



Creating Value Through Governance in the Age of AI

Dr. Yılmaz Argüden
Dr. Erkin Erimez



Helping You Succeed

Helping You Succeed

CREATING VALUE THROUGH GOVERNANCE IN THE AGE OF AI

Dr. Yılmaz Argüden

Dr. Erkin Erimez



Helping You Succeed

ARGE Consulting

Helping You Succeed Since 1991...

As the most widely recognized Turkish management consulting firm internationally, **ARGE Consulting** has contributed to the development of organizations and society for 35 years through its work in **Strategy, Quality, Sustainability, Governance, Institution Building and Performance Management, Integrated Thinking, and Corporate Volunteering.**

Having pioneered groundbreaking work in Türkiye and around the world while making **strategic contributions to the development of society**, ARGE Consulting:

- Led the design, launch, and nationwide expansion of KalDer's **National Quality Movement** across all sectors and throughout Türkiye.
- Assumed responsibility for establishing UN Global Compact Türkiye Network, the world's leading **Sustainability Platform**; helped strengthen National Networks worldwide by promoting the Türkiye Network as a model of good practice; and served on the UN Global Compact Global Board.
- Promotes **governance** as a culture of trust and works to expand its adoption across the public, civil society, and private sectors.
- Pioneers the adoption of **Integrated Reporting** across different sectors in Türkiye and around the world, while promoting its adoption by public institutions and civil society organizations.
- Pioneered the establishment of the Private Sector Volunteers Association (ÖSGD) and the ÖSGD Awards, promoting the widespread adoption of **Corporate Volunteering.**

ARGE's pioneering work, recognized with **awards in Europe and around the world**, is widely regarded as a model of good practice.

ARGE provides **intellectual contributions to the work of international organizations** such as the United Nations, the G20/B20, the OECD, the World Bank, IFC, EBRD, the World Economic Forum, and the IFRS Foundation.

Ideas developed by ARGE have been featured in globally recognized thought-leadership platforms such as Harvard Business Review and INSEAD Knowledge, while respected publishers including Palgrave Macmillan and Wiley have published its books.

ARGE Consulting

35 Years of Global Impact...

- Developed innovative strategies for the deployment of the Global Compact Türkiye Network and represented the Local Networks on the Board of the **UN Global Compact as the elected Global Chair**. As an invited member of the UNGC Think Labs, ARGE provides intellectual contributions to methodologies developed in areas such as Transformational Governance and Business Ethics & Integrity.
- As a **B20 Knowledge Partner** for governance & sustainability, ARGE led the effort to recommend the principles of integrated reporting and responsible leadership to the G20 Leaders. During South Africa's G20 Presidency, ARGE served as Co-Chair of the B20 Ethics & Compliance Task Force.
- Helps leading companies across different industries unlock new strategic opportunities, increasing their **profitability** and **market value**.
- With ARGE's support, its clients have received numerous **quality awards** in Türkiye and across Europe.
- Through its organizational development services, ARGE helps implement **performance management systems** and **career development plans** for thousands of employees.
- **Pioneers the adoption of management approaches in Türkiye** such as the *Balanced Scorecard, Intellectual Capital, Value Management, Change Management, Reputation Management, Board Evaluations, Sustainability Governance, and Municipality Integrated Reporting*.
- Since its founding, ARGE has encouraged its employees, as a company policy, to devote one day each week to community service—equivalent to a combined total of six years. In 2002, this commitment earned ARGE recognition at the European Parliament as one of the **Top Three Companies Shaping the Future**.
- Voluntarily established **Award Programs** for numerous NGOs—including PERYÖN, TAİDER, the SEDEFED Competitiveness Forum, ÖSGD, and Micro Entrepreneurship (Citibank–KEDV)—to help drive social development.
- ARGE was **the only Turkish company** featured in the European Commission's *Responsible Entrepreneurship* book.
- ARGE's social responsibility activities are examined as a **case study at universities** around the world through research conducted by Boğaziçi University and shared via the *European Case Clearing House*.

ARGE Consulting

Leading the Way, Setting the Standard...

- ARGE Consulting is a national leader in **strategy, governance, business excellence, institution building**, and **sustainability**.
- **Globally recognized** for its expertise in governance, sustainability, and corporate social responsibility.
- The world's only national company selected as a **B2o Knowledge Partner** (Governance & Sustainability).
- First Turkish signatory of **UN Global Compact**.
- **EFQM Certified Advisory Organization** (European Foundation for Quality Management) and the only institution from Türkiye to contribute to the development of **EFQM 2020 Model**.
- **Integrated Reporting Training Partner** certified by the International Financial Reporting Standards (**IFRS**) Foundation, as the only Turkish institution.
- **The only institution in the world** to be certified by both EFQM and IFRS.
- The only Turkish company to serve on the Professional Services Working Group of the **World Economic Forum**.

Founded by ARGE Consulting to foster the development of society through a culture of good governance, the **Argüden Governance Academy**;

- Became the Council of Europe's authorized institution to carry out the **European Label of Governance Excellence** (ELoGE) in Türkiye.
- Pioneered the implementation of the **School of Participatory Democracy** program in Türkiye.
- Developed unique methodologies such as the *Sustainability Governance Scorecard* and the *Municipality Governance Scorecard*, which are **recognized globally as exemplary practices** by institutions such as the UN, OECD, and G20.
- Became the **first institution in Türkiye to publish an Integrated Report** and a global pioneer in advancing integrated reporting among civil society organizations.
- Developed and implemented **good governance curricula** for leaders in the public, private, and non-profit sectors, as well as pioneering global programs such as **Good Governance for Children** and a **Youth Network** spanning more than 100 universities, to foster a culture of trust.

ARGE Consulting Publications

No: 14-E

Authors

Dr. Yılmaz Argüden

Dr. Erkin Erimez

ISBN 978-605-2288-21-4

First published in June, 2026

Copyright © 2026, ARGE Consulting

All rights reserved. No part of this publication may be reproduced in any form or by any means without permission from the publisher. Not for resale.

Designed by Özhan Binici

Printed & bound in Türkiye.

TABLE OF CONTENTS

Foreword	1
Executive Summary	5
Introduction	12
What Is Artificial Intelligence?	14
› Why Board Members Need Basic AI Literacy	18
Artificial Intelligence Governance	20
› AI Governance and the ARGE Corporate Governance Model®	22
› Leading Global AI Governance Approaches	23
› Building an AI Governance Structure	29
Risks Created by Artificial Intelligence and the Risk Management Approach	33
› AI Risk Management	40
› Turkish Regulatory Framework	48
› AI Systems Control and Assurance Mechanisms	51
› Managing Ethical and Reputational Risks	54
› Challenges Posed by Evolving Standards for Boards and Their Implementation	56
Artificial Intelligence Governance Is a Leadership Issue	59
Creating Value with Artificial Intelligence	63
› Developing an AI Strategy	64
Deploying Artificial Intelligence in SMEs	70
› AI Adoption Among SMEs in Türkiye	73
› How Should SMEs Approach AI Governance?	76
Boards of Directors in the Age of Artificial Intelligence	79
› Will Boards of Directors Be Composed of Humans or AI?	80
› In the Age of AI, Which Areas Should Boards of Directors Focus on to Create Organizational Value?	81
› Developing the Digital and AI Capabilities of the Board of Directors	88
› How Can AI Contribute to Board Processes?	89
› The Role of Boards in Different Industries	92
Key Questions for Boards of Directors on Artificial Intelligence	95
How Do We Measure the Performance of Artificial Intelligence?	98
Conclusion	100

FOREWORD

Since 1991, **ARGE Consulting** has partnered with more than 500 organizations on over 2,000 projects across a wide range of pioneering fields, including strategy, governance, business excellence, sustainability, integrated thinking, policy and decision-making processes, and also corporate volunteering. Guided by its motto, “**Helping You Succeed**”, ARGE has supported its clients in achieving lasting success. In addition to its consulting services, ARGE transforms its accumulated knowledge and experience into public benefit through voluntary initiatives, contributing intellectual leadership and best practices to the work of international organizations such as the UN, OECD, B2o, IFC, IFRS, EFQM, and the Council of Europe.

To commemorate our 35th anniversary, we have prepared “**Creating Value Through Governance in the Age of AI**” to help boards of directors fulfill their roles and responsibilities in ways that create value throughout the AI transformation, while enhancing board processes and effectively carrying out their guidance and oversight functions.

Artificial intelligence is not the first technological transformation organizations have faced. However, it differs from previous transformations in the breadth of its impact, the speed of its evolution, and the way it permeates decision-making processes. Whereas earlier waves of technological change affected specific sectors or functions, AI has the potential to simultaneously transform the strategies, business models, operations, human capital, stakeholder relationships, and governance structures of organizations. For this reason, AI is not merely a matter of technology; it is also a matter of leadership, governance, and value creation.

Organizations are established for two fundamental purposes: to use resources more effectively and to manage risks more effectively. Their long-term success depends on their ability to create sustainable value for their stakeholders while achieving these two objectives. AI presents organizations with significant opportunities in precisely these areas.

To commemorate our 35th anniversary, we have prepared “Creating Value Through Governance in the Age of AI” to help boards of directors fulfill their roles and responsibilities in ways that create value throughout the AI transformation, while enhancing board processes and effectively carrying out their guidance and oversight functions.

AI can strengthen organizational performance in many ways—enhancing decision quality, improving efficiency, creating new revenue streams, accelerating innovation, and enhancing the customer experience. Yet it also introduces new risks.

The deployment of AI systems confronts organizations with issues they have never before had to address, including bias and discrimination, data security, cybersecurity, intellectual property rights, transparency, accountability, and ethical use. Moreover, many of these risks are not merely technical in nature; they also have strategic, legal, operational, and reputational implications. For this reason, AI's value creation potential and the effective management of the risks it brings cannot be considered separately; they must be addressed holistically.

Today, many organizations are striving to integrate AI into their business processes. Yet technology alone does not create value. Organizations that derive sustainable benefits from AI are those that align technology with their strategies, redesign their processes, invest in human capital, strengthen their governance mechanisms, and foster a culture of continuous learning. At the heart of their success lies not only the technology itself, but also the quality of leadership and governance.

This places significant responsibilities on boards of directors. In the age of AI, the role of boards of directors extends well beyond monitoring risks or approving investments. Boards of directors must contribute to the development of the organization's AI vision, evaluate strategic opportunities, shape their approach to risk management, define ethical boundaries, and safeguard the organization's long-term interests. A core responsibility of boards of directors is to focus not on how AI will be used within the organization, but on how it will help the organization achieve its objectives.

AI is also transforming the way organizations operate and their human capital requirements. New competencies, new ways of working, and new processes in which humans and machines collaborate are emerging. For this transformation to succeed, investing in technology alone is not enough.

Boards of directors must contribute to the development of the organization's AI vision, evaluate strategic opportunities, shape their approach to risk management, define ethical boundaries, and safeguard the organization's long-term interests.

Organizations must also embrace a culture of continuous learning and development that builds trust, manages change, and equips people with the capabilities needed for the future. The success of technological transformations often depends less on the choice of technology than on how effectively the human and cultural dimensions are managed. Therefore, fostering integrated thinking and developing social and intellectual capital should be among the top priorities on the agendas of boards of directors.

In the years ahead, AI systems will become more powerful, more pervasive, and more autonomous. AI agents, decision-support systems, and advanced automation applications will reshape the way organizations operate. What will determine which organizations emerge stronger from this transformation is not their access to technology, but their leadership and governance capacity to manage it effectively. AI can strengthen the guidance function of boards of directors by enabling them to evaluate a broader range of options and scenarios, analyze alternative courses of action, and conduct more comprehensive simulations. Likewise, it can strengthen the oversight function of boards by enabling them to monitor developments within and beyond the organization, changes across the value chain, and competitors' actions earlier and more comprehensively than ever before.

This book does not approach AI from a technical perspective. Instead, its purpose is to equip board members, senior executives, and decision-makers with the governance perspective needed to create value and manage risks in the age of AI. Throughout the book, the opportunities and risks created by AI, the principles of AI governance, the responsibilities of boards of directors, and the key elements of organizational transformation are explored. In doing so, AI is presented from technological, strategic, managerial, and governance perspectives.

In summary, success in the age of AI is determined not by having access to technology, but by the ability to govern it in a way that is aligned with an organization's purpose, strategy, values, and stakeholder expectations.

This book's purpose is to equip board members, senior executives, and decision-makers with the governance perspective needed to create value and manage risks in the age of AI.

Creating sustainable value through AI requires managing risks while seizing opportunities, preserving trust while fostering innovation, and maintaining a healthy balance between short-term gains and long-term impact. Through this book, and in line with our mission of “**creating value by enhancing the quality of management**”, which we have pursued since 1991, we aim to help organizations find the right balance and become stronger, more trustworthy, and more successful in the age of AI.

ARGE Consulting

Creating sustainable value through AI requires managing risks while seizing opportunities, preserving trust while fostering innovation, and maintaining a healthy balance between short-term gains and long-term impact.

EXECUTIVE SUMMARY

AI governance is no longer a choice—it is a strategic necessity.

Artificial intelligence is a collection of technologies that mimic the core functions of human intelligence, such as cause-and-effect reasoning, learning, data analysis, language processing, and decision support. However, current AI systems are optimized for specific tasks and may lack awareness or reasoning capabilities.

Why Governance Matters

The integration of AI into organizational processes can have serious consequences when governance gaps exist. Research and real-world cases clearly illustrate these risks:

RISKS	SCALE OF THE OPPORTUNITY
79% of IT leaders see AI as a security risk.	Leading organizations report over 50% higher revenue growth over three years.
73% of IT leaders believe AI-generated outputs are biased.	Return on investment is 40% higher than that of competitors.
EU AI Act: Administrative fines apply in cases of non-compliance, depending on the severity of the violation (up to €35 million or 7% of annual turnover).	When used effectively, AI delivers cost and efficiency advantages.
Bias detected in AI-driven credit decisions.	AI serves as a strategic lever for innovation and competitive advantage.

The figures above reflect leading organizations in certain sectors and cannot be generalized to all organizations or circumstances. Therefore, each organization should be evaluated within its own context.

Assessing AI Governance Through the Principles of Good Governance

This study identifies seven critical dimensions of effective AI governance:

- **Consistency:** AI has the potential to support the principle of consistency by reducing error rates in routine processes. However, because current AI systems are not trained to handle decisions involving multiple dimensions, they may also struggle to meet stakeholder expectations.
- **Responsibility:** Protecting user data against unauthorized access and misuse (data security and privacy), and addressing the challenges of assigning accountability for AI-based decisions.
- **Accountability:** Clear assignment of accountability throughout the entire AI lifecycle.
- **Fairness:** Ensuring that AI outputs do not reinforce discrimination, bias, or inequalities.
- **Transparency:** Ensuring that AI decisions are understandable, traceable, and justifiable.
- **Effectiveness:** Ensuring the resilience of AI systems against cyberattacks and manipulation, while addressing the challenges of establishing expectations and objectives at the outset and conducting independent impact assessments to measure the outcomes of AI-supported decisions.
- **Deployment:** Ensuring that all units using AI within the organization operate within defined boundaries and established models, and that stakeholder expectations are not overlooked.

These seven critical dimensions, assessed through the principles of good governance, are fully aligned with the CRAFTED principles of the **ARGE Corporate Governance Model®**: Consistency, Responsibility, Accountability, Fairness, Transparency, Effectiveness, and Deployment.

The seven critical dimensions, assessed through the principles of good governance, are fully aligned with the CRAFTED principles of the ARGE Corporate Governance Model®: Consistency, Responsibility, Accountability, Fairness, Transparency, Effectiveness, and Deployment.

Seven Critical Risk Areas

The seven critical risk areas created by AI for organizations are as follows:

- **Bias:** Training data may contain biases that lead to discriminatory decisions. A study published by Stanford shows that large language models systematically disadvantage older women in recruitment processes.
- **Cybersecurity:** IBM research found that only 24% of generative AI projects had implemented adequate security measures. Malicious actors can use AI to carry out cyberattacks and identity theft.
- **Data Privacy:** Samsung engineers uploaded confidential source code to an external AI application, leading to the permanent loss of trade secrets. In the Google DeepMind–Royal Free London NHS Foundation Trust collaboration, authorities found that the data-sharing arrangement violated data protection legislation and required the Trust to sign an undertaking.
- **Intellectual Property Rights:** The New York Times filed a lawsuit against OpenAI and Microsoft for using its published content without permission to train their AI models.
- **Accountability:** Air Canada was held responsible by a court for incorrect information provided by its chatbot. Accountability for AI-based decisions remains a subject of debate.
- **Lack of Transparency:** The ‘black box’ nature of AI can make decision-making processes difficult to understand, creating life-threatening risks in high-risk areas such as autonomous vehicle safety.
- **Workforce Transformation:** The decline in entry-level roles may lead to a shortage of critical judgment skills within organizations over the medium term. Forbes describes this as “a leadership crisis that will emerge gradually.”

The seven critical risk areas created by AI for organizations: Bias, Cybersecurity, Data Privacy, Intellectual Property Rights, Accountability, Lack of Transparency, and Workforce Transformation.

Global Risk Management Frameworks

Three leading international frameworks provide guidance for organizations in managing AI risks:

- **EU AI Act:** Four risk-based categories are defined (unacceptable, high, transparency, and minimal risk). Human oversight, transparency, and data quality are mandatory for high-risk systems. Non-compliance may result in fines of up to 7% of annual turnover.
- **NIST AI Risk Management Framework:** Consists of four integrated functions: Govern, Map, Measure, and Manage. A six-step implementation roadmap is available. Although voluntary, the framework has gained broad acceptance across industry.
- **ISO/IEC 42001:** An international management system standard for managing risks throughout the AI lifecycle. A certification system aligned with the EU AI Act that helps strengthen customer trust.

Human Control: Three Different Models

Our study explains how human control in AI systems can be structured through three different models. The choice of model depends on the impact of the AI-assisted decision on people and the organization.

MODEL	DEFINITION AND CONDITIONS OF USE
Human in the Loop	Human approval is required at every critical step. This model is suitable for medical diagnosis, legal decisions, and cases with significant financial impact. It offers the highest level of accuracy and ethical oversight, but the lowest speed.
Human on the Loop	AI makes and implements decisions, while humans continuously monitor and intervene when necessary. Suitable for customer service, cybersecurity, and autonomous vehicles.
No Human in the Loop (Autonomous)	AI operates completely independently. It should only be used for routine, low-risk processes where errors can be corrected. This model poses the greatest challenges for accountability.

The Five Strategic Responsibilities of Boards

One of the book's most important messages is that AI governance is not merely an information technology issue. It is a leadership and corporate governance issue that must be addressed at the board level. Accordingly, boards of directors have five strategic responsibilities:

- **Strategic Oversight:** Aligning AI strategy with the organization's overall strategy; keeping risks and opportunities on the board's regular agenda; and ensuring effective resource allocation. An AI maturity assessment is the first step in this process.
- **Risk Management:** Evaluating AI-related strategic, operational, reputational, legal, and cybersecurity risks; approving risk management policies.
- **Innovation and Value Creation:** Guiding the use of AI in innovation initiatives; establishing investment priorities.
- **Monitoring Human Capital and Cultural Transformation:** Evaluating the workforce transformation strategy; ensuring a culture of continuous learning; monitoring transparent communication with employees.
- **Trust and Ethical Leadership:** Implementing responsible AI practices; evaluating and approving oversight mechanisms to prevent bias and discrimination; ensuring proactive and transparent communication with stakeholders.

