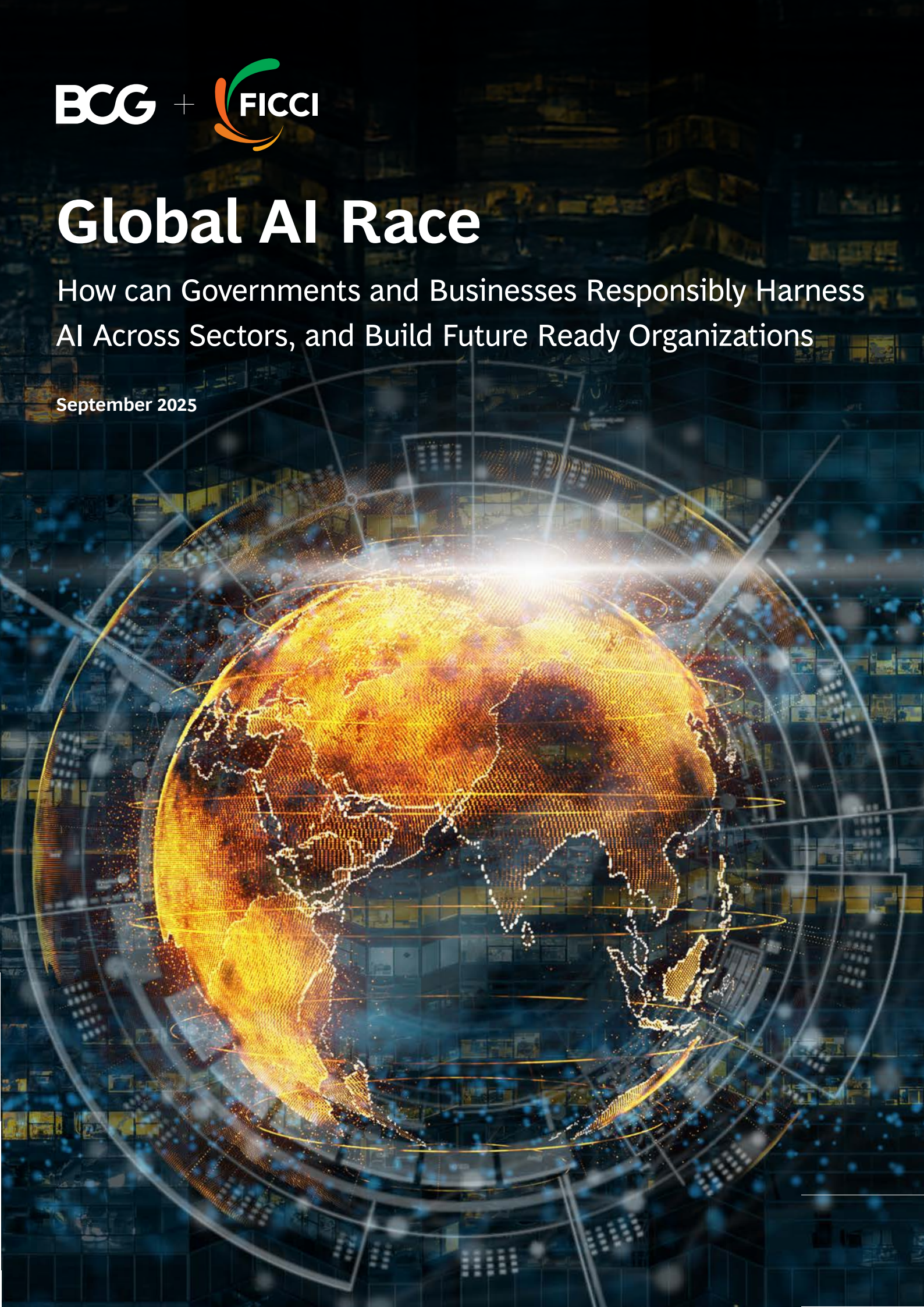
BCG + FICCI

Global AI Race

How can Governments and Businesses Responsibly Harness AI Across Sectors, and Build Future Ready Organizations

September 2025





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Foreword

Artificial Intelligence (AI) is rapidly emerging as the defining technology of our time, reshaping economies, transforming industries, and influencing the global balance of power. As countries and companies race to capture its potential, the benefits remain unevenly distributed, raising the risk of a widening digital and economic divide. While most developed economies have national AI strategies, many developing nations continue to lag across critical dimensions. On talent alone, nearly one in three AI experts who relocate choose to move to the United States.

The insights in this white paper highlight both the consequences and the challenges of this race. From overcoming barriers that impede businesses from scaling impact, to enabling the right ecosystems of compute, talent, and governance, the path forward demands coordinated action. The RISE framework, spanning Research, Investment, Skilling, and Ethics, emerges as one important pillar of this journey. It must also be coupled with innovation, bold leadership, and global collaboration to unlock AI's full promise. To derive value and drive global equitable growth, we must build strong supportive ecosystems.

Governments must prioritize enabling infrastructure and responsible governance; businesses must move beyond pilots and embed AI at scale; and global institutions must foster cooperation to bridge divides. Together, we can ensure that AI is not just a race for advantage, but a collective pursuit of progress that unlocks value for the world.

At Boston Consulting Group, we are privileged to work with policymakers, businesses, and civil society across the world to shape strategies that balance innovation with responsibility. We believe that by combining foresight with collective action, AI can become not only a source of competitiveness for a few, but a driver of inclusive growth for all.



Saibal Chakraborty
Managing Director and Senior Partner
BCG



FICCI, in collaboration with Boston Consulting Group, is pleased to present this white paper launched under the aegis of FICCI LEADS. It aims to address a critical challenge: While AI is reshaping economies, benefits remain uneven across nations, sectors, and businesses.

While many organizations have successfully piloted AI projects, true transformation requires moving beyond small-scale experiments to achieving enterprise-wide impact. This paper serves as a guide for both governments and businesses, offering practical steps to scale AI initiatives across four key pillars: compute, data, models, and talent. We also delve into the critical need to build public trust and ensure the responsible, people-centric adoption of AI.

For businesses, AI is not merely a technological upgrade; it is a catalyst for unlocking unprecedented growth, efficiency, and productivity. Companies that have successfully integrated AI into their core operations and culture are already achieving transformative results, from accelerated product innovation to enhanced customer satisfaction.

Moving towards widespread adoption requires us to collectively navigate and overcome challenges such as bridging skill gaps, modernizing legacy infrastructure, and empowering organizations to embrace change. Organizations that invest equally in their people and processes, in addition to technology, will ultimately lead the way.

FICCI is committed to continuing its role as a convener of global leaders, a catalyst for partnerships, and a source of pragmatic policy recommendations. Our goal is to ensure that AI becomes a powerful driver of inclusive socio-economic development.

We hope this paper will be informative for policymakers, industry, academia, and civil society to move from experimentation to enterprise-wide impact.



Jyoti Vij
Director General
FICCI



Executive Summary

Artificial Intelligence (AI) has emerged as the defining technology of the 21st century, reshaping economies and businesses. By 2030, it is projected to add nearly USD 15.7 trillion to global GDP[1], unlocking unprecedented productivity gains and accelerating innovation across sectors. AI is more than a tool; it is fast becoming a strategic asset that underpins global influence and drives socio-economic progress. This makes it essential for countries and businesses to invest decisively in AI capabilities and resources.

The global AI race is unfolding across four related dimensions: compute, data, models, and talent. A few countries, such as the United States (US) and China, have taken an early lead by investing in research and development. Others, such as India, the European Union (EU), Singapore, the United Arab Emirates (UAE), and Israel, have endeavored to focus on building applications, specialized talent pipeline, and regulatory innovation. Many nations that face structural barriers in infrastructure, funding, and talent risk being left behind, and completely dependent on imported solutions. This unevenness is also visible across industries—while finance and healthcare, along with sector agnostic solutions are advancing rapidly, others such as agriculture and public services remain constrained by the longer gestation periods.

