AI Governance Alliance

WORLD ECONOMIC FORUM

In collaboration with Accenture

Transformation of Industries in the Age of AI

AI in Action: Beyond Experimentation to Transform Industry

FLAGSHIP WHITE PAPER SERIES

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Contents

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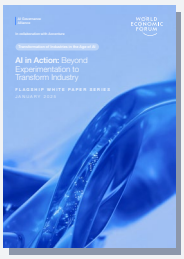
Reading guide

The World Economic Forum's AI Transformation of Industries initiative seeks to catalyse responsible industry transformation by exploring the strategic implications, opportunities and challenges of promoting artificial intelligence (AI)-driven innovation across business and operating models.

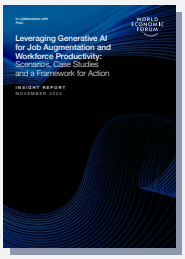
This white paper series explores the transformative role of AI across industries. It provides insights through both broad analyses and in-depth explorations of industry-specific and regional deep dives. The series includes:

Cross industry

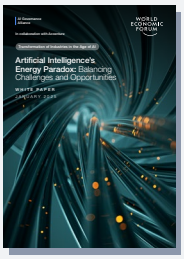
Impact on industrial ecosystems



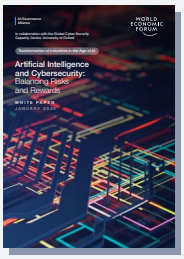
AI in Action: Beyond Experimentation to Transform Industry



Leveraging Generative AI for Job Augmentation and Workforce Productivity



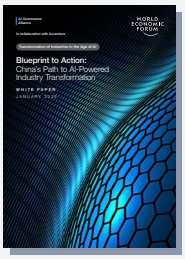
Artificial Intelligence's Energy Paradox: Balancing Challenges and Opportunities



Artificial Intelligence and Cybersecurity: Balancing Risks and Rewards

Regional specific

Impact on regions



Blueprint to Action: China's Path to AI-Powered Industry Transformation

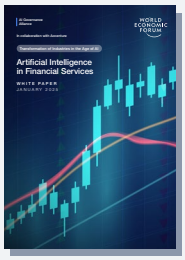
Industry or function specific

Impact on industries, sectors and functions

Advanced manufacturing and supply chains

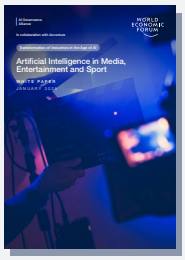
Frontier Technologies in Industrial Operations: The Rise of Artificial Intelligence Agents

Financial services



Artificial Intelligence in Financial Services

Media, entertainment and sport



Artificial Intelligence in Media, Entertainment and Sport

Healthcare

The Future of AI-Enabled Health: Leading the Way

Transport

Intelligent Transport, Greener Future: AI as a Catalyst to Decarbonize Global Logistics

Telecommunications

Upcoming industry report: Telecommunications

Consumer goods

Upcoming industry report: Consumer goods

Additional reports to be announced.

As AI continues to evolve at an unprecedented pace, each paper in this series captures a unique perspective on AI – including a detailed snapshot of the landscape at the time of writing. Recognizing that ongoing shifts and advancements are already in motion, the aim is to continuously deepen and update the understanding of AI's implications and applications through collaboration with the community of World Economic Forum partners and stakeholders engaged in AI strategy and implementation across organizations.

Together, these papers offer a comprehensive view of AI's current development and adoption, as well as a view of its future potential impact. Each paper can be read stand-alone or alongside the others, with common themes emerging across industries.

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Foreword

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The advent of generative artificial intelligence (genAI) marks one of the most profound technological inflection points of the 21st century. What once resided in the realm of imagination or academic theory has rapidly materialized, promising to reshape how individuals and organizations communicate, work and interact.

This transformation is catalysing a surge in AI investments, with enterprises and entire industries seeking to unlock new value for customers and stakeholders. Yet, despite the enthusiasm, most industry sectors and companies remain in the early phases of adoption, with leadership emerging from a select group of pioneering organizations that are setting the pace and direction.

To accelerate this journey, the World Economic Forum launched the AI Transformation of Industries Initiative as part of the broader AI Governance Alliance (AIGA). The initiative aspires to harness AI's transformative potential to unlock innovation, sustainability and growth across industry sectors while ensuring responsible and inclusive development.

This initiative brings together a global community of nearly 400 members from over 300 organizations, engaging with the Forum's 22 industry communities and its centres. Leveraging its neutral platform, the initiative aims to create a safe space for learning and knowledge exchange to help companies and government navigate the successful transformation of industries and businesses in the age of AI. By offering a roadmap that outlines key stages, identifying challenges and spotlighting successes, the initiative seeks to empower organizations to track their AI development, benchmark against peers, and scale adoption with clarity and confidence.

Additionally, the initiative aims to unlock new collaborations between leaders in the private sector, public sector, civil society and academia and provide insights into both cross-industry and sector-specific opportunities and challenges posed by AI. By encouraging dialogue and cooperation, the initiative aims to drive the responsible and scalable transformation of industries.

In partnership with Accenture, this paper marks the starting point of a white paper series. It reflects the initiative's commitment to staying current with the rapidly advancing field of AI. It offers a deep exploration of the strategies, enablers and opportunities required to harness the power of genAI while presenting practical examples of responsible and innovative AI adoption and analyses of AI's impact on industries, companies' functions and regions.

As the evolution of AI continues to redefine productivity and value creation, it also offers a critical opportunity to advance sustainable growth and innovation. Achieving these outcomes demands strategic foresight, responsible adoption and collective action. The path ahead holds immense promise to reshape industries, strengthen societies and deliver impact at scale – if stakeholders are able to seize the moment together.

The coming years will be pivotal. By working in unison, we can ensure that the transformative potential of AI serves as a force for good, delivering lasting benefits to all stakeholders in a rapidly evolving digital age.

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Executive summary

Emerging AI technologies have immense potential to transform industries; scaling efforts require a new mindset and foundational enablers.

Artificial intelligence (AI) is advancing at a rapid pace, fuelled by significant developments in computing power, data availability and sophisticated algorithms in areas like natural language processing (NLP), computer vision and generative AI (genAI). These advancements position AI technologies as one of today's most transformative technologies, with the potential to reshape industries and society by automating complex tasks at scale, enhancing conceptualized decision-making and enabling increasingly personalized capabilities. While analytical AI has been widely adopted across industries, genAI remains in its early stages of adoption. Although many organizations have experimented with AI through pilots and proofs of concept, scaling these efforts to achieve sustained and transformative impact continues to be a significant challenge.

This paper provides a comprehensive analysis of the impacts of emerging AI technologies – including genAI and agentic AI (AI that perceives its environment through sensors and acts on it through effectors) – on industries.

Using investment and existing surveys to understand adoption, some industries are leading in overall AI adoption while others are slower to start but accelerating significantly. The leading adopters, dependent on human expertise, benefit from genAI's ability to generate content, insights and solutions that boost productivity and decision-making. While some past technological revolutions have primarily been focused on transforming manufacturing through automation, AI is set to revolutionize all knowledge-driven fields, altering how tasks are performed and who performs them and redefining value creation across ecosystems. This is transforming how industries function and adapt within evolving ecosystems, reshaping value distribution and capture further influenced by the emergence of new intermediaries and the displacement of traditional ones.

Advancing AI adoption requires strong enablers at both the industry and company level, including:

- **Ecosystem**: creating collaborative environments where knowledge-sharing, responsible innovation and alignment on ethical standards for AI development thrive
- **Trust**: ensuring AI-driven processes function as intended while addressing concerns about accuracy, reliability and fairness, with accountability upheld throughout development and adoption
- **Self-governance**: establishing and implementing internal standards aligned with ethical principles, prioritizing transparency and accountability
- **Talent and organization**: strategizing reskilling and upskilling initiatives to empower employees to work effectively alongside AI, with an emphasis on human oversight
- **Cybersecurity**: developing robust defences to protect AI systems, data and privacy, maintaining user and consumer trust
- **Digital core**: building a strong digital core with secure data, connected systems, automated maintenance and an open architecture for flexibility and scalability

With these enablers in place, it is possible to think beyond narrow cost reduction and efficiencies to unlock AI's full potential. With the rapid development and investment in AI, organizations can greatly benefit by sharing insights and learning from one another's successes and challenges, creating a collaborative environment that accelerates growth and powers innovation.

To stimulate the development and prioritization of AI applications that drive both societal progress and business value, this report introduces a framework outlining imperatives for responsible and transformative AI adoption, focusing on impactful, novel, scalable and ethical practices.

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Introduction

Key opportunity lies in identifying the right applications, amplifying impacts and carefully managing implementation complexities and associated risks.

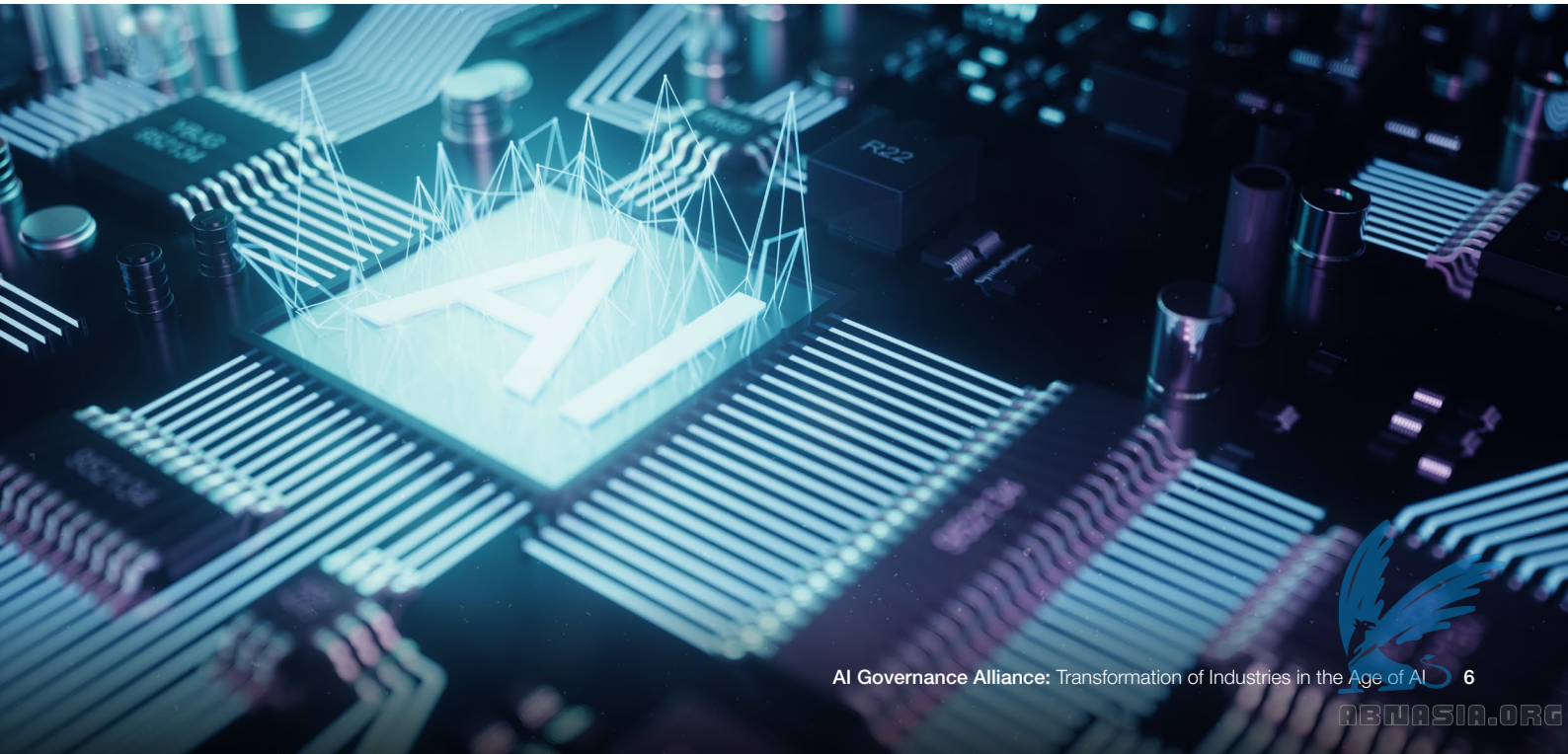
> The goal is not just to automate but to create a relationship where both humans and AI evolve and thrive together.