AI governance is not merely an information technology issue. It is a leadership and corporate governance issue that must be addressed at the board level.

Key Questions for Boards of Directors on AI

This book presents a comprehensive set of questions from strategic, risk management, human capital, and stakeholder perspectives to help boards of directors effectively guide the use of AI within their organizations. These questions provide a critical framework for focusing management's attention on the right issues, uncovering blind spots, and supporting informed decision-making.

AI’s Contributions to the Board

Boards of directors can use AI not only to provide guidance and oversight, but also to strengthen their own decision-making processes. However, this requires the use of proprietary, closed, and secure AI systems.

CONTRIBUTION AREA	ROLE OF AI
Report Summaries	Analyzing lengthy reports to highlight key findings and areas for improvement; benchmarking against industry data.
Decision Quality	Supporting proactive strategy development through data-driven analysis and insights.
Scenario Analysis	Modeling market scenarios and competitors’ actions to evaluate strategic alternatives more comprehensively.
Risk Management	Researching global and industry risks; identifying potential blind spots.
Meeting Minutes	Documenting evaluations at the desired level of detail; strengthening organizational learning.
Real-Time Information	Systems that provide real-time access to performance and risk data.

An experimental study conducted by Wharton and INSEAD found that AI-based boards of directors outperformed human boards of directors in decision quality, the use of evidence, and inclusiveness. However, the researchers reached an important conclusion: AI-based boards fall short in interpersonal dimensions that require trust-building and empathy. For this reason, decisions will continue to be made by humans, while AI will remain a tool for supporting human judgment at the board level.

Value Creation Roadmap

This study presents an eight-step roadmap for organizations to create sustainable value from AI:

- **Maturity Assessment:** A data-driven assessment of current AI capabilities, data maturity, and organizational readiness.
- **Defining the Vision:** Developing an AI vision aligned with the organization's strategic goals, where AI shapes strategy and strategy guides AI applications.
- **Establishing the Governance Structure:** Defining roles, responsibilities, policies, and standards.
- **Process Prioritization:** Identifying the processes where AI can create the greatest value, based on value creation potential and readiness assessments.
- **Data and Technology Infrastructure:** Ensuring data quality, security, and the selection of appropriate technologies.
- **Pilot Implementation:** Limited-scale testing of technical feasibility and cultural alignment.
- **Deployment and Organizational Transformation:** Change management, workforce development, and process redesign.
- **Continuous Learning:** Feedback loops, model monitoring, and strategy updates.

The Foundation of AI Governance

Effective AI governance can only be achieved through the commitment and leadership of the board of directors and executive management. Delegating this responsibility to a single function, such as the information technology department, means entrusting a strategic initiative that affects the entire organization to a single team.

Effective AI governance can only be achieved through the commitment and leadership of the board of directors and executive management.

INTRODUCTION

We are experiencing one of the fastest technological transformations in human history. Artificial intelligence is evolving beyond being merely a tool into a force that is reshaping how organizations compete, operate, make decisions, and create value.

The risks created by this transformation are as significant as the opportunities it offers. Most organizations are trying to navigate this transformation without being adequately prepared. Many organizations integrating AI into their business processes lack the governance structures needed to manage the risks that accompany the value this technology creates.

This study has the following objectives:

- Present the conceptual foundations of AI and how it works, providing the framework needed for organizational understanding rather than technical detail.
- Explain why AI governance is now a necessity by examining its ethical, legal, strategic, and reputational dimensions through concrete examples and research findings.
- Provide boards of directors and executive management with a clear framework for leading this transformation, including the questions they should ask, the decisions they should make, and the areas on which they should focus.

Topics covered in this book are:

- **Fundamentals of AI:** How AI works, the technologies that underpin it, and its lifecycle.
- **AI Governance:** Why AI governance must be an integral part of an organization's overall governance approach; the dimensions of consistency, responsibility, accountability, fairness, transparency, effectiveness, and deployment.
- **AI Risks and Risk Management:** Bias, cybersecurity, data privacy, intellectual property rights, accountability, lack of transparency, environmental impacts, and workforce transformation.

Artificial intelligence is evolving beyond being merely a tool into a force that is reshaping how organizations compete, operate, make decisions, and create value.

- **Control and Assurance Mechanisms:** Human in the loop, human on the loop, and autonomous decision models; when each is most appropriate.
- **The Role of Boards of Directors and AI Strategy:** How boards of directors can lead in the age of AI, the value creation roadmap, and AI's contributions to board processes.

This book is intended for board members, chief executive officers, executive managers, and corporate governance professionals who need to make informed decisions about AI within their organizations and provide effective oversight—without having to be AI or technology experts.

The central argument of this book is that AI governance is not merely a technology issue; it is a leadership issue that directly shapes an organization's strategic position, reputation, legal standing, and long-term capacity for value creation.

AI governance is not merely a technology issue; it is a leadership issue that directly shapes an organization's strategic position, reputation, legal standing, and long-term capacity for value creation.

WHAT IS ARTIFICIAL INTELLIGENCE?

Artificial intelligence is becoming an increasingly important part of our lives. It is already making significant contributions to solving complex problems, and its impact is expected to grow even further. But how can we define artificial intelligence?

Artificial intelligence is a set of technologies that enable computers to imitate key capabilities of human intelligence, including:

- Cause-and-effect reasoning,
- Learning,
- Data analysis,
- Problem solving,
- Recognizing faces and objects,
- Understanding and using language,
- Providing recommendations to support decision-making in specific domains.

This technology is expected to drive significant transformations. AI brings together a wide range of disciplines, including software engineering, computer engineering, electronic engineering, data analytics, statistics, computer hardware, linguistics, neuroscience, philosophy, and psychology.¹

How Artificial Intelligence Works

AI depends on the availability of data, the ability of algorithms to process that data, and sufficient computational capacity. AI systems learn by being trained on large volumes of data, enabling them to identify relationships and patterns.

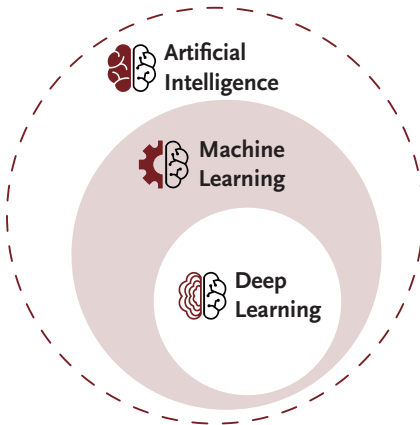
Artificial intelligence is already making significant contributions to solving complex problems, and its impact is expected to grow even further. But how can we define artificial intelligence?

¹ Google, "Artificial intelligence (AI): A Simple-to-Understand Guide", <https://cloud.google.com/learn/what-is-artificial-intelligence>

Compared to humans, AI can analyze far larger volumes of data in a much shorter time. As a result, it can identify relationships and patterns with a lower error rate by detecting details that people might overlook. The effectiveness of AI is directly related to the quality and volume of the data used to train it.

To understand how AI systems work, it is helpful to understand the technologies on which they are built. AI consists of a series of interconnected layers.²

To understand how AI systems work, it is helpful to understand the technologies on which they are built.



Machine Learning: Machine learning is a subset of artificial intelligence in which algorithms are trained on data to identify patterns, make predictions, and improve their performance over time without being explicitly programmed for each task.³ It encompasses a variety of techniques that enable computers to learn by analyzing data and making predictions. These techniques include linear regression, logistic regression, decision trees, and clustering.

The most important algorithms used in this field are neural networks. Inspired by the way the human brain functions, these networks consist of layers of interconnected nodes (similar to neurons in the human brain), enabling them to analyze complex data.

² NASA, “What Is Artificial Intelligence?”, <https://www.nasa.gov/what-is-artificial-intelligence/>

³ IBM, “What Is Artificial Intelligence (AI)?”, <https://www.ibm.com/think/topics/artificial-intelligence>

The simplest form of machine learning is supervised learning. In this method, the model is trained using labeled datasets, enabling it to classify data and make predictions.

In supervised learning, trainers provide the system with training data and define the expected outcomes. This enables the model to learn the relationship between inputs and outputs and apply that knowledge to new situations. A simple example is teaching a computer what a cat looks like by training it on a large number of cat images.

Deep Learning: Deep learning is a subset of machine learning. It uses multiple layers of neural networks designed to mimic the way the human brain functions. These systems can learn on their own without human intervention.

Through natural language processing (NLP), AI models can perform complex tasks such as recognizing human speech, understanding different languages, and generating appropriate responses. Voice assistants on smartphones are a good example of this capability.

The AI systems in use today are examples of artificial narrow intelligence (ANI).⁴ They are designed to perform specific tasks, with large language models (LLMs) being a prominent example. These systems do not possess consciousness or genuine reasoning capabilities. Instead, they perform their tasks by making predictions based on learned patterns and predefined parameters.

Research and development on artificial general intelligence (AGI) is ongoing. It can be regarded as the next stage beyond Artificial Narrow Intelligence. Once developed, AGI is expected to possess reasoning capabilities similar to those of humans, enabling it to establish cause-and-effect relationships and learn independently.

The highest level AI is expected to reach is artificial super intelligence (ASI). It is envisioned as possessing consciousness, operating beyond human control, and surpassing human reasoning capabilities. Reaching this stage also raises significant concerns.

The AI systems in use today are examples of artificial narrow intelligence (ANI). They are designed to perform specific tasks, with large language models (LLMs) being a prominent example.

⁴ Google, "Artificial intelligence (AI): A Simple-to-Understand Guide", <https://cloud.google.com/learn/what-is-artificial-intelligence>

AI Agents: AI agents are an approach that enables existing AI models to plan and execute tasks in a coordinated manner across multiple tools. They do not represent a more advanced form of intelligence than today's AI systems; rather, they deploy the same underlying models within a broader operational framework. AI agents can create their own workflows, use other tools and services, complete tasks, and achieve defined objectives without requiring human direction. They can also adapt to changing conditions.

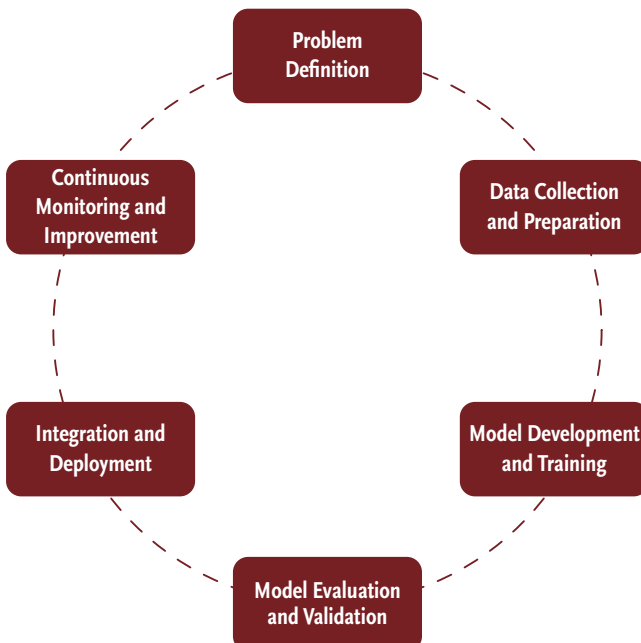
Systems in which multiple AI agents work together are known as Agentic AI (or autonomous AI). These coordinated systems can accomplish complex tasks and achieve challenging goals.

For example, once a person defines the criteria for a trip, AI agents can provide recommendations and, based on the person's choices, book hotels, purchase airline tickets, and arrange car rentals. In this way, much of the process can be carried out by AI agents. This process is an example of an agentic AI workflow.

AI agents can create their own workflows, use other tools and services, complete tasks, and achieve defined objectives without requiring human direction.

AI Lifecycle

The AI lifecycle is a continuous, iterative cycle that encompasses planning, data collection, model training, deployment, and ongoing operation. It consists of six steps:



Problem Definition: Defining the objective, determining whether AI can provide an effective solution, and establishing key performance indicators.

Data Collection and Preparation: Collecting, cleaning, and formatting the data. These activities are essential to ensuring the model operates effectively and efficiently.

Model Development and Training: Selecting or designing algorithms, then training the model on the prepared data to recognize patterns and relationships.

Model Evaluation and Validation: Benchmarking the model against comparable models and verifying that its outputs meet the required standards for precision, accuracy, reliability, and fairness before deployment.

Integration and Deployment: Integrating the trained model into business processes and deploying it for operational use.

Continuous Monitoring and Improvement: Monitoring model performance to detect drift and retraining the model when the accuracy of its outputs declines.

The AI lifecycle is a continuous, iterative cycle that encompasses planning, data collection, model training, deployment, and ongoing operation.

Why Board Members Need Basic AI Literacy

As AI fundamentally reshapes competitive dynamics, business models, workforce structures, and regulatory environments, it also requires active and informed leadership at the highest level of the organization. AI governance is therefore a core responsibility of the board of directors.

Boards of directors that lack a foundational understanding of how AI systems work are ill-equipped to evaluate the strategies presented to them, identify the risks those strategies entail, or effectively fulfill their core oversight responsibilities.

AI systems do not operate by following pre-programmed instructions. Instead, they derive decision rules from statistical patterns in data. To illustrate this, consider a credit-scoring model. It is not programmed to reject applicants with fewer than three years of continuous employment.

Rather, it is trained on tens of thousands of historical loan records and learns which combinations of applicant characteristics are statistically associated with repayment or default. The rules applied by the system do not appear in any policy document; instead, they are encoded in mathematical parameters shaped by the data on which the model was trained.

When an AI system produces an erroneous or discriminatory outcome, the root cause is rarely a coding error. More often, it stems from flaws in the training data or poorly defined objectives. Boards of directors should therefore not limit their inquiries to asking, “Does the system perform as intended?” They should also ask deeper questions, such as: “What patterns has the model learned? From which data were those patterns derived? What objective was the model trained to achieve?” It is essential for board members to possess a basic understanding of AI and sufficient AI literacy to ask the right questions and guide their organizations in creating value.

Boards that take a passive role in overseeing AI initiatives within their organizations are not merely missing a strategic opportunity—they are also falling short of their fiduciary responsibilities.

Effective AI governance does not require board members to possess the technical expertise of data scientists or software engineers. It requires conceptual fluency—the ability to critically evaluate management’s assessments, identify assumptions that have gone unchallenged, and recognize when independent expert advice is needed.

Boards that take a passive role in overseeing AI initiatives within their organizations are not merely missing a strategic opportunity—they are also falling short of their fiduciary responsibilities.

ARTIFICIAL INTELLIGENCE GOVERNANCE

AI governance can be defined as the set of policies, approaches, procedures, and ethical principles established to ensure that AI systems create value for the organization, operate in alignment with its values, and comply with legal requirements throughout their development, deployment, use, and continuous improvement across the AI lifecycle.

AI governance is an integral part of an organization's overall governance approach.

AI is becoming an increasingly integral part of business processes. Initially, it was used for tasks such as forecasting and analyzing large volumes of data to generate insights. Today, AI agents are increasingly being integrated into business processes. As organizations begin to rely on agents for planning, executing tasks, supporting decision-making, and operating with greater autonomy, the need for AI governance has become increasingly evident.

The workplace and workforce of the future will be very different from those of today. Establishing an effective AI governance framework is therefore essential to managing the risks and opportunities organizations face today and will face in the future.

Business leaders face increasing pressure to create value. When used effectively and responsibly, AI has enormous potential to create value. But at the same time, its use introduces risks alongside the opportunities it creates. These risks can affect organizational performance while also exposing organizations to legal and reputational harm. The following examples illustrate the importance of AI governance:⁵

When used effectively and responsibly, AI has enormous potential to create value. But at the same time, its use introduces risks alongside the opportunities it creates.

5 Shalini Harkar, "Implementing AI Governance: A Practical Guide", 20 February 2026, IBM, <https://www.ibm.com/think/insights/ai-governance-implementation>

Distrust in AI Outputs: A study by Harvard Business Review found that 79% of IT leaders believe AI technologies pose security risks, while 73% believe AI-generated outputs are biased.⁵ The findings highlight the importance of carefully evaluating the accuracy and reliability of AI outputs, the potential for biased conclusions, and the ethical risks associated with AI use.

AI Regulation Comes into Force: The EU AI Act imposes significant penalties for non-compliance.

Under Article 99 of Regulation (EU) 2024/1689, prohibited AI practices may result in fines of up to €35 million or 7% of worldwide annual turnover, whichever is higher. Violations of obligations relating to high-risk AI systems may result in fines of up to €15 million or 3% of worldwide annual turnover, while breaches of transparency and documentation requirements may result in fines of up to €7.5 million or 1.5%.

Black Box Models: The inability to understand how models work or the reasoning behind their outputs can expose organizations to reputational damage, litigation, regulatory investigations, and penalties.

One of the most significant examples of this challenge is the risk of bias in AI-assisted credit decisions. A 2023 study by the U.S. Consumer Financial Protection Bureau found that more than 60% of AI-generated credit decisions failed to provide an adequate explanation of the reasons behind the decision.⁶ The Bureau also found that, among applicants with comparable qualifications, white families applying for home loans were approved at rates 80% higher than black families.⁶

Another example is the Dutch government's welfare fraud detection system, System Risk Indication (SyRI). A Dutch court found that its opaque risk profiling created a significant risk of discrimination, particularly because it was deployed in low-income and minority neighborhoods.⁷

A study by Harvard Business Review found that 79% of IT leaders believe AI technologies pose security risks, while 73% believe AI-generated outputs are biased.

⁶ Consumer Financial Protection Bureau, "Director Chopra's Prepared Remarks on the Interagency Enforcement Policy Statement on Artificial Intelligence", 25 April 2023, <https://www.consumerfinance.gov/archive/newsroom/director-chopra-prepared-remarks-on-interagency-enforcement-policy-statement-artificial-intelligence/>

⁷ UNDP, "A Shared Vision for Technology and Governance", 2023, page 22

AI Governance and the ARGE Corporate Governance Model®

The **CRAFTED principles⁸** of the **ARGE Corporate Governance Model®** define the principles that organizations should apply to implement an effective governance approach. AI governance should be aligned with the organization's overall governance approach, ensuring that AI is implemented in a manner consistent with its values. The following principles provide the framework for effective AI governance.

ARGE Corporate Governance Model® Principles (CRAFTED):

- **Consistency:** Ensuring that decisions are consistent with one another and that the reasoning behind them is explainable.
- **Responsibility:** Anticipating the consequences of decisions, assessing them before implementation, and taking preventive action to mitigate potential adverse outcomes.
- **Accountability:** Taking responsibility for the positive and negative outcomes of decisions and the operation of systems, and being able to explain the reasons behind those decisions and outcomes.
- **Fairness:** Making decisions impartially, free from bias and discrimination, and with equal consideration for all stakeholders.
- **Transparency:** Ensuring that decision-making processes and decisions can be clearly explained and communicated to all relevant stakeholders.
- **Effectiveness:** Ensuring the system operates effectively and is designed to minimize errors and adverse outcomes.
- **Deployment:** Maintaining two-way engagement with all stakeholders and developing solutions by drawing on diverse perspectives.⁹

The CRAFTED principles of the ARGE Corporate Governance Model® define the principles that organizations should apply to implement an effective governance approach.