Together, these disparities are creating a widening "AI divide". In 2023, over 66% of developed economies had an AI strategy in place, compared to only 30% in developing and 12% in least developed ones[2]. On the business front as well, organizations that adopt AI in strategic ways are seeing an outsized improvement in their performance. For example, 34% of organizations use AI to create new Key Performance Indicators (KPIs); the ones that do so are 3x more likely to see greater financial benefit[3].

Businesses are increasingly focused on implementing AI for economic gains. However, despite this traction, many remain stuck in pilots and struggle to scale impact. Skill gaps, difficulties in embedding AI into business processes, and navigating cultural resistance are key barriers which slow adoption. To catalyze impact at scale, leadership must focus on integrating AI into the core of their business, starting with quick wins that build confidence, then embedding AI more deeply into processes while empowering people to create greater value.

At an ecosystem level, there are structural inequities in infrastructure, capital, skills, and governance across nations. Access to compute remains prohibitively expensive and scarce. Data, though abundant, is often fragmented, localized, non-digitized or of poor quality, restricting

1. By 2030, AI will contribute $15 trillion to the global economy | World Economic Forum; 2. AI market projected to hit $4.8 trillion by 2033, emerging as dominant frontier technology | UN Trade and Development (UNCTAD); 3. How AI-Powered KPIs Measure Success Better | BCG



scalability. Talent remains limited and highly concentrated in a few geographies, fueling global competition for AI expertise. Funding remains constrained, particularly for AI infrastructure and socially sensitive sectors. Trust in AI remains fragile, with bias, misinformation, and opaque systems threatening public confidence, while fragmented regulatory frameworks make compliance and innovation complicated.

Nations must 'RISE' to the occasion and intervene across four key levers—Research, Investment, Skilling, and Ethics (RISE). Research requires building open, collaborative, public-private ecosystems and fostering innovation. Investment must extend beyond obvious RoI-generating segments to strengthen the digital backbone and support socially sensitive sectors. Targeted Skilling is essential to bridge the widening talent gap through revamped curriculum, reskilling of the workforce, and knowledge sharing. Upholding Ethics requires robust governance frameworks that balance innovation with safety, ensuring trust and adoption. A formidable example is the IndiaAI Mission, backed by an investment of over INR 10,000 crore. It has a holistic approach, focusing on compute capacity, application development, future skilling, startup financing, and safe and trusted AI. The Mission seeks to position India as a global hub for inclusive and responsible AI innovation.

AI represents both an unprecedented growth opportunity and a strategic necessity. Nations and businesses must bridge the AI divide, unlock productivity across sectors, and secure global competitiveness.



CHAPTER 1

The Global AI Opportunity

AI Transforming Nations and Economies

AI is emerging as the defining technology of the 21st century, reshaping industries, economies, and geopolitics. Its economic potential is immense; AI is expected to contribute USD 15.7 trillion to the global economy by 2030[1]. Research & Development (R&D) cycles have shortened from years to months[2]. Early adopters across industries are capturing disproportionate gains with enhanced productivity. For example, manufacturers using AI for predictive maintenance, report double-digit efficiency improvements[3].

The transformative impact of AI extends beyond commercial gains to include powerful socio-economic benefits. In agriculture, AI-driven analytics are raising crop yields by as much as 20%[4], and in education, adaptive learning platforms are personalizing instruction at scale, growing the AI education market to USD 112.3 billion[5]. A notable example is China's Squirrel AI system, an AI-driven adaptive learning platform, which improved students' accuracy in answering questions from 78% to 93% by

1. By 2030, AI will contribute $15 trillion to the global economy | World Economic Forum; 2. BCG X Launches AI Science Institute to Help Companies Accelerate Scientific Research from Innovation to Impact; 3. Shaking Up the Factory Floor with Digital and AI | BCG; 4. Farms of the future: How can AI accelerate regenerative agriculture? | World Economic Forum; 5. Using AI in education to help teachers and their students | World Economic Forum

providing personalized learning paths; it currently serves over 24 million students[6]. During the COVID-19 pandemic, AI models accelerated vaccine research and diagnostics[7], showcasing the technology's ability to address urgent societal challenges.

For governments, advanced AI capabilities now underpin national security, cyber defense, and intelligence operations, making leadership in this domain synonymous with strategic autonomy and international leverage. Nations and businesses which can mobilize AI at scale will secure not just economic advantage, but also strategic leadership in the decades ahead.

Yet, the benefits of AI are not distributed evenly. Access to compute, data, talent, and capital remains concentrated among a few advanced economies and tech giants. This uneven landscape is driving a global race to build AI ecosystems, comprising infrastructure, talent pipelines, regulatory frameworks, and innovation networks.

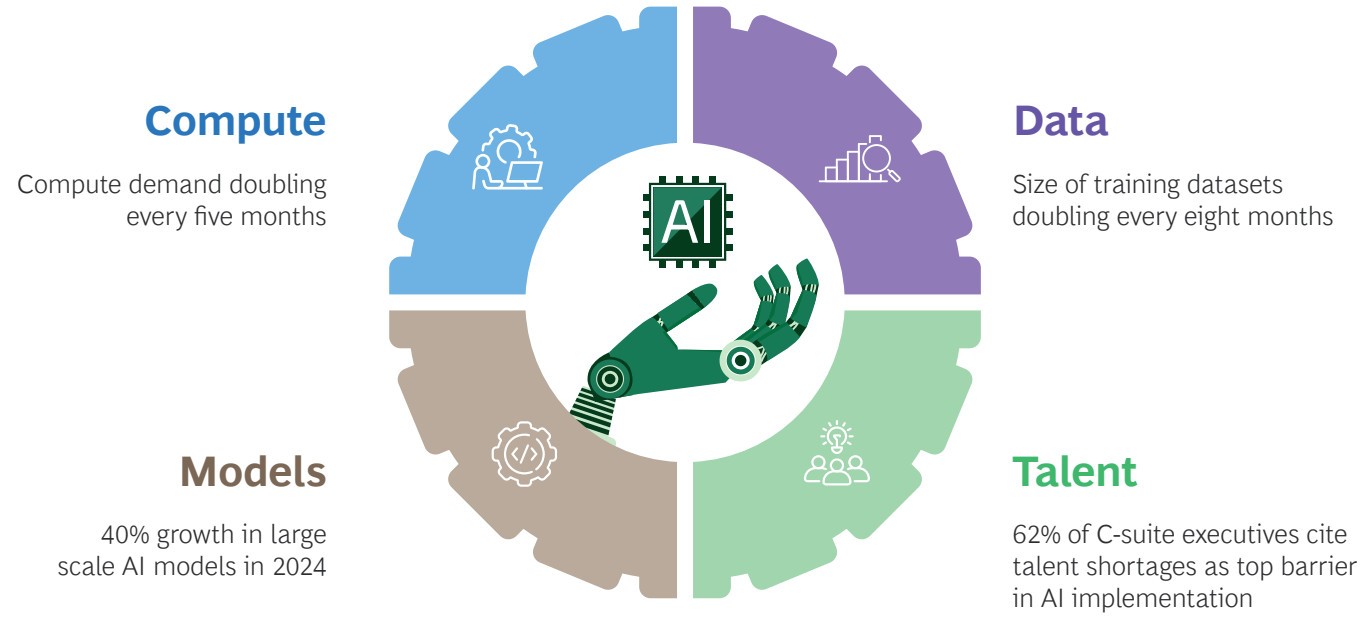
Dimensions of the Global Race on AI

Success in AI is increasingly being determined along four interdependent dimensions—compute, data, models, and talent, each being a critical lever underpinning outcomes for the AI ecosystem, as shown in Exhibit 1.