Thanks to rapid advancements in computing, significant breakthroughs in artificial intelligence (AI) algorithms – particularly in natural language processing (NLP), computer vision and generative AI (genAI) – and an abundance of data, AI has become one of the fastest-evolving technologies. Its latest developments hold the potential to transform both businesses, industries and society.

While significant advancements have been made since AI's inception in the mid-20th century – and rapid adoption has occurred in the last decade, most organizations face challenges in scaling emerging AI technologies and achieving return on investment (ROI). The key opportunity lies in identifying the right applications, amplifying their impacts and carefully managing implementation complexities and associated risks. This should be guided by a strong commitment to ethics, transparency and human well-being to ensure AI truly benefits businesses and society – including sustainability aspects. (Please refer to the World Economic Forum's reports *AI for Impact: Strengthening AI Ecosystems for Social Innovation* and *Innovation and Adaptation in the Climate Crisis: Technology for the New Normal*).

The collaborative potential of AI and humans is driving enhanced outcomes and becoming an increasingly integral part of our social and professional lives. This integration requires a deeper understanding of how people and AI can complement each other, creating mutual growth and improvement. The goal is not just to automate but to create a relationship where both humans and AI evolve and thrive together. This collaboration has the potential to enhance human productivity and creativity through "fusion skills" – intelligent interrogation, judgment integration and reciprocal apprenticing.[1]

This paper assesses AI's current state, highlighting opportunities, industry adoption, enablers and the future impact of AI on industries. It shares community insights on AI adoption, identifying success enablers such as self-governance, talent, cybersecurity and digital core. The goal is to provide a balanced view of AI's potential to drive industry transformation, guiding organizations towards responsible AI practices that promote business growth and societal progress, including sustainability. By offering stakeholders a clear understanding of the AI landscape and future opportunities, this paper aims to empower leaders to make informed decisions and strategically plan for AI adoption at industry, organizational and use-case levels.



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1 The opportunities of adopting AI in 2025

Organizations are shifting focus from efficiency to growth and value-chain reinvention to tackle complex challenges at unprecedented speeds.

With over 82% of businesses seeing genAI as being one of their main levers for reinvention,[2] organizations are increasingly adopting the technology, expecting significant benefits.

Beyond operational efficiency, productivity is a key opportunity of genAI adoption. While businesses sometimes start by focusing on optimizing workflows and cost reduction, many later discover even greater potential through productivity improvements supercharged by genAI. High productivity growth companies are now seeing a 4.5% higher cost-efficiency ratio than peers.[3] Early adopters of modernized genAI tools and processes have expanded their operational visibility, optimized capital allocation and achieved 2.4 times greater productivity and cost savings of 13%.[4,5]

CASE STUDY 1

Efficiency and cost savings

A technology provider has developed a virtual engineer that transforms building management by using experience-based learning to anticipate behaviours and patterns. It integrates real-time data from portfolios, utilities and weather to optimize maintenance strategies. Operators can instantly generate energy and emissions reports, execute commands and make informed decisions, ensuring buildings operate efficiently. Virtual engineers can reduce heating, ventilation and air conditioning (HVAC) energy costs by up to 25% and cut maintenance planning time by 90%.[6,7]

CASE STUDY 2

AI agent to improve operational efficiency and customers service

A California-based wellness start-up launched an “AI agent as a service”, enabling customers of their partners to submit queries and receive rapid, natural language guidance. Trained on thousands of support pages and supporting over 100 languages, the agent is able to reduce the number of queries forwarded to human assistance by 78%. This capability has boosted customer service efficiency, allowing clients to focus more on their core operations.[8]

Revenue generation opportunities are picking up pace. Companies that lead in AI adoption are already outperforming their peers by 15% in revenue generation – a figure projected to more than double by 2026.[9] This expected revenue growth could contribute $7.6-17.9 trillion to the global economy by 2038 – with the upper end of the range achieved through “people-centric” solutions.[10] People-centric solutions recast adoption in ways that responsibly place people and innovation at the centre. This growth potential reinforces the urgency for companies to build AI-enabled capabilities to remain competitive and avoid the risk of being outpaced by early adopters.

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> The shift in customer expectations has elevated AI from a value-add to a critical capability for all businesses.

CASE STUDY 3

AI driving revenue generation

A designer AI application by a leading technology firm streamlines the design process, enabling teams to quickly generate diverse and creative patterns. It considers trends, colour palettes, best-selling designs and inspirational sources to help designers craft new patterns with ease. By analysing historical sales data and customer feedback, it tailors new collections to a brand's unique selling point and target audience, ensuring a balanced mix of commercial, classic and trendy pieces. With features like multi-reference style transfer and limitless design variations, the application empowers design teams to create visually striking collections adaptable to any industry, which have a direct impact on sales and revenue.

Customers embrace AI for more personalized, efficient experiences. AI has shifted from being a unique differentiator to a fundamental requirement for companies aiming to stay competitive. Tools and features like chatbots, virtual assistants and personalized recommendations are now commonplace, enhancing the shopping experience. For example, over 70% of customers feel AI improves shopping by saving time and offering personalized interactions, with 65% believing AI understands their habits as well as, or better than, their close friends and family. More than 50% are interested in AI-guided experiences across various platforms.[11] This shift in customer expectations has elevated AI from a value-add to a critical capability for all businesses.

CASE STUDY 4

Virtual assistants

The London Stock Exchange Group uses its AI-powered Question and Answer Service (QAS) to help customer service teams deliver faster, more consistent answers to common client queries. Drawing on multiple algorithms to identify commonalities in client questions and requests, QAS effectively addresses thousands of inquiries daily while reducing resolution time by 50%.[12]

CASE STUDY 5

Enhancing customer experience

Swedish video game developer Mojang Studios uses AI to enhance player personalization and optimize content recommendations in its Minecraft Marketplace. Integrating a data intelligence platform with AI services allows Mojang Studios to monitor player sentiment on social media, enabling real-time, automated feedback. This setup processes data 66% faster than previously possible – thereby allowing Mojang to better tailor experiences for millions of Minecraft enthusiasts.[13]

Technological advances are enabling organizations to address increasingly complex challenges at unprecedented speeds. Developments like convolutional and recurrent neural networks are central to modern AI systems, supported by semiconductor advancements and cloud computing. Quantum computing, though nascent, promises to boost AI capabilities significantly, potentially revolutionizing optimization and simulation.[14] This adaptability has made AI a tool for innovation across industries, with companies investing in AI infrastructure, and research and development (R&D). Examples of this can be seen across industries, such as financial services using AI for fraud detection and customer service enhancement and the media industry applying it to product innovation and content creation.

The potential of AI to transform industries is widely recognized, with early use cases demonstrating its promise. However, concerns persist about companies' ability to scale AI in a way that drives true transformation, especially given challenges such as accuracy, intellectual property protection and workforce impact. Balancing these ambitions with a realistic view of AI's limitations and risks will be essential as organizations navigate the complexities of integration, responsible use and tangible value creation.

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2

Status of AI adoption

AI investments are rising, with genAI adoption still largely in the experimentation stage.

of organizations now report using genAI in at least one function.

To understand the extent of industry transformation in the context of AI, its adoption across industries can be examined. There are various ways to assess AI adoption, including investment and spending statistics, adoption surveys, projected impacts and more. This paper specifically uses AI investments and existing surveys to understand where organizations are directing their AI efforts.

Overall, investments in AI and its uses have soared. This growth is expected to continue globally, with AI-related spending across industries projected to reach approximately $630 billion by 2028, growing at a 29% compound annual growth rate (CAGR) from 2024 to 2028,[15] alongside an anticipated revenue of nearly $1 trillion.[16,17]

GenAI, in particular, has been a major contributor to this growth, with its capabilities evolving at an unprecedented pace.[18] Global corporate spending on genAI has grown significantly, with projections indicating a rapid increase at a 59% CAGR from 2024 to 2028, reaching over $200 billion globally by 2028.[19] According to one survey, 65% of organizations now report using genAI in at least one function.[20]

This rapid rise in both genAI investment and usage indicates that genAI is likely accelerating broader AI adoption, with the intention of embedding advanced AI capabilities more deeply into business operations.

While investments in AI and the use of genAI have soared across organizations, adoption is still in its early stages.

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2.1 The state of AI adoption across industries, functions and organizations

Industries that rely heavily on human capital are at the forefront of genAI spending.

To understand the current state of genAI adoption, this paper examines three dimensions: industry adoption, functional adoption and organizational adoption.

Investments in AI vary across industries, with some leading in adoption and others accelerating quickly