⁸ Dr. Yılmaz Argüden, “Keys to Governance”, Palgrave Macmillan, 2011, pages 3, 105, 107
Dr. Yılmaz Argüden, Pınar Ilgaz, Burak Erşahin, “ARGE Kurumsal Yönetişim Modeli”, November 2007, <https://arge.com/kitaplar/arge-kurumsal-yonetisim-modeli.pdf>

⁹ Dr. Yılmaz Argüden, Pınar Ilgaz, Dr. Erkin Erimez, Dr. İnan İzci, Özhan Binici, “Civil Engagement Model®: Building Trust Through Good Governance”, November 2024, Argüden Governance Academy Publications, <https://argudenacademy.org/publications/Arguden-Governance-Academy-Civil-Engagement-Model-Building-Trust-Through-Good-Governance.pdf>

Leading Global AI Governance Approaches

International organizations have established a broad set of principles for AI governance. These principles contribute to the development of effective and responsible AI governance structures while supporting the adoption of globally recognized best practices.

Several international organizations have developed principles and guidance for AI governance. Among them, the OECD is one of the leading organizations providing a comprehensive framework for the responsible governance of AI. The United Nations, both independently and in collaboration with the OECD, has also undertaken a range of initiatives in this area. Organizations such as the IEEE have likewise developed principles and standards to promote the responsible development and use of AI.

The AI governance principles established by international organizations help organizations build effective and responsible AI governance structures and adopt globally recognized best practices.

OECD AI Principles

The OECD AI Principles are organized around two complementary frameworks. The first sets out values-based principles that are recommended for the private sector, civil society, and public-sector organizations involved in the development and deployment of AI systems. The second provides recommendations for governments developing AI policies and regulations. These recommendations should also be considered by the private sector and civil society, as they provide insight into the priorities and direction of future regulatory frameworks, helping organizations prepare for evolving compliance requirements.

The OECD AI Principles were introduced in 2019 and updated in 2024.¹⁰ Their purpose is to promote the trustworthiness of AI systems and support policymakers in developing effective AI policies.

Values-Based Principles

- **Principle (1.1) Inclusive Growth, Sustainable Development, and Well-Being:** This principle highlights the potential for trustworthy AI to contribute to overall growth and prosperity

¹⁰ OECD AI Principles, <https://oecd.ai/en/ai-principles>

for all – individuals, society, and planet – and advance global development objectives.

- **Principle (1.2) Respect for the Rule of Law, Human Rights and Democratic Values, Including Fairness and Privacy:** AI systems should be designed in a way that respects the rule of law, human rights, democratic values and diversity, and should include appropriate safeguards to ensure a fair and just society.
- **Principle (1.3) Transparency and Explainability:** This principle is about transparency and responsible disclosure around AI systems to ensure that people understand when they are engaging with them and can challenge outcomes.
- **Principle (1.4) Robustness, Security and Safety:** AI systems must function in a robust, secure and safe way throughout their lifetimes, and potential risks should be continually assessed and managed.
- **Principle (1.5) Accountability:** Organizations and individuals developing, deploying or operating AI systems should be held accountable for their proper functioning in line with the OECD's values-based principles for AI.

The purpose of the OECD AI Principles is to promote the trustworthiness of AI systems and support policymakers in developing effective AI policies.

Recommendations for Policymakers

- **Principle (2.1) Investing in AI Research and Development:** Governments should facilitate public and private investment in research & development to spur innovation in trustworthy AI.
- **Principle (2.2) Fostering an Including AI-Enabling Ecosystem:** Governments should foster accessible AI ecosystems with digital infrastructure and technologies, and mechanisms to share data and knowledge.
- **Principle (2.3) Shaping and Enabling Interoperable Governance and Policy Environment for AI:** Governments should create a policy environment that will open the way to deployment of trustworthy AI systems.
- **Principle (2.4) Building Human Capacity and Preparing for Labor Market Transformation:** Governments should equip people with the skills for AI and support workers to ensure a fair transition.

- **Principle (2.5) International Co-Operation for Trustworthy**

AI: Governments should co-operate across borders and sectors to share information, develop standards and work towards responsible stewardship of AI.

When developing AI initiatives, selecting service providers, and deploying AI applications, organizations should focus on the values-based principles outlined above.

These principles emphasize:

- Consistency and resilience
- Responsibility
- Accountability and explainability
- Fairness
- Transparency and security (including data security and personal data protection)
- Effectiveness and value creation
- Inclusiveness

The **NIST** (National Institute of Standards and Technology) AI Risk Management Framework, the world's most widely adopted voluntary standard for AI risk management, identifies the following characteristics of trustworthy AI:¹¹

- Valid and reliable
- Safe
- Secure and resilient
- Accountable and transparent
- Explainable and interpretable
- Privacy-enhanced
- Fair – with harmful bias managed

IBM, a leading organization in the field of AI governance, identifies the following as key areas of focus for effective AI governance:¹²

When developing AI initiatives, selecting service providers, and deploying AI applications, organizations should focus on the values-based principles.

¹¹ NIST, "Artificial Intelligence Risk Management Framework: Generative Artificial Intelligence Profile", January 2023, <https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf>

¹² Shalini Harkar, "Implementing AI Governance: A Practical Guide", 20 February 2026, IBM, <https://www.ibm.com/think/insights/ai-governance-implementation>

- **Transparency:** AI decisions should be understandable and traceable, and the reasoning behind them should be explainable. This makes AI outputs more understandable and trustworthy. The data sources used to reach decisions should also be disclosed.
- **Accountability:** Clearly defining responsibility for AI decisions helps prevent harmful impacts. Accountability should be established and monitored throughout the AI lifecycle. AI models should be auditable, and responsibility for decisions should be clearly assigned at every stage of the process.
- **Fairness:** AI applications should not produce outcomes that reinforce discrimination, bias, or inequality.
- **Data Security / Privacy Protection:** AI applications should ensure that user data is not used for unauthorized purposes or accessed by unauthorized individuals or organizations.
- **Safety:** AI systems should be protected against cyberattacks and data breaches through robust security controls, including firewalls and other protective measures.

Implementing these approaches helps establish clear boundaries for governing AI processes, ensure that processes are properly documented, and enable the timely detection of deviations from established objectives.

The OECD AI Principles, the NIST AI Risk Management Framework, and IBM's AI governance principles all emphasize the same core dimensions: consistency and resilience, responsibility, accountability, fairness, transparency (including data security and privacy protection), effectiveness, and deployment. The CRAFTED principles of the ARGE Corporate Governance Model® align directly with these dimensions. This alignment is no coincidence; good corporate governance and responsible AI governance are built on the same fundamental principles.

These principles should not remain merely a policy document; they must be embedded in the practices of the entire organization. The tangible benefits that organizations can achieve by applying the CRAFTED framework to AI are summarized in the next page.

The CRAFTED principles of the ARGE Corporate Governance Model® are directly aligned with the core dimensions of AI governance. This alignment is no coincidence; good corporate governance and responsible AI governance are built on the same fundamental principles.

CRAFTED PRINCIPLE	AI GOVERNANCE COUNTERPART	BENEFITS FOR THE ORGANIZATION
Consistency	AI decisions must be aligned with the organization's values and other policies.	Prevents conflicting AI applications across departments and ensures a consistent approach during regulatory oversight.
Responsibility	The potential adverse consequences of each AI application should be assessed before deployment.	Supports proactive risk management and helps prevent legal and reputational crises.
Accountability	Responsibility must be clearly defined throughout the AI lifecycle.	Builds trust with auditors, regulators, and stakeholders, and helps prevent legal crises such as the Air Canada case.
Fairness	Bias audits must be systematic and properly documented.	Protects against discrimination claims, prevents reputational harm, and supports alignment with diversity commitments.
Transparency	The rationale behind decisions must be explainable; stakeholders must be informed.	Builds customer and employee trust and facilitates regulatory reporting.
Effectiveness	AI systems must be designed to minimize errors and adverse outcomes.	Preserves operational continuity and strengthens quality assurance.
Deployment	Promotes two-way engagement with all stakeholders and embeds AI practices across the organization.	Addressed separately on the following page.

The deployment principle emphasizes that developing policies alone is not enough—they must be embedded throughout the organization’s day-to-day practices. Meaningful stakeholder engagement helps ensure that these policies are adopted across the organization. This approach enables employees to become active contributors to the implementation of AI initiatives and organizational change, while also supporting effective and consistent implementation.

Meaningful participation must take place at three distinct dimensions:

DIMENSION	WHO SHOULD BE INVOLVED?	IMPLEMENTATION EXAMPLES
Internal Stakeholders	Employees, mid-level managers, legal and compliance teams, internal audit.	Employee feedback during the drafting of AI policies, business unit-level impact assessments, post-implementation internal audit cycles.
External Stakeholders	Customers, suppliers, communities, regulators.	AI transparency notices for customers, AI conduct policies for suppliers, regulatory communication plans.
Organization-Wide Deployment	All business units, SME subsidiaries, and international operations.	A designated AI representative in each business unit, integration of the AI governance policy into all employee contracts and business processes.

Without effective stakeholder engagement:

- **Policies Remain on Paper:** An AI ethics policy approved by the board of directors may never be adopted by operational teams.
- **A Gap Emerges Between Technical and Business Teams:** Engineers may design a safe AI model, but the sales team may use it for a different purpose.
- **Trust Cannot Be Built with External Stakeholders:** It is impossible to build trust without explaining how AI is used.

Each business unit's compliance with the AI governance policy should be assessed through an internal audit at least once a year, with the findings reported to the board of directors. Without implementing this process, an AI governance approach aligned with the principles of good governance will remain little more than an organizational commitment.

AI governance is inherently connected to an organization's overall governance approach. As a result, the principles and topics discussed throughout this book are closely interconnected. Given the rapid pace of technological change, it is essential for the AI governance approach to remain up to date.

An effective AI governance approach requires a cross-functional team that brings together employees from different disciplines, including members of management with decision-making authority. This team should focus on:

- Developing AI governance policies
- Establishing principles for the development and use of AI
- Defining decision-making and oversight processes
- Establishing approaches to AI product development
- Assessing AI-related risks
- Designing and maintaining continuous oversight mechanisms
- Establishing processes for data collection and data quality
- Developing guidelines on the appropriate use of AI by employees

This approach is also aligned with the principles of integrated thinking.

Each business unit's compliance with the AI governance policy should be assessed through an internal audit at least once a year, with the findings reported to the board of directors. Without implementing this process, an AI governance approach aligned with the principles of good governance will remain little more than an organizational commitment.

Building an AI Governance Structure

An effective AI governance structure addresses the following elements:¹³

- **Defining the Need for AI Governance:** The need for an AI governance approach should be clearly defined, and the

¹³ Shalini Harkar, "Implementing AI Governance: A Practical Guide", 20 February 2026, IBM, <https://www.ibm.com/think/insights/ai-governance-implementation>



governance structure should be built accordingly. This process should be guided by the organization's strategy, objectives, risk management framework, and ethical principles, while also establishing how the effectiveness of the AI governance approach will be measured.

- **Defining Roles and Responsibilities:** The roles and responsibilities within the AI governance structure should be clearly defined. Decision-making authority and accountability should be assigned across the relevant positions, teams, and processes. These roles and responsibilities should span the entire AI lifecycle, ensuring effective oversight at every stage.
- **Defining Policies and Standards:** Policies and standards should be established to provide clear guidance for employees within the AI governance structure. They define the fundamental principles that should guide AI development, identify key considerations throughout the process, and establish how AI systems should be designed, tested, deployed, monitored, and audited. These policies and standards help mitigate bias, manage risks, and promote fairness, transparency, and explainability throughout the AI lifecycle.
- **Establishing a Centralized System and Record-Keeping Infrastructure:** A centralized system and record-keeping infrastructure should be established to ensure that AI activities and processes can be effectively monitored, tracked, and audited. This enables organization-wide visibility into the use of AI and supports the timely identification of unauthorized use, as well as more effective risk analysis.

Defining policies and standards help mitigate bias, manage risks, and promote fairness, transparency, and explainability throughout the AI lifecycle.

- **Defining an AI Risk Management Framework:** An AI risk management framework should be established to support the ongoing oversight of AI systems. Not all AI applications require the same level of monitoring and oversight.

To determine the appropriate level of monitoring, the following factors should be taken into consideration:

- The sensitivity and importance of the data being used
- The extent to which AI-generated recommendations and autonomous decisions affect people and business outcomes
- The likelihood that the data used to train AI systems may introduce bias, errors, or unfair outcomes

In this context, AI models that may have an impact on healthcare, financial services, or legal matters are classified as **high risk**, while models that primarily affect business processes or customer experience are classified as **medium risk**. This classification provides a structured basis for identifying and assessing AI-related risks.

- **Training and Change Management:** Employees should be trained as the AI governance structure is implemented. Ongoing training helps employees stay up to date with new developments and ensures that the organization keeps pace with advances in AI. Successful implementation also requires a structured change management process, as both the governance policies and the growing use of AI in business processes introduce significant organizational change. These policies define how processes should be governed and how control mechanisms should be applied during system updates and model retraining.
- **Operating Oversight Mechanisms:** Once the AI governance structure has been implemented, it is essential to maintain ongoing oversight and continuously monitor AI models. This enables risks to be identified at an early stage and appropriate mitigation measures to be taken. Process owners and internal audit functions play a critical role in this process. Their reviews help ensure that AI implementations and outcomes remain aligned with organizational policies, internal rules, ethical principles, and regulatory

Once the AI governance structure has been implemented, it is essential to maintain ongoing oversight and continuously monitor AI models. This enables risks to be identified at an early stage and appropriate mitigation measures to be taken.

requirements. As a result, the entire AI lifecycle can be effectively monitored and governed.

- **Review and Continuous Improvement:** Throughout the implementation of the AI governance structure, it is important to regularly review its effectiveness, identify areas for improvement, and evaluate the effectiveness of control mechanisms. These activities help ensure the effective operation of business processes. Integrating the policies, rules, and values established by the governance structure directly into AI processes supports their effective and consistent operation.
- **Continuous Engagement with Value Chain Stakeholders:** Organizations that acquire AI models from external providers should work closely with the developers of those models and promote transparency regarding the data used and the explainability of AI-generated decisions. This is important because organizations may also be exposed to risks that originate entirely from the developer, rather than from their own data or the decision-making processes they have established.

AI governance should be an integral part of the organization's overall governance approach.

Effective AI governance can only be achieved through the active commitment and leadership of the board of directors and executive management.

AI governance should be an integral part of the organization's overall governance approach.

RISKS CREATED BY ARTIFICIAL INTELLIGENCE AND THE RISK MANAGEMENT APPROACH

Artificial intelligence offers significant opportunities in areas such as developing new medical treatments, monitoring pandemics, generating solutions to global challenges such as climate change, increasing productivity, and fostering creativity. It also contributes to reducing errors through data analysis and situational assessment, while enabling robots and other technologies to perform dangerous tasks.¹⁴

Artificial intelligence also gives rise to significant risks. Because these risks can directly affect an organization's strategic position, they should be addressed by the board of directors. The key risks associated with the use of AI are outlined below.¹⁵

Bias

The outputs of AI and machine learning algorithms are closely influenced by the presence of bias in the data used to train them. When trained on biased data, AI systems may produce outputs and decision recommendations that reflect those biases. This can reduce the quality of decision-making and expose the organization to discrimination claims and legal proceedings.

Artificial intelligence also gives rise to significant risks. Because these risks can directly affect an organization's strategic position, they should be addressed by the board of directors.

¹⁴ European Union, "Benefits and Risks of AI", <https://www.consilium.europa.eu/en/policies/benefits-and-risks-of-ai/>

¹⁵ Rina Diane Caballar, "10 AI Dangers and Risks and How to Manage Them", IBM, <https://www.ibm.com/think/insights/10-ai-dangers-and-risks-and-how-to-manage-them>

A study published by Stanford University in October 2025 found that large language models exhibit bias against women above a certain age in professional contexts.¹⁶ When researchers asked an AI system to generate CVs for hypothetical female candidates, it consistently portrayed them as younger and less experienced than their male counterparts. When the same AI system was then asked to evaluate those CVs, it assigned higher scores to older men than to women of the same age, even when their qualifications were identical. These findings suggest that AI tools used in recruitment may systematically disadvantage women above a certain age.

Cybersecurity

Malicious actors can use AI to launch cyberattacks, send fraudulent emails to compromise organizational systems, clone voices and images with a high degree of realism, and generate convincing audio and video content. These techniques can be used to gain unauthorized access to an organization's information and data, as well as to employees' personal information. This may result in unauthorized access to personal data held within the organization's systems and expose the organization to legal risks. These risks are even greater when employees use unauthorized AI tools rather than those provided or approved by the organization.

A study by the IBM Institute for Business Value found that adequate security measures had been implemented in only 24% of organizations' active generative AI projects.¹⁷ At the same time, 82% of respondents believed that adequate security measures were already in place. The same study also found that 70% of respondents said innovation was prioritized over security.

Data Security / Privacy

Training large language models requires vast amounts of data. While some of the data used for training is provided directly by

A study by the IBM Institute for Business Value found that adequate security measures had been implemented in only 24% of organizations' active generative AI projects.

¹⁶ Douglas R Guilbeault, Solène Delecourt, Barghav Srinivasa Desikan, "Age and Gender Distortion in Online Media and Large Language Models", *Nature*, 8 October 2025, <https://www.nature.com/articles/s41586-025-09581-z>

¹⁷ IBM Institute for Business Value, "Securing Generative AI", <https://www.ibm.com/thought-leadership/institute-business-value/report/securing-generative-ai>

researchers, a significant portion is collected from the internet and social media platforms. Much of this data is used without the consent of the individuals concerned.

Similarly, some of the data used to train customer relationship management (CRM) models that predict and influence customer behavior may consist of personal data. If the necessary consent has not been obtained from the data subjects, its use may also expose the organization to legal risks.

In 2015, the Royal Free London NHS Foundation Trust shared data relating to 1.6 million patients with kidney disease with DeepMind, one of Google's AI companies. It was stated that the data had been anonymized before being used to train the AI model. However, under the UK's data protection legislation, data subjects were still required to be informed when their health data was used for purposes other than those for which it had originally been collected, even if the data had been anonymized. The Trust was found by the relevant authority to have breached data protection law. It subsequently signed an undertaking but was not fined.¹⁸

In 2023, Samsung engineers uploaded confidential source code and internal meeting notes to an external AI application. The service provider used this information to train its AI model, making it publicly accessible. Although Samsung was unable to bring legal action against the service provider, the company lost valuable intellectual property and a source of competitive advantage as a result of its employees' actions. At the time, Samsung did not have a policy governing the use of AI. Following the incident, the company prohibited employees from using generative AI tools.¹⁹

Intellectual Property Infringement

AI models are trained using data protected by intellectual property rights. As a result, the outputs they generate may infringe those rights or otherwise give rise to intellectual property risks.

While some of the data used for training is provided directly by researchers, a significant portion is collected from the internet and social media platforms. Much of this data is used without the consent of the individuals concerned.

¹⁸ BBC, "DeepMind Faces Legal Action Over NHS Data Use", <https://www.bbc.com/news/technology-58761324>

¹⁹ Osman Husain, "18 AI Privacy Violations: Real Examples (2026)", 16 March 2026, <https://www.enzuzo.com/blog/ai-privacy-violations>

In December 2023, The New York Times filed a lawsuit against OpenAI and Microsoft, alleging that they had used thousands of the newspaper's copyrighted articles without permission to train their AI models. The training data included thousands of published articles, enabling the AI models to generate responses based on the newspaper's content.²⁰ This may have contributed to a decline in readership and adversely affected the newspaper's advertising revenue.

Accountability Issues

One of the most significant issues surrounding artificial intelligence is determining who should be held accountable and responsible for harmful outcomes resulting from model errors. This question has yet to be clearly resolved. Organizations may be required to account for the adverse consequences of AI-driven decisions and actions. The complexity lies in the fact that, even when an organization is not directly responsible for every aspect of an AI model's training, the resulting outcomes may still be attributed to that organization. In such cases, however, it remains unclear how accountability should be assigned.

