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WORLD ECONOMIC FORUM

In collaboration with the Office of the Principal Scientific Adviser to the Government of India and BCG X

Transforming Small Businesses: An AI Playbook for India's SMEs

INSIGHT REPORT

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Images: Getty Images

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Foreword

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India stands on the cusp of a transformative opportunity, driven by the potential of artificial intelligence to empower micro, small and medium enterprises (MSMEs).

India has more than 60 million[1] MSMEs that drive its economy – creating employment, contributing to around half of the country's exports and 30% of its GDP. Despite its potential, the MSME sector in India faces formidable challenges, including operational inefficiencies, limited scale, constrained access to markets and inadequate financial support. These obstacles not only limit growth in the short term but also restrain MSMEs from achieving long-term competitiveness on the global stage.

Artificial intelligence (AI) can transform these organizations by enhancing their productivity, optimizing operations and unlocking finance as well as new markets. However, their adoption of AI at scale requires a structured and collaborative approach due to the multiple systemic barriers that hinder AI adoption. Addressing these barriers through a collaborative effort can enable the organizations to realize AI's immense potential in their business operations.

This report, *Transforming Small Businesses: An AI Playbook for India's SMEs*, aims to simplify this adoption journey by guiding the efforts of multiple stakeholders. It recognizes the diversity of MSMEs in India and emphasizes the importance of taking a cluster-based approach to ensure maximum on-the-ground impact. It highlights the key barriers to AI adoption for MSMEs and shows a way forward using the three-pillar framework for accelerating AI adoption along with a clear implementation roadmap in the form of a call to action. It also showcases some high-value AI use cases in these organizations and presents case studies to highlight real-world impact. Furthermore, it provides a framework for MSMEs to identify high-value use cases relevant to their business.

This playbook is the result of extensive consultations with policy-makers, MSME entrepreneurs, industry bodies and leaders and academics. It reflects a collective vision for harnessing the power of AI to address major challenges and transform MSME organizations.

The report aims to align government, private enterprises, academia and MSMEs in building an AI ecosystem that promotes a future in which MSMEs are financially empowered, operationally robust and technologically advanced. We therefore request all stakeholders to reflect on the insights captured here and bring them to action by adapting the recommendations to their own unique context.

The report's authors extend their deepest gratitude to all stakeholders whose expertise, vision and dedication have shaped this initiative. They hope this playbook serves as a beacon, guiding the Indian MSME ecosystem towards a vibrant, innovative and competitive future.

Executive summary

This report presents a structured roadmap for stakeholders to accelerate the adoption of AI at scale within India's micro, small and medium enterprises.

Micro, small and medium enterprises (MSMEs) are the backbone of India's economy, generating employment and playing a pivotal role in the country's socioeconomic development. With MSMEs contributing nearly 30% of India's GDP, employing more than 230 million people and accounting for nearly half of India's exports, their growth trajectory is crucial for achieving India's ambition of becoming a $7 trillion economy by 2030.

Yet MSMEs in India face numerous challenges such as operational inefficiencies, limited financial resources and constrained scalability. Artificial intelligence (AI) has emerged as a transformative force for MSMEs that can enable them to overcome these challenges. Adoption of AI technologies in the MSME ecosystem can unlock significant value for the Indian economy, with the potential to generate more than $490 billion in economic value for MSMEs.

However, in their current state, these organizations face significant barriers to adoption that hinder their ability to harness AI's potential. The aim of this report is to alleviate the barriers to AI adoption faced by MSMEs by curating the efforts of multiple stakeholders in government, industry, MSME associations and academia. The report also demystifies the use of AI in MSME organizations through illustrative use cases along with a framework to help them identify and prioritize relevant use cases for their business.

The need for an AI playbook

The implementation of AI systems in Indian MSMEs is hindered by significant obstacles, including a lack of AI awareness and of data and data systems, accessibility of relevant solutions and workforce capabilities. These challenges present the need for a clear and well-defined framework to guide the efforts of stakeholders towards the acceleration of AI adoption in Indian MSMEs. This playbook is designed to help policy-makers design appropriate interventions to scale the use of AI in MSMEs as well as guide the MSME ecosystem towards becoming AI-ready.

The AI playbook for MSMEs has five main purposes:

1. To articulate and highlight the major barriers faced by MSMEs in their AI adoption journey
2. To offer an overview of major AI use case categories in the MSME ecosystem and present a framework to enable MSMEs to prioritize relevant AI use cases
3. To inspire MSMEs to use the transformative power of AI by showcasing real-world case studies
4. To present a structured framework based on three critical pillars – awareness, action and recognition – to accelerate AI adoption in MSMEs
5. To provide a call to action as well as a detailed implementation roadmap delineating the role of different stakeholders

Methodology

To create a practical and context-sensitive playbook, the World Economic Forum, with the guidance of the AI for India 2030 Advisory Council, established a multistakeholder expert group. This included policy-makers, industry associations, leading technology companies and academia, ensuring a comprehensive range of perspectives. Further, many stakeholders outside the expert group – including MSMEs, MSME associations, MSME workers and research institutions – were also consulted.

The methodology for developing the playbook involved three key steps:

1. Design thinking-driven research combined with ethnographic studies of MSMEs to understand their pain points and business challenges
2. Expert consultations through in-depth interviews to understand the primary challenges faced by MSMEs with respect to AI adoption as well as high-value use cases
3. Contextual analysis to develop relevant case studies and use case illustrations to inspire MSMEs to implement AI in their ecosystems

Framework: Principles and pillars

The IMPACT AI framework offers a structured approach to scaling AI adoption in Indian MSMEs, aligning stakeholder efforts around three core pillars: awareness, action and recognition.

Together, these pillars provide a comprehensive roadmap for building an AI-driven MSME ecosystem.

Awareness pillar

The **creating awareness** pillar focuses on bridging knowledge gaps and building trust among MSMEs regarding AI adoption. It includes establishing AI experience centres, AI sandboxes and capability-building programmes to demonstrate the practical benefits of AI solutions and foster peer-to-peer learning.

Action Pillar

The **inspiring action** pillar is designed to equip MSMEs with actionable tools and frameworks such as the AI maturity index, AI solutions marketplace and alternative financing options. It enables businesses to assess their readiness, identify suitable solutions and effectively implement AI technologies.

Recognition pillar

The **receiving recognition** pillar emphasizes the showcasing of successful early adopters as role models through an MSME AI pioneer programme. By celebrating pioneers, this pillar aims to inspire confidence, encourage broader adoption and foster an ecosystem-wide momentum towards AI transformation.

Call to action

To accelerate AI adoption and realize its transformative potential within India's MSMEs, it is critical for all stakeholders – including central and state governments, MSME entrepreneurs, AI start-ups, industry leaders and academia – to collaborate and take concrete steps forward. Policy-makers should establish enabling environments and infrastructure; MSME entrepreneurs should make efforts to proactively understand and embrace AI; and AI start-ups and solution providers should focus on creating affordable and accessible solutions tailored to MSMEs. Collective action can empower India's MSMEs and drive their economic growth.

> **If we want AI to truly serve inclusive growth, it must work not only for large enterprises but also for the millions of MSMEs driving economies like India's. Through initiatives like AI for India, AI Transformation of Industries and the global collaboration fostered by AIGA, we're laying the groundwork for scalable, responsible and locally relevant AI adoption. This playbook is a vital step in that journey – turning ambition into action for India's MSME ecosystem.**
>
> Cathy Li, Head, AI, Data and Metaverse; Member of the Executive Committee, World Economic Forum

> **The Global Lighthouse Network has proven how large manufacturers have harnessed advanced technologies like AI to drive step-change performance improvements at scale. The next frontier is bringing these innovations to MSMEs – so they too can benefit from increased productivity, resilience and global competitiveness. This playbook provides a practical path to turn that ambition into reality.**
>
> Kiva Allgood, Managing Director, San Francisco Office, Centre for Advanced Manufacturing and Supply Chain and Centre for Urban Transformation, World Economic Forum

Introduction

AI has the potential to transform India's small-enterprise ecosystem, enabling it to grow and compete globally.

of India's GDP in 2023 was contributed by MSMEs, underscoring their role as the cornerstone of the national economy.

India's MSMEs are a dynamic force, driving economic growth and promoting innovation in numerous industries. Nevertheless, many MSMEs are yet to realize their full potential because of constraints such as operational inefficiencies, limited scale and restricted access to national and global markets. These issues not only hinder the MSMEs' growth in the short term but also limit their ability to become more competitive in the longer run.

AI, with its transformative capabilities, offers novel ways of tackling these challenges and will enable them to boost productivity, become more competitive and enhance their resilience. Understanding the context is important. MSMEs are the cornerstone of India's economy. They accounted for as much as 30% of India's GDP in 2023, nearly half the country's exports (by value)[2] and employed more than 230 million people in 2024[3] – second only to the country's agriculture sector.

In addition to serving as drivers of industrial development, exports and employment, India's MSMEs have become important nodes in the nation's supply chains, integrating with larger companies[4] to enhance their efficiency. They are also drivers of affordable innovation, often creating cost-effective solutions, while their focus on sectors such as textiles, handicrafts, leather goods and engineering components helps India diversify its exports.

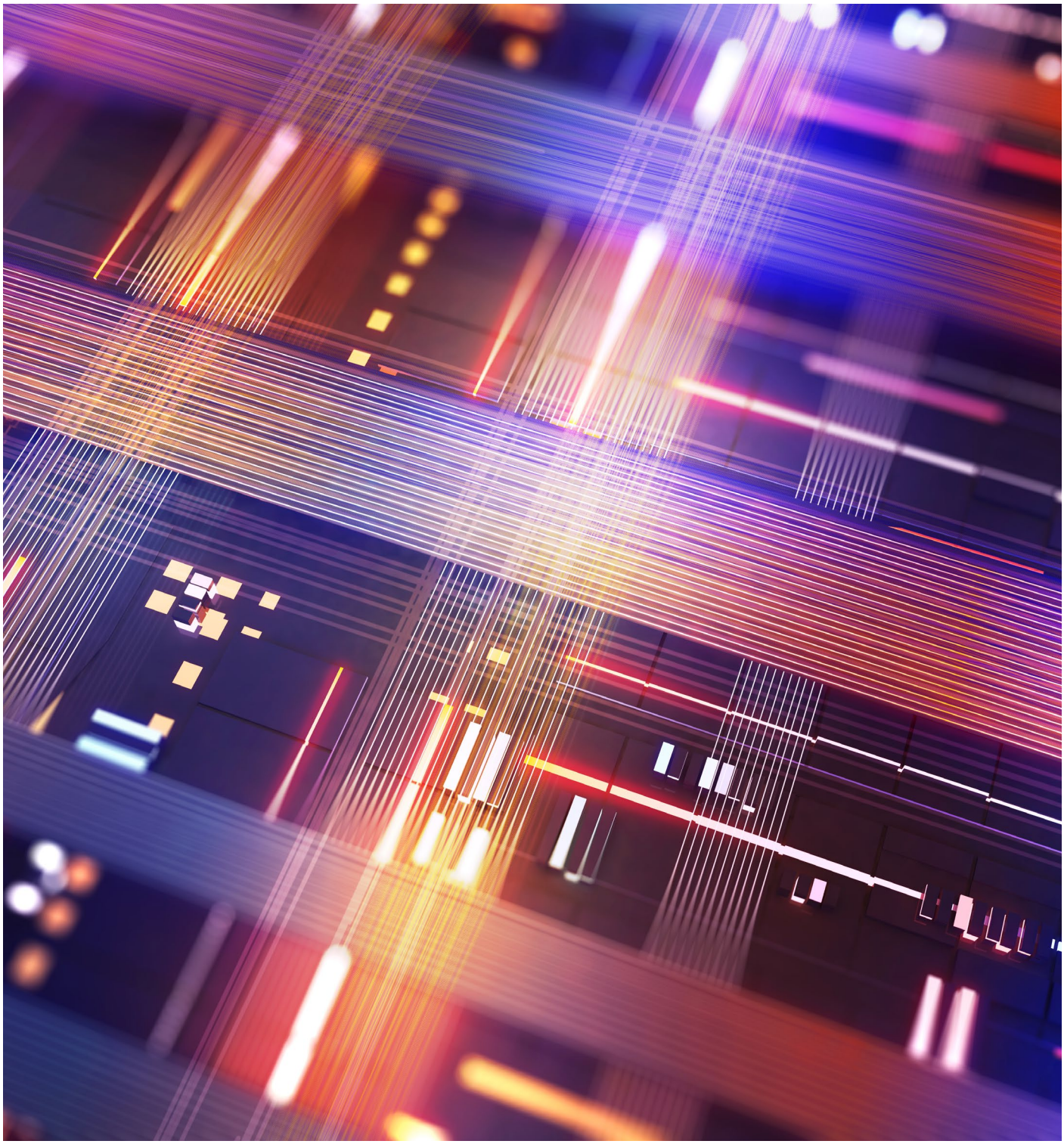
MSMEs also play a crucial role in promoting regional development, often starting up in rural and semi-urban areas where they act as significant employers, particularly in industries such as handicrafts, light manufacturing and food processing. They support rural economies by adding value to agricultural produce and creating non-farm income opportunities. They can absorb both skilled and semi-skilled labour, which reduces income inequalities and regional disparities in the country. Of the total workforce employed by registered MSMEs, 45.4 million are women,[5] demonstrating the sector's contribution to women's employment. The role that MSMEs play in reducing regional and gender imbalances makes them a cornerstone of India's economic strategy and its pursuit of inclusive growth.

Several MSMEs have also sprung up in emerging green industries such as renewable energy, organic farming and waste management, which will help India meet its environmental commitments.

Strengthening the MSME sector is thus essential if India is to attain its ambition of becoming a $7 trillion economy – the world's third largest – by 2030.[6]

1 Why do we need this playbook?

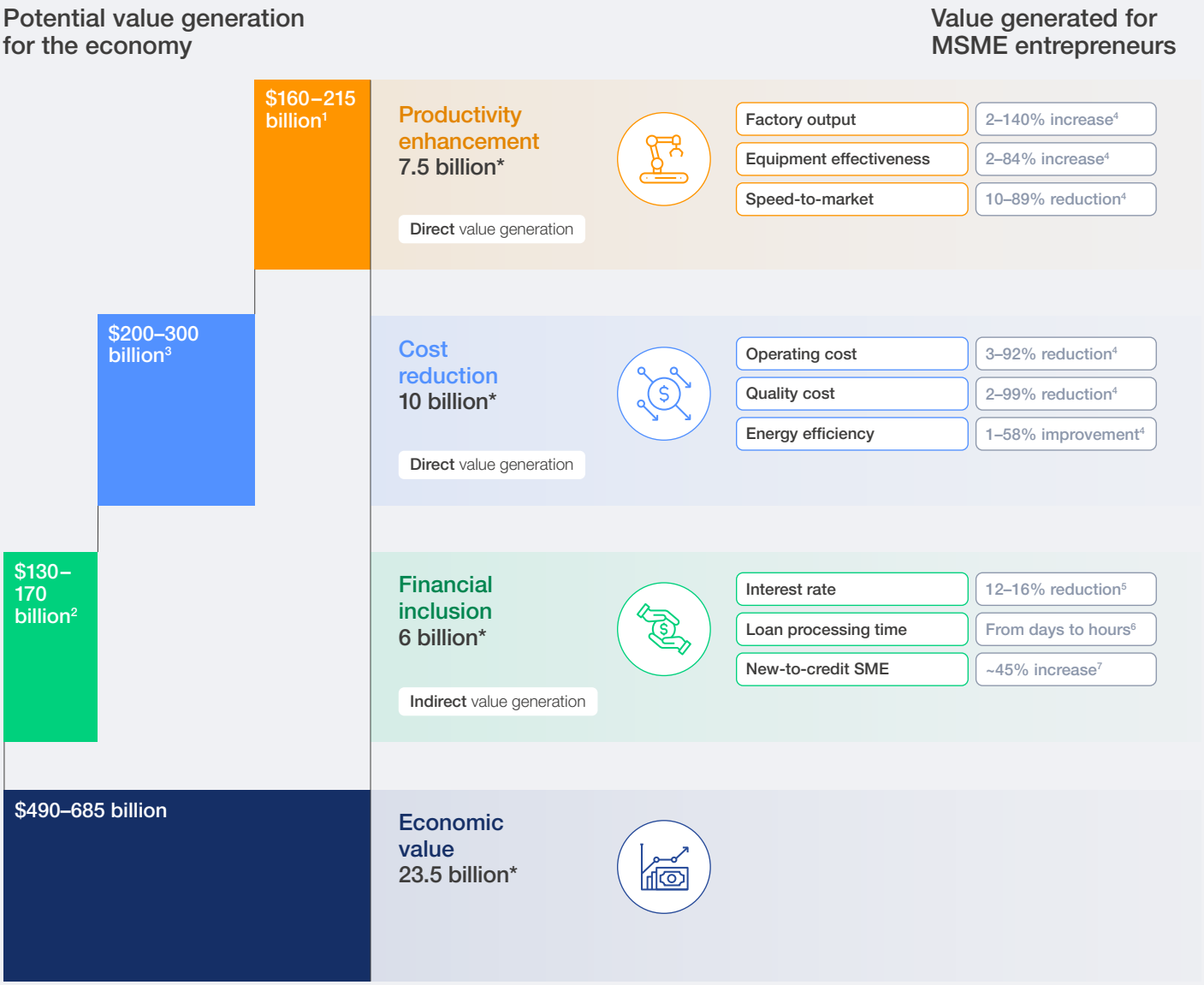
There are many reasons why adopting and scaling AI in India's MSMEs will benefit from careful planning and the use of a structured playbook.