- **Compute:** Compute power is the foundation of AI progress and as mentioned in Exhibit 1, the volume of power needed is growing exponentially with compute demand for training frontier models now doubling roughly every five months[8]. Advanced Graphics Processing Unit (GPUs), cloud infrastructure, and hyperscale data centers are becoming strategic assets, yet access to them remains highly unequal. Leading economies maintain their edge through dominance in supply chains, while developing countries face financial and infrastructure barriers. Interventions such as export controls and trade restrictions also further widen the divide.

EXHIBIT 1

Dimensions of the Global Race on AI



Source: The 2025 AI Index Report | Stanford HAI; Epoch AI; Five Must-Haves for Effective AI Upskilling | BCG

6. Using AI in education to help teachers and their students | World Economic Forum; 7. How cutting-edge AI is helping scientists tackle COVID-19 | World Economic Forum; 8. The 2025 AI Index Report | Stanford HAI

- **Data:** Although today's digital world generates vast amounts of data, high-quality, domain-specific datasets remain scarce. Wealthier countries can build or buy them, while lower-income nations lack access, deepening disparities. Meanwhile, privacy and localization laws like General Data Protection Regulation (GDPR), California Consumer Protection Authority (CCPA), and the EU AI Act are impeding global data flows[9], forcing developers to maintain separate pools. Countries with large user bases, like India, or with rich datasets, like Germany's industrial data, can gain an advantage if they harness them effectively.

- **Models:** Foundation models are now the centerpiece of AI competition. As mentioned in Exhibit 1, 167 large scale AI models were released in 2024, up from 119 in 2023, about a 40% increase[10]. The US remains dominant, producing 40 of the 60 new notable models launched in 2024[10]. However, the competition is intensifying between proprietary systems and open-source challengers. By late 2024, top open models were within 1–2% of leading proprietary systems on benchmarks[11] and newer players like EU's Mistral and UAE's Falcon had also become credible contenders.

- **Talent:** Talent is perhaps the most unequally distributed and decisive resource in AI and the key to unlocking AI value. A nation that leads in the attraction of talent in a given technology is 17 times more likely to also assume leadership in that technology[12]. The US remains the global hub, attracting one in three experts[13], with foreign workers holding 40% of top tech roles[14] and over 70% of AI hires coming from abroad[15]. Meanwhile, other regions are starting to compete as well—the EU has launched EUR 600 million in grants, France and the UK are expanding mobility schemes, and Japan and Australia are introducing new incentives[16]. Academic research output mirrors this unevenness too—in 2024, China's publications equaled the combined output of the US, UK, and EU, while also accounting for 40% of global citations[17].

The Global AI Divide: Current State of AI Adoption and Innovation Across Nations and Businesses

Nations and companies vary widely in their AI adoption and development, as observed in the gap across nations on the four dimensions of the global AI race. AI progress is highly uneven; over 70% of countries remain below maturity thresholds in AI research, skills, and ecosystem development[18]. On the business front too, despite years of pilot projects, only 26% of companies have developed the capabilities to move beyond proofs-of-concept and generate tangible AI value at scale[19].

A small set of nations dominate global AI activity, while others are making strides. This tiered landscape highlights a growing global AI divide, with stark disparities in AI capabilities and benefits.

Country Landscape

Few nations, like the US and China, lead in AI adoption and innovation. The U.S. leads on frontier model development, top talent, and research output, reinforced by its tech giants and vibrant startup ecosystem. China, supported by massive state programs and a huge data pool, is rapidly closing the gap in research and model performance. The U.S. attracted about USD 109 billion in private AI investment in 2024 vs USD 9.3 billion in China[20]. Together, these leaders are poised to capture a disproportionate share of AI's value, reinforced by scale economies and network effects.

Many other economies are also now becoming AI hubs, contributing meaningfully through strong research communities, national AI strategies, and vibrant startup ecosystems. Many have cultivated specific strengths: the UK in R&D and policy, Singapore in strategic governance, and India in applied AI through its large data and talent base. Still, they are yet to fully reach scale and frontier capabilities.

For example, South Korea's SK Group and AWS have committed ~USD 5.1 billion to build data center with 60,000 GPUs[21]. South Korea also launched the National AI Korea Hub, which has shared 600+ types of high-quality AI datasets since 2017[22]. The AI4EU platform provides datasets and tools to democratize access[23].

Singapore has launched SEA-LION, its own LLM, trained on multilingual and multicultural data. It supports numerous languages spoken in the region, including Thai, Vietnamese, Bahasa Indonesia, Malay, Filipino, and Tamil[24].

India has taken multiple steps as well to strengthen its AI ecosystem. Telangana has launched TGDeX (Telangana Data Exchange) as one of India's first state-led digital public infrastructures for AI, designed to democratize access to datasets, models, and compute power[25]. The

9. Tech and Data Governance: Cross-Border ComplianceChallenges and Strategy | IPAG; 10. The pace of large-scale model releases is accelerating | Epoch AI; 11. The 2025 AI Index Report | Stanford HAI; 12. Who's Winning the Global Race for STEM and AI Talent? | BCG; 13. Who's Winning the Global Race for STEM and AI Talent? | BCG; 14. Where Will Tomorrow's AI Geniuses Go? | BCG Henderson Institute; 15. US brain drain handing the global talent war to China | Asia Times; 16. Where Will Tomorrow's AI Geniuses Go? | BCG Henderson Institute; 17. New report shows China dominates in AI research–and is western world's leading collaborator on AI | Yahoo Finance; 18. Seventy Percent of Economies Are Underprepared for AI Disruption | BCG; 19. AI Adoption in 2024: 74% of Companies Struggle to Achieve and Scale Value | BCG; 20. The 2025 AI Index Report | Stanford HAI; 21. South Korea says SK and Amazon to invest $5 billion in country's biggest data centre | Reuters; 22. AI Data | NIA South Korea; 23. About AI4EU | AI-on-Demand; 24. SEA-LION | SEA LION; 25. Telangana rolls outs TGDeX | TOI

state also holds various challenges, such as the AI Rising Grand Challenge, which attracted 240+ startups and 400+ proposals across healthcare, MSME, education, transport, and revenue use cases[26].

Many AI-focused acceleration programs and funding initiatives have also come up in India, such as Google for Startups Accelerator: AI First (India), which is an equity-free accelerator tailored for Indian AI startups at Seed to Series A stages focusing on Agentic and Multimodal AI[27]. SenseAI is an India based venture capital fund that specializes in investing in early-stage, AI-first startups, committing both capital and mentorship[28].

Sectoral Landscape

Most developing economies, however, have minimal AI investment, limited talent pools, and sparse AI infrastructure. In fact, over two-thirds of all economies are lagging in fundamental AI readiness. AI adoption is slow and confined to pilot projects or consumer-level use of global AI services. Structural barriers, such as weak digital infrastructure, high hardware costs, brain drain, lack of comprehensive AI strategies, and funding hinders progress. However, some are beginning to prioritize enablers like internet access, STEM education, and data governance.

AI adoption varies sharply by sector. Sectors like finance, which have rich data, strong digital infrastructure, and innovation-friendly cultures, lead with 60–70% adoption. In contrast, data-poor sectors like agriculture and construction lag below 25%[29], constrained by manual processes, legacy systems, regulation, and risk aversion. For example, as seen in Exhibit 2, India's private sector investment is highly skewed towards healthcare and fintechs, and socially critically sectors see less than 10% of the overall funding.