A passenger who had lost a family member used Air Canada's chatbot to obtain information about the airline's bereavement fare policy. The chatbot informed the passenger that they could purchase the ticket at the standard fare and apply for a partial refund within 90 days. However, Air Canada's policy explicitly stated that retroactive refunds were not available in bereavement cases. When the passenger submitted the refund request, the airline rejected it. Air Canada initially argued that it was not responsible for the chatbot's "hallucination," claiming that the AI system was "an independent entity" and that its official policies were the only authoritative source of information. The passenger subsequently took the matter to court, which ruled that the airline was directly responsible for all information provided by its digital representatives.²¹

One of the most significant issues surrounding artificial intelligence is determining who should be held accountable and responsible for harmful outcomes resulting from model errors. This question has yet to be clearly resolved.

²⁰ Negar Bondari, "AI Copyright and the Law: The Ongoing Battle Over Intellectual Property Rights", 4 February 2025, University of Southern California, <https://sites.usc.edu/iprls/2025/02/04/ai-copyright-and-the-law-the-ongoing-battle-over-intellectual-property-rights/>

²¹ Maria Yagoda, "Airline Held Liable for Its Chatbot Giving Passenger Bad Advice", 23 February 2024, BBC, <https://www.bbc.com/travel/article/20240222-air-canada-chatbot-misinformation-what-travellers-should-know>

Lack of Transparency and Explainability

AI models and algorithms often operate as opaque “black boxes,” providing little or no insight into their internal workings or decision-making processes. This challenge extends even to technology specialists working in the field of AI. The complexity of these systems makes it difficult to understand how decisions are reached or what reasoning underlies them. As a result, questions arise regarding the reliability of AI models and algorithms and the potential for their recommendations to produce unintended consequences.

Associate Professor Samir Rawashdeh of the University of Michigan-Dearborn has explained why this issue cannot be easily resolved.²² For example, if an autonomous vehicle were to strike a pedestrian in a situation where it was expected to brake, the system’s “black box” nature would prevent investigators from tracing its decision-making process or understanding why it made that decision. Rawashdeh explains that, if such an accident occurred and it was determined that the perception system had failed to detect the pedestrian, it would likely be concluded that the system had encountered a novel situation. The next step would be to determine what caused the failure and then retrain the system using similar scenarios so that it could perform better in the future.

“However, the fundamental challenge is whether it is ever possible to obtain training data that covers every possible scenario,” says Rawashdeh. “What happens when the weather is both sunny and slightly foggy, or when the roads have just been salted and the asphalt appears whiter than usual? There are infinitely many possibilities, so you can never be certain that the system is robust enough to make the right decision in every situation.”

Adverse Environmental Impacts

The operation of AI models requires substantial amounts of energy. In particular, the data centers that support these systems can place significant pressure on local energy infrastructure and contribute to energy shortages in the regions where they are located. Energy consumption also results in carbon

The complexity of AI systems makes it difficult to understand how decisions are reached or what reasoning underlies them. As a result, questions arise regarding the reliability of AI models and algorithms and the potential for their recommendations to produce unintended consequences.

²² Samir Rawashdeh, “AI’s Mysterious ‘Black Box’ Problem, Explained”, 6 March 2023, University of Michigan-Dearborn, <https://umdearborn.edu/news/ais-mysterious-black-box-problem-explained>

emissions. Another important concern is the use of water for cooling purposes. This can exacerbate water scarcity and create medium-term risks for food security, human well-being, and the security of essential supplies.

A study by the World Bank and the ITU suggests that the information and telecommunications sector may account for between 1.5% and 4% of global greenhouse gas emissions.²³ The report also notes that, as discussed above, water consumption poses additional environmental risks. In the medium term, these challenges may result in data centers becoming subject to carbon taxes and increase the cost of operating AI models.

Failure to Replenish the Workforce

Artificial intelligence enables the automation of certain tasks. As the need for human labor in these roles declines, organizations often eliminate such positions to improve efficiency and reduce costs. This particularly affects entry-level roles, making it more difficult for organizations to attract and develop new talent. At the same time, the outputs generated through automation are typically reviewed by more experienced employees. Over time, however, as these experienced employees leave the organization or move into more senior positions, organizations may struggle to find sufficiently trained employees to replace them. By focusing primarily on short-term efficiency gains and cost savings, organizations may fail to develop the next generation of talent. In the medium term, this can create capability gaps that ultimately affect decision-making at higher levels of the organization.

By focusing primarily on short-term efficiency gains and cost savings, organizations may fail to develop the next generation of talent.

An article published in Forbes on 30 January 2026 discusses this issue and makes the following points:²⁴

- Hiring is described as only the visible aspect of the problem, while the real issue is the development of capabilities.

²³ ITU, The World Bank, “Measuring National ICT Sector Environmental Impact”, 2025, <https://openknowledge.worldbank.org/server/api/core/bitstreams/cf2a2fia-bd75-4b81-95d1-96e044209b30/content>

²⁴ Samantha Walravens, “AI is Erasing Entry Level Jobs—and the Training That Comes with Them”, 30 January 2026, Forbes, <https://www.forbes.com/sites/geekgirlrising/2026/01/30/as-ai-erases-entry-level-jobs-colleges-must-rethink-their-purpose>

As entry-level roles decline, so do the opportunities to develop critical skills such as judgement and accountability.

- Executive coach and former Apple engineering leader Jossie Haines is quoted as saying: “While AI eliminates routine tasks, it cannot automate human judgement.”
- Judgement is defined as the practical ability to recognize when an output does not reflect reality, understand the associated risks, and intervene at an early stage.
- This capability is described as a professional instinct developed through working alongside experienced colleagues.
- It is developed by participating in meetings where there are no clear-cut answers, observing experienced leaders’ real-time reasoning, and directly seeing how decisions affect different teams.
- Many essential skills are developed in entry-level roles. As experience is gained, employees also develop the ability to identify errors early, together with a stronger sense of responsibility and accountability.
- As these roles disappear, this accumulated experience gradually begins to erode.
- Organizations may not feel the effects immediately, but over time the decline in entry-level positions creates talent gaps that become increasingly difficult to address.
- The article emphasizes that leadership pipelines do not develop on their own. Organizations need people who understand how work is actually carried out, can identify risks at an early stage, and are able to make sound decisions even when information is incomplete.
- Technology can accelerate execution, but organizations are still ultimately guided by human judgement.
- In the economy of the future, judgement will become the core capability that distinguishes speed as a competitive advantage from speed as a source of risk.

Many essential skills are developed in entry-level roles. As experience is gained, employees also develop the ability to identify errors early, together with a stronger sense of responsibility and accountability.

Since all of the risks discussed above directly affect the company’s strategic position, it is important that they be assessed by the board of directors.

AI Risk Management

The purpose of AI risk management is to minimize the potential adverse effects of artificial intelligence while maximizing its benefits. AI risk management is the systematic process of identifying, mitigating, and monitoring potential risks associated with AI technologies. It forms an integral part of AI governance and helps ensure that AI operates within the boundaries established by the organization's AI governance approach.

The purpose of AI risk management is to minimize the potential adverse effects of artificial intelligence while maximizing its benefits.

Risk management is one of the most important aspects of AI governance.

Organizations use risk management frameworks to manage their risk management processes. These frameworks provide guidance on the steps to be taken and the actions required to manage risks throughout the AI lifecycle. They help organizations develop, deploy, and maintain AI systems in ways that minimize risks, uphold ethical standards, and ensure ongoing regulatory compliance.

The most widely adopted AI risk management frameworks are:

- EU Artificial Intelligence Act
- ISO/IEC Standards
- NIST (National Institute of Standards and Technology) AI Risk Management Framework

EU Artificial Intelligence Act

The Act was introduced to regulate the development and use of artificial intelligence. It establishes a risk-based approach and requires different rules to be applied to AI systems according to the level of risk they pose to human health, safety, and fundamental rights. It also includes provisions governing the development, training, and release of foundation models (such as ChatGPT, Claude, and Gemini), which play a significant role in the development and deployment of AI systems.

The EU Artificial Intelligence Act classifies AI systems into four risk categories.²⁵

²⁵ European Union, "AI Act", <https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai>

Unacceptable Risk

AI systems at this risk level pose an unacceptable risk to human safety, livelihoods, and fundamental rights.

AI systems used:

- for manipulation and deception;
- to exploit human vulnerabilities;
- for social scoring;
- to assess individuals' likelihood of committing crimes;
- to create facial recognition databases;
- to detect emotions in workplaces and educational institutions;
- for biometric classification;
- for real-time biometric identification by law enforcement in public spaces

are considered to present an unacceptable level of risk. The deployment of such systems is prohibited.

High Risk

AI systems at this risk level pose a risk to human health, safety, and fundamental rights.

AI systems used:

- as safety components in critical infrastructure (e.g., transport);
- in educational institutions where they may determine access to education or influence professional careers (e.g., exam scoring);
- as AI-based safety components in products (e.g., robotic surgery);
- for recruitment, employee management, and access to self-employment (e.g., CV screening);
- to determine access to certain essential private and public services (e.g., credit assessment systems);
- for remote biometric identification, emotion recognition, and biometric categorization;
- by law enforcement where they may interfere with fundamental rights;

The EU Artificial Intelligence Act classifies AI systems into four risk categories: unacceptable risk, high risk, transparency risk, and minimal risk.

- in migration, asylum, and border management (e.g., reviewing visa applications);

- in the administration of justice and democratic processes (e.g., assisting in the preparation of court decisions)

are classified as high-risk AI systems. These applications are not prohibited. However, developers must ensure the following:

- **High Data Quality:** Clean datasets to minimize bias.
- **Traceability and Transparency:** The reasoning behind the system's decisions must be explainable.
- **Human Oversight:** A human must retain oversight of the decision-making process.
- **Cybersecurity:** Resilience against cyber threats and unauthorized interference.

The development of high-risk AI applications is not prohibited.

However, developers must ensure high data quality, traceability and transparency, human oversight, and cybersecurity.

Transparency Risk

These systems are subject to transparency requirements so that users are aware when they are interacting with AI.

- Chatbots;
- Systems that generate visual content

are included in this category.

Users of these systems must be informed accordingly. For example, individuals interacting with a chatbot must be made aware that they are communicating with AI, and it must be disclosed when an image or video has been generated by AI.

Minimal Risk

These are systems that pose minimal or no risk.

- AI-powered games;
- Spam filters

are included in this category. There are no restrictions on the deployment of these systems.

Organizations outside the EU that develop AI systems are also subject to the EU Artificial Intelligence Act if their AI systems or the outputs they generate are used within the EU. Such organizations are required to appoint an authorized representative established in the EU. They are also subject to the Act's risk-based requirements and authorization obligations.

From the perspective of Turkish companies, the EU Artificial Intelligence Act applies to any company that offers products or services in the EU market, processes the personal data of individuals in the EU, or is affected by the outputs of AI systems used within the EU. As such, the Act has the potential to directly affect many companies based in Türkiye.

Accordingly, Turkish companies that meet any of the following conditions fall within the scope of the Act:

- Technology companies that directly export products or software to the EU,
- Companies providing e-commerce software, Software as a Service (SaaS), or other digital services to consumers in the EU,
- Corporate groups with European subsidiaries that operate as integrated structures with group companies in the EU,
- Turkish software companies that develop software for EU-based clients, as well as Business Process Outsourcing (BPO) providers that operate as subcontractors,
- AI applications developed in Türkiye that are used in the EU market.

From the perspective of Turkish companies, the EU Artificial Intelligence Act applies to any company that offers products or services in the EU market, processes the personal data of individuals in the EU, or is affected by the outputs of AI systems used within the EU.

ISO/IEC Standards

The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) have developed standards that address various aspects of AI risk management. ISO/IEC standards emphasize the importance of transparency, accountability, and ethical considerations in AI risk management. They provide guidance for managing risks throughout the entire AI lifecycle, from design and development to deployment and operation.

One of the standards jointly developed by ISO and the IEC is ISO/IEC 42001, the international standard for AI management systems. ISO/IEC 42001 focuses on the design of management systems that address challenges associated with the use of AI, including ethics, transparency, accountability, and data security. Adopting a holistic approach, ISO/IEC 42001 is designed to support the identification and management of risks throughout the AI lifecycle.

The standard provides a framework for governing and operating AI systems in a way that fosters safe and responsible innovation. Certification to ISO/IEC 42001 helps organizations build trust among all stakeholders.

The standard is structured under the following four headings:²⁶

HEADING	DESCRIPTION
AI Management Systems	AI systems should be integrated into the organization's overall management processes to support continual improvement. It is also important that they are aligned with other ISO standards and that leadership roles and responsibilities are clearly defined within the management system.
AI Risk Management	A systematic approach to identifying and managing risks throughout the AI lifecycle.
AI Impact Analysis	Analysis of the impact of AI on individuals and society.
Data Protection and AI Security	Compliance with data security and personal data protection legislation, and ensuring that AI systems are secure against cyberattacks.

The benefits of ISO/IEC 42001 certification include:

- Supporting the deployment of reliable, ethical, and transparent AI systems
- Facilitating compliance with regulations such as the EU Artificial Intelligence Act
- Strengthening accountability
- Enhancing risk management
- Building the trust of customers and stakeholders
- Aligning AI governance with the organization's strategic objectives
- Enhancing the reliability of AI systems
- Improving operational efficiency
- Reducing development and compliance costs
- Strengthening governance
- Providing effective oversight of ethical issues

²⁶ KPMG, "ISO/IEC 42001 Certification The Global Standard for AI Management Systems (AIMS)", May 2025

NIST Framework

The NIST AI Risk Management Framework (AI RMF) was published in January 2023 and has since become a widely recognized reference framework.²⁷ Its purpose is to help organizations effectively manage AI-related risks and support the design, development, deployment, and use of trustworthy and responsible AI systems. The framework was developed through collaboration between the public and private sectors. Although its adoption is voluntary, its comprehensive approach has led to widespread use across organizations. It is also compatible with ISO/IEC 42001.

The framework comprises two sections. The first provides a general assessment of the risks and opportunities associated with trustworthy AI systems. The key areas of focus for a trustworthy AI system are:



Safe: Does not cause physical, psychological, or financial harm, and always prioritizes human safety.

Secure and Resilient: Resilient to cyberattacks, manipulation, and system failures. Appropriate safeguards are in place, together with recovery mechanisms to respond to attacks, manipulation, and failures.

Explainable and Interpretable: The reasoning behind decisions can be clearly explained, enabling users to understand how the system operates.

Privacy-Enhanced: Protects personal data by applying the principles of data minimization and anonymization, while respecting individuals’ rights.

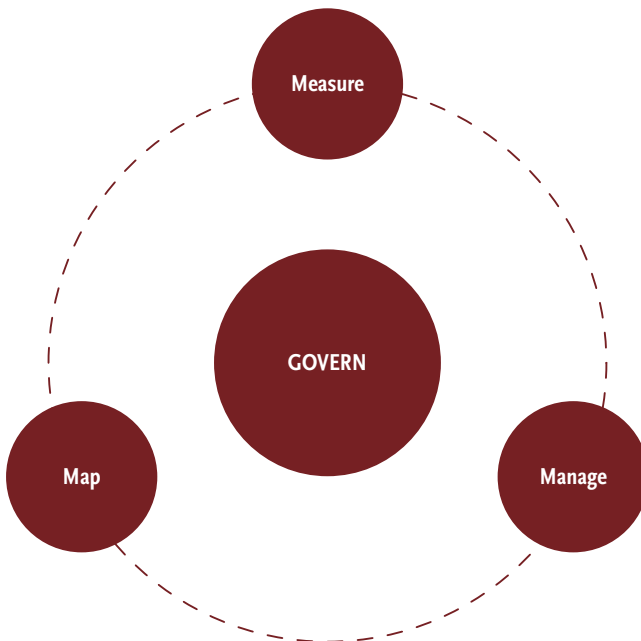
Fair – with Harmful Bias Managed: Identifies and mitigates harmful biases, supports equal opportunity, and avoids creating inequitable outcomes across groups.

²⁷ NIST, “Artificial Intelligence Risk Management Framework: Generative Artificial Intelligence Profile”, January 2023, <https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf>

Accountable and Transparent: Roles and responsibilities are clearly defined, and decisions are traceable, auditable, and open to scrutiny.

Valid and Reliable: The system performs as intended for its designed purpose, produces consistent results, and is monitored for deviations from expected performance.

The second section focuses on four areas that help organizations manage AI risks:



Govern: Establishing the culture, policies, and processes needed for AI risk management. It encompasses leadership commitment, governance structures, and stakeholder engagement. Under this heading:

- Defining the organization's AI risk appetite and risk tolerances
- Establishing AI policies, procedures, and accountability mechanisms
- Employee training and awareness programs
- Supply chain and third-party AI risk management

AI governance is the establishment of the culture, policies, and processes needed for AI risk management. It encompasses leadership commitment, governance structures, and stakeholder engagement.

Map: Identifying the context of the AI system, its stakeholders, and potential risks. This provides the foundation for risk assessment. Topics addressed include:

- Identifying the purpose and intended use of the AI system
- Identifying affected stakeholders and communities
- Classifying categories of adverse impacts
- Evaluating the sectoral context and regulatory requirements

Measure: Analyzing identified risks using quantitative and qualitative methods and prioritizing them accordingly. Topics addressed include:

- Defining AI performance measures and reliability metrics
- Conducting bias testing and fairness assessments
- Performing explainability and interpretability assessments
- Measuring the likelihood and impact of risks

Manage: Implementing, monitoring, and continuously improving response plans for prioritized risks. Topics addressed include:

- Implementing risk mitigation strategies
- Continuous monitoring and early warning mechanisms
- Incident response and crisis management plans
- Continuous evaluation and improvement processes

The framework provides a six-step roadmap for implementation:

- 1. Organizational Readiness Assessment:** Assessing the organization's current AI governance maturity, establishing leadership, authority, and accountability structures, and forming a cross-functional team.
- 2. Creating an AI Systems Inventory:** Listing all AI systems and their intended uses within the organization, and identifying data sources and stakeholders.
- 3. Classifying and Prioritizing Risks:** Positioning each AI system in use within a risk matrix based on its likelihood and impact, and prioritizing those identified as high risk.
- 4. Establishing Control and Assurance Mechanisms:** Determining how technical controls (e.g., testing, monitoring, and explainability) and process controls (e.g., human oversight and approval workflows) will be implemented.

The NIST AI Risk Management Framework provides a six-step roadmap for implementation.

5. Operating a Continuous Monitoring and Feedback Loop:

Regularly monitoring performance metrics, reporting deviations from expected performance and unexpected events, and capturing lessons learned (learning cycle).

6. Conducting Periodic Audits and Updating the Framework:

Reviewing all risk assessments at defined intervals or following significant changes, and monitoring regulatory developments.

Turkish Regulatory Framework

Personal Data Protection Law for Companies Operating in Türkiye

Law No. 6698 on the Protection of Personal Data (KVKK) should be regarded as an important regulation in the context of AI risk management. The Law establishes requirements relating to purpose limitation, data minimization, accuracy, accountability, and transparency in the processing of personal data. These principles are directly relevant to the development and operation of AI systems. Specifically, the Law regulates:

- The collection of personal data (Articles 3 and 4);
- Obtaining explicit consent when collecting sensitive personal data (Article 6);
- Human oversight of automated decision-making processes (Article 11/e);
- The explainability of AI system decisions (Articles 10 and 11);
- The designation of data controllers and their registration with the Data Controllers Registry (VERBİS) (Articles 12 and 16);
- The transfer of personal data abroad (Article 9).