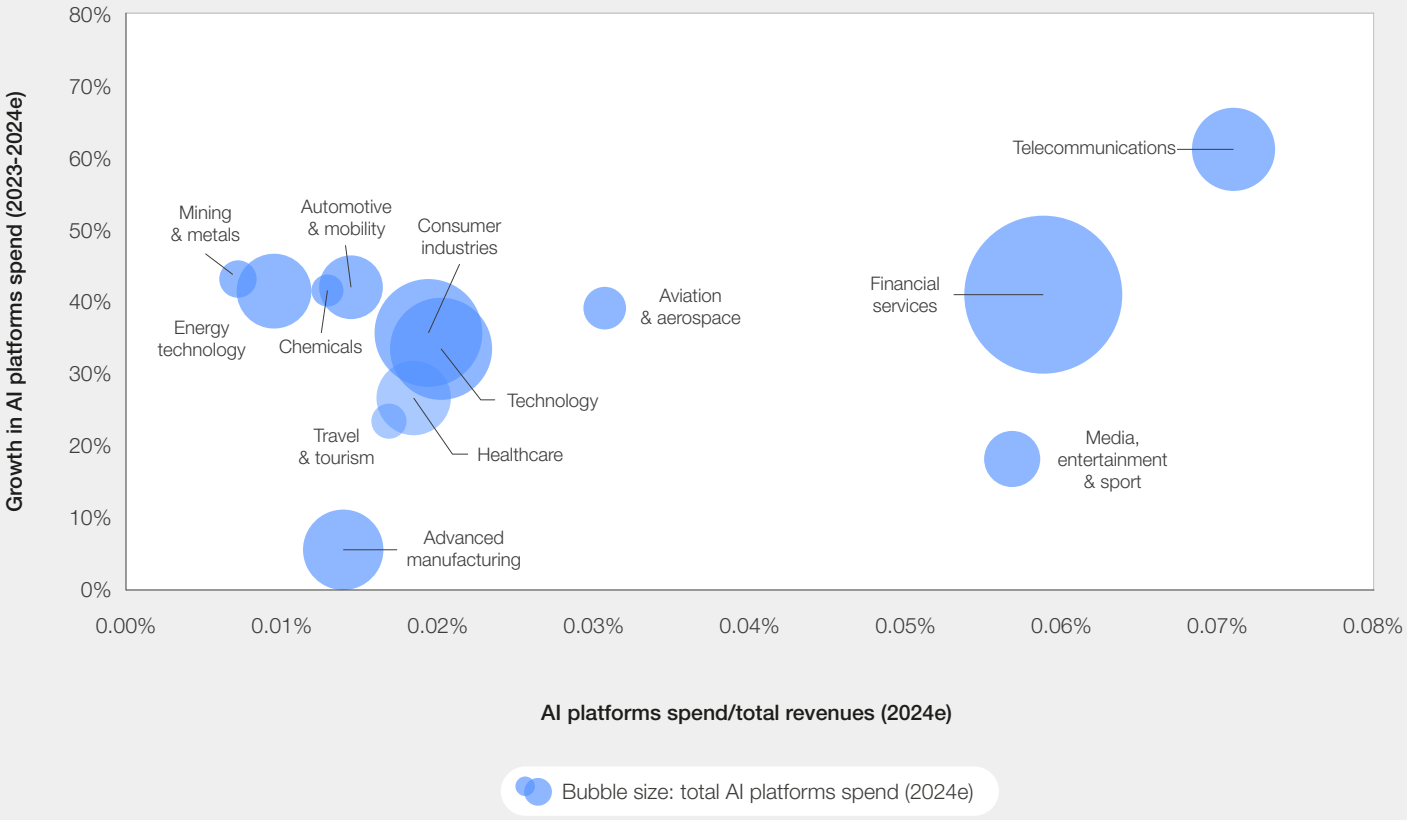
Adoption of AI technologies, as reflected in AI spending, is significantly advanced in some industries (telecommunications, financial services and consumer industries), while others are rapidly catching up with accelerated investments (see Figure 1). This represents a mix of priorities for AI adoption, as discussed in the previous section. Industries that rely heavily on human capital – such as healthcare, financial services, media entertainment and sport, consumer industries and some professional services – are at the forefront of genAI spending.[21,22]

GenAI is expected to transform a broad array of knowledge-driven, human-centric industries. It is more prominent in these industries because it excels at processing unstructured data and enabling creativity, personalization and automation. These industries, which have some of the highest levels of AI investment, rely heavily on human expertise and decision-making and can benefit from genAI's ability to create content and surface insights. Research also shows that companies in these industries recognize AI's potential to boost operational efficiency and productivity, enhance customer experiences and sharpen their long-term competitive edge in rapidly evolving markets.[23,24]

FIGURE 1 **Spend in AI platforms by industry 2023-2024**

AI platforms spend by industry, 2023-2024e

Growth in spend, spend/revenues and total AI platforms spend



Source: Accenture Research. Data from Accenture's G2000 list. AI platforms spend from IDC (2023-2024e). Revenues from Capital IQ S&P (2023-2024e). Telecommunications provide voice, data and communication services (e.g. AT&T, Telefonica). Technology includes high tech, which develop cutting-edge electronics, hardware and digital solutions (e.g. Apple, Samsung), software and platforms, which create software applications and online platform-based services (e.g. Alphabet, Microsoft), and IT services, which offer technology consulting and system integration (e.g. IBM, Accenture).

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Based on engagement with industry communities and as outlined in the industry-specific papers, the primary targets of AI investment vary:

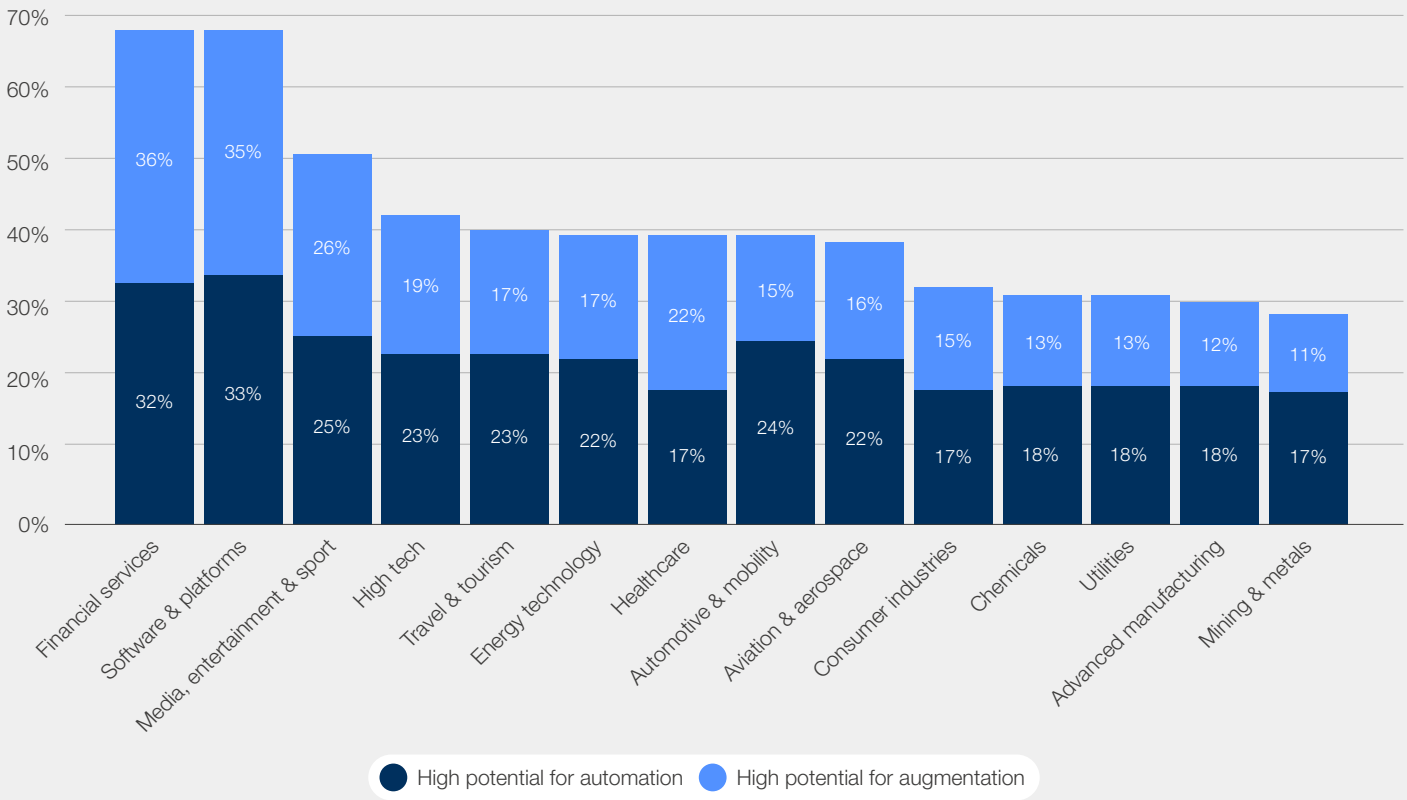
- **Technology firms** are spending heavily on data-centre infrastructure, such as AI chips and servers, and on R&D to develop AI applications that will support all other industries.
- **Financial services industry** are leading in AI investment, primarily by focusing on fraud detection, risk management and customer-service enhancements through AI-driven chatbots and other personalized services.
- **Consumer industries** are adopting AI to drive in silico innovation (using computer simulations and models for research and development), enhance tailored engagement through intelligent bots, and streamline integrated business planning across functions.
- **Media, entertainment and sport industry** are adopting AI to augment the creative process, enhance audience engagement by providing hyper-personalized content and immersive experiences, and optimize content production activities.
- **Telecommunications industry** are building on their experience with predictive AI, and are expanding genAI use cases to drive efficiencies, improve customer service and automate network management.
- **Energy industry** are using AI to transform operations by optimizing energy production and use, enhancing grid management and advancing sustainability.
- **Healthcare industry** are investing in AI for clinical decision support systems, diagnostics, patient management and operational efficiencies.
- **Advanced manufacturers** are using AI to focus on predictive maintenance, quality control and automation of production processes.

Future adoption rates would depend on how pervasive tasks are augmented or automated by AI. Figure 2 shows predictions by industries of the tasks that could potentially be augmented or automated.

FIGURE 2 **Projection of tasks potentially automated or augmented due to genAI, by industry**

Work time exposure (automation and augmentation) to genAI, by industry

Percentage of time dedicated to tasks exposed to automation and augmentation potential



Note: Analysis of over 19,000 individual tasks across 867 occupations and 22 countries, assessing the potential exposure of each task to LLM adoption, classifying them as tasks that have high potential for automation (shown), high potential for augmentation (also shown), low potential for either or are unaffected (non-language tasks).

Source: Accenture.

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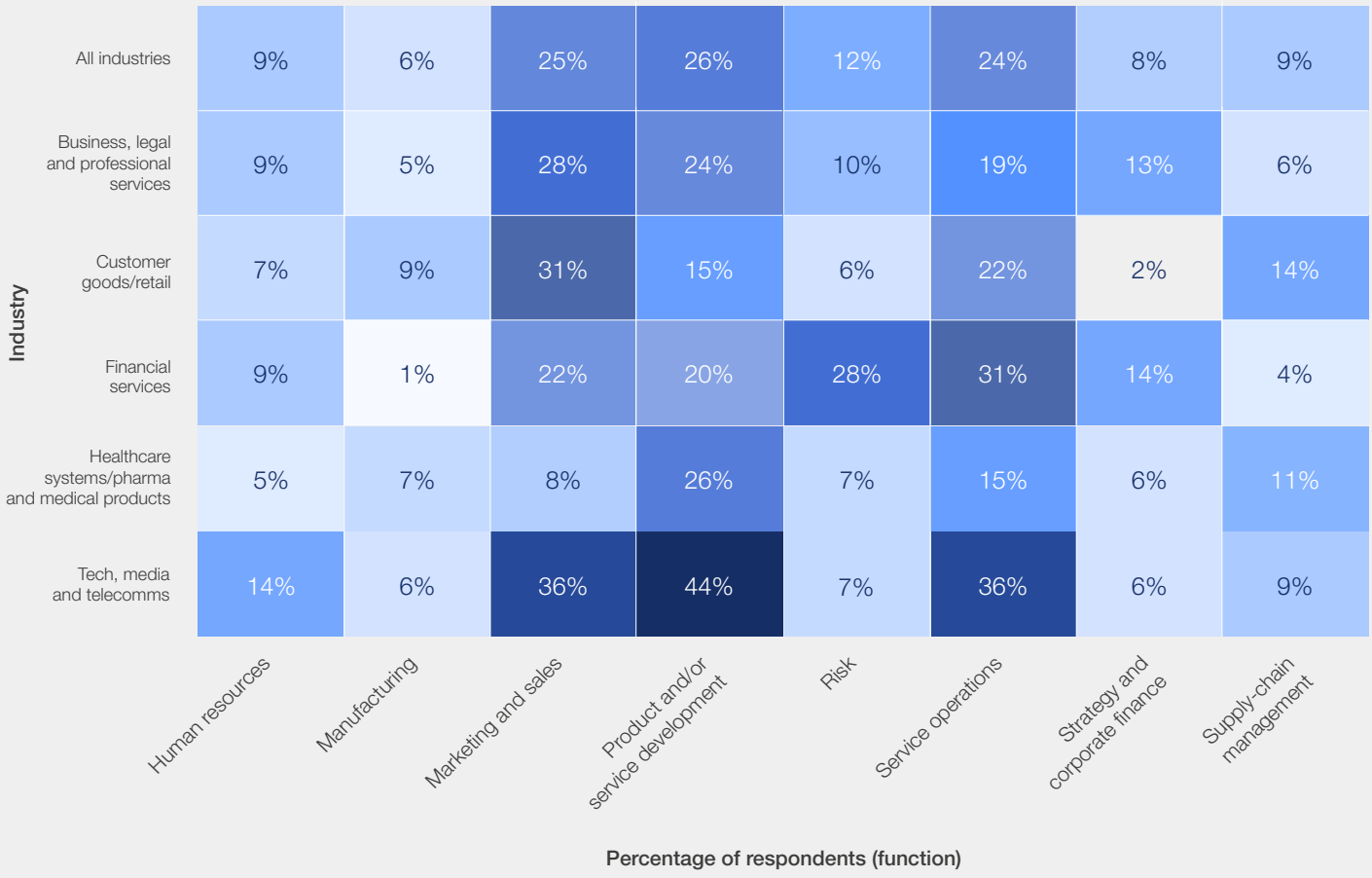
Adoption varies across functions, concentrating on functions that generate or digitalize large volumes of structured and unstructured data