- **Fintech:** The financial sector is among the most advanced in AI adoption, leveraging it for fraud detection, risk modeling, trading, and customer service. High-frequency trading accounts for around ~70% of US equity market volume, supported by machine learning[30]. 49% of fintechs and 35% of banks are ahead in AI adoption[31]. Addressing hurdles such as regulatory compliance, data privacy, and the need for explainable models can unlock further growth.
- **Healthcare:** Healthcare is a data-rich sector with high-value use cases ranging from diagnostics to decision support. However, adoption remains confined to specific applications. AI is being steadily integrated in areas like triaging and disease prediction yet, progress is slowed by strict regulations, patient safety concerns, compliance mandates, and fragmented health data.
- **Agriculture:** Agriculture remains among the slowest in AI adoption due to lower certainty of business viability and longer gestation period required to build successful enterprises. AI-driven yield prediction, soil monitoring, and automated irrigation show promise in boosting productivity. AI can detect crop stress or pests weeks in advance, as seen in Brazilian farms combating whitefly[32]. Yet, adoption is hampered by limited data, low tech literacy, high equipment costs, and weak rural infrastructure, leaving AI use largely confined to big agribusinesses.
- **Education:** Adoption of AI in education has been cautious and uneven globally. AI-driven educational technology can personalize learning, automate grading, and provide intelligent tutoring, which could help address teacher shortages and improve student outcomes.

An AI divide is rapidly emerging, with benefits clustered around a few leaders due to deep structural imbalances. Advanced economies dominate talent, compute, infrastructure, data, and cloud access, while many developing nations still struggle with basic electricity and internet. Even within industries, large corporations can afford custom servers and chips, leaving smaller firms unable to compete. Capital and talent are equally concentrated: In 2024, the US attracted hundreds of billions of dollars compared to just USD 4.5 billion in the UK, drawing top experts[33]. Today, U.S. and China account for the majority of the world's AI professionals, creating self-reinforcing hubs where talent, capital, and innovation accumulate.

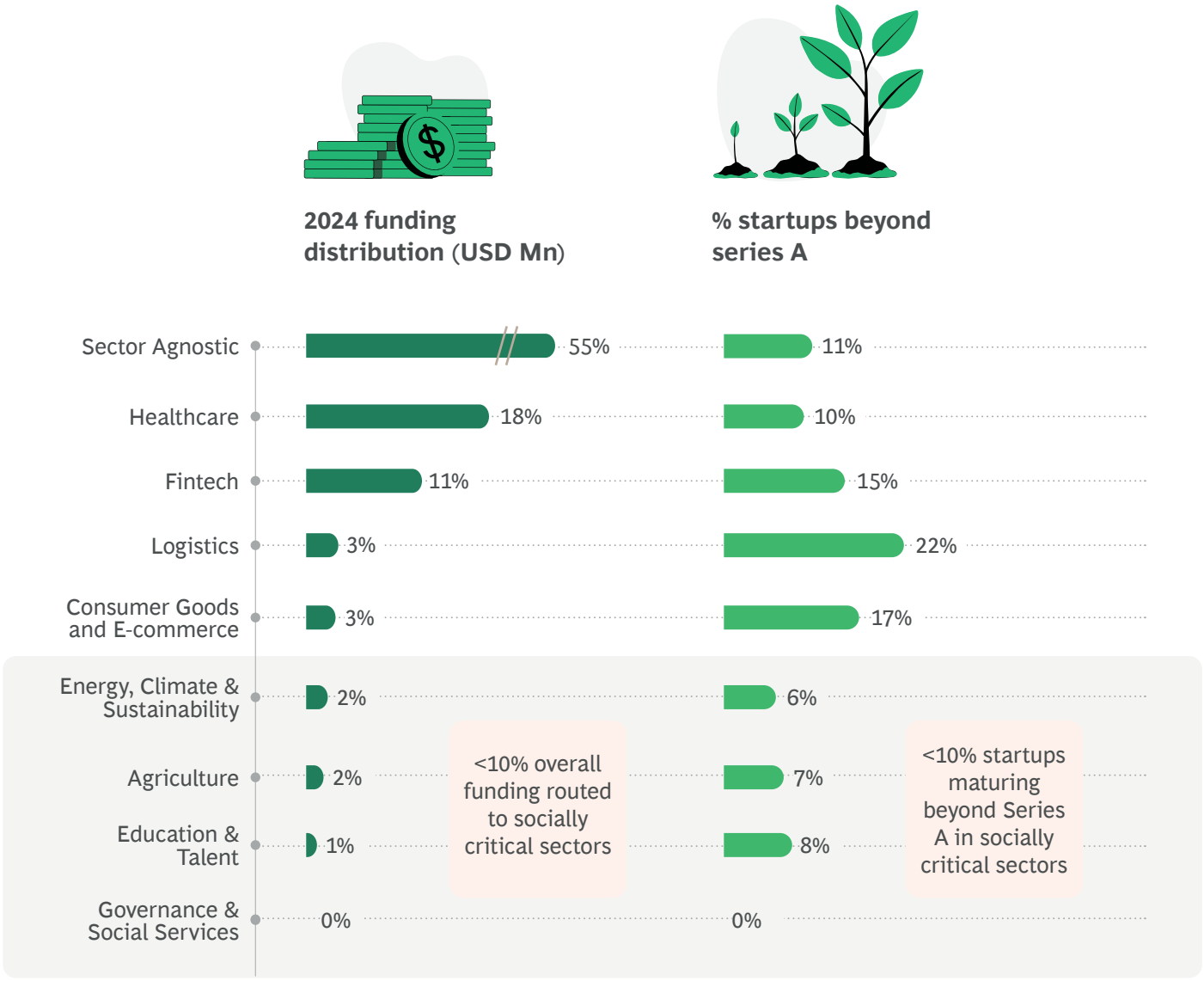
Taken together, these forces create a cycle in which advanced nations accelerate ahead, while developing economies and smaller firms fall behind. Inequalities are getting amplified, leading to a world where technological advantages are concentrated in a handful of nations and companies and achieving impact from AI has become challenging.

26. Telangana AI Rising Grand Challenge; 27. Google for Startups Accelerator: AI First (India); 28. SenseAI; 29. Why AI is replacing some jobs faster than others | World Economic Forum; 30. Why AI is replacing some jobs faster than others | World Economic Forum; 31. AI Adoption in 2024: 74% of Companies Struggle to Achieve and Scale Value | BCG; 32. How AI can help improve food systems in the agricultural revolution | World Economic Forum; 33. The 2025 AI Index Report | Stanford HAI

EXHIBIT 2

Lesser Funding in Socially-Relevant Sectors

Example: India's private sector investment in AI startups



Source: Tracxn, BCG Analysis



This is an AI generated image

CHAPTER 2

From Pilots to Impact:

Scaling AI use cases for Businesses

Challenges in Scaling AI at Businesses

Despite the billions invested in AI, most pilots never scale. Nearly half are scrapped before production, and fewer than one in eight prototypes reach deployment[1]. This pilot-to-production gap is stark, 95% of AI startups fail[2], and only about 11% of companies realize significant value from AI[3]. Scaling is constrained by multiple challenges along the journey, as shown in Exhibit 3.

- **Technological Challenges:** For projects that progress beyond prototyping, integration is the key barrier. Pilots often run in sandbox environments but scaling demand costs refactoring and long timelines. Fragmented infrastructure and siloed data act as significant scalability barriers that prevent AI solutions from expanding beyond pilots[4]. Organizations lacking modern digital foundations struggle to move beyond isolated use cases[5].

- **Talent, Skill and Cultural Challenges:** Scaling pilots require expertise to monitor, retrain, and maintain models; the lack of this expertise renders many deployments unsustainable. Cultural barriers compound this problem: Firms often lack leadership vision, cross-functional skills, and the ability to embed AI into workflows, with leaders underestimating how pilots translate into enterprise-wide impact[6].