Pursuant to Article 12 of the Law, data controllers are required to implement the necessary technical and administrative measures, and to conduct or ensure the conduct of audits, in order to maintain an appropriate level of security. This highlights the need for AI governance to encompass the following areas:

- Assigning an AI system owner (model owner) for each AI system and assigning responsibility for compliance with the Personal Data Protection Law (KVKK) to that individual.

Law No. 6698 on the Protection of Personal Data establishes requirements relating to purpose limitation, data minimization, accuracy, accountability, and transparency in the processing of personal data.

- Updating and maintaining KVKK compliance documentation (the personal data processing inventory, privacy notices, and consent forms) throughout the AI lifecycle.
- Developing an AI-specific data security policy and communicating it to employees.
- Entering into data processing agreements with third-party AI service providers.
- Conducting or commissioning an annual AI and Personal Data Protection Law (KVKK) compliance audit.
- Including AI system-specific scenarios in the data breach response plan.

Organizations that deploy AI systems are required, as with other risk management approaches, to continuously monitor the performance of those systems and make the necessary improvements. The following actions are expected under the Personal Data Protection Law (KVKK):

MONITORING ACTIVITY	MONITORING FREQUENCY	RESPONSIBLE PARTY	LEGAL BASIS (KVKK)
Model Bias Testing	At every model update	AI system owner + legal	Art. 4/1-a, b — fairness and accuracy
Privacy Notice Review	Every six months or upon a model update	Data protection officer	Art. 10 — information obligation
Data Breach Simulation	Annually	IT security + legal	Art. 12 — security; Art. 17 — notification
VERBİS Registration Update	Upon any change	Data protection officer	VERBİS Regulation
Third-Party Audit	Annually	Internal audit + external expert	Art. 12/2
Automated Decision-Making Reviews	Every six months	AI system owner + legal	Art. 11/e

When AI governance and compliance with the Personal Data Protection Law (KVKK) are properly integrated, they can be regarded as two mutually reinforcing elements. Investment in data quality enhances model performance. Requirements relating to transparency and explainability encourage the development of more reliable and less biased models. Accountability mechanisms enable organizations to manage their AI systems in a more disciplined manner. Organizations that adopt this integrated approach can gain a competitive advantage by both minimizing legal risks and developing higher-quality AI applications.

The Personal Data Protection Board has not yet issued AI-specific guidance under the Personal Data Protection Law (KVKK). This presents a window of opportunity for organizations in Türkiye. Organizations that proactively establish voluntary compliance standards and systematically integrate KVKK requirements into their AI governance frameworks will be better prepared for future regulatory requirements and better positioned in the event of regulatory audits.

The Republic of Türkiye's National Artificial Intelligence Strategy 2021–2025 emphasizes the development of domestic AI capabilities and public-private collaboration.²⁸ Where organizations based in Türkiye offer products or services in the EU market, the extraterritorial provisions of the EU AI Act apply, making it mandatory to appoint an authorized representative within the EU.

Banking Regulation and Supervision Agency (BDDK) Regulations for Financial Institutions Operating in Türkiye

As of 2023, the Banking Regulation and Supervision Agency (BDDK) has begun to clarify its regulatory expectations regarding algorithmic decision-making in financial services. Three key BDDK expectations stand out for organizations operating in the banking and fintech sectors:

The Personal Data Protection Board has not yet issued AI-specific guidance under the Personal Data Protection Law (KVKK). This presents a window of opportunity for organizations in Türkiye.

²⁸ Presidency of the Republic of Türkiye, Digital Transformation Office, “Ulusal Yapay Zekâ Stratejisi 2021–2025”, August 2021, <https://bilgem.tubitak.gov.tr/wp-content/uploads/sites/8/TR-UlusalYZStratejisi2021-2025.pdf>

- **Model Risk Management:** AI models used for credit scoring, fraud detection, or default prediction should be validated and documented in accordance with the BDDK's model risk management expectations.
- **Explainability Requirement:** High-impact decisions, such as the rejection of a customer's loan application, are expected to be supported by a clear rationale. "Black-box" model outputs may create legal risks in the event of complaints or regulatory audits.
- **Audit Trail:** Maintaining auditable records of AI-assisted financial decisions will provide the foundation for an organization's defense in the event of legal disputes.

Financial Crimes Investigation Board (MASAK): AI and Financial Crime Risks for Financial Institutions Operating in Türkiye

In the context of the Financial Crimes Investigation Board (MASAK), AI should be considered from two distinct perspectives. The first is the use of AI in anti-money laundering and counter-terrorist financing (AML/CFT) processes; the second is the prevention of legal risks arising from algorithmic bias in these systems. For organizations in Türkiye, it is critical to take these risks into account when deploying AI systems for anti-money laundering.

AI Systems Control and Assurance Mechanisms

The role that humans play in the control and assurance mechanisms for AI decision-making processes depends on the extent to which the decisions and outputs of the AI system affect individuals, society, and the organization.

In this context, three approaches have emerged:

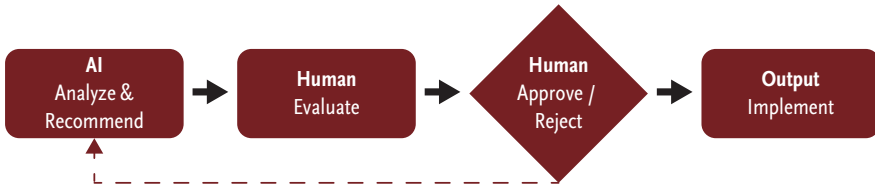
- Human in the Loop decision-making
- Human on the Loop decision-making
- No Human in the Loop (autonomous) decision-making

The operation of these approaches and the circumstances in which each is appropriate are explained below.

The role that humans play in the control and assurance mechanisms for AI decision-making processes depends on the extent to which the decisions and outputs of the AI system affect individuals, society, and the organization.

Human in the Loop Decision-Making

In this approach, a human is involved at every critical stage of the decision-making process. The AI generates recommendations, which the human evaluates. Based on that evaluation, the human either approves or rejects the recommendations before they are implemented. The workflow is illustrated below.



This approach provides a high level of accuracy, enables ethical oversight, establishes clear accountability, and offers a high likelihood of detecting errors. It is used in high-risk, high-impact situations, where the consequences of error are significant and risk must therefore be minimized.

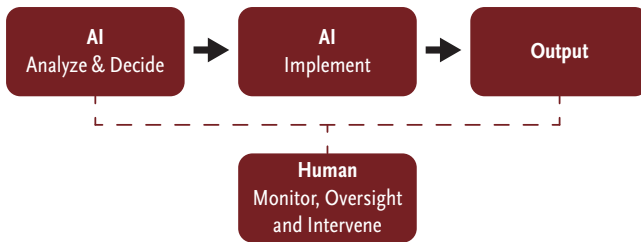
The role of AI is limited. Because decisions are made by humans, the process is slower than in autonomous systems.

The most significant challenge associated with this approach is that individuals with approval authority may exercise that authority without having sufficient knowledge. Those responsible for this role should therefore be provided with the knowledge and training necessary to understand how the AI system operates and how its decisions may affect individuals, society, and the organization.

Examples of Application Areas: medical diagnosis and treatment, legal matters, decisions with significant financial implications, military decision-making, etc.

Human on the Loop Decision-Making

The AI generates recommendations, evaluates them, makes decisions, and implements those decisions. In this approach, decisions are not made by humans; however, the system remains under continuous human supervision. If an inappropriate outcome or a risk is identified, a human intervenes, halts the system, and takes the necessary action to correct the decision.



This approach offers higher speed than the first. Human involvement is focused on oversight, enabling a greater degree of automation. It is typically used in situations where risks are lower and errors can be tolerated. However, inappropriate outputs may not be detected immediately, resulting in delayed human intervention.

Examples of Application Areas: Customer service chatbots, cybersecurity threat detection and response, autonomous vehicles, etc.

No Human in the Loop (Autonomous) Decision-Making

In this approach, the AI system operates autonomously. It analyzes or perceives information, makes decisions, and implements them. Humans design the system and review audit results and system logs. They do not intervene directly in the system's operation.



These systems can operate continuously without interruption. They are used in situations where risks are low and errors can be corrected. However, they offer limited transparency and traceability, and accountability may be unclear. As a result, correcting errors can be more difficult.

Examples of Application Areas: Routine backup operations, data center resource optimization, etc.

Managing Ethical and Reputational Risks

Ethical and reputational risks are among the most frequently overlooked risks in AI governance, yet they are also among those most likely to cause lasting harm. Unlike technical failures, ethical risks often accumulate gradually and remain unnoticed until the organization's reputation has already been seriously damaged.

Unlike technical failures, ethical risks often accumulate gradually and remain unnoticed until the organization's reputation has already been seriously damaged.

Potential sources of these risks include the following:

- **Biased Training Data:** Models trained on data that reflect historical discrimination may reinforce those patterns.
Example: An AI recruitment system systematically assigning lower scores to certain demographic groups.
- **Lack of Transparency:** Customers not knowing which decisions have been made by AI leads to a loss of trust.
Example: An insurance company rejecting claims using AI without disclosing this fact.
- **Purpose Drift:** A system developed for one purpose being used in a different context. Example: A sentiment analysis model developed for customer service being used to evaluate employee performance.
- **Stakeholder Communication Gaps:** Inadequate or misleading communication about the use of AI. Example: Customers who are unaware that they are interacting with a chatbot.

Early Warning Mechanisms

The use of early warning mechanisms to manage these risks can help shift an organization from a reactive to a proactive approach. The methods that can be used for this purpose are listed in the table on the following page.

Key Considerations in Testing and Audit Processes

Testing and audit processes must encompass ethical, legal, and operational dimensions in addition to technical accuracy. The principal matters that should be subject to board oversight are summarized below:

METHOD	DESCRIPTION AND EXAMPLE
Bias Monitoring Dashboard	Model outputs are regularly analyzed across demographic groups. Financial sector example: Credit rejection rates are regularly monitored across ethnic, gender, and socio-economic groups.
Red Team Testing	Independent teams deliberately stress-test the system to identify bias, security vulnerabilities, and manipulation scenarios. Healthcare sector example: The diagnostic system is tested against rare disease cases to identify potential failures.
Ethical Impact Assessment	Before each new AI application is deployed, its potential adverse social and individual impacts are systematically assessed. Public sector example: Before deploying a social assistance distribution algorithm, the distribution of beneficiaries across ethnic, age, and geographic groups is analyzed.
Stakeholder Feedback Loop	Feedback on AI experiences is regularly collected from customers, employees, and community representatives. Retail sector example: Customer discomfort with the personalization algorithm is measured through monthly surveys.
Board of Directors Ethics Report	A report on AI ethics compliance, identified issues, and corrective measures is presented to the board of directors at least twice a year.

- **Model Validation vs. Process Audit:** Model validation (technical accuracy and reliability) and process audit (how the model is used and who makes the decisions) are distinct. Organizations should address both. Example: In the banking sector, a credit model may be technically validated; however, the sales team’s use of the model in an inappropriate context may fall outside the scope of the audit.
- **Conducting External Audits:** Internal audits may have blind spots when assessing AI systems. Independent external audits are particularly important for high-risk systems.

Healthcare sector example: Under the EU AI Act, diagnostic support systems are required to undergo an independent review by clinical auditors at least once a year.

- **Auditing Systems Procured from Suppliers:** Most organizations procure core AI systems from external suppliers. However, the organization's legal responsibility also extends to supplier errors. The Air Canada case illustrates this risk. Supplier contracts should include audit rights, bias reporting obligations, and update notification requirements.
- **Maintaining Audit Trails:** Logs should be maintained to record what decisions AI systems made, when they were made, and the data on which they were based. These records constitute critical evidence in both internal audits and legal proceedings. Example: The GDPR (General Data Protection Regulation) and the EU AI Act require automated logging for high-risk systems.
- **Compliance Testing for Regulatory Changes:** The secondary legislation under the EU AI Act is still evolving. The compliance of existing systems with each new regulatory requirement should be tested, and updates should be planned as an ongoing process whenever necessary.

Challenges Posed by Evolving Standards for Boards and Their Implementation

The EU AI Act, the NIST AI RMF, ISO/IEC 42001, and KVKK for organizations operating in Türkiye constitute the four foundational pillars of AI governance. However, these frameworks differ in their approaches and contain inconsistencies in certain areas.

Consequently, for organizations operating globally, managing the risks arising from these frameworks is a key board responsibility.

The EU AI Act, the NIST AI RMF, ISO/IEC 42001, and KVKK for organizations operating in Türkiye constitute the four foundational pillars of AI governance. However, these frameworks differ in their approaches and contain inconsistencies in certain areas.

DIMENSION	EU AI ACT	NIST AI RMF	ISO/IEC 42001 & KVKK
Binding Nature	Mandatory (with sanctions)	Voluntary (guidance)	ISO: Voluntary; KVKK: Mandatory
Risk Approach	Categorical (four risk categories)	Holistic and contextual	Focused on the AI system lifecycle
Human Oversight	Mandatory for high-risk systems	Recommended based on context	Determined according to requirements
Transparency	User disclosure obligations	Emphasis on internal documentation	Certification-based evidence
Scope	All AI systems placed on the EU market	Determined by the organization	AI systems covered by the organization's commitment
Data Privacy	Integrated with the GDPR	Addressed separately	KVKK: Legal obligation in Türkiye

Matters to Be Evaluated by the Board of Directors and During Implementation

The simultaneous implementation of these frameworks requires careful management by organizations. In particular, it is important to properly manage the differences and inconsistencies among the frameworks while ensuring that the specific obligations of each framework are fulfilled.

Matters to be considered in this regard include:

- **Differences in Definitions:** The definition of a high-risk system differs between the EU AI Act and the NIST AI RMF. For example, a human resources platform may be classified as high risk under the EU AI Act, whereas under the NIST AI RMF its classification is left to the organization's own assessment. This may create uncertainty regarding which requirements should be applied.

- **Documentation Burden:** ISO/IEC 42001 certification requires comprehensive management system documentation, while compliance with the EU AI Act requires technical documentation in different formats. Although these requirements largely overlap, they differ in their level of detail. Organizations may therefore need to prepare separate documentation to satisfy each framework.
- **Differences in Human Oversight Standards:** While the NIST AI RMF leaves appropriate human oversight to the organization's context, the EU AI Act requires that a person with the authority to intervene participate in the approval process for high-risk systems. This results in differences in implementation, particularly for real-time decision-making systems (e.g., credit approval and medical decision-making).

When addressing these matters, boards of directors may benefit from the following approaches:

- Adopting the most stringent requirements across the frameworks as the baseline (highest common denominator approach). This approach increases compliance costs but reduces multi-regulatory risk.
- Mapping the requirements of the EU AI Act, the NIST AI RMF, and KVKK within a single internal policy matrix enables organizations to consolidate and manage overlapping requirements.
- Tracking standards development and clarifying interpretations through proactive dialogue with regulators is beneficial. The secondary legislation under the EU AI Act is still evolving, making active monitoring of this process critically important.
- It is beneficial for the board of directors to review the standards compliance matrix at least once a year and assign monitoring responsibilities to the compliance team.

Boards of directors can adopt a highest common denominator approach by managing the requirements of different frameworks through an internal policy matrix and a standards compliance matrix, closely monitoring regulatory developments and standard-setting processes, and regularly reviewing their implications for the organization.

ARTIFICIAL INTELLIGENCE GOVERNANCE IS A LEADERSHIP ISSUE

Boards of directors are the highest decision-making bodies within organizations. Their primary responsibility is to provide strategic direction, monitor and oversee how decisions are implemented and whether implementation is aligned with the organization's values, and oversee organizational performance while making recommendations where necessary.

Boards of directors play a vital role in enabling organizations to create long-term value in line with their mission and vision. As AI becomes integrated into organizational processes, this role becomes even more important, and the responsibilities of boards of directors continue to expand. The integration of AI into organizational processes creates significant opportunities while also introducing substantial risks.

The decisions of the board of directors will play a guiding role in shaping how:

- technology infrastructure evolves,
- data is used,
- the workforce is structured,
- business models evolve,
- risk management approaches develop,
- organizational culture evolves, and
- long-term organizational resilience is built.

These decisions will enable the organization to grow, strengthen, and remain resilient in the age of AI.

The integration of AI into organizational processes creates significant opportunities while also introducing substantial risks.

It is therefore essential for the board of directors to closely monitor the rapidly evolving environment, track developments, and understand the risks and opportunities these developments create for the organization. In particular, understanding how AI will affect competition, the industry, and its future is essential for making effective, high-quality decisions. When management presents strategic options and alternative courses of action, only such an understanding enables the board of directors to evaluate them effectively and provide appropriate guidance. In this way, the board of directors can guide management in determining how AI can best contribute to the organization's strategy and objectives.

When an organization is adapting and implementing AI applications within its own processes, visible ownership by the board of directors and senior management—their support for AI initiatives and their clear commitment to them—helps demonstrate the organization's commitment to AI adoption. Boards of directors should ensure that senior management not only plans but also implements an effective communication strategy and a robust capacity-building program to enable this transformation and communicate the right messages throughout the organization. This helps reduce uncertainty surrounding the adoption of AI across the organization and build trust. Within the framework of established policies and rules, employees can also accelerate the adoption of AI applications and contribute new ideas, thereby increasing the benefits the organization can realize.

It is important that decisions regarding the use of AI be made under the oversight and guidance of the board of directors. Matters for which board leadership is particularly important include:

- Which organizational processes AI should be used in (e.g., innovation and R&D, enhancing customer experience, supply chain management, risk analysis, scenario analysis, improving efficiency, and reducing costs),
- Which AI tools are being used within the organization, and the benefits and risks associated with those tools,

It is essential for the board of directors to closely monitor the rapidly evolving environment, track emerging developments, and understand the risks and opportunities they create for the organization.

- What the organization's AI governance approach is, how risks are classified and managed, and how roles, responsibilities, and decision-making authority are defined,
- How the AI governance team, committee, or working group is composed and which organizational units are represented (the benefits and risks associated with AI use may differ across functions within the organization. It is therefore important that these matters be addressed by a cross-functional body and that decisions be made through deliberation. Legal considerations are also important, and members of the legal team should therefore be included in this process),
- How data governance is implemented within the organization,
- Which organizational data is or will be shared with external AI models such as ChatGPT, Claude, Gemini, and Microsoft Copilot (once data has been shared with external AI models, it is no longer fully under the organization's control),
- How the use of AI models is documented, how decision-making authority and responsibilities are monitored, and what preparations and certifications have been put in place for regulatory or third-party audits,
- Which stages of AI system deployment will be carried out autonomously and which will require human decision-making, together with the benefits and risks associated with this approach,
- How accountability and responsibility will be determined if customers, suppliers, stakeholders, employees, or society are harmed as a result of autonomous decisions made by AI,
- How the use of AI tools other than those approved or provided by the organization is or will be controlled.

It is beneficial for these matters to be addressed under the guidance of the board of directors, as they directly affect the organization's reputation, the protection of trade secrets, and its ability to create long-term value.

Assigning responsibility for AI governance and leadership to a single organizational unit (such as the information technology function) is equivalent to entrusting a strategic initiative that affects the entire organization to just one function.

Assigning responsibility for AI governance and leadership to a single organizational unit is equivalent to entrusting a strategic initiative that affects the entire organization to just one function.