1.1 AI can generate significant value for the MSME ecosystem

The adoption of AI in Indian MSMEs has the potential to unlock significant economic value for India as well as drive tangible benefits for MSME entrepreneurs. The value unlocked by AI in Indian MSMEs is measured in terms of three levers: productivity enhancement, cost efficiencies and financial inclusion. Taken together, the impact of AI through these three levers will transform the MSME ecosystem as well as individual enterprises.

FIGURE 1 **AI will generate value for India and benefit MSME entrepreneurs**



*Value realization by 2030 assuming 20% MSME adoption with an implementation depth of 20%

Notes: 1. Based on AI pilots in MSMES: see The Indian Express. (2025). *As Punjab industry takes to AI, government sees opportunity for MSME sector*. https://indianexpress.com/article/cities/chandigarh/punjab-industry-ai-government-opportunity-msme-sector-9791130/; The Productivity Institute. (2024). *AI catalyst: Cracking the code for MSME productivity*. https://www.productivity.ac.uk/wp-content/uploads/2024/11/AI-Catalyst-Report-291124.pdf; **2.** Based on MeitY's *India's Trillion Dollar Digital Opportunity* and Avendus. *MSME lending: Unlocking potential, realizing dreams*. https://www.avendus.com/india/reports/59; **3.** Based on AI pilots in MSMES: see The Indian Express. (2025). *As Punjab industry takes to AI, government sees opportunity for MSME sector*. https://indianexpress.com/article/cities/chandigarh/punjab-industry-ai-government-opportunity-msme-sector-9791130/; **4.** World Economic Forum. Global Lighthouse Network. https://initiatives.weforum.org/global-lighthouse-network/home; **5.** SIDBI. (2018). *Study on informal sector lending practices in India*. https://www.sidbi.in/uploads/coca_reports/2019-03-29-165105-t9yg7-Study-on-Informal-Sector-Lending-Practices-in-India-Final-Report.pdf **6.** IIFL Finance. (2024). *The role of AI & machine learning in MSME lending*. https://www.iifl.com/knowledge-center/msme/how-ai-and-machine-learning-are-shaping-msme-lending **7.** The Economic Times. (2024). *From data to dollars: How AI enhances credit decisioning for MSMEs*. https://economictimes.indiatimes.com/small-biz/sme-sector/from-data-to-dollars-how-ai-enhances-credit-decisioning-for-msmes/articleshow/112417725.cms?from=mdr

> AI adoption in MSMEs has the potential to unlock $490–685 billion in economic value.

Unlocking economic value: AI as a growth engine for MSMEs

AI adoption in MSMEs has the potential to unlock $490–685 billion in economic value. This represents growth of around 45–62% for the sector, which currently contributes about $1.1 trillion to GDP. However, while this represents the potential, the actual value realized will depend on the level of adoption across the ecosystem as well as the depth of AI implementation. With time, the level of adoption and depth will increase, leading to a convergence of potential and realized value. This value can be measured along three levers:

1. **Productivity enhancement:** AI-driven automation, predictive analytics, process optimization and market insights can boost the overall productivity of the MSME sector, thereby enabling MSMEs to generate a higher revenue per unit input. Initial pilots of AI in Indian MSMEs have shown a productivity increase of 15–20%.[7] Given the current GDP contribution of the MSME sector ($1.1 trillion), this represents a value increase of $160–215 billion.

2. **Cost reduction:** AI can drive efficiencies in operations, logistics, supply-chain management and resource management, thereby reducing costs for organizations. Pilots of AI implementation in Indian MSMEs have shown a 20–30% reduction in costs as a direct result of AI implementation.[8] MSMEs in India currently operate at an overall earnings before interest, taxes, depreciation and amortization (EBITDA) margin of 6–6.5%,[9] or, in other words, have operational costs of 93.5–94% of revenue. Given these low margins, such enterprises can benefit greatly from cost reduction and margin expansion. AI implementation has the potential to unlock $200–300 billion in cost savings in the MSME ecosystem.

3. **Financial inclusion:** MSMEs in India lag significantly behind other countries such as China and the United States in terms of formal credit penetration. Only 19% of the total MSME credit demand in India is met through formal credit sources, leaving behind a massive credit gap of $530 billion.[10] Thus, MSMEs have to rely on informal lenders to meet their credit needs. These informal lenders process loans without asking for extensive documentation but charge an interest rate typically 12–16% higher than that charged by formal lenders.[11] AI-driven data capture, documentation and credit assessment models can help bridge this credit gap and enable formal credit access for several MSMEs, thus unlocking $130–170 billion in economic value (assuming an incremental capital output ration [ICOR] of 2 for the MSME sector).

AI as a business enabler: Impact for MSME entrepreneurs

Beyond a macroeconomic impact, AI adoption by Indian MSMEs can translate into direct measurable advantages for the MSME entrepreneur. It is important to identify this benefit from the perspective of MSME entrepreneurs/owners. As one MSME owner pointed out during consultations, they want to see the value that AI can generate for them before making any investment in the technology. AI can improve metrics in three areas: productivity enhancement, cost reduction and financial inclusion. This improvement can help MSME entrepreneurs drive revenue growth, improve margins and expand business operations.

AI adoption by MSMEs can significantly increase shopfloor productivity, translating to greater revenue generation for the MSME entrepreneur. Results from across the World Economic Forum's Global Lighthouse Network[12] suggest that labour productivity can increase by 30–40%, while overall equipment effectiveness can increase by 10–30% through AI implementation. Additionally, AI can also help reduce lead times by 30–40% and increase on-time delivery by about 10–20%. While the Lighthouse Network includes larger enterprises, MSMEs can realize similar benefits through AI adoption.

Studies also show that AI has the potential to reduce product cost by up to 32%, operating cost by 24% and defect rates by up to 99%. The use of AI can also drastically reduce inventory, thus leading to further cost savings and freeing up working capital. Furthermore, AI-driven sustainability initiatives can lead to waste reduction of up to 64% and increase energy efficiency by up to 59%. Thus, the adoption of AI can improve margins and drive a measurable impact on individual MSME businesses.

The use of AI by lenders and MSMEs can also drive financial inclusion and enable formal credit for many unserved MSMEs. Currently, a significant chunk of MSMEs lack access to formal credit because they do not have the extensive documentation required for credit appraisal. AI can enable alternative credit assessment models that can better measure the risk of enterprises using alternative sources of data. The interest rate charged by informal lenders in India to MSMEs can be 12–16% higher compared to formal credit institutions. Thus, AI-driven credit assessment can lead to a significant reduction in finance costs for MSMEs. In addition, while traditional loan processing can take weeks to months for MSMEs, AI-driven models can reduce this time to a few hours.

1.2 MSMEs in India differ on multiple dimensions

While MSMEs are often referred to as a single unit in this playbook, it is important to recognize that in India they are not a homogenous group.

While MSMEs are often referred to as a single unit in this playbook, it is important to recognize that in India they are not a homogenous group, varying widely in terms of size, sector and geographical location, among other factors. Understanding this range is important so that the recommendations made in this playbook can be tailored to the differing challenges, resources and technological readiness of the approximately 63 million[13] MSME organizations.

MSMEs by size

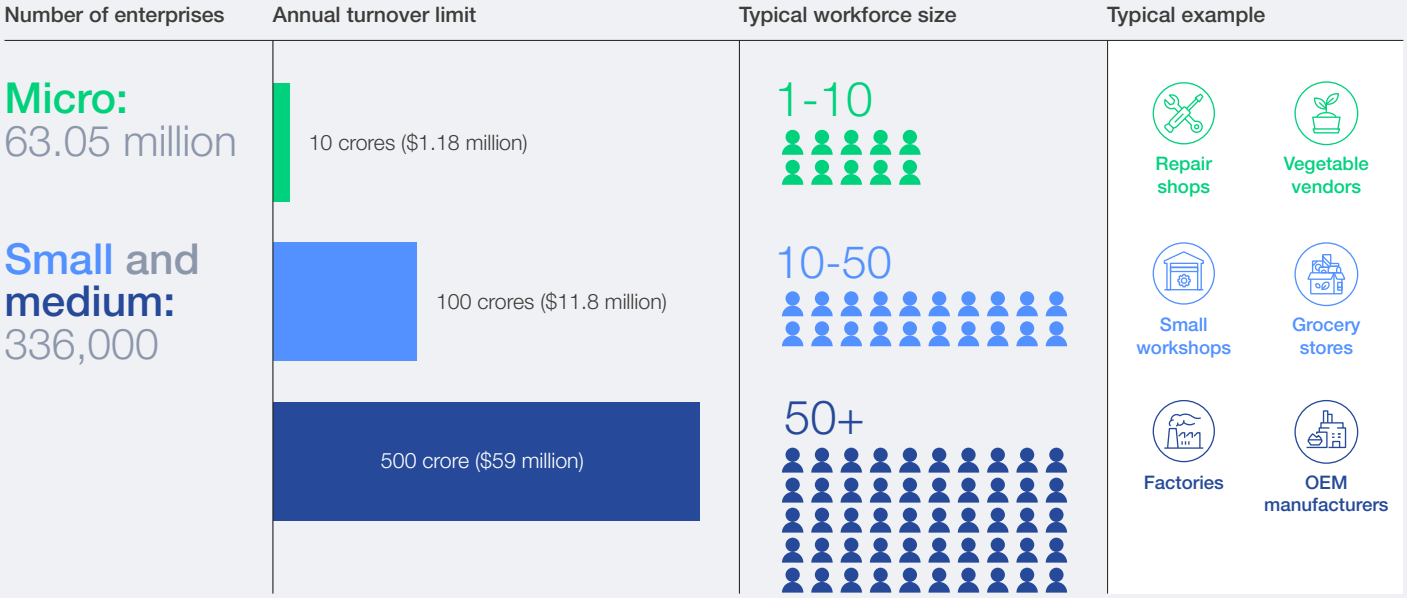
MSME classification in India is based on the annual turnover and investment in plant and machinery made by the organization.[14] While the characteristics of the organization vary even within each of the three categories, microenterprises typically face the highest barriers to technology adoption, while medium enterprises are best suited to new technology adoption. Table 1 details the classification system and notes the number in each segment in the MSME ecosystem as well as typical characteristics with respect to technology and AI.

TABLE 1 **MSMEs by turnover and investment limits**

Classification	Annual turnover limit	Investment limit	Number of MSMEs	Typical characteristics
Micro	INR 10 crores ($1.18 million)	INR 2.5 crores ($295,000)	63.05 million	Minimal automation, informal data management and limited access to finance
Small	INR 100 crores ($11.8 million)	INR 25 crores ($2.95 million)	331,000	Structured operations, often use accounting tools
Medium	INR 500 crores ($59 million)	INR 125 crores ($14.75 million)	5,000	Often use enterprise resource planning (ERP) software, better financial access

Source: Ministry of Micro, Small & Medium Enterprises. (2025, February 4). *Budget 2025–25: Fuelling MSME expansion*. https://pib.gov.in/PressReleasePage.aspx?PRID=2099687; Government of India. (2024). *Annual Report 2023–24*. https://msme.gov.in/sites/default/files/FINALMSMEANNUALREPORT2023-24ENGLISH.pdf

FIGURE 2 **Diversity within the MSME landscape**



Note: This visual is for representation only and is not drawn to scale; this playbook will primarily focus on small and medium enterprises (SMEs).
Source: Ministry of Micro, Small & Medium Enterprises. (2025, February 4). *Budget 2025–25: Fuelling MSME expansion*. https://pib.gov.in/PressReleasePage.aspx?PRID=2099687; Government of India. (2024). *Annual Report 2023–24*. https://msme.gov.in/sites/default/files/FINALMSMEANNUALREPORT2023-24ENGLISH.pdf; World Economic Forum analysis

> Since MSMEs in a cluster are closely knit and depend on each other, any transformation programme can maximize its impact by taking a cluster-based approach.

MSMEs by sector

India has a well-balanced MSME landscape, with almost an equal number of MSME organizations operating in the manufacturing, service and trade sectors. According to the annual report of the MSME ministry, the trade sector has the highest number of enterprises, with a 36% share of the total. Trade is followed by the service sector, with a 33% share, and manufacturing with a 31% share.[15]

Within manufacturing, services and trade, there are many MSME industries operating across India. Some of the major MSME industries in the country include textiles, pharmaceuticals, fast-moving consumer goods (FMCG), vehicle components, footwear, leather and electronics. Each of these industries has its own challenges and needs and will therefore have its own differing AI use cases that can support its business operations.

The implementation of AI solutions will vary across these different MSME industries. For example, an FMCG manufacturer with a consumer-facing business may find digital marketing and customer engagement tools to be of great value in its business, while a vehicle component manufacturer may use AI-based virtual prototyping to reduce prototyping costs.

MSME clusters

MSME organizations in India are typically found in geographically concentrated groups that specialize in a particular industry, product or service. These clusters enable a shared ecosystem of suppliers, buyers, skilled labour and infrastructure. This leads to cost efficiency, knowledge-sharing and economies of scale.

India has thousands of MSME clusters spread across different states. For example, there are vehicle components clusters in Chennai, textile clusters in Tirupur and Surat, and a pharmaceutical cluster in Pune. Since MSMEs in a cluster are closely knit and depend on each other, any transformation programme can maximize its impact by taking a cluster-based approach.

In the case of AI-adoption programmes, different clusters will have different AI use cases, challenges to AI adoption and so on. A cluster-based approach will ensure that the programme stays relevant for the target MSMEs and ensure adoption of AI at an accelerated place.

BOX 1

AI in microenterprises

Microenterprises form the backbone of India's MSME ecosystem. These businesses are often single-owner or family-run, with a very limited scale of operations. Microenterprises represent more than 99% of all MSME organizations in India. They also contribute significantly to employment – employing around 97% of the total workforce in the MSME sector.[16]

Microenterprises are characterized by limited investment and a small scale of operations. Around 85% of them employ no more than three people, with less than 2% employing more than nine people.[17] As per Udyam registration data,[18] about 85% of microenterprises operate with investments of less than INR 5 lakh (c. $5,800) and almost 99% of them operate with investments of less than INR 25 lakh (c. $29,200).[19] Furthermore, 92% of microenterprises have a turnover of less than INR 50 lakh (c. $58,400), with 70% having an annual turnover of less than INR 10 lakh (c. $11,600).[20] This is evidence of the small scale of these enterprises and of their limited financial resources. They include the likes of fruit-and-vegetable vendors, repair shops and cottage industries, usually with very informal operations.

The AI journey for these microenterprises will naturally differ significantly from that of small and medium enterprises (SMEs). Most of the enterprise owners lack any understanding of AI. Most transactions are in cash with no formal documentation. Records are mostly maintained on paper, and these are not digitized. At such a limited scale of operations, any attempt to establish digital systems in these enterprises would be impractical.

At the same time, AI has the potential to deliver significant value to microenterprises, even at a small scale of operations. Table 2 outlines some of the key challenges faced by microenterprises in India and how AI-powered solutions can help address them.

Using AI to address microenterprise challenges

Challenge	Description	How AI can help (mobile-based solutions)
Low levels of productivity and wages	Manual operations and lack of digital tools reduce efficiency and income	– **Voice-enabled productivity apps:** AI-powered apps (such as Google Assistant) can set reminders, track sales and manage inventory using simple voice commands in local languages – **AI WhatsApp bots:** Receive and send orders, generate bills and check stock via WhatsApp
Lack of access to credit	No formal credit history makes bank loans hard to get	– **AI credit scoring via mobile wallets:** Fintech apps use AI to analyse transaction patterns for loan eligibility – **Mobile lending platforms:** AI suggests suitable micro-loans based on SMS and UPI transaction history (Lendingkart, Indifi)
Poor infrastructure and market access	Difficulties reaching wider markets due to poor connectivity and know-how	– **AI social media tools:** Mobile-friendly apps to auto-create ads, suggest hashtags and optimize posting times (Zoho Social, Canva)
Punitive or complex regulations	Complex tax, licensing and compliance processes are hard to navigate	– **AI-powered compliance assistants:** Apps offer mobile reminders, voice-guided GST filing help (GITA - GST Interactive Technical Assistant) and automated invoice generation (Vyapar, Zoho Invoice) – **Legal chatbots:** Micro-entrepreneurs can ask policy or scheme-related queries and get simple summaries in local languages

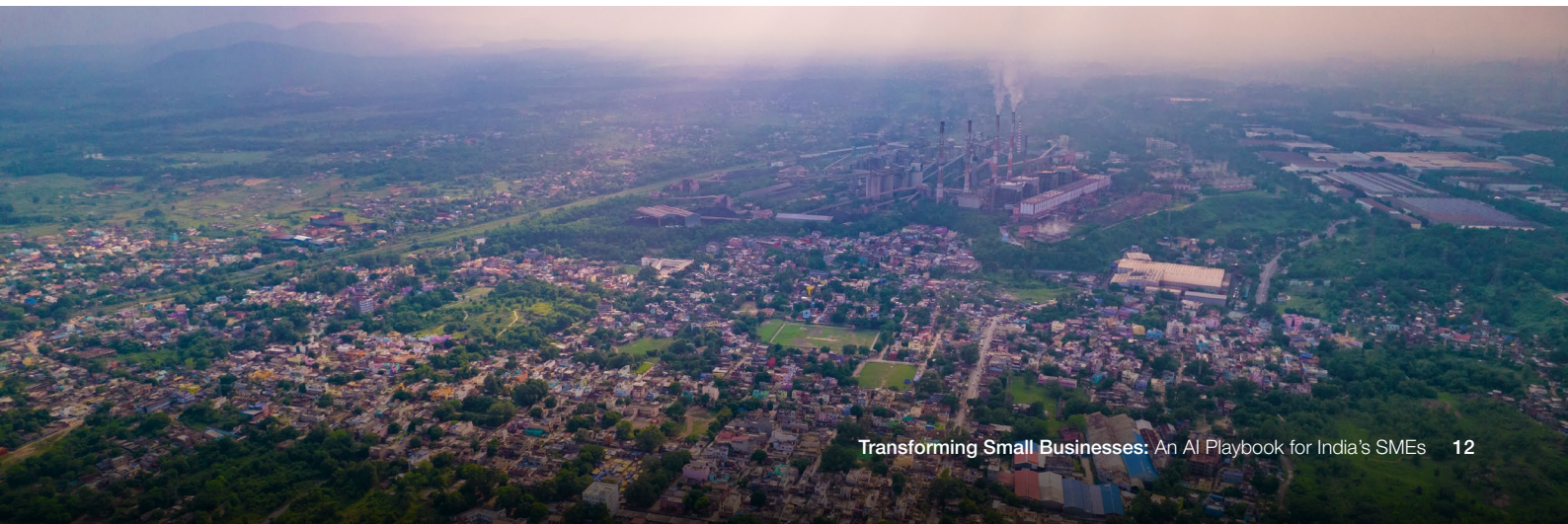
While it will take a long time for these microenterprises to realize the full potential of AI due to their low digital and AI maturity, they can still make use of basic AI tools. The following strategy can unlock the value of AI for microenterprises:

1. **Start with free/low-cost AI tools:** Microenterprises can begin their AI journey by using free or low-cost AI tools in their business operations. Several AI tools on the market offer a freemium model, charging users only for usage above a certain scale or to access certain features. The Application Development Initiative, under the IndiaAI Mission, is also focused on developing AI applications in critical sectors, with 18 applications already under development. Using these free or low-cost applications will increase microenterprises' familiarity with AI and help build trust before progressing to more advanced applications.