1. AI Adoption in 2024: 74% of Companies Struggle to Achieve and Scale Value | BCG; 2. Why 95% Of AI Pilots Fail, And What Business Leaders Should Do Instead | Forbes; 3. Scaling AI Pays Off, No Matter the Investment | BCG; 4. Advancing AI Transformation: A Roadmap for Businesses and Governments | World Economic Forum; 5. Scaling AI Pays Off, No Matter the Investment | BCG; 6. The Adoption of Artificial Intelligence in Firms | OECD

EXHIBIT 3

Key Challenges to Scaling AI Pilots



Technological Challenges	Talent, Skill and Cultural Challenges	Procedural Challenges
Infrastructure, integration and data issues	Knowledge, leadership and organizational cultures	Change management and formation of repeatable and scalable systems

Source: BCG Analysis

- **Procedural Challenges:** Even with the right tools and talent, attempts to scale may falter if the right processes are not established. Many firms overemphasize algorithms while neglecting change management, data readiness, upskilling, and governance. As a result, transformative impact beyond pilots is rare[7]: Surveys show that 70% of AI adoption obstacles stem from people and process issues, not technical ones[8]. Firms often struggle with aligning projects to business needs, managing change, and establishing governance frameworks to ensure quality, ethics, and cross-department coordination. Ultimately, the key enablers of scale are workflow redesign, cross-functional development, talent management, and governance, rather than cutting-edge algorithms alone[9].

Levers to Unlock Value on Ground

Unlocking AI's business value is a strategic, multidisciplinary endeavor. It requires simultaneous efforts – identifying potential which can be extracted from AI, empowering people to harness that value, and transforming processes at organizations for bringing impact[10].

- **Potential:** Organizations should focus AI investments on a few strategically aligned, high-impact use cases instead of scattering bets. Three to four well-chosen initiatives typically yield twice the Return on Investment (RoI) relative to many fragmented ones. Top businesses in AI channel over 80% of their AI investments into reshaping key functions and developing new products or business models, not just for minor efficiency initiatives. For example, a beauty company launched a 24/7 virtual advisor, redesigning customer experience and customer journey, rather than layering AI on top to improve existing efficiencies[11]. The same company is also leveraging AI in product research and marketing, using 3D visualizations for enabling faster product testing and allowing for personalized marketing strategies for individuals or different local markets[12].

  J.P. Morgan has identified and pursued AI use cases across multiple business lines. Its private bank advisers use a "Coach AI" tool that instantly analyzes market data and client portfolios to generate tailored advice; this has helped increase gross sales ~20% year-on-year and is expected to let advisers handle 50% more clients in coming year[13].

- **People:** Leading companies devote about 70% of their AI effort to people, process, and culture change, compared to just 30% on technology, recognizing that adoption is more sociological than technical. Organizations should invest heavily in workforce upskilling. Redesigning roles to integrate AI into day-to-day work is vital, ensuring employees' see the technology as empowering. For instance, a telecom organization

7. AI, tech and the intelligent age at Davos 2025: What to know | World Economic Forum; 8. AI Adoption in 2024: 74% of Companies Struggle to Achieve and Scale Value | BCG; 9. AI Adoption in 2024: 74% of Companies Struggle to Achieve and Scale Value | BCG; 10. The CEO's Guide to the Generative AI Revolution | BCG; 11. 221-Weekly-Brief-Taking-a-GenAI-Agent-from-Concept-to-Reality.pdfs; 12. The Amazing Ways L'Oréal Is Using AI To Transform The Beauty Industry Forever; 13. JPMorgan says AI helped boost sales, add clients in market turmoil | Reuters

was able to achieve a 40% increase in sales conversion for campaigns by using AI Deep Customer Engagement model, focusing on advanced personalization as well as a scalable solution which can be implemented across the company. Beyond the models, 300+ agents and store staff were trained to use AI driven next best actions; the company also won an Experimentation Culture Award, showcasing the importance of cultural change for AI value extraction[14].

- **Processes:** Businesses need to identify core processes where AI can materially improve efficiency or quality, and then redesign them rather than layering AI on top. Building cross-functional hubs to spread best practices and accelerate enterprise-wide scaling is key. Using clear metrics and pilot-and-scale approaches to convert experimentation into measurable business outcomes will help organizations scale the AI adoption. Strong governance, explainability, and compliance frameworks make scaling faster and safer. For example, a consumer goods company implemented a GenAI platform that delivered an ~60% efficiency boost for targeted workflows, consolidating effort on one enterprise wide capability rather than dozens of small tools. By automating tasks that consumed up to 40% of employees' time, these solutions streamlined workflows end-to-end, reducing routine work by up to 90% and doubling output quality[15].

Amazon Ads uses generative AI tools to lower creative barriers and help brands scale campaigns across images, video, and audio. The tool allows advertisers to create 30-second interactive audio ads in minutes. Amazon also reported that brands using its Image generator from October 2023 to June 2024 saw ~5% more sales per advertiser on average[16].

Uber Freight is an example of a business which was able to leverage AI by making interventions across all the three mentioned levers. A key problem in the industry is empty miles, trucks often drive back empty after deliveries, wasting cost and capacity. Uber Freight uses machine learning to algorithmically match loads and optimize routes so that trucks run full more often. By analyzing hundreds of parameters like traffic, weather, schedules, etc., Uber Freight's pricing and routing algorithms were able to cut empty trucking miles from the U.S. average of ~35% down to as low as 10–15%[17].

Indian Businesses are also rapidly integrating AI into their processes to extract value. A leading Indian fintech company, Razorpay also exemplifies this approach. It has concentrated AI on strategic areas like fraud detection, neobanking, and ecosystem APIs, creating new avenues for growth beyond just incremental efficiencies. At the same time, it has invested in people through continuous upskilling, internal hackathons, and enabling AI "agents" which act as virtual teammates across various functions. On the process front, they have redesigned merchant onboarding and KYC journeys to cut drop-offs and speed up approvals, while conversational AI resolves routine queries with over 90% accuracy. By aligning potential, people, and process, this fintech firm demonstrates how AI can drive systemic, measurable impact rather than fragmented gains.

NoBroker has built an in-house AI engine to power fraud detection, pricing intelligence, image verification, and conversational support. It integrates AI deeply into core processes like matchmaking and documentation, while also extending its virtual assistant tech as a B2B SaaS offering. On the customer side, agents automate routine support, blending conversational AI with human oversight for scale and efficiency.

Pocket FM is an AI-native across its content value chain, using AI for title identification, script-to-audio conversion via synthetic voices, multilingual localization, and marketing automation. Generative AI tools speed up content production, personalization, and expansion into new formats such as comics. This creates cost efficiencies of up to 90%, increasing productivity by 50% and enabling global scaling.

In the consumer sector, a leading eyewear company, Lenskart has used AI to transform the buying journey. It prioritized use cases like AI-powered virtual try-on, generative AI for rapidly scaling catalogs, computer vision to monitor 2,000+ stores, and AI forecasting for inventory and hyperlocal delivery. At the cultural level, Lenskart introduced AI co-pilots for in-store associates, automated chatbots for 100,000+ weekly customer interactions, and real-time dashboards to enhance staff productivity, all designed to augment human expertise. Strategically, AI has become the backbone of Lenskart's omnichannel model and global expansion, boosting conversions, improving inventory turns, and reducing service costs[18].

Strategic implementations of AI allow firms to gain considerable returns. For example, Sanofi uses smart prescriptive KPIs which link supply chain performance to sales and suggest corresponding changes in sales activities or priorities based on how the supply chain is doing[19]. In McDonalds as well, AI is used for identifying and tracking KPIs which monitor customer needs, other than the traditional KPIs of just service speed or order accuracy. It has reshaped KPIs to focus on customer satisfaction, brand loyalty and engagement[20].