AI governance should therefore be led through structures that bring together all relevant organizational units.

For example, a dedicated AI committee could fulfil this role. Such a committee should also include members of the organization's senior management. The leadership of the board of directors and senior management is essential to providing strategic direction and oversight. The committee should maintain close communication with the board of directors and report directly to the committee or committees designated by the board.

Failure by the board of directors to provide this leadership and direction may result in legal penalties, data breaches or losses, the loss of trade secrets, reputational damage, distrust and inefficiency within the organization, and even financial losses.

The leadership of the board of directors and senior management is essential to providing strategic direction and oversight.

CREATING VALUE WITH ARTIFICIAL INTELLIGENCE

The use of artificial intelligence in business is becoming increasingly widespread. The AI transformation we are experiencing is unfolding in a fundamentally different way from previous waves of transformation. Because AI can be applied across an exceptionally wide range of activities, it is expected to have an impact on every industry, every function, and every role. AI's transformative potential is expected to have a profound influence on how organizations compete, operate, and grow.

Organizations need a structured approach and a clear roadmap to achieve an AI-driven transformation that creates value for both the organization and its stakeholders. Most organizations are still at the beginning of this journey. According to one study, only 4% of organizations have reached an advanced stage of value creation by developing and implementing their AI strategies, while 22% have established an AI strategy and developed advanced capabilities, enabling them to begin creating value.²⁹ The same study found that leading companies generated revenues approximately 50% higher and returns on invested capital around 40% higher than their competitors over the previous three years. The findings also show that the organizations deriving the greatest value from AI are those that treat it as a strategic priority.

Another study found that a significant proportion of participating organizations use AI in at least one of their business processes.³⁰

AI's transformative potential is expected to have a profound influence on how organizations compete, operate, and grow.

²⁹ Nicolas de Bellefonds, T Charanya, Marc R Franke, Jean Apotheker, Paul Forth, Matthias Grebe, Andreas Luther, Rémy de Laubier, Victor Lukic, Michael Martin, Christian Nopp, Jean Sassine, "Where is the Value in AI", October 2024, BCG

³⁰ Amit Singla, Alexander Sukharevsky, Lisa Yee, Michael Chui, Brett Hall, "The State of AI: How Organizations are Rewiring to Capture Value", March 2025, McKinsey

The same study found that many of these AI applications have had only a limited impact on EBITDA (earnings before interest, taxes, depreciation, and amortization). The findings suggest that organizations need a clear AI strategy to realize the full value of AI.

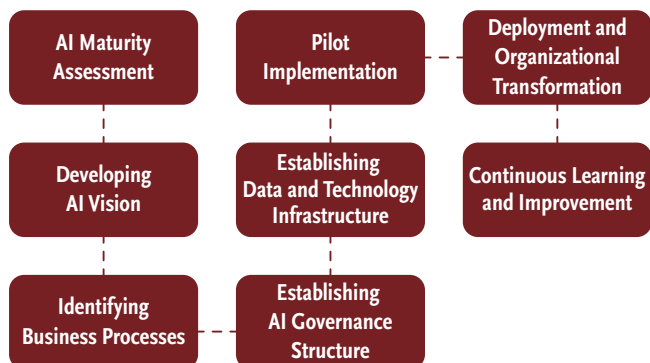
Developing an AI Strategy

Organizations that have been successful in this area recognize that creating value from AI requires more than a technology-focused approach. Instead, they:

- Take a holistic view,
- Align AI initiatives with the organization's overall strategy,
- Redesign selected business processes,
- Develop their people and capabilities,
- Treat AI adoption as a transformation and cultural change initiative that requires effective change management.

An AI strategy is an integral part of an organization's business strategy, and the two continuously influence one another. One of its defining characteristics is that it is not static but must evolve over time. To keep pace with today's rapidly changing environment, organizations should continuously monitor the AI ecosystem, learn from experience, and embrace a culture of continuous improvement. The strategy is also more likely to succeed when supported by clearly defined and measurable key performance indicators (KPIs).

Following the roadmap below when developing an AI strategy helps organizations achieve better outcomes.



An AI strategy is an integral part of an organization's business strategy, and the two continuously influence one another. One of its defining characteristics is that it is not static but must evolve over time.

AI Maturity Assessment: A data-driven assessment conducted before developing an AI strategy to evaluate an organization's current AI capabilities, data maturity, organizational readiness, and resistance to change. This step provides a clear understanding of the organization's current state and identifies the areas that require further development.

Developing the Organization's AI Vision: This stage defines an AI vision that is aligned with the organization's strategic objectives. At this stage, decisions are made on why AI will be adopted and the areas in which it will be applied in support of those objectives. The vision development process establishes:

- The objectives to be achieved,
- The business processes and functions in which AI will be used,
- The key risks and how they will be managed,
- The Key Performance Indicators (KPIs) that will be used to measure success.

Developing the vision for an AI strategy is a two-way process. Organizations should go beyond identifying where AI can be used to achieve existing strategic objectives. They should also consider how AI capabilities create new opportunities that were previously unattainable, and shape their strategies accordingly. The success of this step depends on senior management clearly communicating its commitment to the vision throughout the organization and taking ownership of its implementation. During the vision development process, the organization's core values and non-negotiable principles should also be clearly defined.

Organizations should go beyond identifying where AI can be used to achieve existing strategic objectives. They should also consider how AI capabilities create new opportunities that were previously unattainable, and shape their strategies accordingly.

Identifying the Business Processes in Which AI Will Be Used: This stage identifies the business processes in which AI will be deployed, based on an assessment of value creation potential and organizational readiness. The AI use cases identified in the previous step are further evaluated to determine the processes in which they can be applied. For each selected process, the following are assessed:

- The changes that will be required,
- The change process and its associated challenges,

- The value expected to be created,
- The availability of the data required,
- The organization's level of readiness.

The assessment results are then compared to determine which processes should be prioritized. Priority should be given to initiatives that can deliver quick wins, while preparation and investment plans should be developed for strategically important processes. For each selected process, the expected benefits should be clearly defined and measurable.

Establishing the AI Governance Structure and Operating Model: This stage defines roles, responsibilities, policies, and standards, and integrates the principles of good governance into the organization's AI governance framework. Effective AI governance provides the foundation for successful AI deployment and robust risk management. The AI governance approach defines:

Effective AI governance provides the foundation for successful AI deployment and robust risk management.

- The boundaries within which AI systems will operate:
 - Core policies and standards
 - Model approval processes
 - Relationships with AI system providers and associated risk management
 - Guiding principles
 - How AI outputs will be monitored and audited
- How decision-making authority and responsibilities will be allocated,
- The organizational structures through which AI governance will be carried out:
 - AI committee
 - AI Center of Excellence
 - Business unit leaders
- The governance model to be adopted:
 - Centralized
 - Hybrid
 - Decentralized

At this stage, decisions are made regarding the level of human oversight to be applied to each process:

- Human in the loop decision-making
- Human on the loop decision-making
- No human in the loop (autonomous) decision-making

Establishing the Data and Technology Infrastructure: This stage focuses on ensuring data quality, data security, and the selection of appropriate technologies. The quality of AI systems depends to a large extent on the quality of the data on which they are built and operate. It is therefore essential to assess what data is available and evaluate its quality. At this stage, the following are assessed:

- Where each dataset is stored within the organization,
- Analysis of data gaps and inconsistencies,
- Which data AI systems use and for what purposes,
- How AI systems will be trained,
- Data ownership and accountability,
- Data access policies,
- Monitoring and continuous improvement of data quality,
- Data traceability.

It is widely expected that, over the long term, the data most likely to differentiate AI systems will be the data collected by the organization itself.

The following technology-related considerations are evaluated:

- Cloud services, computing capacity, and storage,
- Data centers,
- Model development and monitoring processes,
- Business applications and application programming interfaces (APIs),
- Model performance monitoring, drift detection, and audit logs,
- The organization's investment approach:
 - Platform-based solutions
 - Point solutions

The quality of AI systems depends to a large extent on the quality of the data on which they are built and operate. It is therefore essential to assess what data is available and evaluate its quality.

Pilot Implementation: This stage involves testing technical feasibility and organizational readiness on a limited scale while defining how success will be measured. It provides an opportunity to assess technical feasibility, the efficiency of business processes, user adoption, and the effectiveness of change management initiatives.

A pilot is most effective when it focuses on a specific business process and is conducted over a defined period. Clear and measurable success criteria should also be established in advance to evaluate the pilot's performance.

Deployment and Organizational Transformation: This stage focuses on change management, workforce development, and business process redesign. It can be considered the most important stage in creating value from AI. At this stage, the business processes to which AI will be applied are mapped.

As part of the process mapping exercise, the stages at which humans and AI will be involved are identified, together with how work, decision-making authority, and responsibilities will be allocated at each stage. The skills and capabilities required to support the process are also defined. A change management plan is then developed and implemented. One study found that 70% of the challenges encountered during transformation and deployment are related to people and processes.³¹

One of the most important aspects of the deployment phase is workforce development. The objective is to equip the existing workforce with new skills so that employees can successfully perform their roles within AI-enabled business processes.

This step is important for determining workforce requirements, organizational structure, and the competencies and capabilities that will be needed in the future. Research suggests that AI may reduce the number of entry-level positions. At the same time, however, it may also increase the risk of talent shortages over the medium term. Organizations should therefore take a long-term, holistic approach to workforce planning.

As part of the process mapping exercise, the stages at which humans and AI will be involved are identified, together with how work, decision-making authority, and responsibilities will be allocated at each stage.

³¹ Nicolas de Bellefonds, T Charanya, Marc R Franke, Jean Apotheker, Paul Forth, Matthias Grebe, Andreas Luther, Rémy de Laubier, Victor Lukic, Michael Martin, Christian Nopp, Jean Sassine, "Where Is the Value in AI", October 2024, BCG

The success of change management depends on early communication, transparent implementation, effective engagement efforts, rewarding early adopters, providing a safe environment for experimentation, and maintaining regular communication throughout the process.

Continuous Learning and Improvement: This stage focuses on feedback loops, model monitoring, and strategy updates. In accordance with the deployment principle of good governance, feedback should be systematically gathered from all organizational units at this stage.

As business and technology continue to evolve rapidly, organizations should continuously monitor how these changes affect their AI strategy and adapt it accordingly. In a rapidly changing environment, continuous adaptation is essential.

The most important aspect of developing an AI strategy is continuous learning and improvement. This process can only be managed effectively through well-designed feedback mechanisms. Model performance monitoring, user feedback, evaluation of business outcomes, and error and failure analyses provide the primary sources of feedback. It is also important to monitor the model lifecycle and adapt it to changing conditions.

Performance measurement provides the most important inputs to the learning cycle. These measurements identify where improvements are needed and what actions should be taken. Another key success factor is ensuring that the organization allocates sufficient resources to implement the identified improvement initiatives.

A recent development in this field is the emergence of AI agents. By carrying out defined, repetitive tasks, these agents can create significant opportunities for organizations. As organizations adopt AI agents, ensuring effective collaboration between people and agents is becoming increasingly important. Research has shown that people working alongside AI agents increasingly treat them as members of their team.

The most important aspect of developing an AI strategy is continuous learning and improvement. This process can only be managed effectively through well-designed feedback mechanisms.

DEPLOYING ARTIFICIAL INTELLIGENCE IN SMEs

SMEs are the backbone of the global economy. They account for more than 90% of businesses worldwide and more than 50% of global employment. However, SMEs have yet to fully benefit from the transformative opportunities offered by AI. As a result, it is estimated that two-thirds of SMEs worldwide face increasing competitive pressure due to the challenges of investing in and adopting new technologies.³²

SMEs face a range of challenges in their AI transformation journey, including limited access to technology, skills shortages, insufficient financing, and inadequate ecosystem support. As a result, the deployment of AI systems among SMEs remains relatively low. According to OECD data, the share of SMEs with more than 10 employees in G7 countries using AI systems increased from 5.6% in 2020 to 14% in 2024.³³ However, this growth still lags significantly behind that of large companies.

Studies show that the use of AI systems in SME operations can significantly improve productivity. SMEs in G7 countries that use AI systems in their operations have been found to be between 4% and 15% more productive than other SMEs of a similar size operating in the same sector.³⁴

SMEs face a range of challenges in their AI transformation journey, including limited access to technology, skills shortages, insufficient financing, and inadequate ecosystem support.

³² BBC, “Does Artificial Intelligence Work for SMEs”, <https://www.bbc.com/storyworks/future/power-of-small-ant-international/does-artificial-intelligence-work-for-smes>

³³ OECD, “AI Adoption by Small and Medium-Sized Enterprises: Discussion Paper for the G7”, 2025, https://www.oecd.org/en/publications/ai-adoption-by-small-and-medium-sized-enterprises_426399c1-en.html

³⁴ Francesco Filippucci, Alexander Sukharevsky, Lisa Yee, Michael Chui, Brett Hall, “Macroeconomic Productivity Gains from Artificial Intelligence in G7 Economies”, OECD Artificial Intelligence Papers, 20 June 2025, <https://doi.org/10.1787/a5319ab5-en>

Realizing these productivity gains also requires developing employees' skills, investing in the necessary infrastructure, and redesigning operations to meet new requirements. Compared with developed regions, emerging regions—including Southern and Eastern Europe, Latin America, the Middle East, and parts of Asia—face greater challenges in terms of digital infrastructure, education and skills development, and ecosystem maturity needed to support AI transformation.³⁵ Among SMEs that have deployed AI systems, generative AI solutions are used in 29% of core business activities.³⁶ Taken together, these findings indicate that SMEs around the world will need to make significant efforts to integrate AI technologies into their business processes.

Four factors influence the adoption of AI systems by SMEs:

- **Connectivity Quality:** Connectivity is generally better in urban areas and may decline in rural areas.
- **Data Quality:** SMEs need to improve the quality of the data they use to train and operate AI systems. Data quality improvements can be carried out by employees with the necessary expertise.
- **Skills Shortage:** SMEs face difficulties in attracting AI talent. It is therefore important for them to take proactive steps to address this challenge. At the same time, they also need to upskill their existing workforce in AI. Large language models can help expand access to training while reducing costs.
- **Financing:** SMEs face difficulties in accessing credit, making it challenging for them to invest in large-scale infrastructure. However, the growing availability of AI services—offered through cloud-based, subscription, and usage-based pricing models—is making these technologies more accessible. While this increased accessibility is a significant advantage, SMEs should pay close attention to data security when using subscription-based services.

Compared with developed regions, emerging regions face greater challenges in terms of digital infrastructure, education and skills development, and ecosystem maturity needed to support AI transformation.

³⁵ Deloitte China, Ant International, GFTN, “AI Inclusion Report – Inclusive Finance Powered by AI”, 2024, <https://www.deloitte.com/cn/en/Industries/tmt/perspectives/ai-inclusion-report.html>

³⁶ OECD, “Generative AI and the SME Workforce: New Survey Evidence”, 2025, <https://doi.org/10.1787/2d08b99d-en>

Successful AI Use Cases in SMEs Worldwide

Small Packaging Manufacturer in Brescia, Italy³⁷: This SME specializes in packaging and uses off-the-shelf AI tools such as ChatGPT, Gemini, and Microsoft Copilot, as well as machine learning applications, to automate parts of its workflows.

The company reports that the use of these tools has helped improve production capacity analysis, optimize processes, and automate operational workflows. Describing the benefits of AI, the company highlights “speed, efficiency, in-depth analysis, the ability to identify better solutions, and the ability to develop new tasks.” The company also notes that challenges remain, including integrating AI into a broader ecosystem and strengthening employees’ learning and development.

The company also benefited from support provided by the Italian government during its AI adoption journey. According to the company, the greatest challenge has been scaling AI across the organization.

Micro-Scale Wholesale Company in Japan³⁷: A micro-scale B2B (business-to-business) company based in Tokyo, Japan, specializing in wholesale trade between local manufacturers and global customers, uses customized AI agents to streamline its communication and sales processes.

Taking a service-sector perspective, the company identified several challenges that make it difficult for local manufacturers to sell in global markets, including “limited resources, language barriers, and delays in response times.” Recognizing that AI could help address some of these challenges, the SME developed customized AI agents to manage customer inquiries, facilitate project negotiations, and support multilingual chat applications.

From a sales perspective, this has helped drive revenue growth while saving employees time on tasks such as order processing, invoicing, and shipping. For global buyers, the company has delivered benefits such as reduced time spent on market analysis and product development, as well as shorter negotiation cycles,

Describing the benefits of AI, the company highlights “speed, efficiency, in-depth analysis, the ability to identify better solutions, and the ability to develop new tasks.”

³⁷ OECD, “AI Adoption by Small and Medium-Sized Enterprises: Discussion Paper for the G7”, 2025, https://www.oecd.org/en/publications/ai-adoption-by-small-and-medium-sized-enterprises_426399c1-en.html

faster responses, and easier communication despite time zone differences. The company summarizes the value it creates as follows: “Our greatest value lies in AI’s ability to help us connect both parties with zero stress and no language barriers, while saving time and reducing costs.”

AI Adoption Among SMEs in Türkiye

Although Türkiye has demonstrated its strategic commitment to digital transformation through its 2021–2025 National Artificial Intelligence Strategy and numerous programs that bring together public and private sector stakeholders, critical areas for improvement remain in terms of pace, scale, and the challenges specific to SMEs.

According to TÜİK³⁸, the adoption rate of business intelligence (BI) software among SMEs ranged from 4.9% to 10.7% as of 2025. By comparison, AI adoption averages 14% across OECD countries and reaches 28% among medium-sized and large enterprises in the EU.³⁹ The distribution of SMEs using BI in Türkiye is summarized in the table below.³⁶

According to TÜİK, the adoption rate of business intelligence software among SMEs ranged from 4.9% to 10.7% as of 2025.

ENTERPRISE SIZE	BI ADOPTION RATE
Small Enterprise (10–49 employees)	4.9%
Medium-sized Enterprise (50–249 employees)	10.7%
Large Enterprise (250+ employees)	35.1%

SMEs in Türkiye are estimated to use AI primarily for peripheral and support functions such as content generation, customer service chatbots, and simple data reporting. By contrast, AI integration into core production and strategic decision-making processes remains limited.

³⁸ TÜİK, “Girişimlerde Bilişim Teknolojileri Kullanım Araştırması”, 2025, <https://veriportali.tuik.gov.tr/tr/press/54012>

³⁹ OECD, “OECD Digital Economy Outlook 2024: Embracing the Technology Frontier”, 2024, <https://doi.org/10.1787/a1689dc5-en>

The barriers identified in this transformation include:

- Limited access to the financing required for technology investments, largely due to the weak capital structures of many SMEs in Türkiye.
- Skills shortages, particularly the tendency of skilled professionals to prefer large companies; limited AI knowledge among management; and employees' inability to devote sufficient time to training and development due to heavy workloads.
- Underdeveloped data management infrastructure and practices (ERP adoption appears to be below 30%), as well as limited knowledge of data privacy and cybersecurity
- The limited availability of AI solutions designed specifically for the needs of SMEs.
- Limited university–industry collaboration

However, Türkiye also has a significant window of opportunity to expand the use of AI systems among SMEs. These opportunities can help SMEs build capacity in this field. The technology can also offer significant opportunities beyond the industrial sector—for example, in agriculture through smart irrigation, climate-based crop management, and supply chain monitoring.