There is notable variation in adoption rates across functions (see Figure 3) – with marketing and sales, product and service development, service operations and risk management leading the way in 2023. Finance, human resources (HR), and marketing and sales are expected to experience the most disruption in tasks potentially automated or augmented, which is likely to further drive AI adoption in these functions (please refer to the World Economic Forum's reports *Jobs of Tomorrow: Large Language Models and Jobs* and *Leveraging Generative AI for Job Augmentation and Workforce Productivity: Scenarios, Case Studies and a Framework for Action*).

Functions with the highest rates of AI adoption are typically those that generate or digitalize large volumes of structured and unstructured data. The greater the data available, the more effectively AI models can be trained, refined and scaled.

FIGURE 3 **Adoption by function and industry, 2023**



Source: Maslej, N., L. Fattorini, R. Perrault, V. Parli, et al. (2024). *Artificial Intelligence Index Report 2024.* Stanford University.

CASE STUDY 6

Cross-functional AI adoption

BMW introduced a platform with multiple genAI agents across its sales, supply chain and marketing functions to accelerate the conversion of data into real-time insights. The platform intelligently chooses a data source specific to the function and then pulls information corresponding to the user's prompt. This faster transformation of enterprise data into actionable knowledge has improved productivity across both the firm's corporate functions and on its showroom floors by 30-40%.[25]

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CASE STUDY 7

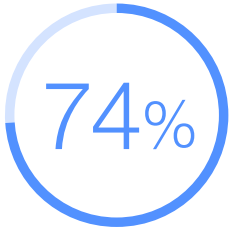
Embedded AI in functions

Swiss Federal Railways (SBB), in partnership with a leading software solution and technology company, developed an AI-powered visual inspection solution to minimize unplanned downtime and improve maintenance efficiency. Using advanced machine learning and enhanced model training, the solution enables condition-based and predictive maintenance for critical rolling stock components like pantographs. This approach allows the company to assess wear and tear without requiring the removal of these parts from services. The upshot: inspection times are down by 60%, and inspection errors have fallen by 20-30%.[26]

CASE STUDY 8

After-sales multi-agent system

Beko has developed a connected system of AI applications designed to overhaul the after-sales process. Using customer interaction insights, this system feeds data into analytics and predictive tools, which helps resolve issues quickly, suggest relevant upsell options and ensure technicians have the correct parts for a successful first visit. Additionally, it offers real-time guidance, providing technicians with AI-driven troubleshooting support and access to translated manuals for enhanced service delivery.



of companies report challenges in adopting AI at scale.

The depth of AI adoption within organizations is in the early phases

To truly transform industries and enable organizations to fully realize its benefits, AI should be adopted in alignment with core business objectives. This involves embedding AI deeply into operations, strategies and decision-making processes, moving beyond isolated or experimental initiatives.

Insights from community engagement indicate that the depth of AI adoption remains largely in its early stages. Many organizations are still experimenting with AI or implementing individual use cases rather than achieving end-to-end transformation across the enterprise. While some industries appear more advanced in AI adoption, individual organizations show significant variation in the depth and scale of their efforts. Notably, 74% of companies report challenges in adopting AI at scale, with only 16% of enterprises prepared for AI-enabled reinvention.[27,28]

When planning AI investment and integration, companies should assess where they stand in their adoption journey, which ranges from initial experimentation to continuous reinvention. Based on feedback from the AI Transformation of Industries community, different phases of adoption are characterized by specific descriptors and metrics (see Table 1).

To fully harness the potential of AI, organizations need to advance beyond the experimental phases, embracing deeper integration to realize its collaborative potential alongside potential human collaboration. This journey provides a roadmap for leaders to assess their current position and identify priority steps towards AI-enabled transformation. Early adopters and frontrunners play a crucial role as benchmarks, sharing best practices and insights to guide others on this path.

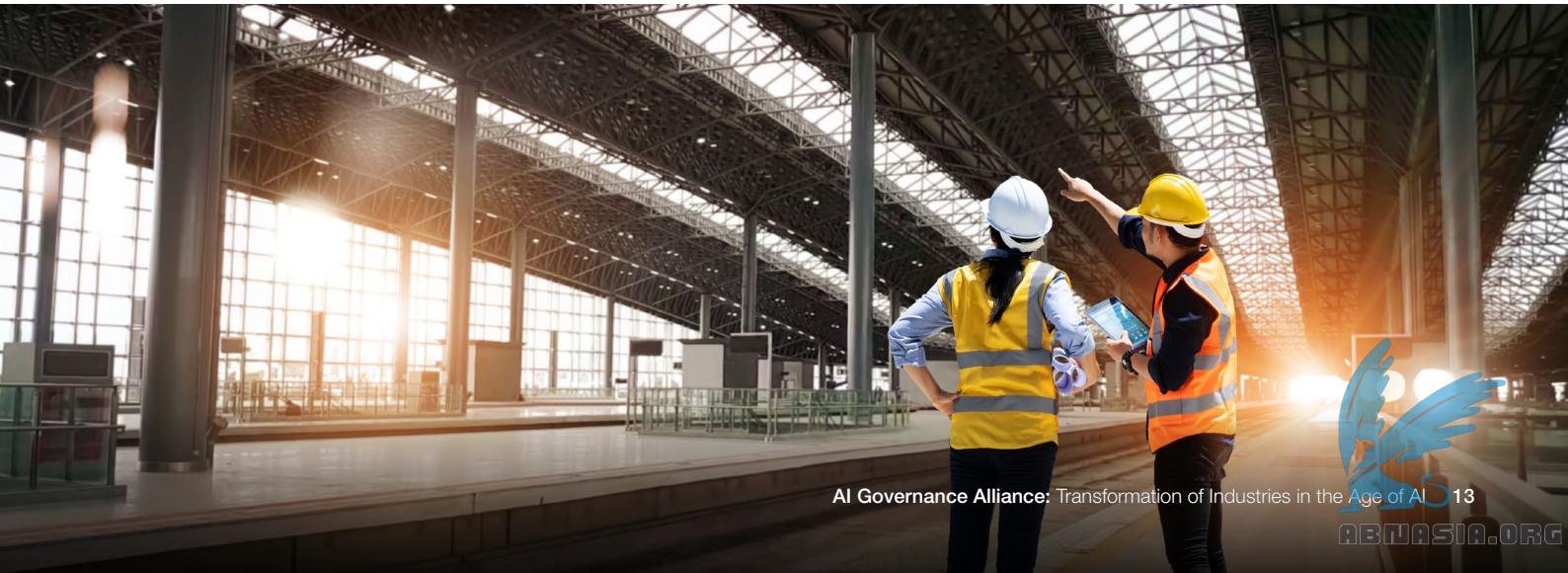


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TABLE 1 | **Defining depth of AI adoption**

AI organizational adoption phases	Description	Metrics/indicators	Examples
Phase 1 Initial and ad hoc	Organizations are just beginning their AI journey, hindered by barriers such as regulatory constraints, organizational risk aversion and/or a lack of awareness of AI's potential.	– Data quality and accessibility – Basic data and compute infrastructure	– Limited to AI sandbox experiments
Phase 2 "Thousand flowers bloom"	Organizations are running multiple AI experiments, often disconnected from core business strategy and possibly driven by individual teams or tech-savvy leaders.	– AI project volume – Increased investment in AI talent – Workforce training and upskilling efforts – Initial governance practices	– Use cases prioritized, with multiple use cases piloted through MVP (minimum viable product) development and production and some identified for scaling
Phase 3 End-to-end reinvention	Organizations are moving beyond experimentation and beginning to see measurable value from deploying AI at scale within a specific business domain.	– Presence of a formal AI strategy – Robust data governance – AI-enabled process improvements – Measuring ROI of AI projects	– Reinvention of marketing strategies, supply chain and customer service – Functional cognitive brain
Phase 4 Enterprise-level reinvention	Organizations are aligning AI initiatives across multiple functions, supported by foundational infrastructure, robust data governance and workforce upskilling, to ensure effective integration of AI across business units.	– Established ethical AI board – Significant customer impact – Continuous improvement culture – Positive impact on business outcomes	– Data products consumable across functions – Enterprise cognitive brain – Functional and governance silos broken down
Phase 5 Value chain reinvention (future vision)	AI initiatives extend across the entire value chain, creating innovative collaborations with partners, suppliers and even competitors.	– AI as a core business enabler – Continuous improvement culture – Significant stakeholder impact – Substantial impact on business outcomes	– Continuous monitoring and reassessment – Strategic outcome evaluation

Source: Accenture analysis in collaboration with World Economic Forum consumer industries team.

As AI moves beyond experimentation, a broader shift towards enterprise-level reinvention of business and operating models will emerge. Early signs of transformation are already visible, with leading organizations implementing changes to transition towards AI-enabled models, and AI-native models are even emerging. New intermediaries and disintermediation powered by AI could disrupt incumbents while driving shifts in value dynamics and the development of emerging business ecosystems.

Organizations should prioritize applications that deliver tangible, measurable value and focus on scaling their adoption across the business. This requires identifying high-impact use cases, optimizing them, building a strategic roadmap for broader implementation and, importantly, learning from industry peers and sharing best practices to accelerate growth, avoid common pitfalls and unlock AI's full potential.

CASE STUDY 9

Emerging transformation

Semiconductor firm AMD, in partnership with a major software company, enhanced its sales-order capabilities with a genAI supply chain troubleshooter tool that offers detailed insights into order commitments, product allocations and supply issues. The tool analyses over 10,400 orders annually, saving AMD some 3,120 hours in productivity and cutting the time and cost of its root-cause analysis by 90%.[29]

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2.2 Foundational enablers for successful AI implementation

To fully realize AI's value, the AI Transformation of Industries Community highlighted the foundational enablers required at both the industry and company level.