2. **Opt for AI-as-a-service models:** AI-as-a-service models allow small businesses to implement AI capabilities as cloud-based services, which does not require significant investment in infrastructure. This also allows for a faster deployment time, so microenterprises can start seeing returns quickly and scale their AI use accordingly.

3. **Adopt AI via mobile-based applications:** There has been a significant uptick in mobile phone penetration in India in recent years, with 85% of Indians having access to a mobile phone and 60% having access to the internet.[21] Microenterprise owners can use mobile-based AI tools such as chatbots and AI assistants. As they identify specific use cases, they can buy more advanced mobile-based tools for accounting, inventory, supply-chain management, etc.

The use of basic AI tools can help microenterprises slowly increase productivity and optimize operations. This will gradually free up working capital and improve margins, leaving more resources that can be invested in advanced AI applications and AI infrastructure. However, this change will be slow and gradual. Going forward, this playbook will focus on India's small and medium enterprises (SMEs)



1.3 SMEs operate at different stages of digital maturity

The digitalization journey for SMEs in India is highly diverse, with varying levels of digital maturity in enterprises. The journey can broadly be categorized in five stages (Figure 3). Understanding this journey is a crucial prerequisite for developing strategies to accelerate AI adoption in SMEs.

FIGURE 3 **Stages of digital maturity in Indian SMEs**

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Stage	**Digital awareness**	**Digital starter**	**Digital adoption**	**Digital automation**	**Digital integration**
Stage description	› Paper-based data capture (in notebooks, ledgers) › Use of smartphone-based basic tools	› Use of MS Excel to capture data › Use of accounting software such as Tally	› Use of ERP and CRM systems to capture data and initial automation › Use of e-commerce platforms	› Sensors and IoT devices capture data › Partly automated workflows › Use of analytics on data captured	› Fully automatic sensor-based data capture › Fully automated workflows with actuation layer

Source: World Economic Forum analysis

The adoption of AI-driven solutions will depend on an SME's stage in the digital journey. Enterprises in the earlier stages (digital awareness, digital starter) need foundational digital tools and skilling before they can start using AI, while those at the advanced stages (digital automation, digital integration) can benefit from alternative financing models to invest in AI solutions and tools.

Understanding where an SME stands in its digital journey makes it possible to provide relevant stage-appropriate recommendations and make interventions to accelerate digital transformation. Similarly, clarity on the average digital maturity of SMEs in a particular cluster enables stakeholders to tailor the cluster strategy to focus on differing needs.

1.4 SMEs need a structured approach to AI adoption

> This AI playbook demystifies AI by providing step-by-step advice on identifying needs, picking feasible but impactful solutions and scaling AI adoption.

If India's SMEs are to adopt AI at scale, they need a structured playbook that can guide them in adopting and deploying AI effectively, offer achievable strategies to overcome systemic barriers and unlock sustainable growth.

This AI playbook demystifies AI by providing step-by-step advice on identifying needs, picking feasible but impactful solutions and scaling AI adoption. By consolidating best practices, case studies and policy recommendations, it provides CEOs of SMEs with the confidence to make better decisions and navigate their digital transformation journeys.

This report will encourage collaboration among technology providers, financial institutions and policy-makers, aligning stakeholders to drive the growth of Indian SMEs by scaling the use of AI. While the target audience is policy-makers and SME entrepreneurs, the playbook will also help other stakeholders such as start-ups, industry and academia decide how best they can collaborate with Indian policy-makers and SMEs.

In that sense, the AI playbook for Indian MSMEs serves as the first resource for Indian policy-makers developing strategies to scale the use of AI in

This playbook has been designed to complement the many AI-related initiatives already under way in India.

their jurisdictions. In fact, it has been designed to complement the many AI-related initiatives already under way in India such as the IndiaAI Mission,[22] overseen by India's Ministry of Electronics and Information Technology, and the AI initiatives and pilots, such as the Telangana AI Mission[23] and Karnataka's AI centres of excellence,[24] set up by the country's state governments.

The AI playbook for Indian MSMEs has three distinct dimensions:

1. It provides a framework for identifying high-value AI use cases for SMEs in India.
2. It offers a framework to drive AI adoption by SMEs:
    a. **Creating awareness** through use case experience centres and AI sandboxes as well as through various tools for capability-building
    b. **Inspiring action (through DNA – data, network and AI applications)** by using an AI maturity index, proposing an AI solutions marketplace and identifying alternative funding models for AI investments
    c. **Receiving recognition for SME AI pioneers** that are early adopters of the technology to inspire the ecosystem and build trust; this is followed by partnership with programme anchors such as central ministries and state governments as well as industry and SME associations
3. It shows the way forward for SME entrepreneurs and policy-makers through a detailed roadmap for accelerating AI adoption in Indian SMEs.

↓ Visuals from a workshop with MSME promoters and associations in Chennai, Tamil Nadu

1.5 The multistakeholder methodology of the playbook

The AI playbook for Indian MSMEs emerged from collaborations coordinated by the World Economic Forum in India, guided by the AI for India 2030 Advisory Council. In 2024, the Forum established an expert group to explore how AI could address the systemic challenges faced by MSMEs.

The methodology combined design thinking-driven research backed by stakeholder engagement that included ethnographic studies of SMEs in Bengaluru, Chennai, Coimbatore, Goa and Mumbai as well as workshops with SME entrepreneurs in these geographies. The report team engaged with more than 30 industry experts, start-ups, consultants and academics at two joint consultations. These discussions were complemented by in-depth interviews with MSME experts, AI specialists and SME CEOs. This approach of expert consultation and ground-level engagement provided crucial insights into the high-value use cases that would benefit SMEs as well as the challenges of AI adoption in SMEs.

The report findings, synthesized from these engagements, form the foundation for this playbook. In addition to an evaluation of the specific challenges that SMEs face in implementing AI technologies, the report showcases an AI use case prioritization framework and illustrates some high-value use cases that were selected for their impact potential to address critical operational inefficiencies and enhance SME competitiveness as well as the feasibility of implementation.

Finally, all of the insights have been integrated into an IMPACT AI Framework, which offers guidance for policy-makers and SMEs starting out on their AI journeys. It maps the concrete ways in which policy-makers can spur AI adoption by SMEs and position the early adopters as pioneers for others to emulate. Identifying exemplars will generate confidence among SMEs and pave the way for AI adoption at scale in Indian SMEs.

2 What are the challenges to AI adoption?

Interviews with SME stakeholders in India reveal what they need in order to implement AI successfully, and explain the challenges in doing so.

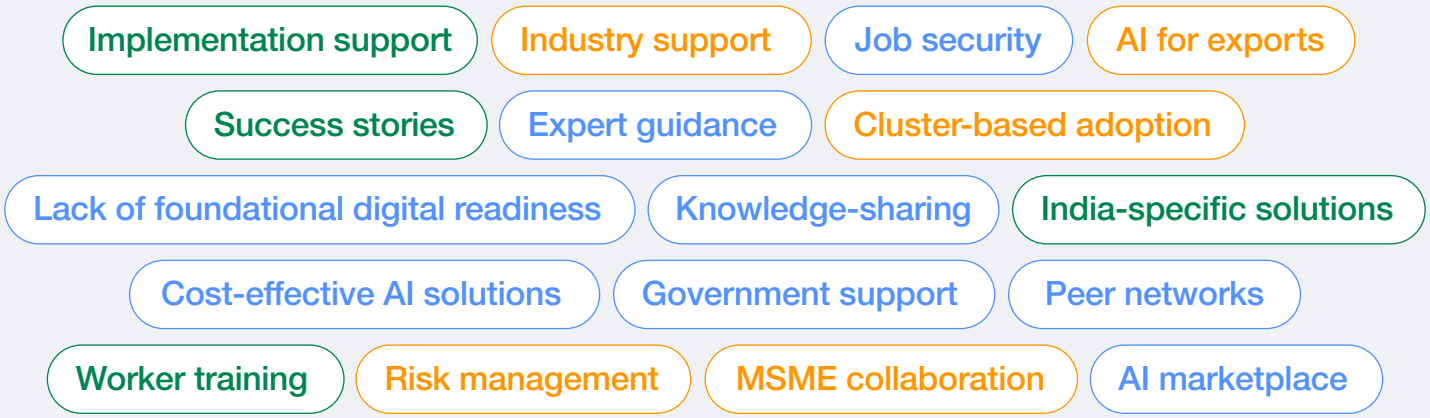
2.1 Stakeholder perspectives

SME stakeholders' perspectives about AI are compelling

Through discussions with those at the forefront of Indian SMEs, the report team uncovered a narrative about AI that is as much about aspiration as it is about adoption. Interviews with the ecosystem's stakeholders provided insights that helped develop a realistic understanding of the relevance and scope of this technology.

Extensive consultations with SME owners and entrepreneurs, start-ups, industry representatives, shopfloor workers and government bodies painted a picture of business owners juggling razor-thin margins while eyeing digital transformation; workers seeing both threat and opportunity in AI's emergence; and industry veterans advocating for an ecosystem that nurtures rather than just enables. These perspectives, sometimes conflicting but always illuminating, offer crucial insights into the challenges and opportunities that AI poses for SMEs.

FIGURE 4 **Word map of SME stakeholders' concerns and needs**



Source: World Economic Forum

Perspectives from SME owners and entrepreneurs

Don't sell me AI – show me my path to value

"I want AI, but I struggle with a lot of questions. What use cases would be the most beneficial for me? How ready am I? Who can assess this for me? Where are the appropriate solutions available? Who are the right partners for implementation?

We need AI that plays by my margins because value is what keeps my lights on

"We always have to maintain a delicate balance between keeping costs low and ensuring the quality of the product. The cost of AI is a huge deterrent. Most of the AI solutions I have seen are designed for large enterprises and will be quite expensive for me. Custom AI solutions for small manufacturers like mine seem out of reach.

Without guidance from experts, it is difficult to see a clear path forward

"Over the last few years, we have done what we could to reduce our production times. We are being told that incorporating AI in our operations could help us tap into the remaining gains that are to be made on the productivity front. But we cannot do this by ourselves. We need some guidance from experts who can visit our factory and tell us exactly which processes can benefit from using AI and how.

Government needs to be an ecosystem curator, not just a subsidy provider

"We want the government to be an enabler and facilitator. We would like to see the government establish an AI platform that could help us get access to AI solution providers, equipment vendors and available subsidies, thereby facilitating knowledge-sharing. Such a platform must also include tools to evaluate effectiveness of solutions and must also integrate [original equipment manufacturer] OEM–supplier networks.

We are ready to experiment – but the OEMs are reluctant

❝ We have identified the way in which AI can help us. But our customers, that is, the OEMs, do not want to experiment with a process that has been working well for a long time. Without their support, we wouldn't be able to tap into AI's benefits.

Availability of the right knowledge can help prevent sticking points

❝ Knowledge-sharing is critical for us. If a database can be created that can map issues to potential AI solutions, it can play the role of an expert for us who can diagnose the problem and recommend targeted solutions. Hiring such an expert is crucial but it is in no way financially feasible for us.

Workers need to see AI as their ally, not their replacement

❝ There is a general reluctance among workers to trust AI systems. They view it as a threat to their jobs. If you can help us show them that AI can assist, not replace, them – by simplifying tasks and allowing them to upskill and remain relevant – we will find it easier to get them onboard.

Role models and success stories encourage us, can you show us more?

❝ We learn a lot among ourselves. For instance, here in the Peenya Industrial Cluster, many of us owners get together and discuss ways to improve our processes and discuss challenges. In this regard, with a new technology such as AI, where there is general reluctance on how useful it can actually prove, I think if some heroes or role models can be showcased who have been able to improve their processes, that will be very helpful and encouraging.

Perspectives from start-ups and industry

We can't jump to AI when most of us haven't walked the digital basics

❝ The challenge with Indian SMEs is that they are very diverse with respect to their AI-readiness. We need to create AI solutions that can be easily integrated into existing systems, especially for those enterprises that are digitally less mature. Many SMEs are still operating with very minimal digital infrastructure. Without these basics in place, it's going to be very difficult to introduce advanced AI solutions.

We will need to meet each SME where it is

❝ SMEs need a phased approach to bring them up to speed; we will have to meet each where they are in their digital journey. Currently, the absence of reliable data that can help an enterprise achieve an overall view of the factory floor is a major bottleneck in deploying AI. Our role then is to first help these businesses build a digital foundation so they can fully benefit from AI.

Ecosystem power propels small firms

❝ For AI to be truly effective, SMEs, OEMs and the government need to collaborate closely. Large companies should assist their smaller counterparts by sharing knowledge and offering digital infrastructure – AI implementation is a shared effort within the ecosystem.

We need AI built for Indian realities, not global wallets

❝ The problem is that most of the solutions produced in India are developed for deployment abroad because that commands a hefty price tag. We urgently need to find a way to create India-specific solutions that can be offered to Indian enterprises at a reasonable cost.

Help SMEs find their target then the right tool

❝ When deploying AI solutions, simply saying that you want to improve your process isn't enough for us. You must know exactly what improvement you are looking for. For instance, you could say you want to reduce your quality rejection rate from 20% to 5% or that you want to reduce the on-belt time from one minute to 30 seconds. We can also help you clearly outline these goals, but in the absence of these, there is no point in moving ahead.

Process needs production-ready AI, not prototypes

❝ When we work with clients, we usually see more risk aversion among process industries. Experimentation, if gone wrong, can prove to be very costly there – a single mistake could shut down the entire operation for hours. So most of these manufacturers just want to make sure that the current process is running as smoothly as it can. But, let me assure you, the opportunity is equal in both types of industries.

Let AI translate export standards while your best minds solve real challenges

❝ When you're dealing with dozens of different export standards, having experts spend time on repeatedly decoding, translating, understanding or synthesizing compliance requirements and related documentation is just wasteful. AI can take all those buyer requirements and convert them directly into the language your teams can understand – let AI handle this routine work and free up your skilled people to tackle the really complex challenges that actually need human expertise.

↑ Visuals from a workshop with MSME promoters in Coimbatore, Tamil Nadu

Perspectives from shopfloor workers

Don't show me AI's power, show me my path to it

"I'm seeing machines and robots start to take over jobs in other factories. My company says they will bring in AI but I don't know what it means for my job. I want to keep working here but I don't know if I can learn all this new technology. I did not even finish high school. I'm willing to try but I need someone to show me how in a way I can understand.

I am willing and optimistic – show me the way forward

"AI sounds intimidating, but it could actually help make my job easier. If I get proper training, I am being told that we can use AI tools to monitor machines and prevent breakdowns before they happen. Instead of fearing job loss, I see this as a chance to upgrade my skills.

Show us how it works with us, not against us, and we are onboard

"There's this fear that AI will lead to surveillance, where every move we make is tracked. If the management can show us that they will use AI responsibly, for improving safety and productivity rather than constant monitoring, it would be more acceptable.

Perspectives from government bodies

We are driven to provide the right tools to SMEs to use AI

"In repeated interactions with the World Economic Forum, we have been told that many enterprises have expressed a wish for an AI platform where SMEs can easily connect with the right solution providers. We aim to offer financial incentives, subsidize AI implementation costs and create programmes that ensure SMEs see the benefits before they face the financial burden of adoption. AI can improve safety, energy efficiency and productivity. However, the framework should also include awareness programmes to overcome resistance and ensure smooth AI integration across sectors.