Several incentive programs have also been introduced to support the adoption of AI applications by SMEs:

- The National Artificial Intelligence Strategy identifies SMEs' access to AI as a cross-cutting objective across all of its strategic priorities.⁴⁰
- KOSGEB operates a range of programs to support SMEs in their digital transformation and AI journey.⁴¹
- TÜBİTAK is regarded as the primary source of funding for SMEs, particularly for research-intensive AI projects.⁴²

Türkiye also has a significant window of opportunity to expand the use of AI systems among SMEs. These opportunities can help SMEs build capacity in this field.

⁴⁰ Ministry of Industry and Technology of the Republic of Türkiye, “Ulusal Yapay Zekâ Stratejisi 2021–2025”, August 2021, <https://bilgem.tubitak.gov.tr/wp-content/uploads/sites/8/TR-UlusalYZStratejisi2021-2025.pdf>

⁴¹ KOSGEB, “Dijital Dönüşüm Destek Programı Başvuru Kılavuzu”, 2024

⁴² TÜBİTAK, “1507 KOBİ Ar-Ge Başlangıç Destek Programı Uygulama Esasları”, 2024, https://tubitak.gov.tr/sites/default/files/3653/228tubitak_1507-kobi_ar-ge_baslangic_destek_programi_uygulama_esaslari.pdf

STRATEGIC OPPORTUNITY	KEY INDICATORS
Strong Technology Ecosystem	• 130+ technology development zones (Technoparks) • Technoparks at more than 90 universities • 5,000+ startups
E-Commerce Growth	• 28% growth in 2024 • Well-developed digital infrastructure and payment systems • Marketplace integration provides a strong foundation for AI adoption
Manufacturing Transformation (Industry 4.0)	• Digitalization programs across Organized Industrial Zones • High AI potential in the automotive, textile, and machinery sectors, where SMEs are highly concentrated • Significant potential for productivity gains through AI-based predictive maintenance, vision-based quality inspection, and facility optimization
High-Quality Workforce	• 50,000+ engineers graduate each year • An internationally competitive software and AI sector
Strategic Geography	• Proximity to Europe, the Middle East, and Asia • AI-enabled growth opportunities for cross-border e-commerce and service exports

- The Ministry of Industry and Technology supports AI start-ups and SMEs through more than 130 Technology Development Zones (Technoparks) across Türkiye, offering low-cost office space, tax exemptions, and R&D incentives.
 - Corporate tax and VAT exemptions are available to companies operating in Technology Development Zones.
 - The employment of AI specialists is encouraged through income tax exemptions on employee salaries.
 - Infrastructure and mentoring support is provided for university–industry collaboration projects.
- The Presidency’s Digital Transformation Office (DTO) coordinates AI initiatives across the public and private sectors and supports the development of the national AI infrastructure.

Key initiatives for SMEs include:

- **National AI Data Platform:** Public datasets have been made available to researchers and SMEs.
- **AI Competence Centers:** Provide AI consultancy services and testing environments for SMEs in selected provinces.
- **Digital Türkiye Platform:** Integrates government services with SME support mechanisms.
- Large Turkish technology companies offer AI packages and access to application programming interfaces (APIs) for SMEs.
- TTGV (Technology Development Foundation of Türkiye) operates technology transfer programs through industry–university–government partnerships.⁴³

To accelerate AI adoption, SMEs in Türkiye can:

- Begin by focusing on a single high-impact use case (e.g., a customer service chatbot or inventory optimization) rather than attempting to implement all AI systems at once.
- Keep investment needs under control by utilizing the AI features available within their existing software platforms.
- Limit initial costs and risks by using AI packages offered by software providers.
- Conduct a preliminary feasibility study to benefit from KOSGEB and TÜBİTAK support and seek technical consultancy when preparing grant applications
- Accelerate knowledge sharing and learning by joining AI working groups within industry associations and chambers of commerce.

How Should SMEs Approach AI Governance?

A significant proportion of SMEs have not yet reached a sufficient level of AI governance maturity. However, as AI continues to reshape competitive dynamics—and companies across value chains increasingly leverage these systems in

The Presidency's Digital Transformation Office (DTO) coordinates AI initiatives across the public and private sectors and supports the development of the national AI infrastructure.

⁴³ TTGV – Technology Development Foundation of Türkiye, <https://ttgv.org.tr/programlar>

supply chain management—SMEs will also be driven to adopt AI in their business processes. Taking early steps toward AI governance will therefore provide a significant advantage.

The EU AI Act also introduces certain obligations for companies outside the European Union. Implementation for SMEs is scheduled to begin in December 2027. It is therefore important for SMEs engaged in exports to prepare for these requirements in order to maintain their access to EU markets.

A three-step approach can be followed:

- 1. Preparing an Inventory of All AI Applications Used by the Organization:** At this stage, the organization should compile an inventory of all AI applications used for process management, operational activities, and decision support. This inventory should also include applications that have not been officially procured or approved by the organization but are used by employees through their personal accounts (Shadow AI). This is important because, should an issue involving the organization arise, it must be possible to identify the responsible parties. As part of this step, the organization should also develop an AI usage policy, together with the principles and rules governing AI use, to define how AI may be used within the organization and the principles that should guide its use.
- 2. Identifying Risk Areas and Establishing an Accountability and Responsibility Framework:** At this stage, the organization should identify the risks associated with both existing and planned AI systems and determine how those risks will be managed. The discussion in the Risks Created by AI and the Risk Management Approach section of this book may help identify potential risks and the circumstances under which they may arise. Once the risk areas have been identified, attention should be focused on the potential impacts of those risks. Based on the nature and significance of those impacts, decisions should be made regarding the appropriate level of human oversight—human in the loop, human on the loop, or fully autonomous. Following these decisions, accountability and responsibility for each process should be clearly assigned.

As AI continues to reshape competitive dynamics—and companies across value chains increasingly leverage these systems in supply chain management—SMEs will also be driven to adopt AI in their business processes. Taking early steps toward AI governance will therefore provide a significant advantage.

When defining control and accountability arrangements, it is also important to ensure that those involved possess an adequate level of knowledge and competence, and that training needs are assessed as part of the organization's capability development efforts.

- 3. Establishing an AI Management System:** At this stage, decisions are made regarding how the AI management system will be governed and what governance and assurance mechanisms will be put in place.

BOARDS OF DIRECTORS IN THE AGE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence is having a profound impact on organizations, reshaping both their ecosystems and their operations. To lead this transformation effectively, boards of directors must understand not only the fundamental principles of AI governance but also the unique dynamics of their respective industries.

To keep pace with this transformation, boards of directors are expected to understand and monitor developments in AI, oversee stakeholder expectations and practices relating to AI, and provide strategic guidance to executive management. Unlike previous waves of technological change, artificial intelligence is transforming a remarkably broad range of activities at an unprecedented pace. While it creates significant opportunities, it also introduces substantial risks in areas such as cybersecurity, fairness, data privacy, and environmental impact.

Boards of directors play a critical role in ensuring the long-term sustainability of organizations. In particular, they should provide both guidance and oversight in areas such as organizational and technology strategy, technology architecture, workforce transformation, data security, risk management, and the ethical use of AI. They should also help shape stakeholder expectations, challenge assumptions, and encourage management to take appropriate action. By fulfilling these responsibilities, boards of directors help ensure the organization's long-term sustainability and support the development of future business models.

To keep pace with this transformation, boards of directors are expected to understand and monitor developments in AI, oversee stakeholder expectations and practices relating to AI, and provide strategic guidance to executive management.

The age of AI no longer allows boards of directors to operate as they once did. In this era, organizations that wait to see how early adopters perform before taking action may lose their competitive advantage. Acting quickly and taking a leadership position can therefore make a meaningful difference. Striking the right balance between moving swiftly and fulfilling the traditional responsibilities of the board may be the key to effective governance.

Will Boards of Directors Be Composed of Humans or AI?

On this subject, two of the world's leading academic institutions—Wharton's Mack Institute and INSEAD's Center for Corporate Governance—conducted an experiment.⁴⁴ For the purposes of the study, two experimental boards of directors were established. One consisted entirely of AI agents, while the other was composed of human participants. The human board consisted of participants in INSEAD's Board Development Program.

The study found that the AI boards of directors—established as a multi-agent simulation—analyzed materials rapidly, adhered consistently to standard board protocols, and interacted autonomously through a structured memory system. The evaluators assessed performance against eight good governance criteria. According to the results, the AI board outperformed the human board in decision quality, use of evidence, inclusiveness, and implementation planning. By contrast, the human board was more likely to lose focus, engage in circular discussions, and overlook relevant data.

The evaluators found that the AI boards lacked interpersonal interaction and competencies such as building trust and demonstrating empathy. However, they performed well in terms of participation and clarity.

The researchers concluded that AI would not replace humans on boards of directors, as they considered interpersonal interaction and the ability to build trust to be essential for organizations.

The researchers concluded that AI would not replace humans on boards of directors, as they considered interpersonal interaction and the ability to build trust to be essential for organizations.

⁴⁴ Valery Yakubovich, Stanislav Shekshnia, Elizabett Yashneva, Kyle Sullivan, "Can AI Boards Outperform Human Ones?", 5 November 2025, Harvard Business Review, <https://hbr.org/2025/11/can-ai-boards-outperform-human-ones>

They emphasized that AI systems could serve as planning tools, simulate board discussions, stress-test strategic options, and help overcome organizational blind spots.

In short, boards of directors will continue to be composed of humans, and decisions will continue to be made by humans. This will ensure clear responsibility and accountability.

In the Age of AI, Which Areas Should Boards of Directors Focus on to Create Organizational Value?

The board of directors is an organization's highest decision-making and oversight body. Its focus on the right priorities and its ability to ask the right questions have a significant influence on the organization's ability to create value. The key areas that boards of directors should include within their agenda and provide guidance and oversight on are summarized below.

Strategic Perspective and Oversight

Although AI offers significant opportunities, implementing it without a strategic framework approved by the board of directors can lead to fragmented initiatives that are misaligned with the organization's strategic objectives and expose it to unnecessary risks. The board's proactive involvement in AI governance helps align the organization's overall strategy with its AI roadmap, ensures effective resource allocation, and supports sound ethics and risk management. In fulfilling this role, the board can critically evaluate the opportunities identified by management, helping to keep risks under control while maximizing the value and benefits that AI can deliver.

The board's most important responsibility is to provide the strategic direction needed to enable the organization to create value. In doing so, the board should consider not only how AI can benefit the organization's business, but also how AI can support the execution of its strategy and accelerate the achievement of its strategic objectives. As discussed in the section on value creation through AI, this approach ensures that AI initiatives are evaluated within the broader context of the organization's strategy.

The board's proactive involvement in AI governance helps align the organization's overall strategy with its AI roadmap, ensures effective resource allocation, and supports sound ethics and risk management.

It is important to seize the opportunities that emerge as part of the organization's strategy. When evaluating AI opportunities, rather than moving directly to implementation, it is often more effective to begin with a pilot project and then determine the next steps based on its results. This is because studies show that approximately 85% of initiatives launched to capitalize on AI opportunities fail to achieve their intended outcomes.

To better understand AI's impact on the industry, monitor developments among competitors, and assess potential opportunities and risks to the organization's business model, the board can regularly review an AI Impact Map (Competitive Displacement Map). This enables the board to develop an informed view of when AI is likely to affect specific business roles, processes, and sectors.

To ask the right questions and contribute to the AI roadmap, the board must keep up with emerging trends and understand how AI is affecting both the industry and the organization, as well as how it could reshape the industry. This does not require board members to be technology or AI specialists; however, they should possess sufficient knowledge to ask the right questions and understand the issues.

When making decisions about AI systems, the board should consider the following questions:

- **Is the Data Ready for AI Systems:** The organization's data should be reviewed by eliminating biases and errors, anonymizing data where appropriate, and preparing it for training AI systems and generating recommendations over the medium term. This provides a sound foundation for reliable decision support.
- **Is the Organization's Technology Infrastructure Suitable and Sufficient for AI Systems:** Understanding how AI systems will be integrated into the existing technology infrastructure, the extent of any additional investments required, which external services will be needed, and the associated costs helps the board make informed decisions.
- **Is the Organization Culturally Ready for AI Transformation:** The board should understand the organization's level of

To ask the right questions and contribute to the AI roadmap, the board must keep up with emerging trends and understand how AI is affecting both the industry and the organization, as well as how it could reshape the industry.

maturity for AI transformation and what actions are needed to reach the desired level. It is also important to determine the expected pace of the transformation, as this will shape how the process is planned and managed.

- **How Should the AI Initiative Be Governed Across the Organization:** Clearly defining which organizational structure will be responsible for AI initiatives is one of the most important factors for success. However, assigning this responsibility to a single function may not be appropriate, as AI directly influences the organization's strategy, performance, and reputation. Instead, AI governance may be more effective when led by senior management through a cross-functional structure that brings together all relevant functions, with the board providing guidance and oversight on key strategic matters.
- **How Will AI Systems Be Integrated into Business Processes:** When integrating AI systems into business processes, boards of directors should consider the following to provide effective guidance. In particular, they should assess whether the proposed AI systems:
 - Can respond to evolving business and operational needs;
 - Are aligned with process requirements;
 - Support the objectives of the processes they are intended to enhance;
 - Clearly define which processes require human approval and which can operate autonomously;
 - Identify which processes should be redesigned or restructured to enable effective AI integration.

Boards of directors may also need to review their working practices to enhance their effectiveness. In particular, it is beneficial to determine which matters should be addressed by the full board, which should be delegated to board committees, and whether additional committees are needed.

For example, a dedicated AI committee could be established to oversee AI-related matters. Such a committee could evaluate AI initiatives, opportunities, and risks (while responsibility for risk oversight should also remain with the risk committee) and

It is beneficial to determine which matters should be addressed by the full board, which should be delegated to board committees, and whether additional committees are needed.

present its recommendations to the board. If establishing a new committee is not considered necessary, it is important to determine how responsibilities should be allocated across the existing committees.

Innovation

Supporting innovation initiatives and allocating adequate resources are among the key drivers of value creation. This requires defining the activities to be undertaken, the outcomes to be achieved, and the value expected to be created. Such an approach enables the board to monitor the progress of these initiatives, assess their performance, and provide guidance on whether they should be continued, refined, or discontinued.

Before undertaking innovation initiatives, it is important to understand the organization's AI maturity level. This provides a basis for assessing its human and technological capabilities and identifying the innovative opportunities that can realistically be pursued. Boards of directors should therefore ensure that such assessments are carried out.

In addition, it is beneficial for boards of directors to monitor developments at other organizations, stay informed about global developments, and regularly review the organization's AI application portfolio. Including these topics on the board agenda on a regular basis helps accelerate learning and improve governance effectiveness.

AI Risk Management

One of the board's most important responsibilities is to assess the risks facing the organization, evaluate the approaches used to manage those risks, and provide appropriate guidance. In this context, it is important for the board to understand AI-related risks, how they currently affect the organization, and how they may affect it in the future. These risks may be:

- Strategic
- Operational
- Reputational
- Data and cybersecurity
- Legal

Supporting innovation initiatives and allocating adequate resources are among the key drivers of value creation. This requires defining the activities to be undertaken, the outcomes to be achieved, and the value expected to be created.

For effective risk management, the approach, rules, and policies developed to manage AI-related risks, together with their ethical boundaries, should be reviewed and approved by the board. It is also important to establish how and how frequently AI-related risks will be reported to the board, and which committees will be responsible for reviewing them.

Organizations are generally unable to develop AI systems entirely on their own. Instead, they often procure AI models and adapt them to meet their specific needs. In this process, it is important to closely monitor the training and customization of these models, the management of relationships with technology providers, as well as cybersecurity and data security.

It is important to ensure that AI risk management is integrated into the organization's overall risk management framework and that interdependencies among risks are taken into account.

In this regard, particular attention should also be paid to regulatory compliance. The following approaches to AI risk management can help boards of directors make more effective decisions and strengthen risk management:

- Analysis of issues arising from the use of AI systems (such as the Air Canada chatbot incident).
- Quarterly AI governance briefings covering:
 - Developments in AI outside the organization,
 - AI systems used within the organization and assessments of those systems,
 - The updated AI risk register and an assessment of changes since the previous review,
 - Legal obligations arising from the use of AI,
 - Findings from internal and external AI audits.
- Annual AI crisis simulations addressing:
 - Crises arising from the algorithms in use,
 - Crises arising from competitive developments,
 - Potential legal liabilities arising from AI.
- Annual evaluation of organizational AI capabilities and review of the findings.

It is important to ensure that AI risk management is integrated into the organization's overall risk management framework and that interdependencies among risks are taken into account.

Workforce Transformation

As AI becomes integrated into organizations, significant workforce transformation is expected. Effectively managing this process while preserving and strengthening the organization's culture requires close guidance and oversight by the board of directors. The board should also oversee the alignment of human resources policies with the organization's strategy.

Key priorities for workforce transformation include:

- Developing the workforce
- Equipping the existing workforce with new skills
- Restructuring processes and redefining the role of people within them
- Defining the role of people in AI-supported decision-making
- Attracting and retaining the talent required by the organization
- Managing workforce redeployment and the impact of job displacement
- Building a culture of continuous learning

Monitoring matters such as ensuring that the transformation process is managed transparently and openly is also important for effective governance. The board's guidance and oversight of talent management help ensure that the organization develops the capabilities needed to achieve its strategic objectives.

- **Development of the Internal Workforce:** The board can provide guidance on how the organization's existing workforce should adapt to the new ways of working, evolving process requirements, and new role definitions. It can also monitor progress and make recommendations based on the outcomes of the initiatives undertaken.
- **Change Management Activities:** The integration of AI systems into business processes may require some processes to be redesigned while others are restructured. The transition to new ways of working may also involve strengthening the organization's culture and adapting it to the new environment. How the change management process is managed will largely determine whether the desired

The board's guidance and oversight of talent management help ensure that the organization develops the capabilities needed to achieve its strategic objectives.

outcomes are achieved. Actively involving employees in the design and restructuring of relevant processes, and providing opportunities for them to express their views and share their experience, can be important to a successful transformation. For this reason, the board's close monitoring of these processes and its visible support for the transformation increase the likelihood of successful change management.

Building Trust

In particular, younger generations place great importance on ethical values when making purchasing decisions. This underscores the importance of building stakeholder trust in how the organization uses AI systems to maintain its competitiveness.

One of the most significant issues surrounding AI systems is the uncertainty associated with the transparency and explainability of their decision-making processes. Building trust in AI among stakeholders should therefore be a key item on the board of directors' agenda. In this context, implementing responsible AI practices is essential. This ethical approach encourages boards of directors to look beyond legal compliance and proactively consider the long-term consequences of the organization's actions and their broader impacts on society.

A responsible AI approach encompasses ethical principles such as trust, transparency, fairness, accountability, and human oversight. Organizations that empower people to use and govern AI effectively can bridge the gap between technological progress and public trust. The board of directors should monitor whether the organization has implemented measures to prevent bias and discrimination throughout the AI lifecycle. In this context, both internal and external audits play an important role.

One of the key conditions for building trust is effective stakeholder engagement on AI-related matters. Involving stakeholders—such as employees, suppliers, and customers—in the design and development of processes that affect them helps generate more effective solutions and build trust. It is also important for boards of directors to monitor these stakeholder engagement processes.

A responsible AI approach encompasses ethical principles such as trust, transparency, fairness, accountability, and human oversight.

Developing the Digital and AI Capabilities of the Board of Directors

Developing digital capabilities goes beyond appointing a digital expert to the board of directors. The fundamental objective is to build digital capabilities across the board as a whole. Boards of directors that embrace continuous learning and stay informed about AI trends are better equipped to make high-quality decisions.