At the industry level, encouraging ecosystem collaboration is key, as it encourages shared learning, innovation and responsible AI development. Trust-building within industries allows for sharing best practices and resources while maintaining competitive integrity.

At the company level, enablers for frictionless AI implementation include self-governance, workforce readiness, robust cybersecurity and an interconnected digital core.

Industry-level enabler 1: Ecosystem collaboration

> Companies are increasingly forming partnerships to access resources and expertise for scalable AI solutions.

Partnerships and collaboration have long been recognized as essential for accelerating innovation and AI is no exception to this. Companies are increasingly forming partnerships with cloud providers, AI tech firms, start-ups and public institutions to access resources and expertise for scalable AI solutions.

Key strategies for collaboration include:

- **Strategic partnerships**: Examples include alliances with cloud providers and AI firms, which provide scalable capabilities and potential data-sharing mechanisms to encourage innovation.
- **Co-creation**: Companies work together to create tailored AI solutions through iterative processes of data sourcing and model testing.
- **Data access**: Partnerships across ecosystems enable access to diverse, high-quality data, driving innovation. Through partnerships across the supply chain and industrial ecosystems, companies can access broader data pools that drive new innovation, where data-sharing creates a cycle where AI insights lead to further innovation and collaborative opportunities.
- **Risk and investment sharing**: Collaborative efforts reduce the financial and technical burdens of large-scale AI deployments. This benefits start-ups, which often face financial and resource constraints.
- **Curated networks**: Companies partner with specialized providers to build complete AI systems using a variety of models and data sources.
- **Public-private partnerships**: Governments and non-profits support ethical AI development through funding and regulatory frameworks, like the EU's Digital Europe Programme.

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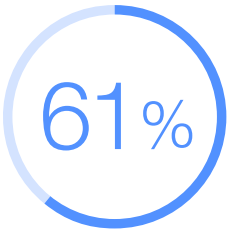
Industry-level enabler 2: Stakeholder trust in AI



of people hesitate to rely on AI systems, often due to concerns over data security and third-party involvement.

Historically, AI's biggest challenges were technological and economic,[30] but today, trust in AI-driven processes is a key barrier. For AI to succeed at scale, individuals, companies and partners must trust and take responsibility for ensuring that processes powered by AI are safe, reliable and effective. While 95% of workers see value in genAI, their primary concern is whether organizations can ensure positive outcomes for all.[31,32]

Building trust starts within the organization. A global survey found that 61% of people hesitate to rely on AI systems,[33] often due to concerns over data security and third-party involvement. By adopting trust principles in the development and deployment of intelligent technologies, trust can be built.[34] Effective change management, whereby companies support employees in adopting AI through training and transparent communication on how to use the technology responsibly and effectively, can also lead to a more consistent, positive user experience with AI.[35]

At the cross-company level, trust is vital for data-sharing collaborations that strengthen AI, such as in federated learning. Leaders must address security, accountability and ethical concerns, ensuring AI solutions are secure, transparent, interoperable and fair. This encourages collaboration and reduces legal risks, promoting a trustworthy, collaborative ecosystem.[36,37,38]

Company-level enabler 1: Industry self-governance

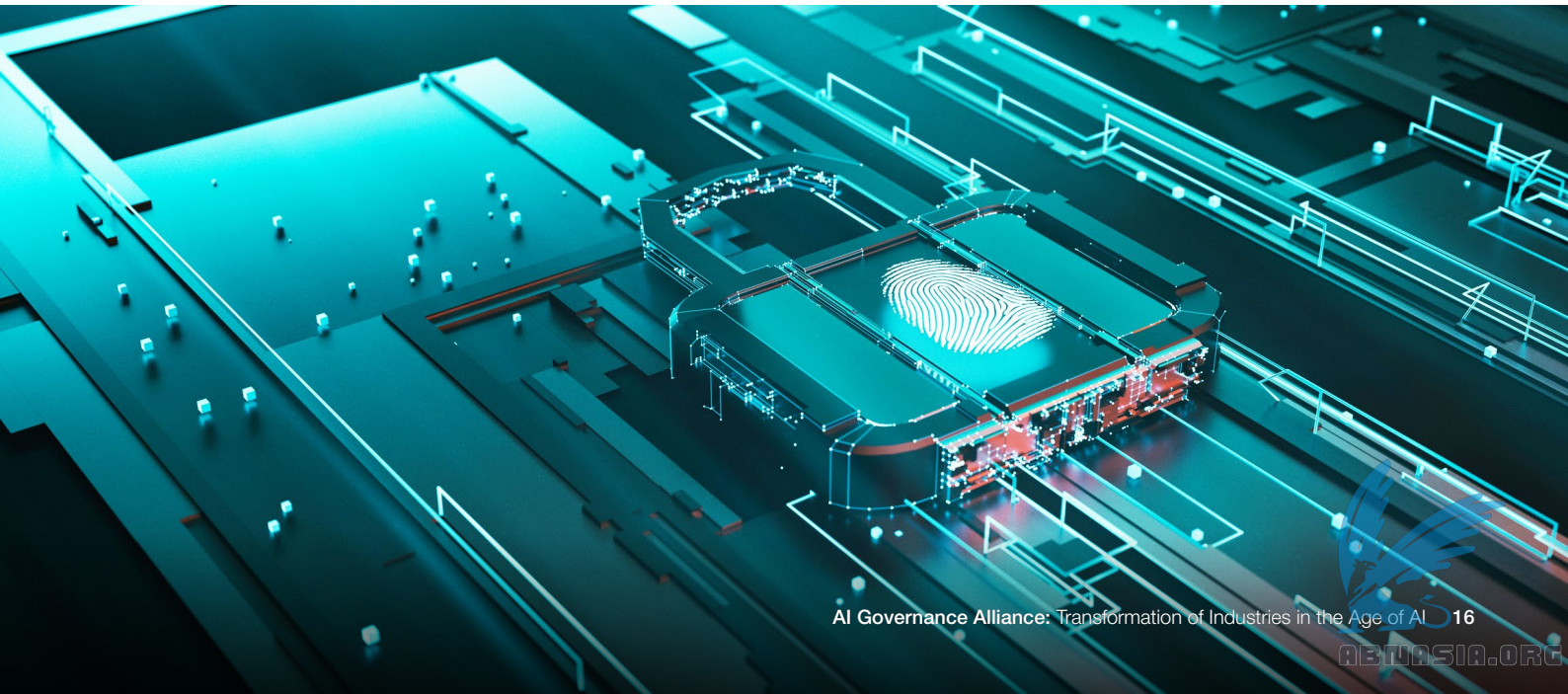
To deploy AI responsibly,[39] organizations are creating self-governance frameworks that complement regulations, enabling agility and risk mitigation. These frameworks help align AI deployment with company values and regional regulations, focusing on data privacy, security, transparency and AI's broader impact.

Self-governance integrates privacy, innovation and compliance to build trust, potentially increasing customer confidence by up to 30%.[40] Companies should appoint a chief responsible AI officer or establish ethics committees to ensure AI practices align with regulations. Additionally, governance should be embedded in the tools developers and data scientists use, with clear policies to ensure compliance.

CASE STUDY 10

Failure to responsibly deploy AI

In October 2024, a major US city launched an AI-powered app to help new entrepreneurs navigate the complexities of starting a business. The app intended to provide resources and guidance around navigating legislation, however, it often provided misinformation to business owners that could lead to them breaking the law. Consequently, the platform received public criticism and has degraded trust among its user base, prompting officials to revisit how the tool provides outputs.[41]



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Company-level enabler 2: Talent and organization

> Organizations need to prioritize workforce development to enable employees to navigate technological changes and lead AI-driven value creation.

AI is poised to reshape critical aspects of work – what is done, who does it, when it's done and how it's performed. GenAI, in particular, is expected to increasingly redefine work across industries, drive labour productivity, improve decision-making and augment human capabilities.

To prepare for this transformation, organizations need to prioritize workforce development to enable employees to navigate technological changes and lead AI-driven value creation.

Engagement with the community and research by the World Economic Forum's Center of New Economy highlights some key actions related to the workforce, including:

- **Building AI capabilities**: Organizations are increasingly aligning their structures with AI goals, led by organizational moves such as appointing chief AI officers or forming AI strategy teams. AI is becoming integral to business functions, with dedicated AI-driven roles in operations, marketing and risk.
- **Agile, data-centric cultures**: Promoting cross-functional teams and cultivating a data-driven, adaptive culture can accelerate AI adoption. Designated employees ("change champions") can also play a crucial role in embedding AI into an organization's operating model that embraces experimentation.
- **Human-AI interaction**: As AI handles routine tasks, jobs requiring AI management, data analysis and creativity will grow, alongside the need for emotional intelligence to facilitate smooth human-AI collaboration.[42] As AI takes over routine tasks, human roles are expected to shift towards higher-impact activities, increasing human-computer interaction. To prepare for these changes, companies must reskill employees and ensure AI is designed to work harmoniously with humans, taking into account human needs and considerations.
- **Continuous learning and change management**: Surveys show that many workers are concerned their organization's AI implementation will cost them their jobs or lead to stress, burnout or overload.[43] To address these concerns, organizational support to help employees build trust in AI-driven processes and integrate the technology successfully into their work is essential.

CASE STUDY 11

Talent transformation

Chevron's pivot to renewable energy required new employee skills and expertise. To help address its lengthy recruitment cycles, Chevron turned to an AI talent acquisition platform, which saved the energy firm about $10 million by efficiently assessing organizational skills gaps. The platform also accelerated Chevron's hiring process by 30%.[44]

CASE STUDY 12

Human-AI collaboration

A hospital services company adopted AI to improve discharge planning. To achieve this, its machine learning model analyses over 72 variables to predict discharge readiness within 24 hours, providing actionable insights through a cloud-based interface. Deployed across 12 hospitals, the tool has increased daily discharge rates by 4.6% in six months, streamlining patient transitions and easing bottlenecks.

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Company-level enabler 3: Cybersecurity

> For leaders to invest and innovate in AI with confidence, they also need to gain an understanding of the cyber risks related to AI.

AI-enabled cyberattacks like deepfakes, targeted phishing and data breaches are emerging threats for large and small organizations alike. Concerns around these threats are growing, with over 55% of survey respondents believing that genAI will ultimately give attackers a cyber advantage.[45] Therefore, organizations need to stay abreast of developments in cybercriminal use of AI to pre-empt potential future attack vectors. For leaders to invest and innovate in AI with confidence, they also need to gain a comprehensive understanding of the cyber risks related to their adoption of AI. Key actions for leaders include:

- **Balance risk and reward**: Regularly weigh AI's operational benefits against potential cyber risks.
- **Invest in essential cybersecurity operations**: Couple AI innovation investments with security investments to ensure security is embedded throughout the AI system's life cycle.
- **Embed AI cyber risk into cross-organizational risk management**: Involve multi-disciplinary teams to address the cyber risks from AI adoption effectively – either by adapting existing structures or creating new ones tailored to the unique challenges of AI.
- **Promote AI security-by-design and by-default**: demand robust third-party risk management and use the organization's purchasing power to promote AI security-by-design and by-default.
- **Engage with national and sector-specific standards:** Stay informed about evolving AI regulations and how the specific local and regional AI context impacts business operations and risk.