AI can be integrated into companies in a gradual manner, starting with complementary tasks before moving to complete integration into business processes. For example,

14. Austrian Telco Is Using AI to Drive Customer Value | BCG X; 15. Global Consumer Goods Leader Finds Gains in GenAI Platform | BCG X; 16. New AI tools for advertisers | Amazon Ads; 17. AI in Trucking Logistics: Uber Freight Uses Tech to Optimize Routes | Business Insider; 18. India AI Leap | BCG; 19. The Future of Strategic Measurement | MIT Sloan BCG; 20. The Cultural Benefits of Artificial Intelligence in the Enterprise | MIT Sloan BCG

Ben and Jerry's uses AI as Illuminator, for input for co-creation in processes such as product development, generative design etc. The next step is using AI as a Recommender; Morgan Stanley uses AI for recommendations on demand forecasts, personalization engines etc. and humans take the final call. Uber uses AI as a Decider, for predictive maintenance and call center optimizations. And finally, AI can be used as an Automator, such as in Rio Tinto, where AI decides and implements, with human oversight as seen in customer service, autonomous driving etc[21].

Leading businesses also balance innovation with responsibility by embedding ethical review mechanisms, explainability, and compliance frameworks into their operating models. Finally, successful firms also partner with startups, academia, and technology providers to co-innovate and access specialized capabilities[22].

But organizations cannot scale AI in isolation. Without supportive ecosystems of infrastructure, talent, financing, and governance, progress remains fragmented and unequal.

21. Expanding AI's impact with organizational learning and BCG–Are you making the most of your relationship with AI | MIT Sloan Management Review;
22. The Future of Strategic Measurement | MIT Sloan BCG



This is an AI generated image

CHAPTER 3

Enabling the AI ecosystem

The Role of Government

Many structural barriers prevent access to AI resources and pose hindrance to scaling AI across nations. We have identified four key pillars wherein the government can play a role in increasing AI ecosystem health—technology and infrastructure, skilling, financing and policy, and governance.

Tech Enablers: Compute, Models, Data

Access to core AI resources is a major hurdle for ecosystem development. The costs to garner these resources can be prohibitive: High-performance GPUs are priced at over USD 40,000 each[1], and training a frontier system can require USD 30 to 191 million in compute[2], creating structural barriers[3]. Most frontier models are closed and accessible only via restricted Application Programming Interface (APIs), while even many "open-source" models carry licenses limiting commercial use, concentrating intellectual property. Supply chain and regulatory constraints compound the challenge. Over 90% of advanced AI chips are produced by TSMC in Taiwan, creating exposure to geopolitical risk. Global shortages prioritize major buyers, forcing smaller firms and labs to endure long delays. Rising data localization laws, now in over 60 countries with 140+ cross-border restrictions, further fragment access and impede AI development[4].

1. Good luck catching up to Nvidia | Financial Times; 2. The 2025 AI Index Report | Stanford HAI; 3. The Extreme Cost Of Training AI Models | Forbes;
4. How Barriers to Cross-Border Data Flows Are Spreading Globally, What They Cost, and How to Address Them | ITIF

Skilling

Global demand for AI expertise far exceeds the available supply of skilled professionals. In a global survey of executives, 62% C-suite executives cited a lack of AI-skilled talent as their biggest challenge to implementing AI initiatives[5]. The skills deficit translates into lost productivity and higher costs, while AI leaders achieve up to five-fold productivity gains[6]. The global talent shortfall could cost USD 8.5 trillion in unrealized annual revenues by 2030[7], while broad skilling initiatives, such as those in Southeast Asia, could lift GDP by ~4% or USD 250 billion, by 2030 . Strategically, a lack of AI expertise constrains innovation and national competitiveness. Countries with shallow talent pools risk falling behind in developing new industries or advancing frontier research. Policymakers increasingly treat AI talent as a strategic resource, with many governments investing in education and upskilling their citizens to build resilient national pipelines[8].

Financial Support

Global AI investment is surging but remains highly uneven. Funding is concentrated in a few economies with the majority of newly backed AI startups in the US, while many regions struggle to attract capital. Early-stage financing is especially scarce, leaving startups in developing countries reliant on grants or foreign investors. The United Nations (UN) has also noted the absence of a global fund needed to build AI capacity in these regions[9]. The challenge deepens further at the growth stage, the "valley of death", since scaling requires significant capital, but investors hesitate unless startups show proven RoI and resilient unit economics, a hurdle that stalls ventures, such as most in India, at Series A[10]. Only ~6% of the total AI startups in India have received Series A+ funding[11], vs ~14% in retail[12]. Sectors like education and agriculture face even higher barriers, as unclear revenue models deter investors, despite strong social impact potential. Investor caution stems from long development cycles, unclear monetization, and shifting rules on privacy, ethics, and liability. In emerging markets like Africa and Southeast Asia, limited track records, weak mentorship, and poor global access further deter funding. As a result, only a few ecosystems thrive, while much of the world's AI potential remains underfunded.

Governance, Safety and Responsible AI

Responsible AI is critical to unlocking AI's rewards by mitigating and managing its risks. Bias, misinformation, opacity, and unethical use have already eroded public trust and triggered stricter oversight. Nearly 77% of Americans don't trust businesses to use AI responsibly[13], and over 60% worry about AI-driven misinformation and deepfakes[14]. AI carries significant risks that shape trust, regulation, and adoption. Systems often amplify social biases, creating unfair outcomes and exposing organizations to legal and reputational harm. A Federal Trade Commission (FTC) settlement banned store surveillance and AI based Facial Recognition Technology for five years, when a retailer was found to misclassify women and people of color as shoplifters[15]. Generative tools can spread false content and unethical uses, such as invasive surveillance or autonomous decision-making without oversight, raise further alarm, prompting strong policy responses like the EU's AI Act. Publicized failures fuel global skepticism, making responsible AI not just an ethical choice but a business imperative. Clear regulations and ethical certifications can serve as seals of approval, restoring public confidence.

Laying the Foundation for AI: RISE (Research, Investment, Skilling and Ethics)

In order to extract the maximum from AI, governments need to "RISE" to the occasion, across four key levers, as shown in Exhibit 4.

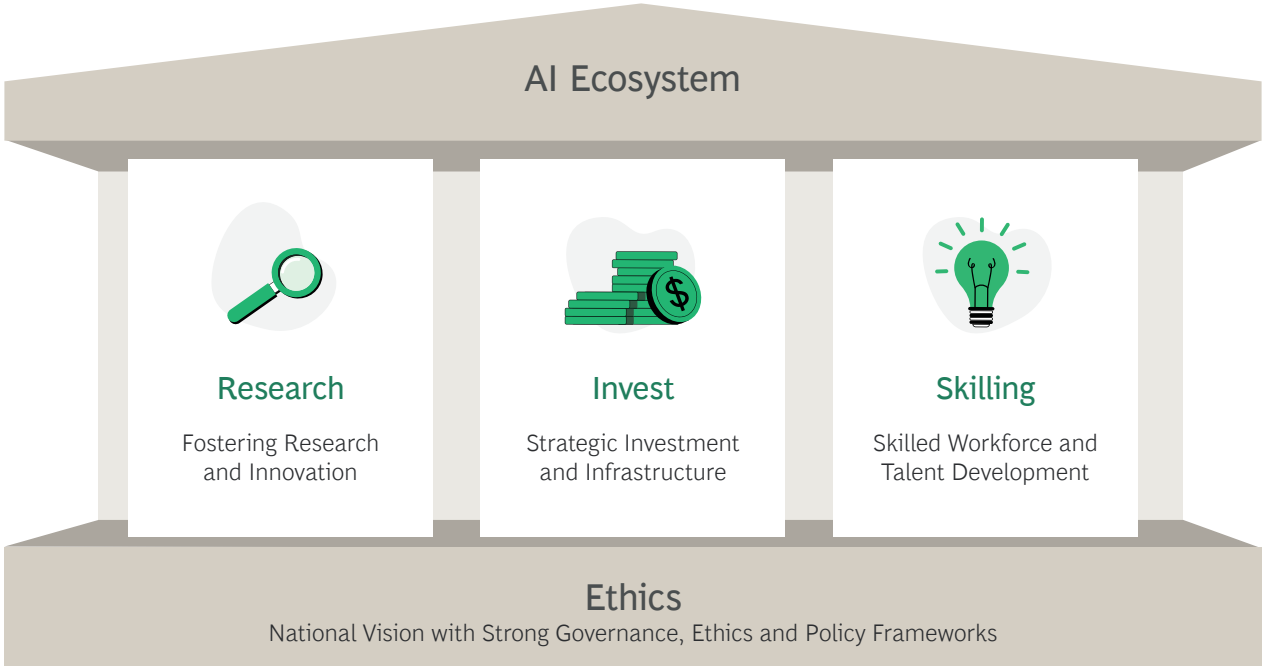
Research: Fostering Research and Innovation