Research and solution development must go hand in hand

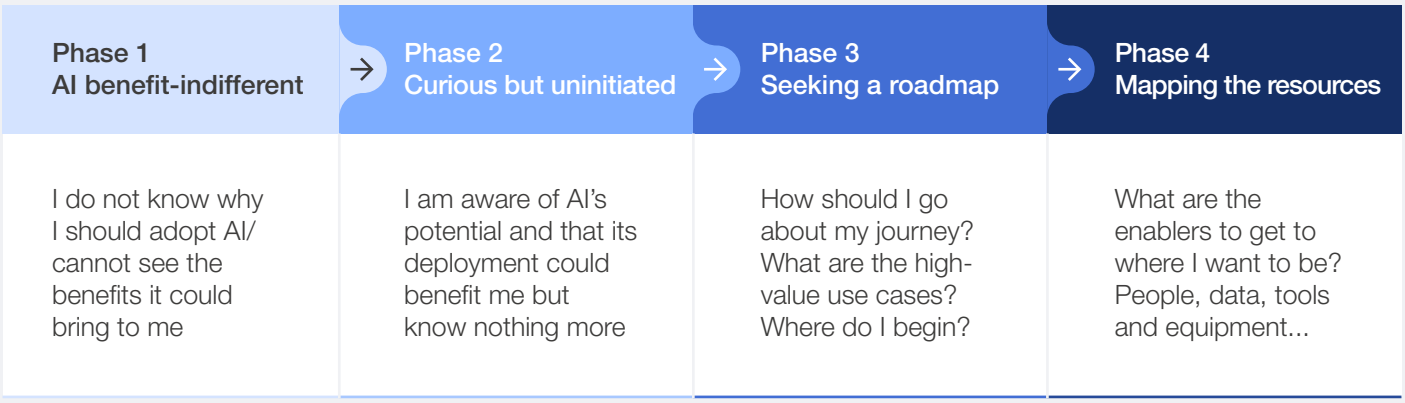
"Industry need to work continuously with academia in a culture of ongoing research. Perhaps some of our research students can spend some weeks with the companies developing the AI solutions and some of their staff can come to work with us. Such a structure can enable a seamless flow of crucial experience and also ensure that both the research conducted and the solutions produced are as realistic and useful as possible.

2.2 Key challenges to AI adoption identified from stakeholder perspectives

The perspectives shared by SME entrepreneurs, workers, industry bodies, start-ups and government stakeholders reflect a diverse but consistent set of concerns. Drawing from these ground-level insights, the team has synthesized the findings into four major categories of challenges that hinder AI adoption among MSMEs. These thematic areas form the basis for the framework and recommendations that follow.

1 The knowledge imperative – AI awareness

FIGURE 5 **The AI transformation journey from an SME perspective**



Source: World Economic Forum

> Most SMEs are aware that AI deployment could benefit them but they are not sure how.

To determine where an SME should start with AI, it is necessary to determine where it currently is on its journey. Every SME goes through four phases, as shown in Figure 5. Interviews indicate that most SMEs are at the second or third stage of their journey – aware that AI deployment could benefit them but they are not sure how. They have not studied high-value use cases nor have they been able to identify partners for implementation or tools that could help them start out. In addition to being unaware of solutions, they are also unsure of the value proposition and returns for each solution.

Furthermore, another problem faced by SMEs is the lack of inspiration, success stories and mentorship. Many SME owners hesitate to invest in AI due to the lack of clear visible proof of success within their industry ecosystem. Further, the lack of structured mentorship programmes means that SMEs struggle to understand the real implementation challenges. Addressing this gap by creating mentorship programmes and promoting local success stories can inspire SMEs to introduce AI into their organization.

SMEs also lack the expertise to implement AI solutions in their business operations. Implementation partners/vendors can help SMEs bridge this gap by undertaking technology integration and implementation at reasonable prices. Connecting SMEs to a network of these partners can make the process easier and thereby increase adoption.

Nurturing an ecosystem is as critical as enabling it. SMEs need a platform where they can learn about AI, its implications for small businesses and the value potential of implementing different AI use cases. In order to do this, SMEs at different phases of their AI journey need to be brought together. Enterprises at advanced stages of the journey can act as mentors and guides for other SMEs in the early phases. A peer network can be used to share experiences, challenges faced and opportunities unlocked.

> The transformation of SMEs through AI will require a change in how businesses view and use data assets

2 Foundational challenge for AI – data and digital readiness

Data for AI is a major challenge for SMEs

Before focusing on AI applications for SMEs, it is important to come to grips with the role that data plays vis-à-vis AI. Data is AI's lifeblood, fuelling every prediction, decision and outcome. Just as humans learn from experience, AI learns from data. Consultations conducted with stakeholders in the SME ecosystem confirmed that the successful adoption of AI will hinge on data.

At the same time, stakeholders quickly pointed to the major problems SMEs face in collecting and sharing data effectively. These include:

Data infrastructure challenges: Most SMEs face financial barriers to adopting advanced technologies such as industrial internet of things (IIoT) sensors and cloud platforms. Real-time data systems require significant upfront investment in hardware, integration and maintenance, which many SMEs cannot afford. Transitioning legacy systems to the cloud presents challenges such as technological complexity and data continuity.

Workforce capability: The lack of technical expertise is a major hurdle. SME employees often lack the skills to operate IIoT systems, analyse data or handle cybersecurity risks. Their resistance to adopting new technologies and inadequate access to training programmes will slow progress, making workforce readiness a major gap in establishing robust data systems.

Cybersecurity and privacy concerns: Data breaches and hacking risks deter many SMEs from sharing data, especially if they have not invested in robust cybersecurity frameworks. Privacy concerns, such as the misuse of business data, further exacerbate SMEs' distrust of digital systems. Without safeguards, these issues undermine confidence and slow the adoption of real-time data-based solutions.

Regulatory barriers: Fragmented regulations and the fear of increased tax burdens discourage SMEs from embracing data-sharing. Interoperability challenges make the process more complex, highlighting the need for standardized frameworks. Over-regulation further deters adoption, making data-sharing efforts cumbersome.

Thus, the transformation of SMEs through AI will require a change in how businesses view and use data assets. Currently, most rely on analogue devices such as ledgers, physical logs and, at most, computerized spreadsheets to manage their operations. They capture financial data in Tally or Zoho while operational records such as inventory levels and production schedules are maintained in spreadsheets. These manual methods introduce errors, inefficiencies and delays in decision-making. They also create bottlenecks, because this kind of data capture, interpretation and analysis is constrained by experience and availability.

AI algorithms can reduce SMEs' dependence on humans by automating data processing, identifying patterns and providing data-driven insights.

↓ Visuals from a workshop with MSME promoters in Goa

The data journey

A typical SME's data flows include five datasets that can help address its challenges in cashflow optimization, inventory management, workforce retention, customer engagement and supply-chain efficiency. They are:

1. Financial data such as revenues, costs, receivables, tax filings and credit histories
2. Operational data such as inventory levels, stock-keeping unit (SKU) movements, maintenance logs and production schedules
3. Customer insights from order histories, payment cycles, customer feedback and customer relationship management (CRM) records
4. Supply data such as supplier details, delivery schedules and tracking data
5. Environmental data including energy consumption, waste levels and water usage

Undertaking the data journey is essential if SMEs are to unlock AI's potential. By shifting from fragmented manual processes to real-time systems, SMEs can address operational challenges with AI.

TABLE 2 **Data journey – from manual processes to real-time systems**

Phase	Data sources	Data quality	How AI can be used	Outcomes/impact
0	Ledgers, manual logs, physical records (e.g. energy bills, handwritten logs)	Data is unstructured, delayed and prone to errors	Retrospective analysis to identify trends from historical data	Manual processes lead to slow, reactive decision-making with limited scope for optimization
1	Spreadsheets, Tally, Zoho, basic ERP and CRM systems	Data is structured but lacks real-time updates and integration	Basic trend identification and automated reporting	Improved documentation reduces errors, but decisions remain delayed and operational gaps persist
2	Application programming interfaces (APIs), IIoT sensors, QR code-enabled tools, cloud platforms	Data becomes real-time, centralized and interconnected	Predictive analytics enables proactive planning	Proactive decisions improve efficiency and reduce costs (e.g. predictive maintenance and inventory control)
3	Fully integrated systems combining real-time data and AI tools	Data is continuous, real-time and aligned across functions	Autonomous decision-making through prescriptive analytics	Fully automated workflows maximize uptime, resource use and customer satisfaction

Source: World Economic Forum

> SMEs need access to affordable, easy-to-use and easy-to-integrate AI solutions

3 The AI solutions accessibility challenge

SME organizations in India typically operate with low margins, limited financial resources and without a digitally skilled workforce. For AI adoption to scale in SMEs, these organizations need **access to affordable, easy-to-use and easy-to-integrate solutions**. Additionally, since these organizations are new to the AI transformation journey, **lack of funding and AI infrastructure** are other major barriers to adoption. These challenges need to be addressed by creating an enabling ecosystem for scaling AI adoption at SMEs.

One major challenge regarding accessibility is the lack of **AI solutions and testing environments that focus specifically on SMEs and particular SME sectors**. Most AI solutions are designed for large enterprises and require complex infrastructure, a high volume of structured data and significant investment. SMEs in India still rely on legacy systems, spreadsheets and basic ERP tools that do not integrate well with existing AI solutions. Additionally, SMEs lack the resources required to test AI applications before full-scale implementation. AI solutions need to be built specifically with SMEs in mind, offering plug-and-play tools and seamless integration with legacy systems.

SMEs in India operate with limited resources – both in terms of **infrastructure and finance**. AI solutions require computational resources that most SMEs cannot afford due to financial and infrastructural limitations. They lack access to cloud platforms, as they are expensive, and are unable to invest in hardware infrastructure. In the absence of structured funding mechanisms that specifically cater to funding for AI adoption by SMEs, adoption becomes a real challenge.

↑ Visuals from a workshop with MSME promoters in Bangalore, Karnataka

4 Talent and workforce capability

The successful adoption of AI at scale in SME organizations requires access not only to the right data and technology but also the **right skilled workforce**. How effectively AI is implemented in these organizations will vary depending on how well the workforce is able to implement, operate and use AI tools and solutions to enhance productivity, efficiency and decision-making. SMEs in India struggle to find the right talent, with a lot of them lacking a digitally skilled workforce. Consultations with stakeholders clearly highlighted this problem, with SME leaders voicing concerns that any initiative to adopt AI is likely to encounter a shortage of capable workers. The problem of talent vis-à-vis AI adoption manifests in these organizations in the form of three critical challenges: **upskilling the operational workforce** for AI-readiness; **attracting AI professionals** to implement new technologies; and cultivating an **AI-literate leadership**.

There is a dearth of **AI-literate leadership** at SMEs. SME owners and managers often lack awareness of how AI can be integrated into business operations to drive efficiency in the organization. Their knowledge of AI is generally limited to popular generative AI (GenAI) tools, without a clear understanding of the potential of AI in all areas of business operations. This lack of understanding leads to inaction, slowing the adoption of AI.

SMEs typically operate with a **workforce that lacks basic digital skills** and has little or no exposure to AI technologies. These workers lack the technical proficiency required to operate digital tools and AI applications. This skills gap makes it difficult for SMEs to implement AI solutions in the organization, as such implementation would have to be accompanied by significant investment in training workers. As SME organizations operate with limited resources, and workers generally work on a fixed-term basis, it is difficult to justify such significant investments in training programmes.

Another challenge faced by SMEs is **attracting skilled AI professionals** who can drive AI implementations in the organization. This is caused by two factors: the demand–supply gap for skilled AI professionals and the unwillingness of these professionals to work in SME set-ups. There is a shortage of AI professionals in the broader job market, with greater and greater demand in the wake of recent euphoria about AI. In addition to this shortage, these professionals typically prefer working for larger organizations that can offer higher compensation packages and a better employee value proposition

> “ The successful adoption of AI requires access not only to the right data and technology but also the right skilled workforce.

3 How to accelerate the adoption of AI in SMEs?

There are many possible AI applications for Indian SMEs, and a framework is needed to guide development in this area.

An analysis of possible AI applications for Indian SMEs provided several lessons and, above all, underlined the need for a generic framework to guide the development of an AI ecosystem for SMEs. The AI landscape is changing quickly because of activity by governments, start-ups, digital giants, business and academia.

3.1 Exploring promising AI applications for SMEs

To identify the range of AI applications that Indian SMEs could profitably deploy, the report team evaluated those that are currently transforming organizations worldwide. The study was enriched by insights from the US Smart Manufacturing Executive Council, targeted workshops with Indian SMEs and site visits with several SMEs. After conducting the analysis and consulting with experts in India, the team stress-tested more than 25 use cases that could be effective for Indian SMEs. They fall into the following categories:

TABLE 3 **AI applications that meet the challenges faced by Indian SMEs**

Category	MSME challenges	AI applications	Key sectors
Operational and supply-chain efficiency	Small manufacturers incur 15–20% higher raw material costs as well as 20% greater logistics costs compared to large Indian enterprises. In addition, inventory mismanagement often disrupts operations while suppliers cause costly delays.	✓ Integrated procurement and supplier monitoring ✓ Inventory optimization with demand insights ✓ Logistics optimization ✓ Predictive analytics for supply-chain continuity ✓ Aftermarket supply-chain optimization	✓ Manufacturing ✓ Retail ✓ Food processing
Workforce and talent	High turnover rates and a shortage of skilled labour undermine SMEs' productivity. SMEs also struggle to retrain employees in the use of advanced digital technologies.	✓ Role–skill mapping ✓ AI-driven retention strategies ✓ Cross-application adaptive learning	
Quality	High defect rates increase operational disruptions and compliance risks. Quality inconsistencies hurt reputation.	✓ Unified maintenance and quality control ✓ Parameter monitoring and optimization	✓ Food processing ✓ Textiles ✓ Pharmaceuticals
Safety	Inadequate safety protocols increase compliance risk and affect employee retention.	✓ Safety monitoring ✓ Root-cause analysis	✓ Metals ✓ Chemicals ✓ Heavy manufacturing
Customer experience	Limited engagement with customers and poor demand forecasting hinder most SMEs' ability to deliver on time. In addition, inadequate feedback loops and static pricing strategies reduce their responsiveness and profitability.	✓ Integrated CRM and demand forecasting ✓ Dynamic pricing algorithms ✓ Sentiment analysis for quality feedback	✓ Retail and e-commerce ✓ Consumer products ✓ Financial services
Sustainability	High energy consumption, inefficient waste management and overuse of water drive up costs and undermine SMEs' compliance with environmental standards.	✓ Energy optimization ✓ Waste and resource management with predictive insights ✓ Smart resource use ✓ Sustainable product innovation	✓ Metals ✓ Textiles ✓ Chemicals

TABLE 3 **AI applications that meet the challenges faced by Indian SMEs** (continued)

Category	MSME challenges	AI applications	Key sectors
Financial efficiency	SMEs' costs of capital at 12–14% are higher than those of large Indian corporations' 8–10%. Ninety-day receivables disrupt cash flows and create liquidity problems, especially as affordable credit is hard to access.	✓ Credit-risk assessment ✓ Unified cash-flow analytics ✓ Integrated financial forecasting	✓ Retail ✓ Heavy manufacturing ✓ Construction
Virtual prototyping	GenAI offers groundbreaking solutions for virtual prototyping, minimizing dependency on physical mock-ups while ensuring alignment with OEM standards. By enabling real-time design simulations, these tools cut costs, accelerate time-to-market and enhance global competitiveness.	✓ Virtual prototyping ✓ Real-time design simulations	✓ Automotive ✓ Heavy engineering
Regulatory compliance	Adhering to regulatory compliance standards is often a complex task for SMEs, especially in specific industries such as automotive and power equipment. Sustainability reporting is also a challenge, especially given multiple reporting frameworks across different jurisdictions.	✓ Automating processes ✓ Compliance advisory ✓ Sustainability reporting	✓ Financial services ✓ Pharmaceuticals ✓ Food processing ✓ Jewellery
Credit access	Limited access to affordable and timely credit is a major challenge for SMEs, often caused by factors such as a lack of credit history, inadequate collateral and complex application processes.	✓ Credit scoring ✓ Automated loan application ✓ Dynamic credit-risk assessment ✓ Customized financial products ✓ Predictive analytics for financial distress	

Source: World Economic Forum

> Initially, SMEs should focus on use cases that have a high impact on the business while being relatively easy to implement.

Prioritizing AI use cases for Indian SMEs

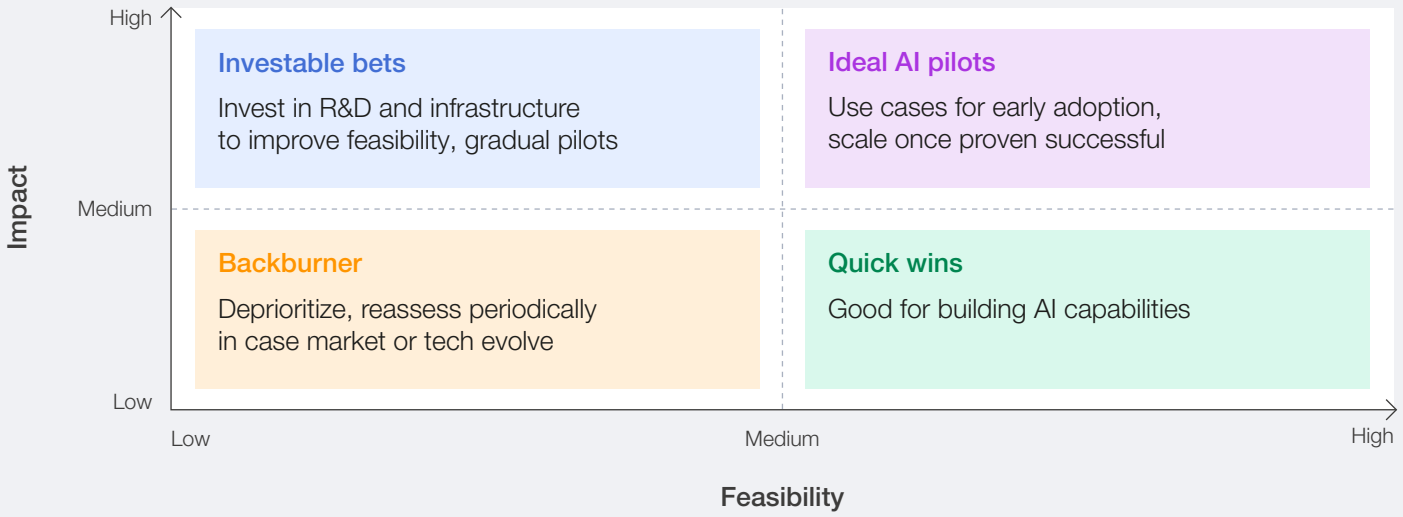
AI has the potential to transform many aspects of SME operations, but not all use cases are equally viable for immediate implementation. To ensure a structured approach to AI adoption in SMEs, each AI use case should be assessed on two parameters – impact delivery and feasibility of implementation – which can be further broken down into a few sub-parameters:

1. **Impact** – the potential value created in the business as a direct result of use case implementation:
   - Business value: Tangible benefits such as revenue growth or cost reduction
   - Strategic alignment: Alignment of use case with the long-term goals of the business or with strategically important areas
   - People impact: The number of people in the workforce who will be affected by use case implementation
2. **Feasibility of implementation** – ease with which the use case can be implemented in the organization's current context:
   - Data readiness: Availability of relevant structured data for use case implementation
   - Operational readiness: Existing infrastructure and workforce capability to implement AI solution
   - Cost to deploy: Investment required for successful implementation of use case

Given the limited resources available to SMEs, AI use cases must be implemented in a phased manner. Initially, SMEs should focus on use cases that have a high impact on the business while being relatively easy to implement. To do this, each use case must be evaluated against the parameters listed above to arrive at scores for impact and feasibility. The use cases can then be prioritized as illustrated in Figure 6.