The use of AI in cyber controls can enhance defence strategies, making them more adaptive and efficient against evolving threats. Examples include improving threat intelligence mechanisms and automating vulnerability management.

CASE STUDY 13

AI-enabled cybersecurity

Cortex XSIAM by Palo Alto Networks, a cybersecurity firm, is a platform that offers advanced threat detection and automated responses by deploying machine learning and behavioural analytics. The platform aggregates and enriches data from various sources, allowing for real-time, adaptive threat management. To date, organizations that use the platform have been able to reduce incident investigations by 75% – and resolve 9 times more security issues than they previously did.[46]

CASE STUDY 14

Human-AI collaboration

Telecom firm AT&T boosted its ability to detect fraud by up to 80% when it harnessed nearly 100 machine-learning models to process over 100 petabytes of data in real time. Thanks to these efforts, AT&T was also able to generate instant customer protection alerts and actionable insights across its call centres, stores and online channels.[47]

Company-level enabler 4: Digital core

Deploying scalable AI strategies is dependent upon establishing a strong digital core – which consists of AI applications and digital platforms, a data and AI "backbone", and physical and digital infrastructure (see Figure 4).[48]

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FIGURE 4 | **Key components of a digital core**

1 AI applications and digital platforms

2 Data and AI backbone

3 Physical and digital infrastructure

Source: Adapted from Accenture and World Economic Forum stakeholder community input.

When data is not available, synthetic data complements real-world data by addressing scarcity and sensitivity.

To unlock value, the digital core should lay the groundwork for sustained growth and transformation. GenAI requires enhanced capabilities from the digital core, making a modern, adaptable infrastructure non-negotiable. Key insights from community discussions emphasize the need for centralized, classified-for-purpose and secure systems. Seamless integration across platforms and automated data management is critical to enhancing efficiency and agility. An open architecture is vital, offering the flexibility and interoperability needed to address diverse use cases. However, different architectures are evolving at varying speeds, requiring a thoughtful approach to integration and scaling.

1. AI applications and digital platforms

This layer enables seamless, personalized and intelligent user experiences through applications and interfaces like virtual assistants and personalized recommendations. These systems use real-time data from diverse sources, such as user interactions, social media and internet of things (IoT) devices, to understand individual preferences and deliver context-aware interactions. Complementing this, analytics and adaptive learning systems continuously refine these interactions, becoming smarter over time by integrating feedback through real-time analytics.[49,50,51]

2. Data and AI backbone

The data backbone layer ensures the flow and usability of high-quality structured and unstructured data, which is crucial for training and deploying effective AI models. Data cleaning enhances model accuracy by reducing noise and biases, using methods like handling missing values, removing duplicates and standardizing formats. When data is not available, synthetic data complements real-world data by addressing scarcity and sensitivity, using techniques like generative adversarial networks (GANs) to improve model diversity and robustness while maintaining privacy. High-quality generation is essential, as poor synthetic data can harm model performance.[52]

This layer also includes tools for data management, such as synthetic data generation and advanced databases (like vector databases) that can store unstructured data like images, voice or natural language via mathematical representations of data (vectors) and knowledge graphs to capture context.[53]

Organizations should employ a robust strategy for their data and AI backbone, including the deployment of modern data stacks, cloud migration and effective staging systems. Companies should commit to ensuring metadata accuracy, consistent labelling and continuous monitoring. These actions will ensure the trustworthiness of data, which is core to trusted front-end systems.[54]

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> It is critical for organizations to steer the technology towards applications that contribute to positive change for society at large.

3. Physical and digital infrastructure

Technologies like 5G, cloud computing (remote data processing) and edge computing (local data processing) allow organizations to handle data efficiently while supporting genAI. Since most organizational data currently resides outside the cloud, transferring it to cloud-based AI systems can be costly and impractical. Deploying AI models directly where the data exists – known as edge AI – enables organizations to use their existing infrastructure, reducing expenses and improving efficiency. This approach lowers latency, strengthens data security, and meets compliance needs, making it particularly valuable in sectors like finance and healthcare.[55]

Framework for transformational and responsible AI adoption

To make the most of the recent surge in AI investments, it is critical for organizations to steer the technology towards applications that look beyond narrow productivity improvements and contribute to positive change for society at large, as well as for the bottom line. To help guide these efforts, the community of the AI Transformation of Industries initiative established the following imperatives that AI applications should follow:

- **Impact**: Measures how effectively AI applications contribute to a company's core objectives like profitability, efficiency and market competitiveness. Key indicators include quantifiable benefits such as revenue growth, cost reduction, risk mitigation, market expansion and customer satisfaction. "Impact" also evaluates the positive social impact of AI use cases, such as advancements in healthcare, education, sustainability and employment.
- **Novelty**: Focuses on how AI applications offer innovative ways to tackle persistent challenges. "Novelty" considers the use of new ecosystems, tools and/or methodologies that provide fresh, effective solutions.
- **Scalability**: Assesses the adaptability and resilience of AI solutions, ensuring they can expand to different regions or industries without losing performance quality. "Scalability" includes evaluating the technology's reliability, as well as its ability to handle increased workloads when demand grows.
- **Responsible AI**: Evaluates AI design and operational practices to ensure alignment with ethical AI standards, such as the Forum's Digital Trust Framework (which emphasizes principles like security, accountability, oversight, inclusivity, ethics and reliability).

BOX 1 **AI impact programme (The Frontier MINDS)**

The Forum's AI Governance Alliance, in collaboration with Accenture, aims to collect and recognize innovative AI use cases that inspire community engagement and facilitate "combinatorial" thinking around high-value AI applications. As part of this effort, the Forum will use the aforementioned criteria to assess promising AI applications.

As genAI becomes more widespread, addressing its risks is crucial for responsible and successful adoption. Key challenges include ensuring genAI's security and reliability to prevent issues like data breaches, privacy violations and unauthorized model usage. Accountability and oversight are also essential to maintaining transparency and managing complex responsibilities within AI ecosystems.

For the ethical use of AI, for example, mitigating bias and discrimination is necessary to avoid amplifying inequalities. Meanwhile, managing risks like misinformation, environmental impact and job displacement are key to building societal trust.

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3 AI's potential future

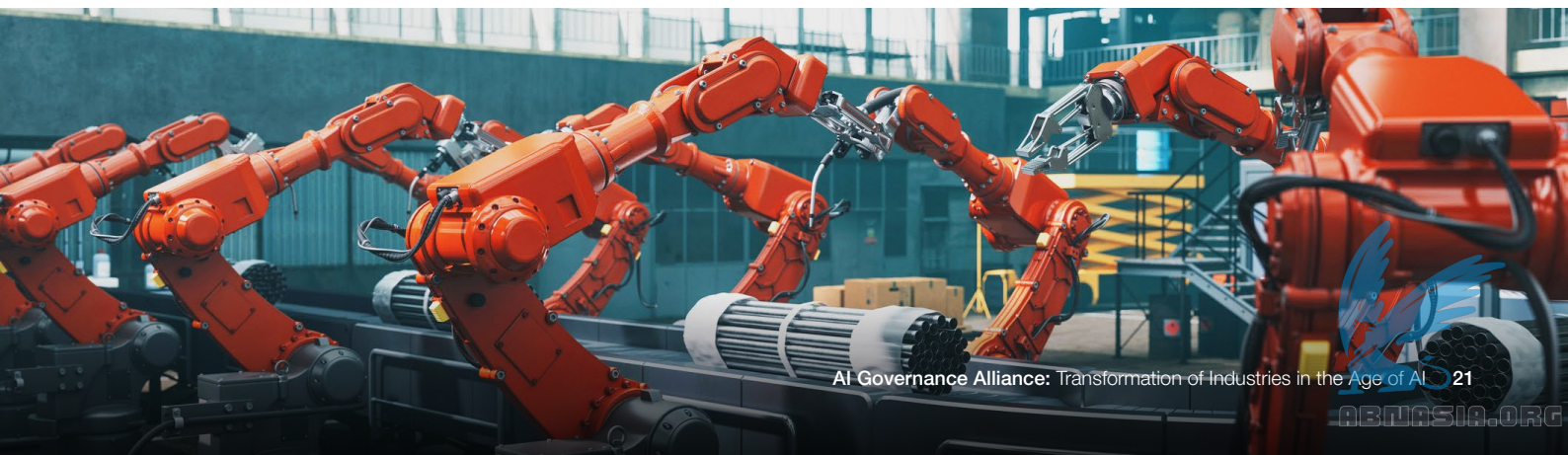
AI shows great promise in breakthrough innovations, from scientific discovery to sustainability, healthcare and beyond, shaping a transformative future.

> Integrating advanced reasoning capabilities into genAI applications will enable AI systems to be more effective at assisting humans.

The most disruptive changes are often those we cannot yet foresee. Nevertheless, certain market shifts are already apparent, providing valuable insights into potential future directions for AI. It may be said that advances in AI – combined with its convergence with other emerging technologies, such as spatial computing, quantum computing and enhanced computing architectures – are poised to disrupt specific industries and capabilities at varying paces.

Most experts also agree that widespread AI integration will drive business transformation across all industries in the coming years. This will be in the form of operational-efficiency enhancements that will catalyse changes spanning analytics, programming, product and strategy development, sales, communications and customer support. Consider the following three promising waves:

1. **Full automation of complex, repetitive tasks**: AI agents, working collaboratively, can enable the full automation of complex, repetitive tasks across various industries, streamlining operations and allowing humans to focus on more advanced tasks. This automation will allow workers to shift focus to more strategic activities. Implementing agents and multi-agent systems at scale will also facilitate automation in industries such as manufacturing, logistics and customer service, driving operational efficiency and enabling cost savings while enhancing overall productivity.[56] By 2028, functions and industries – such as manufacturing and financial services – will see significant gains as AI agents manage production lines, optimize supply-chain operations with minimum human supervision and handle customer support and fraud detection with ease.[57]
2. **More contextualized and personalized decision-making**: Integrating advanced reasoning capabilities into genAI applications will enable AI systems to be more effective at assisting humans in navigating complex environments and making situation-aware decisions. This progress will also deeply impact industries by supporting adaptive solutions – from personalized treatment plans in healthcare to highly personalized consumer experiences. In consumer industries, AI is set to enhance sales capabilities by providing data-driven insights and personalized strategies, enabling sales teams to optimize customer engagement, improve lead generation, and offer tailored solutions and experiences. The education sector will benefit, too, as genAI creates adaptive learning content and real-time assessments. For example, 2024 saw the first commercial experiments with foundation models that had "reasoning" capabilities.[58] Advances in natural language processing have improved dialogue and storytelling as well, thereby enhancing the quality of user interactions and personalized experiences.
3. **Enhanced individual efficiency and capabilities**: The integration of AI-enabled handheld devices, advanced edge AI and compact language models has the potential to revolutionize work by automating tasks, managing schedules and providing real-time information. These innovations enable faster, more informed decision-making, effective communication and more productive behaviours. Instant access to critical insights enhances personal and professional decision-making. This shift will likely reshape how individuals and businesses operate, similar to the transformative impact of the internet.



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Future ambitions of AI impact

In the short term, organizations have primarily focused on implementing AI proof of concepts to evaluate the technology, demonstrate feasibility and identify future use cases. However, as AI investments continue to grow, it is crucial to look beyond these short-term gains and explore applications of AI that could drive transformative change for both businesses and society, addressing some of the world's most pressing challenges.