Fostering AI research and innovation is key to national progress. Governments can accelerate this by funding R&D, supporting applied innovation in priority sectors, and building public–private research partnerships. Centers of Excellence (CoEs) and open research initiatives have shown strong results, for example, the UAE's state-backed lab produced the Falcon model, rivaling Big Tech systems[16]. Tools like challenge grants, pilot sandboxes, and academia-industry linkages both spur breakthroughs and strengthen domestic AI industries, reducing reliance on imported solutions[17]. For example, Singapore launched an initiative to develop 100 generative AI use cases in 100 days through sandboxes and hands-on workshops, accelerating innovation in both public and private sectors[18]. India's Innovation Challenge had innovators from startups, academia, NGOs, and R&D bodies develop AI solutions for critical sectors like healthcare, agriculture, governance, and disaster management, where winners being eligible for Rs. 1 crore in awards and a path to deployment at scale[19].

5. Five Must-Haves for Effective AI Upskilling | BCG; 6. Productivity soars in sectors of global economy most exposed to AI, says report | The Guardian; 7. 3 tips for cultivating a global talent pool of skilled employees in a new era of tech | World Economic Forum; 8. The overlooked global risk of the AI precariat | World Economic Forum; 9. UN advisory body makes seven recommendations for governing AI | Reuters; 10. BCG Analysis; 11. Artificial Intelligence in India - 2025 Market & Investment Trends | Tracxn; 12. Retail Chains in India - 2025 Market & Investments Trends | Tracxn; 13. The Paradox Of Responsible AI: Widespread Usage Coupled With Distrust | Forbes; 14. Americans fear AI permanently displacing workers, Reuters/Ipsos poll finds | Reuters; 15. Rite Aid Banned from Using AI Facial Recognition After FTC Says Retailer Deployed Technology without Reasonable Safeguards | Federal Trade Commission; 16. The UAE Is on a Mission to Become an AI Power | TIME; 17. Harnessing Artificial Intelligence for Development A New Policy and Regulatory Framework | World Bank; 18. New AI initiative to identify and explore 100 AI use cases in the next 100 days | Singapore EDB; 19. Press Release | India Press Information Bureau

EXHIBIT 4

Pillars for building an AI Ecosystem: RISE–Research, Invest, Skilling and Ethics



Source: BCG Analysis

Invest: Strategic Investment and Infrastructure

Investment in AI must be paired with hard infrastructure and financing support. Leading countries use grants, innovation funds, and tax incentives to stimulate growth[20], while building digital foundations, AI-ready datasets, cloud platforms, and high-performance compute. The UAE has invested heavily in compute and energy to attract top projects, Saudi Arabia has earmarked USD 40 billion for AI, and India has also dedicated USD 1.2 billion to build public AI compute, fund startups, and develop indigenous models underscoring the scale of commitment required to lead in this space. By combining financing with infrastructure, governments create ecosystems where startups, researchers, and enterprises can scale AI solutions efficiently.

In July 2024, Brazil launched its Brazilian Artificial Intelligence Plan, branded "AI for the Good of All", to build domestic AI capacity and reduce dependence on imported tools. The government earmarked ~USD 4 billion through 2028 for AI R&D, infrastructure, skills and responsible use. By underwriting both capability in the form of compute, data etc. and demand through business projects and public-sector use cases, it increases the expected return on private AI investment and shortens time-to-deployment, especially for local SMEs[21].

Multilateral and cross-border collaborations amplify this effort. International financial institutions like the World Bank and Japan International Cooperation Agency (JICA) are financing AI capacity-building in emerging markets, while blended finance models, such as the EU's InvestAI partnership, aim to mobilize EUR 200 billion for AI by reducing risk for private investors. Cross-border VC networks bring capital, mentorship, and market access, while industry consortia pool resources for shared research and infrastructure. In 2024, the United Nations Development Programme (UNDP), in partnership with Italian G7 Presidency, launched the AI Hub for Sustainable Development—Startup Acceleration Pilot, targeting startups across African nations[22].

Skill: Skilled Workforce and Talent Development

Building human capital is essential for sustainable AI growth. Countries are investing in education, upskilling, and talent attraction—from broad literacy to advanced research training. Finland's Elements of AI course aimed to

20. Framing a National AI Strategy with ASPIRE | BCG; 21. Brazil proposes $4 billion AI investment plan | Reuters; 22. AI Hub for Sustainable Development Co-Design | United Nations Development Programme; 23. Elements of AI has introduced one million people to the basics of artificial intelligence | University of Helsinki

teach its citizens AI basics[23], while Vietnam plans to train 5,000 AI specialists by 2030 through academia–industry partnerships[24]. By developing and retaining skilled professionals, nations secure pipelines for the industry, government, and research.

Finland's Elements of AI is a skilling initiative, which is policy-anchored, massively scalable and inclusive. The program has introduced over 1 million people to AI basics and expanded to 26 languages and 30+ localizations, showing measurable impact and durability beyond pilots. It explicitly targets non-experts, is free, self-paced, and stresses practical understanding, which boosts completion for broad populations. It was launched by the University of Helsinki with Finnish government support, then expanded EU-wide during Finland's 2019 EU Council Presidency to build citizens' AI literacy.

Closing the skills gap requires coordinated interventions. Organization for Economic Co-operation and Development (OECD) data shows how 14 countries fund national AI training programs, with nine targeting professional development and seven focused on literacy. Governments are also integrating AI into schools, United Nations Educational, Scientific and Cultural Organization (UNESCO) highlights 11 countries, including Austria and India, and using mobility schemes like Singapore's Tech@SG visa to attract expertise. Collaborative global initiatives complement these efforts: the World Economic Forum's Reskilling Revolution aims to upskill 1 billion people by 2030, while UNESCO's AI for the Public Sector program trains civil servants in 50 countries. Together, these measures help distribute AI's benefits more equitably worldwide.

Ethics and Governance: Clear National Vision with Strong Governance, Ethics and Policy Frameworks

Governments should set an AI strategy with clear goals and high-level commitment. A well-defined national AI vision guides resources and rallies stakeholders around AI for economic and social good. For example, the UAE appointed the world's first AI minister and aims to be a leading AI nation by 2031. Egypt's national AI strategy includes an ethics charter, and Indonesia is drafting AI principles to build public trust.

The EU Artificial Intelligence Act (AI Act) is a comprehensive legal framework for AI, introduced in 2024 to ensure the safe, ethical, and lawful use of AI across Europe. Its overarching goal is to foster trustworthy AI while providing legal certainty for businesses innovating with AI. The AI Act categorizes AI systems into four tiers of risk, with corresponding governance measures for each. By addressing AI risks head-on, the Act aims to both prevent undesirable outcomes, such as discrimination or safety failures, and bolster public trust in AI-driven solutions. To achieve this, it establishes clear rules and a layered governance structure ensuring that AI developed or deployed in the EU adheres to European values and laws[25].