Participating in training programs and inviting experts to board meetings help members develop the knowledge and skills required in this area. Today, lifelong learning is an essential part of professional life. Boards of directors that take a leading role in promoting and embedding a culture of continuous learning throughout the organization are more likely to achieve successful outcomes.

Developing AI literacy among board members helps prevent AI-related matters from being driven solely by AI or digital specialists. One of the board of directors' most important responsibilities is to critically evaluate AI initiatives for their alignment with ethical principles, privacy requirements, and strategic objectives. The greatest risk arises when boards of directors evaluate issues, make decisions, and approve AI initiatives without fully understanding them.

Reverse mentoring can also be used to strengthen the capabilities of board members in this area. In this approach, younger employees with expertise in fields such as technology can mentor senior management and members of the board of directors, helping them develop their knowledge and skills. The same approach can also be used to build AI capabilities across the organization.

Live demonstrations of AI applications for members of the board of directors can also help raise awareness. By showcasing both useful outputs and potential errors, including hallucinations, these demonstrations can help board members better understand the capabilities and limitations of AI.

Boards of directors that embrace continuous learning and stay informed about AI trends are better equipped to make high-quality decisions.

How Can AI Contribute to Board Processes?

AI is expected to have the potential to significantly strengthen board decision-making, risk management, strategic planning capacity, and operational efficiency. To realize this potential, it is important to establish a clear strategic and ethical framework. Without such a framework, AI may lead to inefficiency, loss of focus, and unethical decision-making.

Another important consideration when using AI in board processes is that the AI system should be dedicated to the organization and isolated from external systems. Using publicly available AI systems for board reports or research involving the organization may result in confidential information becoming publicly accessible. This could expose sensitive company information to the public and competitors, creating risks for both data security and competitiveness.

The following sections outline the main ways in which AI can support board processes.

AI is expected to have the potential to significantly strengthen board decision-making, risk management, strategic planning capacity, and operational efficiency.

Summarizing and Reviewing Board Reports

AI can be used to summarize the lengthy reports that management sends to board members before board meetings. By providing concise summaries, AI helps board members focus on the key issues, arrive at meetings better prepared, and evaluate agenda items with a critical perspective.

AI can also assist board members by benchmarking the information contained in board reports against industry data. This enables them to compare the risks and opportunities identified by management with industry trends and assess the organization's performance relative to the industry.

Board members can use AI to review the analyses and recommendations contained in board reports, identifying potential blind spots and gaps. Based on these insights, they can develop recommendations for improvement.

Strengthening the Quality of Decision-Making

AI systems can enable boards to develop proactive rather than reactive strategies by providing data-driven analyses and insights. Drawing on extensive data sources, these systems can perform detailed analyses of the issues under consideration and generate alternative recommendations. In this way, they can enhance the quality of board deliberations and decision-making.

Conducting Scenario Analyses

AI can help boards evaluate strategic alternatives and assess how they would perform under different scenarios. AI’s capabilities in this area are summarized in the following table.

AI CAPABILITY	CONTRIBUTION TO THE BOARD
Conducting Research	Conduct opportunity, competitive, and risk analyses using extensive data sources, and develop recommendations for growth and strategic focus.
Generating Insights	Transform data from multiple sources into meaningful insights, identify trends, and perform trend analysis.
Generating Ideas	Evaluate strategy, identify organizational blind spots and biases, and generate recommendations for improvement.
Scenario Analysis	Model market scenarios, assess how strategy outcomes change under different assumptions, analyze competitors’ actions, and simulate the organization’s financial performance and financial position under different scenarios.

The advanced analytical capabilities offered by AI systems can help boards anticipate market trends, identify potential risks at an early stage, and evaluate opportunities in a timely manner. They can also support boards in evaluating strategic alternatives under different scenarios and guide board discussions.

**Anticipating Risks and Developing
Risk Management Recommendations**

AI can strengthen the capacity of boards of directors for risk management.

It can be used to identify and analyze risks that could affect the organization, including:

- Global risks
- Industry-specific risks
- Geographic risks

AI can also provide insights into the potential impacts of identified risks. Its outputs can be compared with the organization's existing risk register to identify overlooked risks and areas requiring further attention. This can help boards develop recommendations for improving both management reports and the information submitted to the board. As a result, both the quality of decision-making and the evaluation of board agenda items can be enhanced.

People may not always have sufficient experience to detect weak risk signals. AI can be particularly useful in identifying and evaluating such signals. By recognizing patterns, AI can serve as an early warning system, alerting boards to the risks these signals may indicate.

The organization's dedicated AI systems can support continuous risk monitoring, going beyond the assessment of risks during board meetings. These systems can also be integrated with other systems used throughout the organization.

AI can be particularly useful in identifying and evaluating weak risk signals. By recognizing patterns, AI can serve as an early warning system, alerting boards to the risks these signals may indicate.

Preparing Meeting Minutes

AI systems can support boards in preparing meeting minutes at the desired level of detail based on the discussions and deliberations during meetings. They can also summarize the key issues addressed during the meeting.

Improving the quality of meeting minutes can help:

- Provide a better understanding of the rationale behind past decisions,
- Strengthen organizational learning by enabling lessons learned from previous decisions, subsequent actions, and the outcomes they produced to be incorporated into future decision-making when similar issues arise (ex-post impact analysis).

Incorporating Views of Different Stakeholders into Board Deliberations

The data sources used by AI systems may already contain information on the expectations and needs of the organization's stakeholders. Alternatively, such information may be collected through stakeholder engagement activities and incorporated into the system. AI can analyze these data to assess stakeholder expectations and evaluate the potential impact of proposed decisions on stakeholders and the communities in which they operate. Based on these analyses, AI can generate assessments and recommendations. This enables boards to consider the perspectives of stakeholders who are not present at the table but may be significantly affected by the decisions, leading to more effective and equitable outcomes.

Establishing AI-Enabled Real-Time Information Systems

These systems can be designed through a detailed analysis carried out by a team comprising both members of the board and management. By integrating the organization's data into a real-time information system, they can provide boards with continuous access to reports and performance data. Rather than relying solely on reports distributed before board meetings, board members can monitor the organization's performance on an ongoing basis, remain well informed, and develop recommendations as needed.

This approach can help ensure that the board agenda focuses primarily on the issues that matter most to the organization, allowing boards to spend less time analyzing the past and more time focusing on the future.

Rather than relying solely on reports distributed before board meetings, board members can monitor the organization's performance on an ongoing basis, remain well informed, and develop recommendations as needed.

The Role of Boards in Different Industries

The principles of AI governance are universal; however, implementation priorities, risk profiles, and the areas on which boards focus vary across industries.

Financial Services: This is one of the sectors most vulnerable to AI-driven bias and discrimination. Regulatory scrutiny is particularly intense. A 2023 study⁴⁵ by the U.S. Consumer Financial Protection Bureau (CFPB) found that more than 60% of AI-driven credit denial decisions lacked adequate justification and that outcomes for similarly situated white and black applicants differed by more than 80%.

Based on the example above, boards in the financial services sector should focus on:

- Auditing bias in credit, insurance, and investment decisions
- Identifying points for human intervention in automated decision-making systems
- Ensuring algorithmic explainability for regulators
- Regularly reviewing the demographic distribution of credit applications rejected by AI
- Providing customers with the right to appeal

Healthcare: Patient safety requires particular attention, as an incorrect diagnosis or treatment recommendation can have irreversible consequences. In 2023, an AI triage system used in a U.S. hospital made systematic errors in patient assessment because of inaccuracies in oxygen measurements related to patients' skin tone, resulting in delays in patient safety alerts. This case illustrates the risks that arise when training data lack adequate representation and human oversight is insufficient.

Based on the example above, boards in the healthcare sector should focus on:

- Ensuring independent medical audits of clinical decision support systems
- Approving patient consent and data privacy policies
- Establishing mandatory human oversight protocols for high-risk clinical applications
- Evaluating whether clinical AI systems deliver equally accurate results across different demographic groups

The principles of AI governance are universal; however, implementation priorities, risk profiles, and the areas on which boards focus vary across industries.

⁴⁵ Consumer Financial Protection Bureau, "Director Chopra's Prepared Remarks on the Interagency Enforcement Policy Statement on Artificial Intelligence", 25 April 2023, <https://www.consumerfinance.gov/archive/newsroom/director-chopra-prepared-remarks-on-interagency-enforcement-policy-statement-artificial-intelligence/>

- Monitoring clinicians’ trust in AI systems and identifying situations in which that trust should be questioned

Retail and Consumer Markets: Personalization algorithms pose risks to consumer trust and compliance with competition law. Price discrimination, manipulative content recommendations, and the use of consumer data beyond its intended purpose are among the key risks in this sector. In Europe, several retail platforms have come under regulatory investigation over allegations that their pricing algorithms charged higher prices in certain postcodes, indirectly affecting lower-income areas.

Based on the example above, boards in retail should focus on:

- Auditing the fairness of pricing and personalization algorithms
- Ensuring that user data processing policies are communicated to customers in a clear and understandable manner
- Regularly reviewing whether recommendation systems generate manipulative content
- Ensuring that pricing decisions based on customer data comply with competition law
- Ensuring that consumers understand what data is collected about them and how it is used

SECTOR	BOARD'S PRIMARY FOCUS	CRITICAL RISK EXAMPLE
Financial Services	Bias auditing, algorithmic explainability	Demographic discrimination in credit decisions (CFPB, 2023)
Healthcare	Clinical oversight, patient safety	Errors arising from representational gaps in AI triage systems
Retail	Pricing fairness, data privacy	Indirect regional discrimination in pricing algorithms

KEY QUESTIONS FOR BOARDS OF DIRECTORS ON ARTIFICIAL INTELLIGENCE

The following questions are designed to help boards of directors understand how artificial intelligence is used within the organization, assess the opportunities and risks it creates, and effectively guide the related processes.

As we celebrate ARGE Consulting's 35th anniversary, we are pleased to share this comprehensive set of questions as a practical resource for organizations embarking on their AI journey.

Strategic Perspective

- How is AI affecting and shaping the sector in which the organization operates?
- Does AI create opportunities for the organization's operations?
- If AI creates opportunities, how are we integrating them into the company's strategy?
- Are competitors using AI? Are there lessons to be learned from their practices?
- In which processes does AI have the greatest impact?
- What is our AI strategy? Are we moving toward an AI-centered organization, or will AI be adopted on a process-by-process basis?
- What is our AI transition roadmap?
- Is our dataset sufficient to produce useful results? Where are the gaps that need to be addressed?

As we celebrate ARGE Consulting's 35th anniversary, we are pleased to share this comprehensive set of questions as a practical resource for organizations embarking on their AI journey.

Risk Perspective

- What are the principal risks associated with the use of AI in our organization?
- What policies and systems do we have in place to manage these risks?
- In processes where AI is used, have our decision-making mechanisms been designed in accordance with the risk profile of each process? (How do we determine which decisions are made by humans, which require human oversight, and which can be entrusted to autonomous systems?)
- Have responsibility and accountability been clearly defined within the established decision-making mechanisms?
- Are the AI systems we use free from bias? When were they last tested?
- Can we explain how the systems we use arrive at their conclusions?
- How do we ensure data security and cybersecurity?
- Do our contracts with AI system suppliers include audit rights and bias reporting obligations?
- Has the compliance of our AI processes with personal data protection requirements been assessed? Are we prepared for the extraterritorial provisions of EU regulations?
- How are conflicting requirements among the EU AI Act, NIST, and ISO standards managed within our organization?

Ethics and Audit Perspective

- Are AI-specific internal audits being conducted?
- Have our AI systems undergone an independent audit within the past 12 months? How were the findings addressed?
- Do we have a bias monitoring dashboard? Is the distribution of outputs across demographic groups regularly analyzed?
- Is red team testing⁴⁶ conducted? How are the results reported to the board?

⁴⁶ A comprehensive assessment of an organization's cyber and physical security systems using the methods and techniques that a real-world malicious attacker would employ. Its purpose is to identify security weaknesses before they can be exploited and strengthen the organization's defenses.

- Is an ethical impact assessment conducted before each new AI application is deployed?
- Are audit trails maintained and retained for a sufficient period?
- Are our stakeholders (customers, employees, etc.) informed about what information is generated by AI?

HR Management Perspective

- How are we integrating AI into our organizational culture in a way that builds trust rather than erodes it?
- What is our approach to change management as AI transforms roles and processes?
- What is our strategy for attracting and retaining the talent needed to benefit from AI?
- Are we developing the capabilities of our existing workforce in line with the competencies required by AI applications?
- Are we communicating transparently with our employees about the transformation driven by AI?
- Are we informing employees about the potential risks associated with AI and our AI use policies?
- What is our plan to address the medium-term risk of diminished judgment arising from the decline in entry-level positions?
- Have AI policies been deployed throughout the organization in accordance with the deployment principle of good governance? How is this deployment monitored?

Stakeholder Perspective

- Are we communicating transparently with customers, suppliers, and society about how we use AI?
- Is stakeholder feedback incorporated into updates to AI policies?

Performance Monitoring Perspective

- Have we established performance indicators to measure the effectiveness of AI governance?
- How are these indicators reported to the board, and how often?
- What mechanisms are triggered when performance deviates from targets?

HOW DO WE MEASURE THE PERFORMANCE OF ARTIFICIAL INTELLIGENCE?

While deploying AI systems across organizational processes is important, it is equally important to measure the value these systems create. Organizations make investments to implement AI systems and incur ongoing operational costs through subscriptions and usage. It is therefore essential to measure how these investments affect the organization's value creation and performance. The results of these measurements also help identify areas for improvement in the value creation process.

Some of the performance indicators that can be used in this area are presented in the table on the following page. Monitoring these indicators at the board level would be beneficial. Doing so can help boards understand the value created through AI, identify risks, recognize the need for revisions to policies and strategies at an early stage, and take the necessary actions.

It is essential to measure how investments affect the organization's value creation and performance. The results of these measurements also help identify areas for improvement in the value creation process.

MEASUREMENT AREA	RECOMMENDED PERFORMANCE INDICATORS
Value Creation	• Cost and efficiency improvement in AI-enabled processes (%) • Return on investment (months) • New revenue opportunities (number/value)
Risk	• Number of identified bias incidents and time to resolution • Number of data security incidents (annual) • Number of regulatory non-compliance findings
Ethics and Audit	• Number of independent audit findings and closure rate • Red team testing frequency and number of vulnerabilities identified • Number of stakeholder ethics complaints
Human Resources	• AI competency training completion rate (%) • Annual change in the number of entry-level positions • Compliance with the deployment principle of good governance: policy implementation rate by organizational unit
Governance Maturity	• Closure rate of internal audit findings • Frequency of policy updates • AI maturity assessment score (periodically)

CONCLUSION

Artificial intelligence confronts organizations with a challenge that goes far beyond technical capability. Unlocking the value of this technology while managing its significant risks—and aligning its deployment with the organization's values, strategic objectives, and ethical responsibilities—is the key to success.

This success rests not on technical capability, but on leadership, governance, and vision. The greatest danger posed by AI is not a flawed algorithm, but a system left unmanaged, with undefined accountability and not integrated with the organization's values.

The findings and framework presented in this book point to five core lessons:

- **The Opportunity Is Real, but Conditional:** Organizations that create value through AI achieve significant advantages in revenue growth and return on investment. However, these advantages do not emerge automatically; they require effective governance, a clear strategy, and human-centered transformation.
- **Risk Cannot Be Overlooked:** Risks ranging from bias and data privacy to cybersecurity and unclear accountability can expose organizations to legal sanctions, reputational damage, and strategic vulnerabilities. These risks must become a permanent item on the board agenda.
- **Regulatory Necessity Is Now a Reality:** The EU AI Act is in force, and similar regulations are spreading globally. Compliance is no longer optional for organizations.
- **Human Judgment Will Continue to Be Central:** AI can strengthen the quality of decision-making; however, building trust, empathy, and ethical judgment remain uniquely human qualities, and they are what make the difference. Decisions will continue to be made by humans, with responsibility and accountability preserved.
- **Workforce Transformation Is a Long-Term Leadership Challenge:** The decline in entry-level roles delivers short-term efficiency gains, but in the medium term, it depletes the

The greatest danger posed by AI is not a flawed algorithm, but a system left unmanaged, with undefined accountability and not integrated with the organization's values.

talent pipeline through which judgment and accountability are developed. Boards must recognize this challenge and take action.

Artificial intelligence no longer allows boards of directors to operate as they once did. In this era, the “wait and see” strategy is no longer a viable option. As leading organizations consolidate their competitive advantage, it becomes increasingly difficult for those left behind to close the gap.

However, speed alone does not create value. To realize real and sustainable value from AI, the following are essential:

- **Strategic Clarity:** A clear vision and roadmap defining why, where, and how the organization will use AI.
- **Strong Governance:** Policies, standards, and assurance mechanisms that ensure transparency, accountability, fairness, and security.
- **Leadership Commitment:** The visible and tangible commitment of the board and senior management is essential. In short, what matters is not merely approval, but active guidance.
- **Human-Centered Transformation:** A comprehensive people strategy encompassing workforce transformation, change management, and a culture of continuous learning.
- **Measurement and Continuous Improvement:** Clear performance indicators, regular strategy reviews, and feedback loops are key to success.

AI transformation must be managed in a manner aligned with the organization's values, strategic vision, and long-term interests. Asking the right questions about AI is the most powerful starting point for this process. Boards of directors bear the responsibility of shaping the answers to these questions, and those answers will determine their organizations' success in the age of AI. Understanding where, how, and under what principles your organization uses AI, as well as which risks are being managed and which are being overlooked, is the board's first and most important step toward effective AI governance.

Understanding where, how, and under what principles your organization uses AI, as well as which risks are being managed and which are being overlooked, is the board's first and most important step toward effective AI governance.

Helping You Succeed

**This book is published to commemorate
ARGE Consulting's 35th Anniversary**

Creating Value Through Governance in the Age of AI

ARGE Consulting has been a leading management consulting firm in Türkiye since 1991 and has been instrumental in developing and deploying innovative management techniques and systems for clients from a diverse range of industries and organizations of all sizes. **ARGE** also provides intellectual contributions to global developments and exemplary support to NGOs for community development.

The majority of **ARGE**'s new projects are conducted with previous clients, which is a critical indicator that shows a high client satisfaction rate.

We believe that continuous improvement is an important requirement for preserving leadership and success. Projects conducted by **ARGE** focus on improving the performance of its clients, who are frequently leaders in their industries.

Our principles for success are:

- Utilizing world-class methodologies,
- Making every effort to create maximum value for clients,
- Respecting the confidentiality of our clients in our projects.

The services provided under these five main categories are as follows:

Strategy	Governance	Business Excellence	Institution Building	Sustainability
Strategy Assessment	Board Evaluation	Total Quality Management	Family Business Governance	Integrated Thinking & Integrated Reporting
Strategy Development	Boards and AI	EFQM Awards	HR Systems	Sustainability Strategies
Strategy Implementation (Balanced Scorecard)	Board Structuring	Business Effectiveness	Performance Management	Stakeholder Engagement
Scenario Planning	Public Sector Governance	Process Efficiency	Organizational & Capability Development	Intellectual Capital Management
Country Strategies	NGO Governance	Value Management	Change Management	Sustainable Success Model®

ARGE consultants closely follow new developments & provide intellectual contributions to the development of global standards around the world. They dedicate one day each week for non-profit community activities to help develop civil society organizations.

ARGE has been recognized by Generation Europe as one of the top three companies "Shaping the Future" for its corporate social responsibility (CSR) program at the European Parliament and served as a B20 Knowledge Partner for governance and sustainability.



Helping You Succeed

www.arge.com