While the trends mentioned are expected to deliver value in the coming years, predicting the exact timeline remains challenging. However, organizations that take an enterprise-wide approach and pursue broader AI ambitions will be better positioned to harness genAI effectively, leading the way in innovation and progress.

The following are examples of AI's potential future impact:

1. **Speeding up drug discovery and disease detection in healthcare**. As technology advances, AI is set to accelerate both drug discovery and the early detection of diseases like cancer,[59] potentially enabling breakthroughs that could address some of the world's most pressing health challenges. AI-driven simulations could eventually predict treatment outcomes, optimize therapies and identify early indicators of diseases – paving the way for more proactive healthcare. These potential advances also hold promise for creating personalized healthcare solutions tailored to each patient's unique needs. To make these goals a reality, there are, of course, various challenges to overcome, including data-sharing restrictions, biases, privacy concerns and transparency issues. Additionally, the impact of AI on the patient-doctor relationship is an important area to monitor as AI tools become more integrated into healthcare settings.[60]

CASE STUDY 15

AI transforming healthcare

Early cancer detection with synthetic biopsy: **Earli** is pioneering in oncology by differentiating between healthy and cancerous cells using programmable genetic constructs. Their method, termed "synthetic biopsy", reacts to the presence of active cancer cells at an early stage, facilitating rapid development of personalized treatments by pharmaceutical and biotech firms, potentially reducing both time and costs associated with cancer care.[61]

Human and AI collaboration: **Apollo Hospitals**, in collaboration with a tech partner, has harnessed AI to revolutionize cardiovascular risk assessment. By mining data from over 500,000 patient records, this tool not only accounts for genetic variances unique to Indian populations but also achieves nearly 90% accuracy in predicting 10-year cardiovascular risk, aiding clinicians in preventive care strategies.[62]

Sophisticated healthcare delivery: **CVS Health** has implemented a data intelligence platform that uses AI to refine customer interactions across its network of over 10,000 stores. By analysing customer behaviour, CVS optimizes the timing and channels for prescription reminders, which has led to a significant improvement in medication adherence by 1.6%, ultimately enhancing patient health outcomes and reducing healthcare expenditures.[63]

2. **Expanding access to tailored education content**: AI can help make personalized learning experiences widely accessible, creating customized content that meets the diverse needs of students, employees and lifelong learners. This means enabling tailored learning paths and resources for every student, supporting inclusive learning environments and improving outcomes across age groups and abilities. For industry professionals, AI-driven training and upskilling programmes can adapt in real time to individual performance, continuously improving to maximize learning impact. This approach also aligns with the concept of a "two-sigma shift" in education outcomes, where each student or employee benefits from a personal (AI) tutor – potentially transforming classrooms, workplace training and much more.[64]

3. **Predicting and responding to climate disasters**: By analysing massive amounts of data quickly and accurately, the latest AI models could greatly improve disaster preparedness and resource planning. This progress would significantly impact three areas: 1) reducing emissions, 2) building adaptation and resilience to climate impact, and 3) advancing climate modelling, economics, education and related research. Together, this comprehensive approach would help to better manage and respond to climate challenges.[65]

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4 **Advancing sustainability**: AI could play a growing role in other sustainability efforts by offering tools for optimizing energy use, managing waste and supporting companies during their sustainability transformations.[66] AI-driven systems, for example, could enable real-time monitoring of environmental data, predictive modelling for climate scenarios, efficient resource allocation and integration of renewable energies.[67] The increased energy demands as a result of increased AI adoption is an impact that needs to be carefully considered and managed.[68]

CASE STUDY 16

AI's role in sustainability and efficiency

Transforming aviation sustainability: By using AI to create digital twins of engines, **Rolls-Royce** can now analyse real-time data to optimize performance and reduce unnecessary maintenance. This approach has already saved 22 million tons of carbon and extended maintenance intervals by up to 50%, helping airlines avoid costly downtime and reduce parts waste.[69]

Future of consumer industries: **SupPlant**, a technology firm focused on precision agriculture, uses extensive data from thousands of growing seasons to enhance irrigation commands and optimize water use. The firm efficiently manages 1.5 billion sensor data points across 2,000 crop seasons. This collaboration promotes a proactive approach that helps farmers prevent plant stress, reduce fruit loss, maximize crop potential and manage water resources much more efficiently than with alternative techniques.[70]

AI mapping of icebergs: Accurate mapping of icebergs is crucial to tracking the effects of climate change. Researchers at the **University of Leeds** recently unveiled a neural network that can accurately map large Antarctic icebergs with the help of satellite images. More impressive still, their AI can do this in just 0.01 seconds – compared to the hugely time-consuming manual efforts that were needed previously to complete the same task.[71]

Data-centricity yielding energy generation: Using an AI-enabled digital twin platform, a leading multi-energy company optimized wind turbine alignment in large wind farms where traditional machine learning had limitations. The platform combined physics and data to analyse wind farm dynamics, optimizing yaw alignment to increase power output without disrupting airflow. This solution generated $15 million in annual value at a single site, with scalable potential across other farms.[72]

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5 **Accelerating breakthrough science**: Leading AI firms have demonstrated in recent years how AI can significantly accelerate scientific progress by unlocking entirely new research possibilities in fields like biology, chemistry, mathematics and physics. Nuclear fusion, for instance, holds immense promise as a potential source of limitless, carbon-free energy. To address the major engineering challenges required to unlock this promising technology, a leading company in the AI space collaborated with the Swiss Plasma Center to develop an AI system capable of predicting and controlling plasma behaviour in a tokamak-style fusion reactor.[73] The cutting-edge system can "sculpt" plasma into various experimental shapes – thereby advancing understanding of how to control plasma and, ultimately, harness nuclear fusion as a sustainable energy source.

CASE STUDY 17

Using AI to accelerate science progress

Future of healthcare: **AlphaFold** is an advanced AI system using diffusion models that accurately predicts the 3D protein structure from an amino acid sequence. AlphaFold's exceptional accuracy has greatly accelerated scientific research, enabling better understanding of diseases and faster discovery of new drugs. By providing structural insights into over 200 million proteins, AlphaFold has the potential to transform fields like medicine, biotechnology and molecular biology.[74]

AI for material science with sequential learning: **Merck** employed a sequential learning platform to develop advanced semiconductor manufacturing materials. The platform generated chemical descriptors and predicted key properties for various formulations, rapidly identifying fundamental relationships and optimization potential. Ultimately, the model pinpointed only the few most relevant highest-performing formulations. This AI-driven approach successfully navigated a complex multi-parameter space and significantly saved experimental costs in the order of hundreds of thousands of euros per campaign, ultimately leading to efficient customer sampling of new materials optimized for sensitivity and reduced defectivity.

6 **Bridging languages, cultures and communities**: AI-powered universal translation has the potential to transform global interactions by providing precise, professional-grade translations across languages and dialects. It breaks down communication barriers, promotes inclusivity and expands the reach of local cultures. This technology can equalize educational opportunities by making learning materials universally accessible, enhance healthcare through effective multilingual communication and support global business by streamlining collaboration and trade. It promotes cultural exchange through art and media, democratizes information and empowers societies in an interconnected world while also preserving endangered languages by giving them global exposure and relevance.

CASE STUDY 18

Towards universal translation

Translated and Cineca are collaborating to develop an advanced AI translation system using one of the world's most powerful supercomputers, Leonardo. By using a unique 15-year dataset and 10 million GPU (graphics processing units) training hours, they aim to create an AI translation model with an error rate of less than three per thousand words, initially focusing on Italian-English translations. This private-public project will result in an open-source language model with the potential to significantly improve machine translation capabilities.[75]

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Conclusion

The AI revolution is not just about powerful new technology and increasing productivity – it represents a fundamental organizational transformation and rethinking around value.

As leaders focus on experimenting with AI value across the value chain, their ability to scale AI adoption and make an impact for business and society will determine success in an increasingly dynamic landscape. Scaling AI requires more than initial implementation – it demands clear frameworks and targeted support to address foundational gaps and guide organizations through each phase of adoption, from pilot to full integration. Companies that proactively embrace this change while staying committed to ethical principles and human-centred design will be best positioned to thrive in this new era.

In this rapidly evolving field, it is essential for organizations to approach the journey with a collaborative and growth mindset to keep with the pace of change. Learning from each other's experiences is crucial to staying competitive in a landscape where progress hinges on shared insights and adaptive strategies.

To address this need, the World Economic Forum AI Transformation of Industries initiative, together with over 600 multistakeholder organizations of the AI Governance Alliance, will continue to provide a neutral space to unlock new collaborations and support companies in their AI adoption journeys. By sharing insights from industry leaders at the forefront of AI integration and facilitating multistakeholder collaboration, the initiative aims to amplify the technology's positive impact on businesses and society alike.

Companies are invited to join the AI Transformation of Industries initiative to participate in mutual learning, unlock new partnerships and gain insights from best-in-class AI applications while advancing industry- and region-specific agendas and accelerating solutions to global challenges.