Public–private partnerships combine governments' mandate for public welfare with industry's agility and expertise. The U.S. Department of State's 2024 Partnership for Global Inclusivity on AI (PGIAI) with eight tech companies targets AI solutions for developing countries. Similarly, co-regulatory approaches are emerging: the UK piloted an AI sandbox for ethical deployment, while in 2023, the U.S. secured voluntary safety commitments from OpenAI, Google, Meta, and Microsoft.

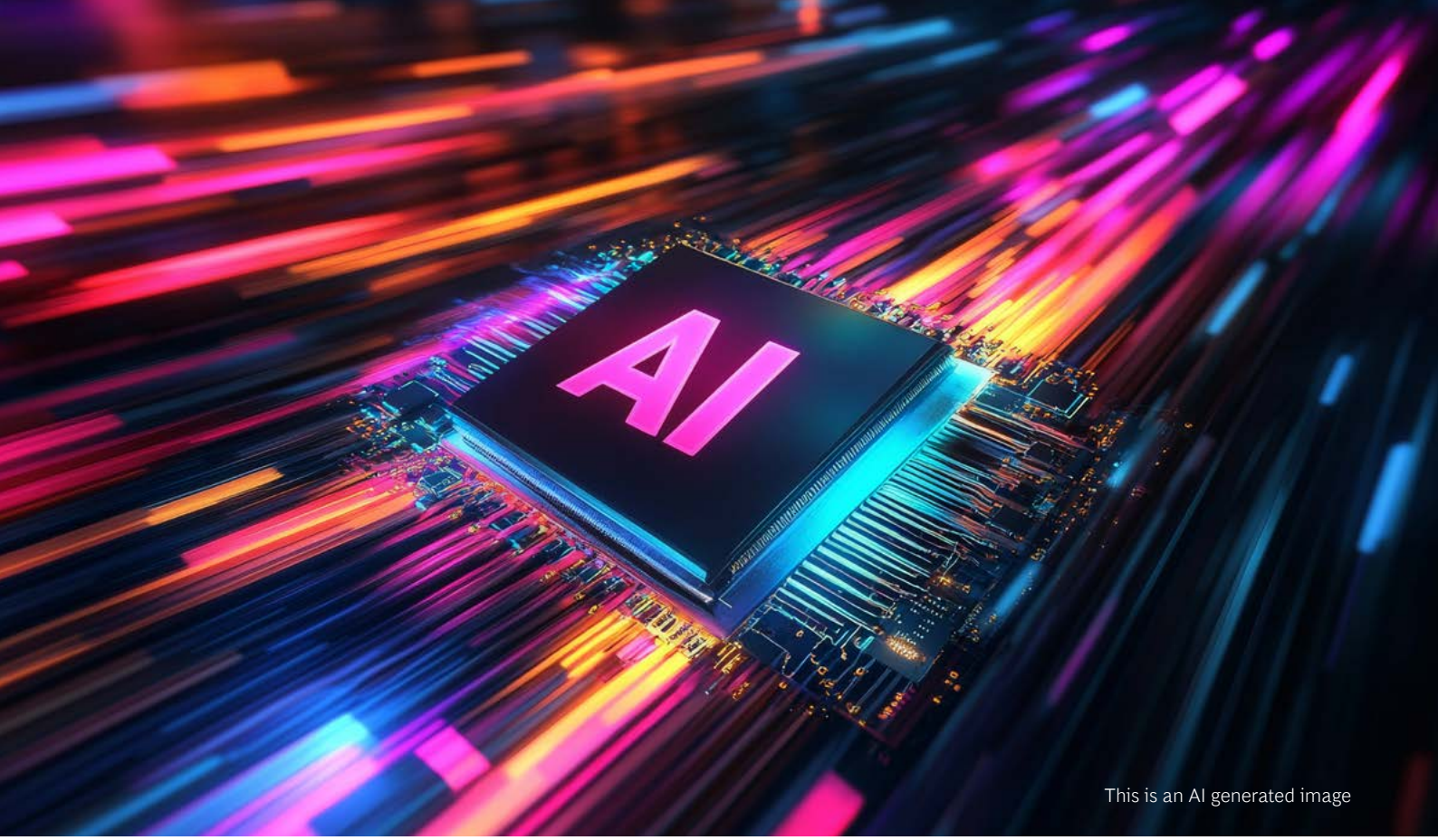
At the global level, multi-stakeholder initiatives are taking shape. The UN convened a high-level AI advisory council in 2023, complementing forums such as its AI for Good summit and the World Economic Forum's AI task force. The Global Partnership on AI (GPAI), launched by the G7 and now spanning nearly 30 countries, advances responsible AI, data governance, and collaborative research, bridging the gap between theory and practice.

Strategic steps across these dimensions can empower nations to advance meaningfully in the global AI race. IndiaAI Mission is a hallmark example of this. IndiaAI Mission has seven areas of focus to advance the country's AI ecosystem. The budgeted outlay for building this mission is approximately INR 10,000 crores. A cornerstone of the mission is AIKosh, the IndiaAI Datasets Platform, launched in March 2025. This platform serves as a secure platform for high-quality datasets, models, tools and use cases across multiple domains. The mission also provides subsidized access to compute infrastructure, now with 34,000+ GPUs[26].

The Mission promotes real-world AI applications and talent development. Initiatives like the IndiaAI Innovation Challenge and Hackathons crowdsource impactful solutions in healthcare, agriculture, governance, and cybersecurity. The Mission is also supporting the development of sovereign LLMs tailored for Indian languages and contexts[27].

The FutureSkills pillar targets mass upskilling and reskilling, expanding AI courses at UG/ Master's/ PhD levels and setting up Data & AI labs in Tier 2 and 3 cities to lower entry barriers and broaden participation[28]. The Safe & Trusted pillar supports development of indigenous tools and frameworks, self-assessment checklists for innovators, and creation of practical guardrails for trustworthy AI.

24. More actions urged to be taken to have 50,000 AI, semiconductor workers | Vietnam News; 25. AI Act : Shaping Europe's digital future | European Commission; 26. AIKosh; 27. IndiaAI Innovation Challenge launched to foster impactful AI Solutions | Press Information Bureau; 28. IndiaAI at MeitY & Meta collaborates to advance Open Source AI Innovation, R&D and Skill Development in India | Press Information Bureau



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CHAPTER 4

Call to Action

AI is not just a technological wave; it is a strategic race that will define economic and social leadership in the decades ahead. Yet, its benefits are highly uneven, concentrated in a few nations and sectors, while many businesses and countries remain constrained by infrastructure, talent, financing, and regulatory gaps. To bridge the widening AI divide, nations and businesses must act now by investing in inclusive infrastructure, building a skilled workforce, embedding responsible governance, and channeling AI toward high-impact sectors.

Businesses need to move beyond pilots by identifying a small set of high-value use cases, redesigning processes around them, and investing in workforce upskilling and change management to embed AI at scale. Partnerships with startups, academia, and civil society can help accelerate learning and spread best practices, especially across underserved sectors such as healthcare, agriculture, and education. International organizations and coalitions also have a central role in bridging gaps: pooling resources, enabling responsible cross-border data sharing, creating blended finance mechanisms for developing economies, and supporting global talent mobility.

Together, these interventions can help ensure that AI is not only a source of competitiveness for a few leaders, but a driver of inclusive growth and resilience worldwide. The path forward requires steady commitment and collaboration between public, private, and multilateral actors rather than siloed strategies. By focusing on research, investment, skilling, and ethics, the four pillars of the RISE framework, governments can create an enabling environment where AI delivers sustained and equitable impact.

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