FIGURE 6 **Framework for prioritizing implementation of AI use cases**

Multiple use cases for AI in SMEs exist
Prioritize high-impact and feasibility use cases to accelerate adoption



Source: World Economic Forum

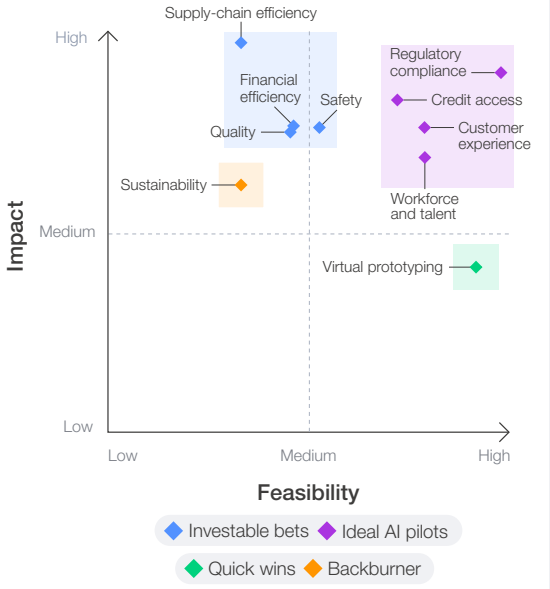
While this framework addresses how individual SMEs can prioritize AI use cases for implementation, it can help determine use case prioritization at a cluster level as well. When this happens, instead of looking at the impact and feasibility with respect to an individual organization, the parameters can be scored based on the cluster average.

BOX 2 | Indicative use case prioritization for the Coimbatore textile cluster

To illustrate the scoring system, the research team analysed the different use case categories previously identified and scored them on the parameters of impact and feasibility listed above from the perspective of the textile cluster in Coimbatore. After arriving at a weighted average score each for impact and feasibility, these use cases were mapped as shown in below.

Each identified use case is evaluated on the sub-parameters for impact and feasibility … → **… and a weighted average is taken to map the use cases on the impact–feasibility matrix**

	Impact			Feasibility		
Use case category	**Business value**	**Strategic alignment**	**People impact**	**Data demand**	**Cost to deploy**	**Operational readiness**
Supply-chain efficiency	5	5	4	1	1	3
Workforce and talent	3	2	5	4	3	5
Quality	4	4	3	2	2	3
Safety	2	3	5	3	2	3
Customer experience	5	3	3	4	4	4
Sustainability	3	5	1	2	1	2
Financial efficiency	5	4	2	1	3	3
Regulatory compliance	4	5	4	5	5	5
Credit access	5	3	4	4	4	3
Virtual prototyping	2	1	3	5	5	4



Note: 1 = least favourable; 5 = most favourable.
Source: World Economic Forum.

Early implementations of AI-based predictive maintenance show promising results, with 20–40% reduction in unplanned downtime

A detailed look at three AI use cases for India's SMEs

From the 10 use case categories described above, the report team analysed six AI applications in detail. Three of these are described below, while three are presented in the section on "AI agents – a new frontier in AI technology", where the team looked at how these applications can be enabled via AI agents. While all of these use cases represent opportunities for value creation, their implementation must be adapted to local contexts and specific environments, and each SME must prioritize their use after considering specific factors such as its technological readiness, digital infrastructure, workforce capabilities and strategic objectives.

1 Predictive maintenance and supply-chain efficiency

The context

India's manufacturing SMEs usually rely on break–fix maintenance, addressing equipment issues only after failures occur. This results in unplanned downtimes and maintenance costs that can be significantly higher than planned maintenance schedules. It also requires investment in a large spare-parts inventory, which eats up limited working capital.

By contrast, AI and machine learning (ML)-driven predictive maintenance offers solutions through IoT sensor data analysis, which enables failure forecasting and an optimized maintenance schedule. Early implementations show promising results, with 20–40% reductions in unplanned downtime and a 10% decrease in equipment ownership costs.[25] For Indian SMEs that work with global supply chains, predictive maintenance enhances operational reliability, reduces risks and strengthens their competitive positioning by boosting efficiency.

FIGURE 7 | **A detailed look – AI-enabled predictive maintenance**

Current scenario	Predictive maintenance	AI-enabled scenario
Reactive maintenance and manual practices lead to frequent breakdowns and production delays		AI and IoT sensors optimize maintenance schedules, minimizing downtime through centralized monitoring
High spare parts inventory tied to unpredictable failures consumes working capital		Streamlined planning aligns parts procurement with predicted needs
Limited monitoring capabilities delay issue resolution, affecting productivity		Real-time sensor data enables proactive maintenance and enhanced reliability

Source: World Economic Forum

CASE STUDY 1

Predictive maintenance for industrial gearbox manufacturer

A mid-sized Indian manufacturer of industrial gearboxes faced recurring problems because of the corrosion of bearings, the degradation of gear surfaces and the failure of lubrication systems in its manufacturing equipment. These issues caused production disruptions and increased its maintenance costs.

Partnering with a technology service provider, the company implemented an AI-based predictive maintenance solution that integrated temperature and vibration sensors with advanced machine-learning algorithms. The system continuously monitored critical equipment parameters, analysing data in real time to identify early-warning signs of failures, which enabled maintenance teams to address issues before they escalated. The implementation delivered a 40% reduction in unplanned breakdowns and a 30% decrease in maintenance costs. Beyond cost savings, the solution enhanced the industrial gearbox-maker's reliability and operational efficiency, transforming the company's manufacturing operations.

CASE STUDY 2

AI driven operational efficiency for aerospace components manufacturer

A mid-sized manufacturing enterprise specializing in advanced composite parts for the aerospace and defence sectors was facing challenges with material waste and production planning. The company worked with costly carbon fibre prepreg materials, making even small inefficiencies financially significant. Additionally, the manual process of generating daily cut plans for production was complex, time-consuming and heavily reliant on engineering support.

To address these issues, the company implemented an AI-powered industrial optimization solution. This system seamlessly integrated with the existing infrastructure and enabled automatic generation of dynamic cut plans. It allowed for efficient grouping of work orders using the same materials, significantly reducing the total number of plans needed and streamlining production processes.

As a result, the company achieved a 4.5% reduction in material waste, improved flexibility in manufacturing and increased overall efficiency. The production team gained independence from engineering for routine planning, and the system's automation capabilities made it easier to manage last-minute changes. The enhanced traceability and ability to handle recuts more precisely further contributed to improved productivity and material savings.

(2) AI-enabled quality management

The context

SMEs that wish to integrate with global supply chains face quality challenges. Traditional manual inspections are labour-intensive and can miss defects, leading to customer dissatisfaction, rework and higher costs.

AI-powered quality control changes this through computer vision and deep learning, which enables real-time defect detection and classification. The first movers in India's steel and electronics industries report a 30% improvement in defect detection, reduced rework costs and greater customer satisfaction.

FIGURE 8 **A detailed look – AI-enabled quality management**

Current scenario	AI-enabled quality management	AI-enabled scenario
Manual inspections lead to inconsistent quality control and limited defect detection		AI systems enable automated, high-precision defect detection across production cycles
Microscopic defects escape detection, causing rework and customer dissatisfaction		Real-time computer vision identifies subtle defects, reducing rework and improving quality
Traditional inspections create bottlenecks in high-speed production		AI seamlessly processes visual data without affecting production speed
Poor defect tracking prevents systematic quality improvement		Comprehensive analytics enable data-driven process enhancement
Limited quality capabilities restrict access to global supply chains		AI-powered quality control meets international standards, strengthening market position

Source: World Economic Forum

CASE STUDY 3

AI-enabled defect detection for steel manufacturer

Detecting manufacturing defects is often a manual process, based on individual expertise, which leads to inconsistencies and misses. To tackle this, an Indian steel-manufacturing MSME invested in an AI-powered defect-detection system. Using high-resolution camera feeds streamed to a cloud platform, the company trained the AI system on greyscale images to identify four types of defects.

The system delivered real-time insights by marking defects on images with precise contours and providing a JSON-based detection report. This included summaries such as defect counts and total affected area as well as detailed statistics on defect locations and types. The AI was able to improve first-pass quality rates by 30%, which greatly reduced rework costs.

3 AI-enabled workforce management and coordination

The context

At most manufacturing SMEs, supervisors spend their time addressing staffing gaps while fragmented systems for tracking attendance and skills compound operational inefficiencies. When critical positions remain understaffed, production lines slow down while downtime and overtime increase.

AI-enabled workforce-optimization platforms integrate attendance, scheduling and skills data with predictive algorithms to anticipate and prevent staffing gaps. These systems enable dynamic shift planning and two-way communication for overtime coordination. As a result, they bring about substantial improvements in productivity, slash ramp-up times and boost staffing efficiency.

FIGURE 9 **A detailed look – AI-led workforce management**

Current scenario	AI-led workforce management	AI-enabled scenario
Reactive workforce scheduling leads to frequent operational disruptions and reduced productivity		AI systems predict staffing needs and optimize shift planning, maximizing operational continuity
Workforce data remains scattered across multiple systems, hampering effective decision-making		Unified platforms provide real-time workforce analytics for agile resource management
Poor visibility in overtime management results in inefficient resource allocation and excess costs		Smart algorithms match overtime needs with optimal worker skills and availability
Supervisors spend excessive time on manual scheduling, limiting focus on strategic priorities		Automated scheduling tools free supervisors to focus on process improvement

Source: World Economic Forum

CASE STUDY 4

AI-driven workforce optimization for manufacturing MSME

A manufacturing MSME faced several challenges in managing its workforce, including lack of data and unplanned employee absences. To address these issues, the company decided to rely on an AI-driven workforce-optimization tool that integrated attendance, vacation and skills data on a unified platform. This enabled supervisors to access real-time workforce insights, with predictive algorithms anticipating staffing shortages and suggesting proactive shift adjustments.

Moreover, employees could use the same system to communicate their availability for overtime work, streamlining staffing allocation. As a result, ramp-up times to production decreased by 56% while the percentage of days when production targets were met rose by 22%. Supervisors reported time savings because the system automated routine planning tasks and improved communications.

> AI agents are autonomous or semi-autonomous systems that can plan and execute tasks, interact with humans and learn from previous interactions to improve output.

Rapid advances in the AI ecosystem

The global AI landscape is evolving at an unprecedented pace, with several breakthroughs in recent years. Some of these AI innovations are already transforming organizations worldwide, while many are still being tested for varying use case applications. In the early stages, it is difficult to separate the transient technologies from those that will change organizational workflows in the long run; however, it is equally important to identify these game-changing advances in the early stages to reap the early-adoption benefits.

During consultations with multiple experts, "AI agents" came up time and again as one such potential AI technology that can transform organizational workflows. AI agents represent the next advance in AI, using previous developments in the field of GenAI. They are autonomous or semi-autonomous systems that can plan and execute tasks, interact with humans and learn from previous interactions to improve output.

Given their potential, AI agents are discussed in the next section, along with some use case illustrations to demonstrate their power to transform SME workflows.

AI agents – a new frontier in AI technology

AI agents represent a new era in AI, with the promise of bringing end-to-end transformation across industries. AI agents are a type of AI that can observe their environment, use AI models for planning and access connected systems to take action and accomplish goals. They have the ability to remember across tasks and changing states, can use one AI model, or more, to complete tasks and can decide when to access internal or external systems on a user's behalf. They are thus able to move beyond traditional AI systems, which are task-specific and require frequent human inputs.

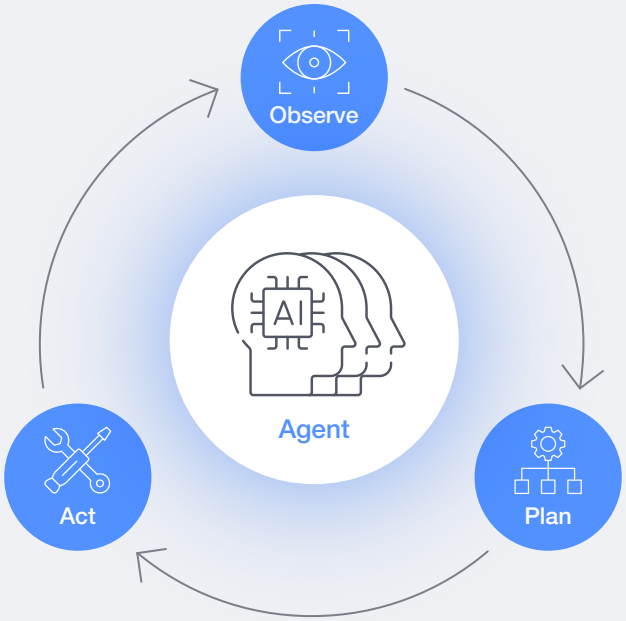
AI agents act in a continuous observe, plan and act cycle, as shown in Figure 10. This is achieved through five major components that characterize an AI agent system:

1. Agent-centric interfaces that allow them to observe their environment by connecting them to users, databases, sensors and other systems
2. A memory module with short-term memory for immediate context as well as long-term memory for factual knowledge and details of past conversations and tasks
3. A profile module to define the agent's attributes, role, goals and behaviour patterns
4. A planning module to decompose tasks into logical steps or action plans
5. An action module to execute using internal and external systems

> **AI agents will become the primary way we interact with computers in the future.**
>
> Satya Nadella, Chief Executive Officer, Microsoft

FIGURE 10 **AI agents – the continuous observe, plan and act cycle**

AI agents function in a continuous observe, plan and act cycle



Observe

Gather information from the environment through:

- **Interfaces** such as APIs, user inputs, metrics, sensor outputs
- **Memory** and context of past interactions

Plan

Evaluate and prioritize actions based on:

- **Goals** to be accomplished
- **Roles** that define agent behaviour and type
- **Reasoning** abilities through LLMs
- **Context** and memory built by the agent

Act

Execute planned actions through:

- **Interfaces** to digital systems and databases
- **Delegation** to other agents
- **Clarification** prompts to users for more input

Source: BCG

> In the context of Indian SMEs, AI agents hold the promise to simplify their AI journey.

AI agents have the potential to create significant value for large and small organizations alike. In the context of Indian SMEs, AI agents hold the promise to simplify their AI journey. Unlike complex AI systems, AI agents typically do not require technical expertise due to their low-code/no-code interface. Agents also present an **affordable** way for SMEs to integrate AI into their workflows since they are modular and can be incrementally scaled as and when the need arises. They can empower SME workers by gathering insights and taking action, thus **unlocking deeper automation through an agent workforce**.

AI agents can generate substantial value for SMEs in India by helping them increase their output, improve efficiency and reduce costs. They can achieve this through three broad levers:

1. **Enabling data-driven workflows:** AI agents can integrate data from multiple sources, analyse the data and enable optimized data-driven workflows that adjust dynamically using real-time data.

2. **Automating business operations:** Agents can operate autonomously with minimal or no human intervention, increasing efficiency and reducing errors.

3. **Empowering the workforce:** AI agents can work alongside the human workforce, complementing their skills and increasing productivity and decision quality. They can thus enable workers to focus on high-value strategic tasks.

It is important to acknowledge the impact of AI agents on the workforce. As these agents enable deeper levels of automation, the role of human workers will inevitably evolve. While many routine tasks currently handled by employees may become automated, this shift will also create opportunities for workers to focus on more strategic, creative and value-added responsibilities. The role of workers will thus transition from hands-on operators to AI-enabled orchestrators (see *Frontier Technologies in Industrial Operations: The Rise of Artificial Intelligence Agents*).

AI agents can therefore increase AI adoption in Indian SMEs by making implementation simpler and demonstrating real value impact on business operations. To inspire SME organizations to adopt AI agents, three high-impact use cases for AI agents are described below, using examples of real organizations and presenting an illustrative AI agent workflow for them.