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Endnotes

1. Daugherty, Paul. (2025). *Embracing Gen AI at Work.* https://hbr.org/2024/09/embracing-gen-ai-at-work.
2. Accenture. (2024). *Reinvention in the age of generative AI*. https://www.accenture.com/us-en/insights/consulting/total-enterprise-reinvention.
3. Accenture. (2024). *The productivity payoff: Unlock competitiveness with gen AI*. www.accenture.com/us-en/insights/strategy/productivity-payoff.
4. Accenture. (2024). *New Accenture Research Finds That Companies with AI-Led Processes Outperform Peers*. https://newsroom.accenture.com/news/2024/new-accenture-research-finds-that-companies-with-ai-led-processes-outperform-peers.
5. Accenture. (2024). *Transform, Not Just Reduce, Your Costs | Accenture.* www.accenture.com/us-en/blogs/business-functions-blog/cost-transformation.
6. Brainbox AI. (2024). *ARIA: Your Building AI Engineer*. https://brainboxai.com/en/aria-your-building-ai-engineer#item_widget_1710180948956_5.
7. Caylent. (2024). *Caylent Leverages AWS to Support the Development of BrainBox AI's ARIA.* https://caylent.com/blog/caylent-leverages-aws-to-support-the-development-of-brain-box-ai-aria.%20Accessed%2018%20Nov.%202024.
8. Mindbody. (2022). *Growing Your Business with AI/ML*. www.mindbodyonline.com/business/education/blog/growing-your-business-aiml.
9. Accenture. (2024). *Going for growth, navigating the great value migration in the age of AI*. https://www.accenture.com/us-en/insights/strategy/ai-enabled-growth.
10. Accenture. (2024). *Work, Workforce, Workers. Reinvented in the Age of Generative AI*. https://www.accenture.com/us-en/insights/consulting/gen-ai-talent.
11. UserTesting. (2019). *Consumer Perceptions of AI in Retail and Ecommerce Report.* www.usertesting.com/resources/reports/consumer-perceptions-ai-retail-and-ecommerce.
12. LSEG. (2024). *Q1 Trading Update April 25, 2024*. www.lseg.com/en/investor-relations/financial-results/trading-update-25-april-2024.
13. Databricks. (2022). *Driving gamer personalization for millions.* www.databricks.com/customers/mojang.
14. Quantum Zeitgeist. (2024). *The Intersection of AI and Quantum Computing.* https://quantumzeitgeist.com/intersection-of-ai-and-quantum-computing/.
15. IDC. (2024). *Worldwide Spending on Artificial Intelligence Forecast to Reach $632 Billion in 2028, according to a New IDC Spending Guide.* https://www.idc.com/getdoc.jsp?containerId=prUS52530724
16. IDC. (2024). *Worldwide Artificial Intelligence IT Spending Forecast (October 2024).* www.idc.com/getdoc.jsp?containerId=prUS52530724.
17. Accenture. (2024). *Work, Workforce, Workers. Reinvented in the Age of Generative AI*. https://www.accenture.com/us-en/insights/consulting/gen-ai-talent.
18. Accenture. (2024). *Going for growth, navigating the great value migration in the age of AI*. https://www.accenture.com/us-en/insights/strategy/ai-enabled-growth.
19. IDC. (2024). *Worldwide Spending on Artificial Intelligence Forecast to Reach $632 Billion in 2028, according to a New IDC Spending Guide.* https://www.idc.com/getdoc.jsp?containerId=prUS52530724.
20. McKinsey. (2024), *Gen AI casts a wider net*, https://www.mckinsey.com/featured-insights/sustainable-inclusive-growth/charts/gen-ai-casts-a-wider-net.
21. Global Newswire. (2024, 20 November). *Menlo Ventures' 2024 State of Generative AI Report Reveals 6x Spike in Enterprise Spending as Market Leaders Shift*. https://www.globenewswire.com/news-release/2024/11/20/2984728/0/en/Menlo-Ventures-2024-State-of-Generative-AI-Report-Reveals-6x-Spike-in-Enterprise-Spending-as-Market-Leaders-Shift.html.
22. McKay, T. (2024, 31 July). *Why generative AI might drive up software spend, but not profits*. IT BREW. https://www.itbrew.com/stories/2024/07/31/why-generative-ai-might-drive-up-software-spend-but-not-profits.
23. Shaw, J. (2024). The Role of AI in Operational Efficiency: Beyond the Silver Bullet. *CIO*. www.cio.com/article/3496380/the-role-of-ai-in-operational-efficiency-beyond-the-silver-bullet.html.
24. Edelman, D. & Abraham, M. (2022). Customer Experience in the Age of AI. *Harvard Business Review*. https://hbr.org/2022/03/customer-experience-in-the-age-of-ai.
25. Accenture. (n.d.). *Putting Generative AI in the Driver's Seat*. www.accenture.com/us-en/case-studies/automotive/bmw-puts-generative-ai-in-the-drivers-seat.
26. SAP. (2017). *Hear How Business AI Changed Asset Management in Train Travel for SBB.* www.sap.com/assetdetail/2024/06/28390918-c27e-0010-bca6-c68f7e60039b.html.
27. BCG Global. (2024). *AI Adoption in 2024: 74% of Companies Struggle to Achieve and Scale Value.* www.bcg.com/press/24october2024-ai-adoption-in-2024-74-of-companies-struggle-to-achieve-and-scale-value.

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28. Accenture. (2024). *Accelerating reinvention to support growth with AI-powered operations*. https://www.accenture.com/us-en/insights/strategic-managed-services/reinvent-operations-with-genai.
29. SAP. (2024). *SAP Innovations Awards 2024 - 4350 - Advanced Micro Devices, Inc. (AMD).* www.sap.com/documents/2024/01/044975a3-a77e-0010-bca6-c68f7e60039b.html.
30. Groumpos, P. (2023). A Critical Historic Overview of Artificial Intelligence: Issues, Challenges, Opportunities, and Threats. *Artificial Intelligence and Applications*, vol. 1, no. 4, pp. 197-213. https://doi.org/10.47852/bonviewAIA3202689.
31. Chakravorti, B. (2024). AI's Trust Problem. *Harvard Business Review*. https://hbr.org/2024/05/ais-trust-problem?ab=HP-hero-featured-image-1.
32. Accenture. (2024). *Work, Workforce, Workers. Reinvented in the Age of Generative AI*. https://www.accenture.com/us-en/insights/consulting/gen-ai-talent.
33. The University of Queensland. (2023). *Trust in Artificial Intelligence: A Global Study.* https://doi.org/10.14264/00d3c94.
34. Dobrygowski, D. & Valkhof, B. (2024). *Explainer: What Is Digital Trust in the Intelligent Age?*. World Economic Forum. www.weforum.org/stories/2024/11/explainer-what-is-digital-trust-in-the-intelligent-age/.
35. Accenture. (2024). *Work, Workforce, Workers. Reinvented in the Age of Generative AI*. https://www.accenture.com/us-en/insights/consulting/gen-ai-talent.
36. World Economic Forum. (2022). *Earning Digital Trust: Decision-Making for Trustworthy Technologies.* www.weforum.org/publications/earning-digital-trust-decision-making-for-trustworthy-technologies/.
37. KPMG. (2023). *Trust in Artificial Intelligence*. kpmg.com/xx/en/our-insights/ai-and-technology/trust-in-artificial-intelligence.html.
38. Accenture. (2024). *Accenture Takes New Steps to Help Clients Scale Generative AI Responsibly*. https://newsroom.accenture.com/news/2024/accenture-takes-new-steps-to-help-clients-scale-generative-ai-responsibly.
39. World Economic Forum. (2024). *Digital Trust Framework*. https://initiatives.weforum.org/digital-trust/framework.
40. Gartner. (2024). *Gartner Top 10 Strategic Technology Trends for 2025*. www.gartner.com/en/articles/top-technology-trends-2025.
41. Lecher, C. (2024). NYC's AI Chatbot Tells Businesses to Break the Law. *The Markup.* themarkup.org/news/2024/03/29/nycs-ai-chatbot-tells-businesses-to-break-the-law.
42. World Economic Forum. (2023). *The Future Job Report 2023*. https://www.weforum.org/publications/the-future-of-jobs-report-2023/.
43. Accenture. (2024). *Work, Workforce, Workers. Reinvented in the Age of Generative AI*. www.accenture.com/us-en/insights/consulting/gen-ai-talent.
44. Eightfold. (2024). *Chevron.* https://eightfold.ai/customers/customer-stories/chevron/.
45. World Economic Forum. (2024). *Global Cybersecurity Outlook 2024*. www.weforum.org/publications/global-cybersecurity-outlook-2024/.
46. Palo Alto Networks. (2015). *Explore Cortex XSIAM Security Analytics*. www.paloaltonetworks.ca/cortex/cortex-xsiam.
47. Databricks. (2022). *Customer Story: AT&T.* www.databricks.com/customers/att.
48. Accenture. (2024). *Reinventing with a Digital Core | Tech Infrastructure.* www.accenture.com/us-en/insights/technology/reinventing-digital-core.
49. Accenture. (2024). *Data readiness in the age of generative AI.* www.accenture.com/content/dam/accenture/final/accenture-com/document-3/Accenture-the-new-data-essentials-the-road-to-data-readiness-report.pdf#zoom=40.
50. Accenture. (2024). *Building a reinvention-ready digital core*. www.accenture.com/us-en/insights/technology/building-reinvention-ready-digital-core.
51. Spotify. (2024). *AI Leaders Podcast #66: Gen AI and Data Privacy: A Dive into Confidential Computing.* open.spotify.com/episode/2ytNMQj1kGabhfedc3KShF?si=69cf42df824046d2&nd=1&dlsi=dde678cca3d44e94.
52. Accenture. (2024). *Data Services, Services & Solutions*. www.accenture.com/us-en/services/data-ai/cloud-data-ai.
53. Accenture. (n.d.). *Is your data ready to power AI reinvention?* www.accenture.com/content/dam/accenture/final/accenture-com/document-3/Accenture-Is-Your-Data-Ready-To-Power-AI-Reinvention-Report.pdf.
54. Accenture. (2024). *Data Essentials with Generative AI*. www.accenture.com/nz-en/insights/data-ai/new-data-essentials.
55. International Business Machines. (2017). *IBM 5G and Edge Computing.* www.ibm.com/cloud/smartpapers/5g-edge-computing/.
56. Anthropic. (2024). *Introducing computer use, a new Claude 3.5 Sonnet, and Claude 3.5 Haiku.* www.anthropic.com/news/3-5-models-and-computer-use.
57. Gartner. (2024). *Intelligent Agents in AI Really Can Work Alone. Here's How.* www.gartner.com/en/articles/intelligent-agent-in-ai.
58. OpenAI. (2024). *Introducing OpenAI o1*. www.openai.com/o1/.
59. Niramai. (2024). *Thermalytix: AI-Powered Breast Cancer Screening Test*. www.niramai.com/about/thermalytix/.

ABNASIA.ORG

60. Topol, EJ. (2019). High-performance medicine: the convergence of human and artificial intelligence. *Nat Med*, vol. 25, no. 1, pp. 44-56. https://pubmed.ncbi.nlm.nih.gov/30617339/.
61. Earli. (2024). *The Earli Story.* www.earli.com/about.
62. Apollo Hospitals. (2023). *This Medical AI Program Is Saving Lives! Here's Why You Need to Read This Right Now.* www.apollohospitals.com/health-library/this-medical-ai-program-is-saving-lives-heres-why-you-need-to-read-this-right-now/.
63. Databricks. (2020). *Customer Story: CVS Health.* www.databricks.com/customers/cvs-health.
64. Khan, S. (2024). *Brave New Words.* Penguin Random House.
65. BCG. (2023). *How AI Can Speed Climate Action.* www.bcg.com/publications/2023/how-ai-can-speedup-climate-action.
66. Wegener, J. et al. (2024). *How AI and Climate Change Innovations Can Be Used in the Real World.* World Economic Forum. www.weforum.org/stories/2024/05/ai-lift-climate-research-out-lab-and-real-world/.
67. Schneider Electric Blog. (2023). *Store, sell, or consume? AI-powered energy decisions for prosumers*. https://blog.se.com/digital-transformation/artificial-intelligence/2023/01/30/store-sell-or-consume-ai-powered-energy-decisions-for-prosumers/.
68. Mendelsohn, S. (2024). *AI Will Accelerate Sustainability — But Is No Silver Bullet*. World Economic Forum. www.weforum.org/stories/2024/09/ai-accelerator-sustainability-silver-bullet-sdim/.
69. Databricks. (2024). *Harnessing the Power of Databricks Mosaic AI for Image Generation at Rolls-Royce.* www.databricks.com/blog/rolls-royce-mosaic-ai.
70. DataStax. (2024). *SupPlant*. www.datastax.com/enterprise-success/supplant.
71. The European Space Agency. (2023). *AI Maps Icebergs 10,000 Times Faster than Humans.* www.esa.int/Applications/Observing_the_Earth/Copernicus/Sentinel-1/AI_maps_icebergs_10_000_times_faster_than_humans.
72. CausaLens. (2023). *Energy & Utilities*. https://causalens.com/industry/energy-utilities/.
73. Google DeepMind. (2022). *Accelerating Fusion Science through Learned Plasma Control.* https://deepmind.google/discover/blog/accelerating-fusion-science-through-learned-plasma-control/.
74. Google Deepmind. (2022). *AlphaFold.* https://deepmind.google/technologies/alphafold/.
75. Translated. (2024). *The Power of Languages Towards the Universal Translator*. www.translated.com/the-power-of-languages.

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