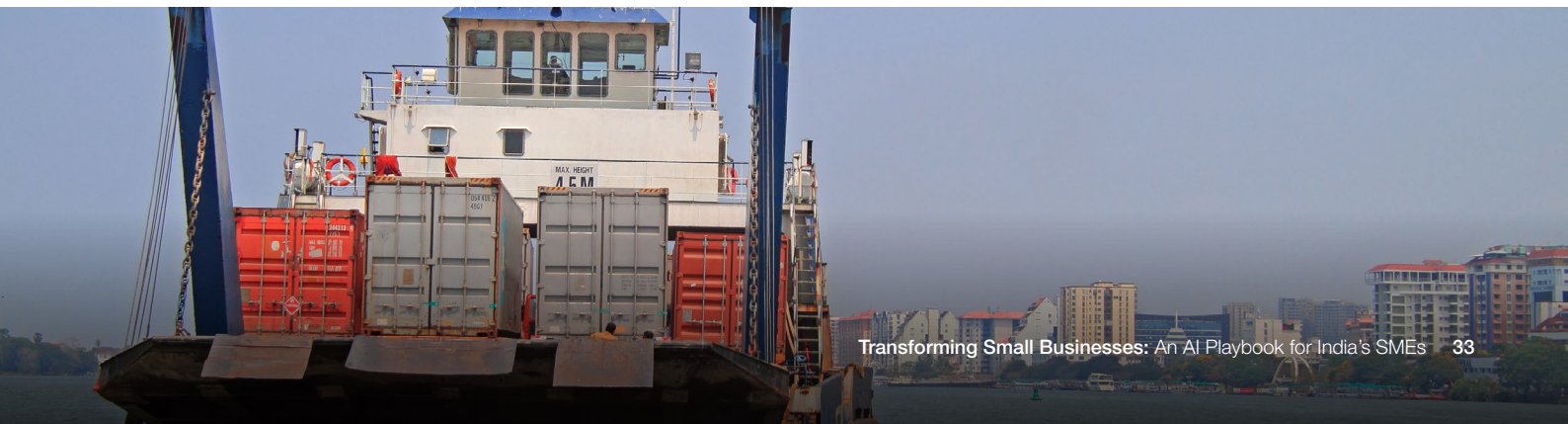
1 AI agent application: Export documentation and compliance

Indian MSMEs play a crucial role for the country's export sector and are responsible for approximately 45% of total exports.[26] Over the past few years, MSME exports have witnessed a significant growth, with a compound annual growth rate (CAGR) of 19%, rising from $88 billion in 2020–2021 to $126 billion in 2022–2023.[27] This is reflective of the potential of Indian MSMEs to expand exports further and strengthen India's position in global trade. However, despite this potential, Indian MSMEs continue to lag behind peer countries such as China, where MSMEs contribute more than 60% to overall exports. Furthermore, MSME e-commerce exports in China amount to more than $200 billion, which is far greater than India's $2 billion.

Indian SMEs face multiple bottlenecks in the export process that hinder their ability to scale quickly. The export process requires coordinating among many stakeholders – including banks, logistics providers and customs house agents (CHA) – which creates a resource burden on SMEs. The process is further complicated by complex regulations, which involves submitting compliance documentation to several regulatory authorities such as the Indian government's Directorate General of Foreign Trade (DGFT), trade bodies, customs and goods-and-services tax (GST) authorities. These regulations are updated regularly, which means SMEs need to dedicate resources to understand these evolving regulations and prepare new compliance documents accordingly. All of this is time-consuming and leads to delays in the export process.

Some metrics illustrate the magnitude of this challenge. India ranks 68th in the World Bank's Trading Across Borders index,[28] which ranks countries based on the time and cost associated with export and import processes. Border compliance in India takes around 52 hours, which is more than double the 21 hours in China. Similarly, documentary compliance takes about 12 hours compared to nine hours in China.

AI and AI agents can streamline and automate the complex export process for SMEs, enabling them to focus on more strategic parts of the business. Use case 1 illustrates how AI agents can help SMEs with their export process.



USE CASE ILLUSTRATION 1

AI agent-enabled export compliance

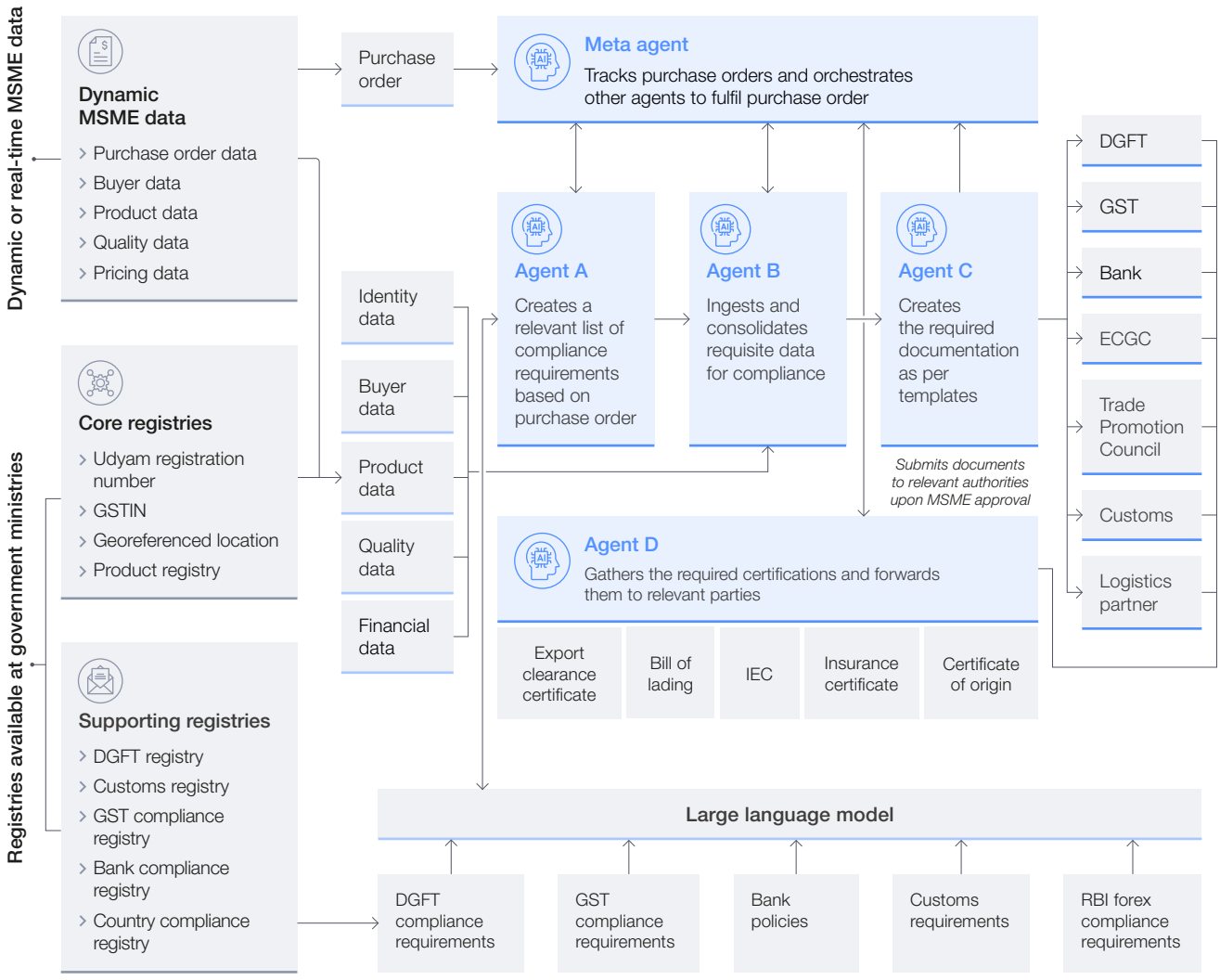
A medium-sized Indian enterprise specializes in the manufacturing and export of masalas (spices) and gums. Exports are a significant source of revenue for the company, with 80% of its revenue coming from exports, primarily serving markets in the United Kingdom, the United States, Canada and the continent of Africa.

The company's export operations are managed by a team of three – one manager overseeing the entire process, with two team members handling pre-shipment and post-shipment procedures. It still relies on manual documentation and compliance processes, which creates significant inefficiencies and sometimes leads to delays in the export timeline.

The current pre-shipment process involves obtaining Food Safety and Standards Authority of India (FSSAI) certification, a registration-cum-membership certificate from the Spice Board and a letter of undertaking (LUT) from the GST department. A pro-forma invoice and customs invoice are then prepared upon receiving an export order. All of these documents are forwarded to the CHA. The second member of the team then gets the vessel schedule from the shipper, books a shipping vehicle, receives a packing list from the shipper and forwards it along with the commercial invoice, certificate of origin and laboratory testing report to the CHA. The CHA next forwards the bill of lading to the company.

The entire export process can be simplified to a great extent by using AI and AI agents to automate the process. An illustration of how AI agents can automate this process is presented below.

Using AI to simplify export paperwork for MSMEs
AI-enabled MSME export compliance



Note: GSTIN = Goods and Service Tax Network number; DGFT = Directorate General of Foreign Trade; GST = goods-and-services tax; IEC = importer-exporter code; RBI = Reserve Bank of India; ECGC = formerly the Export Credit Guarantee Corporation.
Source: World Economic Forum

“ MSMEs face a massive credit gap of $530 billion.

2 AI agent application: Credit access for SMEs

Access to formal lending sources remains a significant challenge for MSMEs in India, with close to 81% of the credit demand unmet or being fulfilled through informal lending sources. Despite MSMEs being an important growth driver for the Indian economy, only 19% of their credit demand is met through formal channels, which is much lower compared to countries such as China and the United States, where 37% and 50% respectively of the credit demand of MSMEs is met through formal lending channels. Furthermore, MSMEs face a massive credit gap of $530 billion.[29]

The lack of credit access limits the growth potential for MSMEs in India, undermining their capacity to expand operations, upgrade technology and invest in growth. An important reason for the credit gap in the MSME sector is limited data availability, hindering the ability of financial institutions to perform quick credit assessments. MSMEs that are unable to provide the extensive documentation required by formal lenders either turn to informal lenders or abandon their plan to obtain credit. Other than this, MSMEs face other challenges such as a lengthy loan-approval process and higher credit cost compared to larger organizations. Additionally, it is challenging for these organizations to identify the right government schemes that can help in their credit journey.

AI can help unlock formal credit for MSMEs in India. AI agents can integrate data from formal and informal sources for a comprehensive credit assessment. Large language models (LLMs) can be used to analyse government schemes and offerings from financial institutions and provide recommendations to MSMEs on loan type and lending institution. In addition, AI can be used to continuously monitor risk post-loan disbursement and provide early-warning signals.

USE CASE ILLUSTRATION 2

AI agent-enabled credit access for MSMEs

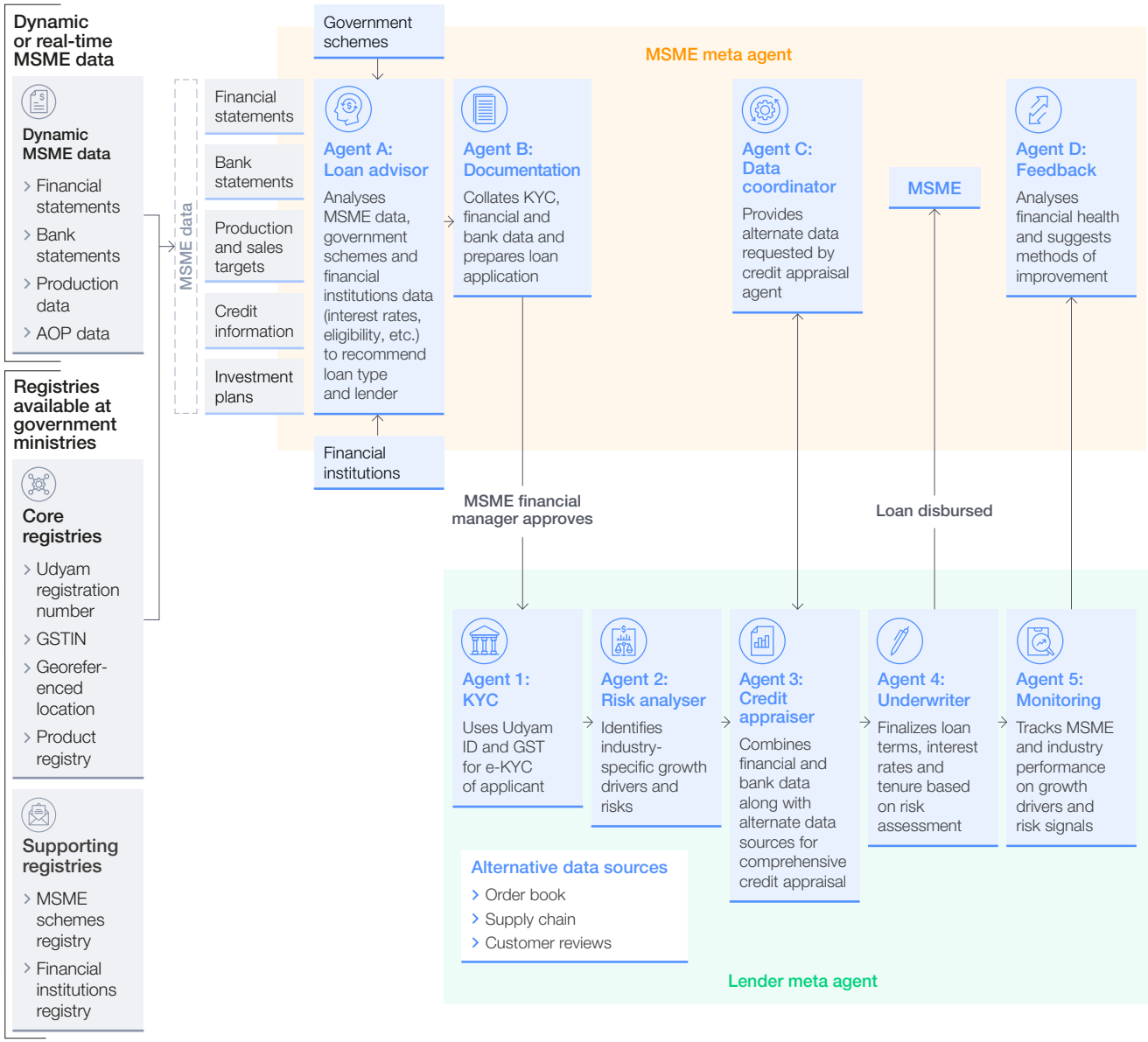
An Indian financial technology (fintech) company is trying to bridge the lending gap in the MSME ecosystem by providing loans to micro-merchants and small businesses.

The current lending process consists of three stages. The first is the application stage, in which MSMEs submit the required documentation for the loan application and credit appraisal. This is the most challenging stage for MSMEs as they lack structured financial and transactions data. The second is the credit appraisal stage, which involves quantitative and qualitative analysis to assess the MSME's ability and intent to pay. The third is post-disbursement risk management, where collections data is analysed to assess ongoing changes in the risk profile of the MSME.

The current lending process is full of challenges, for both the lender and the MSME. MSMEs are often unaware of government schemes, loan eligibility and institutions that can offer them loans. These organizations rely on direct selling agents (DSAs), which connect them with financial institutions and help them in the loan process. The DSAs charge a commission for this service, which increases the cost of credit for MSMEs. On the other hand, lenders still rely on traditional methods such as physical visits to analyse creditworthiness. The use of AI agents can simplify the process for both parties.

An illustrative example of AI an agent-enabled lending process for MSMEs is shown below.

Using AI agents to simplify credit for MSMEs



Note: AOP = annual operating plan; GSTIN = Goods and Service Tax Network number; KYC = know your customer; GST = goods-and-services tax.
Source: World Economic Forum

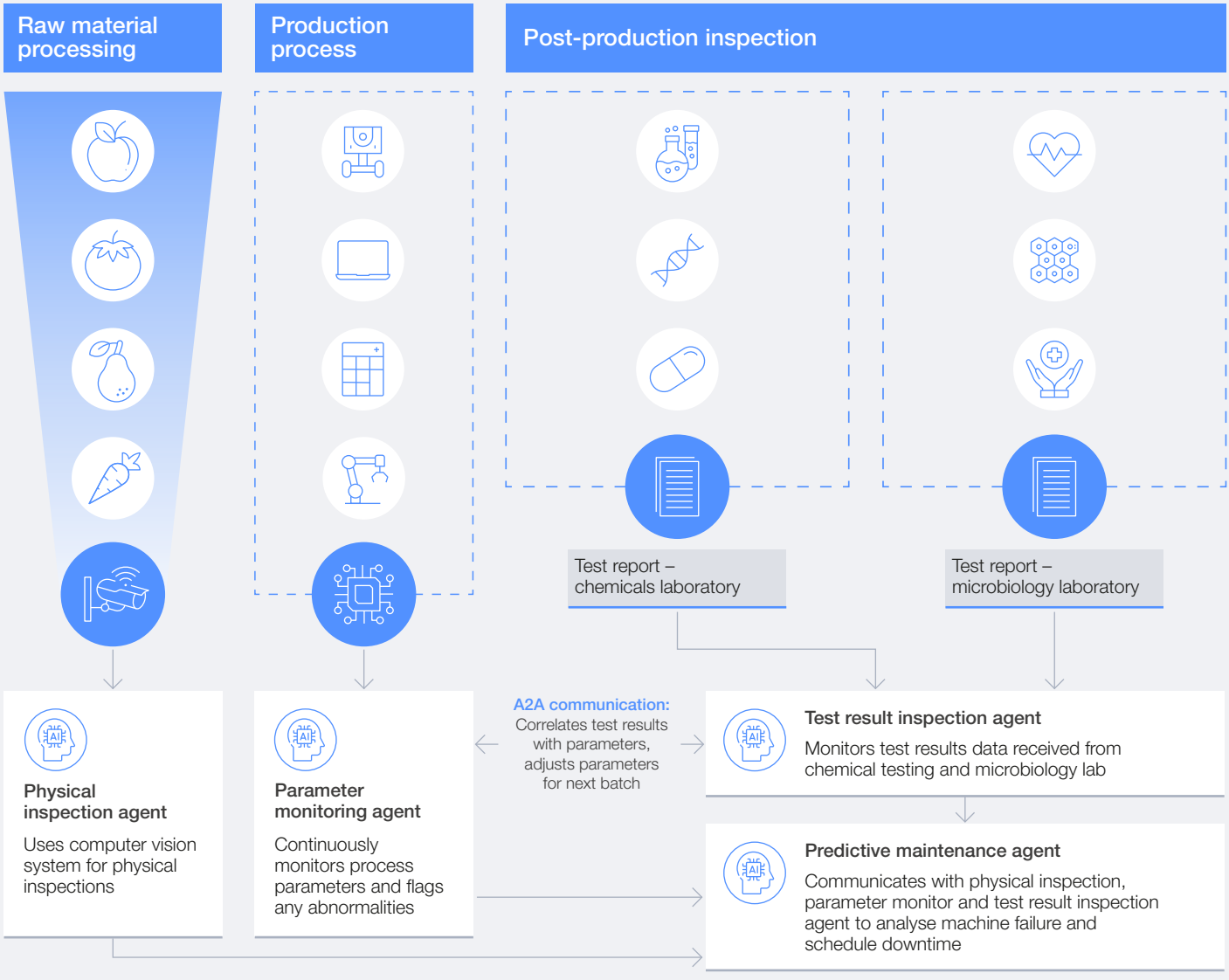
3 AI agent application: Quality management for SMEs

Quality management is crucial for Indian SMEs to stay competitive in the domestic and international markets. Robust quality management practices in Indian SMEs can increase product reliability, operational efficiency and customer satisfaction, thereby improving profitability. Quality management is especially crucial in sectors such as pharmaceuticals – where evolving regulations mandate quality management for exports.

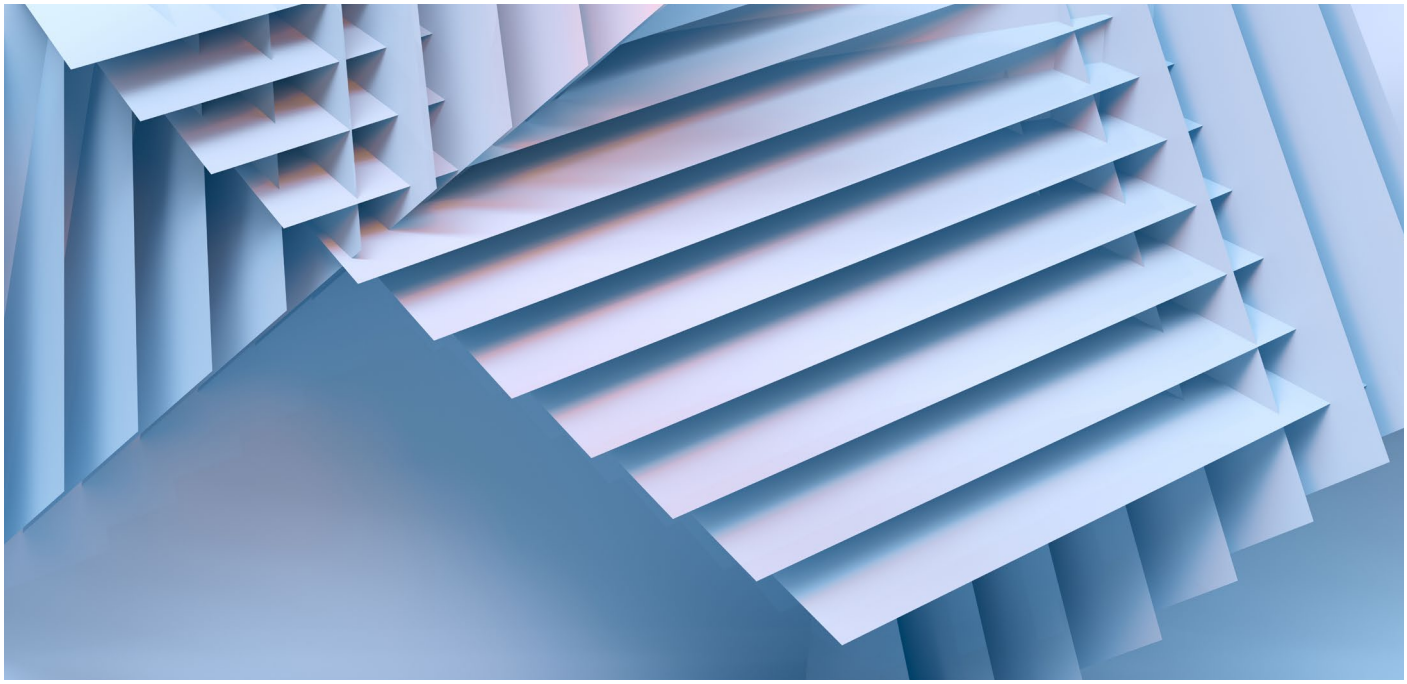
The Indian government, recognizing the importance of this, has introduced multiple schemes to enable robust quality management in MSME organizations. The Quality Management Standards (QMS) and Quality Technology Tools (QTT) schemes of the Indian government are helping MSMEs adopt standards and tools to enhance product reliability. In addition, the Zero Defect Zero Effect (ZED) certification under the "Make in India" initiative encourages MSMEs to meet international quality benchmarks while minimizing the environmental impact. Together, these signify the government's commitment to improving quality management in MSMEs and making them more competitive.

Managing quality in SMEs currently relies on manual checks – prone to error and inconsistencies. AI can dehumanize the process of quality management, making it more consistent and reliable. Data feeds from AI-based systems can be monitored continuously in contrast to periodic manual inspections. AI models can also analyse quality management data, identify patterns and provide recommendations for predictive maintenance to reduce the defect rate. AI-based quality management in SMEs can therefore free up human resources, improve product reliability and increase export potential. An illustrative AI agent-enabled quality management process is presented in Figure 11.

FIGURE 11 **AI agent-enabled quality management**



Source: World Economic Forum



3.2 Framework to accelerate AI adoption

> An analysis of possible AI applications underlined the need for a generic framework to guide the development of an AI ecosystem for SMEs.

Applying the IMPACT AI framework to India's SMEs

An analysis of possible AI applications for Indian SMEs provided several lessons and, above all, underlined the need for a generic framework to guide the development of an AI ecosystem for SMEs. The AI landscape is changing quickly because of activity by governments, start-ups, digital giants, business and academia.

Attempts to regulate AI prematurely will thwart innovation, but a laissez-faire attitude is not the right approach either. The goal must be to tread a middle path that will allow stakeholders to harvest AI's benefits while preventing the downsides. What is needed is a framework that balances the major stakeholders' interests as well as their concerns. This is why the report team developed the Inclusive Multistakeholder Pathway for the Accelerated Convergence of AI Technologies – IMPACT AI, for short.

IMPACT AI will guide the stakeholders in the ecosystem to unify their efforts to achieve a common goal: AI for all. It will unite them in taking specific actions and playing a positive role in AI's development and deployment and will accelerate the responsible development and deployment of AI at scale.

Using the IMPACT AI framework will:

- Accelerate speed-to-market and speed-to-benefit
- Establish a multistakeholder environment that is conducive to coopetition, an approach that combines cooperation and competition
- Increase the demand for AI solutions, enabling the creation of markets and allowing all of the players to gain a larger piece of the growing pie
- De-hype the AI market and provide for realistic expectations by demonstrating the real nature and size of AI's benefits through use cases
- Provide a mechanism for balancing the demand for and supply of AI applications

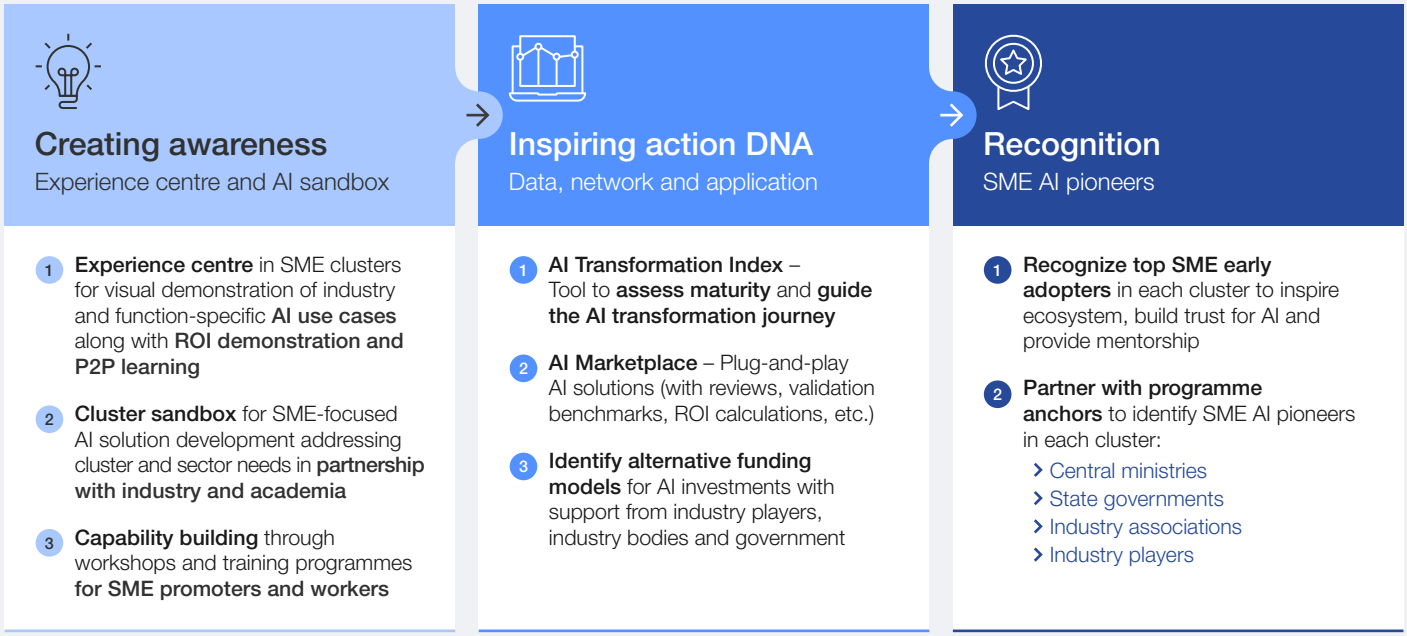
The IMPACT AI framework depends on principles that must be binding on all the players in the AI ecosystem. These include:

- Public interest and safety must be prioritized over everything else. A do-no-harm norm must prevail over design and development decisions
- A risk-based approach must be adopted to design regulations. Self-regulation will be the norm except for the most sensitive areas
- Governments must act as facilitators to develop the AI ecosystem through legislation, policies, data access and the creation of a level playing field
- Governments must create catalysts for the development of the AI market by executing capstone projects in social sectors such as healthcare, education and social protection for the public good
- A transparent, rigorous and effective system of testing and validating solutions must be developed to create a trusted AI market

– The SMEs' operations must be self-driven, supported only where necessary by the other players in the ecosystem

The aim of this framework is to give direction and structure to the efforts of different stakeholders. As such, the implementation of this framework will vary a little based on industry and cluster context. The framework is therefore flexible by design, providing broad guidance. The IMPACT AI framework for India's SMEs has three stages that are designed to equip the country's SMEs with AI while tackling the key challenges such as trust deficits, knowledge gaps and limited scale: **creating awareness**, **inspiring action** and **receiving recognition**. Together they provide a roadmap for SMEs that plan to use AI for growth, efficiency and global competitiveness, as is shown next.

FIGURE 12 **Three-pillar framework to accelerate AI adoption @ MSMEs**



Stage 1: Creating awareness

This stage focuses on bridging the knowledge and trust gaps that most SMEs face before adopting AI. They struggle with fragmented information about AI, limited exposure to applications and a lack of skills required to operate AI systems.

There are three institutional ways of resolving the issue: setting up experience centres, establishing cluster-based AI sandboxes and conducting capability-building programmes for SME entrepreneurs and workers.

> The IMPACT AI framework for India's SMEs has three stages: creating awareness, inspiring action and receiving recognition.

1 Setting up experience centres

This will provide dedicated spaces that showcase real-world use cases, sector-specific applications, success stories, peer-to-peer (P2P) collaboration systems and return on investment (ROI) demonstrations. They will effectively show why SMEs would do well to adopt AI soon. Experience centres could be cluster-based, which would allow SMEs to explore and engage with AI applications specifically tailored to their sector's unique challenges.

Every experience centre should have:

– **Use cases:** Virtual demonstrations of AI applications in sectors of interest to SMEs such as automotive, textiles and chemicals, as well as customer-facing functions such as supply chains, production and design

– **Crowdsourced insights and case studies:** Curated success and failure stories to inspire confidence and provide learnings

– **Tools and guides:** Virtual tours, step-by-step implementation guides and ROI calculators that will help SMEs understand the feasibility and impact of AI solutions

– **P2P community forum:** A platform for P2P learning, shared troubleshooting and industry networking

> Without capability-building, SME AI initiatives run the risk of failure.

The idea of an SME AI experience centre aligns with the Indian government's Ministry of Micro, Small and Medium Enterprises Technology Centres (TCs) programme[30] by complementing and building on its physical infrastructure. While the technology centres deliver sector-specific tools, training and technical services, experience centres will expand their reach with AI-driven demonstrations and real-time collaboration. This approach will improve awareness, enabling SMEs throughout India to start adopting advanced technologies.

2 Establishing cluster-based AI sandboxes

This will provide an environment in which solution providers can develop and test AI solutions tailored to the cluster's needs and challenges. By using local expertise and real operational data within the sandbox in a cluster, solution providers will be able to move rapidly from ideation to pilot-ready solutions. This will reduce the cost, risk and other complexities associated with AI solution development for SMEs.

A cluster-based approach will ensure that solutions are relevant to the local challenges and increase adoption rates as stakeholders can see the immediate application as well as share resources. To scale, the AI sandbox may be established in partnership with research institutions and build on their domain knowledge and AI expertise. For instance, the 100 technology centres being established by India's Ministry of Micro, Small and Medium Enterprises offers a foundation to integrate physical infrastructure with digital capabilities. These centres can host cluster-based AI sandboxes, enabling hands-on experimentation and virtual testing environments.

Experience centres and AI sandboxes will have the following stakeholders:

- **SMEs**, which are trying to gain exposure to AI applications and solutions
- **Government bodies**, which will facilitate funding, resources and policy support
- **Industry associations** that will serve as enablers identifying sector-specific challenges and driving MSME participation in their industries
- **Technology providers** that will showcase AI solutions, tools and best practices
- **Start-ups and academia** that are co-developing tailored solutions and offering mentorship to MSMEs
- **Non-governmental organizations (NGOs)** that play a crucial role in community outreach, reskilling programmes and promoting AI awareness among less-privileged workforce segments

3 Conducting capability-building programmes for AI

This will help to address some of the major workforce challenges that SMEs face – limited access to skilled workers, resistance to change, and insufficient training programmes – which must be addressed to enable AI-driven transformation.

> An AI maturity index offers not just an evaluation mechanism but also a framework for implementation.

The workforce is essential for successful AI adoption since it determines the sector's ability to navigate new tools, processes and innovations. Without capability-building, SME AI initiatives run the risk of failure.

By addressing workforce challenges in three ways, SMEs can build the workforce they will need for using AI:

- Reskilling programmes can bridge the skills gap by introducing sector-specific AI modules and practical applications. Awareness campaigns, delivered in regional languages, can demonstrate AI's benefits and reduce workers' apprehensions about being replaced by algorithms. Partnerships with trade unions and welfare boards will reinforce trust and highlight the technology's potential for enhancing jobs rather than displacing employees. Furthermore, training programmes on digital skills and basic AI tools will enable these workers as well as SMEs to use AI in their day-to-day operations.

- Attracting talent to address the acute shortage of skilled professionals in SMEs will be necessary. Innovative incentives such as writing off education loans, fellowships and employee stock ownership plans (ESOPs) will make the SME sector more appealing to data scientists and engineers. Branding SMEs as high-impact, innovation-driven workplaces can position them as employers of choice. In addition, collaborations between start-ups and large corporations will create shared expertise and strengthen the talent pool.

- Finally, SME entrepreneurs, who are part of the workforce in a sense, will play a critical role in driving AI adoption. Educating them through targeted workshops and tailored roadmaps will build confidence and awareness. Customized AI implementation plans that align with each SME's technology maturity level will ensure that entrepreneurs are armed with achievable strategies. Peer learning networks will promote collaboration, the sharing of success stories and the creation of a supportive environment for SME entrepreneurs.

Stage 2: Inspiring action (through DNA – data, network and AI applications)

This stage focuses on equipping SMEs with the tools and systems to transition from AI awareness to adoption. Anchored by the AI maturity index, it enables businesses to assess their AI-readiness and map an adoption pathway. The AI solutions marketplace serves as a hub for presenting plug-and-play AI solutions. To support the process, it is also necessary to identify alternative funding models to enable AI investment by SMEs. Three elements are critical for success:

1 Use an AI maturity index

An AI maturity index is a self-assessment tool that SMEs can use to evaluate their AI maturity, identify the gaps and plan their path to the adoption of AI-led solutions. Such indices can offer a tailored and achievable approach to assess digital readiness, workforce enablement and operational challenges.

By providing a step-by-step roadmap, the results from an index can help SMEs pinpoint the areas that require immediate attention and prioritize use cases that align with their business goals. Thus, an index offers not just an evaluation mechanism but also a framework for implementation. Its main objectives are:

- Self-assessment. An index allows SMEs to evaluate their AI-readiness using parameters such as data infrastructure, digital adoption and workforce skills.

- Guidance for AI transformation. It can offer practical insights for achieving targeted digital maturity and outcomes such as improved productivity, cost optimization and better customer experiences.

- Enablement through insights. The insights can help SMEs understand what comes next by identifying high-impact use cases and promoting an AI adoption strategy.

An appropriate AI maturity index can also be seamlessly integrated with the Indian government's Udyam platform to accelerate digital transformation. Because of the integration, the Udyam platform will be able to offer dynamic dashboards for SMEs to visualize their AI-readiness, benchmark against peers and receive tailored recommendations.

The index can also align with the Indian government's Ministry of Micro, Small and Medium Enterprises Technology Centres programme[31] to provide practical, sector-specific training and services, which will help scale AI adoption. Furthermore, real-time insights can inform policy-makers about gaps, enabling targeted industry-specific programmes such as grants, subsidies and capacity-building initiatives. Once an AI maturity index is embedded into the Udyam ecosystem, SMEs will be able to access a unified platform for compliance, digital onboarding and AI implementation.

BOX 3 | Indices to assess AI maturity

Indices available globally

Currently, there are many indices that an MSME can use to assess its AI-readiness:

- The Cisco AI Readiness Assessment[32] is a tool that evaluates an organization's readiness to adopt, deploy and use AI across six pillars: strategy, infrastructure, data, governance, talent and culture. It categorizes companies into four levels of preparedness: pacesetters, chasers, followers and laggards.
- The Smart Industry Readiness Index (SIRI),[33] developed by the International Centre for Industrial Transformation (INCIT), is a globally recognized framework designed to help organizations assess and enhance their readiness for transformation relating to the Fourth Industrial Revolution. SIRI evaluates dimensions such as process, technology and organization, providing a structured approach to gauge digital maturity and identify areas for improvement.
- The TDWI AI Readiness Assessment,[34] developed by the Data Warehousing Institute (TDWI), helps organizations understand their AI-readiness across five dimensions, while offering recommendations for improvement.
- The Avanade AI Readiness Assessment Tool[35] assists organizations in identifying actions to enhance their AI maturity. It evaluates readiness across various stages and offers practical steps to accelerate AI adoption.
- The AIIM AI Readiness Assessment,[36] offered by the Association for Intelligent Information Management (AIIM), focuses on preparing unstructured data for AI implementation. It provides insights into organizational readiness for AI, with an emphasis on data management practices.
- The Advaiya AI Readiness Assessment,[37] available through Microsoft AppSource, evaluates an organization's infrastructure, data, capabilities, processes and culture to provide a comprehensive view of AI-readiness.

Choosing an index

An SME should carefully consider its unique needs, industry and organizational goals when deciding which index to use for assessing AI-readiness. The selection process should take several factors into account:

- First, the SME must evaluate its **current stage** of digital transformation. For companies at the beginning of their journey, indices such as INCIT's SIRI can provide a holistic framework to assess foundational readiness across process, technology and organizational dimensions. This is particularly valuable for SMEs looking for an overall roadmap for the Fourth Industrial Revolution.
- Second, SMEs should consider the **specific dimensions** of AI-readiness they want to evaluate. For example, the Cisco AI Readiness Assessment is useful for organizations focusing on strategic alignment, data infrastructure and talent development, while the AIIM AI Readiness Assessment is tailored to companies needing guidance on managing unstructured data for AI deployment.
- Finally, the **industry and operational focus** of the SME matters. Manufacturing firms might benefit more from SIRI or the Advaiya AI Readiness Assessment, as these tools are designed with industrial applications in mind.

> For many SMEs, cost is one of the largest barriers to AI adoption.

2 Design an AI solutions marketplace

This initiative focuses on making AI accessible and user-friendly for SMEs. Discovery tools enable companies to find plug-and-play AI solutions for use cases such as inventory optimization, customer insights and predictive maintenance, which are tailored to their needs. Transparent reviews on this platform can build trust by offering feedback on functionality, impact and user experiences, helping SMEs make informed decisions. By reducing complexity, costs and entry barriers, this initiative inspires SMEs to explore and adopt AI technologies.

Such an AI solutions marketplace can also integrate with India's Open Network for Digital Commerce (ONDC)[38] to serve as the go-to platform for MSMEs. By tapping into ONDC's network and capabilities, the AI solutions platform can position itself as a one-stop solution for SMEs. The ONDC's decentralized framework offers an opportunity to connect AI solution providers with SMEs, ensuring accessibility and visibility. This integration will enable small companies to:

- Discover validated AI solutions. SMEs will be able to access a catalogue of cross-industry and cross-functional AI tools, services and products that have been verified and validated through the AI sandboxes.
- Compare costs, subsidies and incentives. Transparent cost-comparison features, as well as government subsidies and incentives, can be integrated into the platform.
- Review systems. Trust can be built through user-generated reviews and ratings on AI tools, creating a transparent environment.

3 Identify alternative funding models for AI investments by SMEs

For many SMEs, cost is one of the largest barriers to AI adoption. SMEs operate with limited financial capital and have low margins. While larger enterprises can tap into robust cash flows or external capital, SMEs often face capital constraints. To overcome this, there is a need to identify alternative funding models – supported by government programmes, industry partners and financial institutions – that can provide flexible and cost-effective ways to invest in AI. Some options to consider are:

- Government grants and subsidies. Government can offer tax credits for AI-related capital expenditure undertaken by SMEs, directly lowering the cost of adoption. Furthermore, interest rate subsidies specifically designated for AI investment can be channelled through public-sector banks or institutions such as the Small Industries Development Bank of India (SIDBI).
- Cluster-based financing. Groups of SMEs within a cluster can pool resources and procure solutions. This ensures greater bargaining power and lower individual costs. Additionally, common digital infrastructure such as compute credits or data management platforms can be procured jointly or made available at cluster sandboxes.
- Industry and corporate partnerships. Large corporates in the supply chain of a sector can sponsor AI adoption by smaller supplier SMEs. CSR mandates can be used to allocate funds to SME AI transformation projects.
- Specialized lending products. AI investments have a longer return cycle. Banks and non-banking financial companies (NBFCs) can develop dedicated loan products for AI investments with more flexible repayment schedules and reduced collateral requirements.

These models can spread the financial burden of AI investment among multiple stakeholders, making the path to AI adoption for SMEs more collaborative and sustainable.

CASE STUDY 5

Precision Engineering and Technology Centre (PETC), Chennai

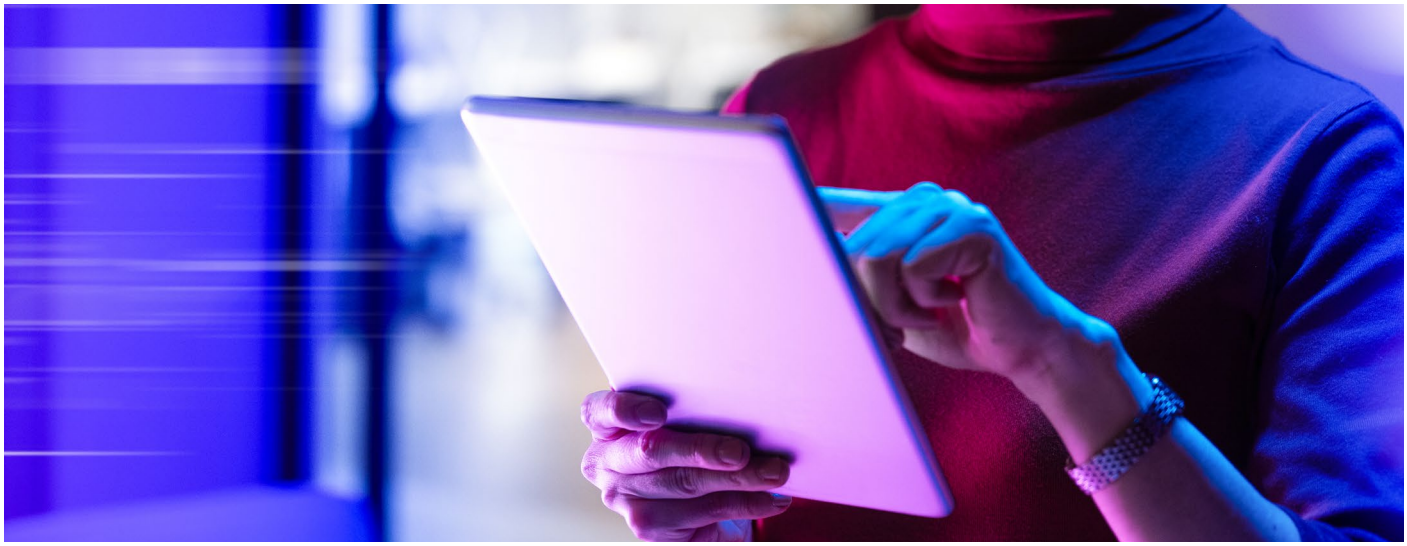
The Precision Engineering and Technology Centre (PETC) in Chennai is a not-for-profit public–private initiative established to accelerate the growth of MSMEs in the precision engineering sector. Through a unique funding model – 70% capital support from the Government of Tamil Nadu and 30% contribution from member MSMEs – PETC enables resource pooling for shared access to high-end infrastructure. Participating MSMEs become part owners of the centre, ensuring services remain aligned with their needs. PETC houses a range of advanced facilities, including a product design centre, a re-engineering lab, 3D metal and plastic printers, a mechanical testing lab and a patent facilitation centre.

By offering access to cutting-edge tools and expert support, PETC significantly reduces the cost and risk of innovation for small enterprises. It empowers MSMEs to undertake complex design, prototyping, and testing projects that would typically be out of reach for individual firms. The centre also conducts training programmes to upskill the local workforce, creating a comprehensive ecosystem that promotes collaboration, innovation and competitiveness within the manufacturing sector.

Stage 3: Receiving recognition

Early recognition is essential for AI adoption by SMEs. It serves as a beacon of inspiration, demonstrating the tangible benefits of AI while building trust. An SME pioneer programme will address a critical visibility and awareness gap in AI adoption by recognizing and showcasing early adopters and evangelists in India. Creating such a programme is essential; SMEs face barriers such as lack of trust, awareness and access to scalable AI solutions. By recognizing the early adopters, the programme will accelerate digital transformation and build credibility for AI.

The AI pioneer programme will be anchored by central ministries, state governments, industry associations and industry clusters with the objective of identifying SME AI pioneers in each SME cluster. Given that each industry cluster will have distinct high-impact AI use cases, a given number of AI pioneers can be identified from each industry cluster. This will promote an AI-enabled ecosystem in which these small businesses serve as role models for other SMEs. The effort can further be aligned with the World Economic Forum's MINDS initiative, enabling global recognition for SME pioneers.



To conclude, the IMPACT AI framework for SMEs can be rolled out in a phased manner. Initially, the awareness campaign along with experience centres and sandboxes can mobilize SME clusters and introduce the initiative's modalities. Following that, SMEs will participate in online self-assessment to evaluate readiness. A panel of experts can guide these SMEs towards their path to digital maturity.

Capability-building programmes can bridge the knowledge gaps and ensure successful implementation. Finally, the AI pioneer cohort will be unveiled, with events, strategy workshops and exploratory visits, ensuring that all the knowledge generated by the execution of the framework is shared by the SME ecosystem.

Conclusion and call to action

The IMPACT AI framework provides a roadmap to position India's SMEs as leaders in the AI-enabled world.

Anchored in creating awareness, inspiring action and receiving recognition, the framework provides pathways for key stakeholders to drive transformation. Each has a distinct role to play.

Governments (central, state and local) can:

- Enable technology centres as AI experience centres. Governments must build on the Ministry of Micro, Small and Medium Enterprises' proposed network of 100 technology centres by integrating AI sandboxes, co-innovation hubs and experience centres for AI demonstrations and experiments.
- Build capacity. Align governments' AI programmes for SME entrepreneurs, reskilling programmes for the shopfloor workforce and talent strategies for SMEs.
- Promote digital public infrastructure. Link initiatives such as the AI solutions platform and Udyam portal with ONDC to create a unified digital ecosystem for AI solutions.
- Create incentive programmes. Roll out programmes that provide financial support such as subsidies, tax breaks and grants to de-risk AI adoption for SMEs.
- Fashion recognition programmes. Central government must lead the SME AI pioneer initiative that seeks to identify and celebrate early adopters.

MSME entrepreneurs must:

- Assess AI readiness: Evaluate your current digital and AI maturity to understand where to begin. Take incremental steps to develop AI readiness.
- Identify high-impact use cases: Focus on pressing business challenges where AI solutions can deliver measurable benefits.
- Engage with local ecosystems: Participate in cluster initiatives, AI sandboxes or technology centres to access shared tools, training and peer support.
- Invest in skills: Upskill yourself and your workers with basic AI and digital training to build internal capability.
- Monitor impact and share learnings: Document outcomes and share learnings to inspire others and attract visibility as an AI-ready enterprise.

AI start-ups should:

- Develop accessible AI tools. Design plug-and-play AI solutions for SMEs and position them in the AI solutions platform. Solutions must be developed with a focus on affordability, ease of use and modularity for specific business challenges.
- Collaborate on AI sandboxes. Partner with research institutions and SME clusters to validate AI solutions, ensuring they meet the practical needs of small businesses.
- Expand e-commerce AI solutions. Use ONDC to scale AI-enabled platforms for SME exports, integrating features such as inventory optimization, payment reconciliation and compliance automation.
- Foster AI ecosystem innovation. Actively participate in collaboration hubs to co-create solutions with academia, government and SMEs, ensuring scalability and domain relevance.

Research institutions will:

- Facilitate applied research. Create frameworks for evaluating AI maturity, identifying best practices and measuring the impact of AI adoption on SMEs.
- Drive workforce transformation. Design reskilling programmes and explore how AI tools can be used to upskill SME entrepreneurs and workers for future roles.
- Mentor start-ups. Provide domain expertise and collaborate on pilot projects to accelerate the adoption of AI solutions validated in sandboxes.
- Develop AI experience centres. Partner with the government to create virtual and physical AI experience centres for SMEs that align with global models such as Fablabs.[39]

Cluster action plan

This plan provides a four-phase roadmap to guide the implementation of the IMPACT AI framework through a cluster-based approach (Figure 13).

FIGURE 13 **Four-phase action plan to increase MSMEs' AI use**

Phase 0 Governing body and action plan	Phase 1 Infrastructure set-up and initial outreach	Phase 2 AI capabilities and AI-readiness	Phase 3 Supply and demand ecosystem	Phase 4 Recognition and improvement
1 Set up steering committee – Cluster AI Council	3 Establish AI experience centre and AI sandbox	5 Launch AI transformation index	7 Launch an AI marketplace platform	9 Recognize SME AI pioneers
State MSME secretary	MSME association	MSME association	MSME association	MSME association
2 Define cluster's AI objectives	4 Conduct outreach and initial workshops	6 Conduct training and upskilling workshops	8 Facilitate alternative funding models	10 Gather feedback and revise AI objectives
Industry body with support from academia	Academia and industry bodies	Academia and industry bodies	Centre / state MSME Ministry	Steering committee

Action point Action owner

Source: World Economic Forum

Phase 0: Pre-launch activities and stakeholder alignment

Objective: Lay the groundwork by forming governance structures and setting cluster AI goals

1 Set up a steering committee – Cluster AI Council

- Identify representatives from MSME associations, government, industry, academia and solution providers
- Formalize committee roles and responsibilities

Lead: State MSME secretary

Outcomes: Steering committee established to guide AI adoption in the cluster

2 Define cluster AI objectives

- Conduct baseline assessment of cluster challenges and AI needs in partnership with academia/MSME associations
- Identify relevant AI use cases for the cluster and prioritize using impact-feasibility framework
- Draft a high-level AI acceleration plan with success metrics (number of pilots completed, number of MSMEs reached, etc.)

Lead: Industry body supported by academia

Outcomes: High-level AI acceleration plan with clear success metrics

Phase 1:
Infrastructure set-up and initial outreach

Objective: Create tangible demonstration facilities and testing environments, conduct initial outreach sessions to jump-start AI adoption

1 Establish the experience centre

- Assess existing infrastructure such as technology centres, centres of excellence and incubation centres located close to the cluster
- Develop a plan to transform existing facilities to form an AI experience centre
- Develop cluster-relevant AI demos and develop ROI visuals/case studies

Lead: MSME association (in collaboration with professional service providers, implementation partners)

Outcomes: Functioning centre showcasing four to six high-value AI use cases

2 Launch cluster sandbox

- Set up a sandbox environment in which solution providers can work on MSME-focused AI pilots
- Establish partnerships with industry and academia to guide development and deployment of solutions

Lead: MSME association (in collaboration with professional service providers, implementation partners)

Outcomes: Operational AI sandbox fostering collaboration between MSMEs, solution providers, industry and academia

3 Outreach and initial workshops

- AI 101 workshops, P2P sessions with early adopters
- Case studies from similar sectors highlighting revenue and profit impact

Lead: Local academia and MSME associations

Outcome: Broad AI awareness and initial interest among MSME entrepreneurs

Phase 2:
Developing AI-readiness and capabilities

Objective: Boost AI capabilities and AI-readiness among MSMEs

1 AI transformation index rollout

- Select/develop an AI maturity assessment tool to map current AI maturity and suggest pathways to increase AI-readiness
- Deploy the index and provide MSMEs with an AI transformation roadmap

Lead: Local academia and MSME associations

Outcomes: Cluster-wide mapping of AI-readiness along with clear next steps

2 Comprehensive training and upskilling

- Conduct training sessions in AI usage, data handling and change management
- Implement train-the-trainer programmes to scale capability-building activities

Lead: Local academia

Outcomes: Increased AI literacy and practical AI skills among MSME entrepreneurs and workers

Phase 3:
Enabling supply and demand ecosystem for AI

1 AI marketplace platform

- Create a marketplace platform with demonstrations, case studies, cost calculators, user reviews and validation benchmarks
- Integrate with ONDC

Lead: MSME association in collaboration with technology vendors, professional service providers, implementation partners

Outcomes: Streamlined platform for discovery of MSME-focused AI solutions

2 Identify and facilitate alternative funding models for AI investments

- Identify government schemes for AI-focused credit lines or subsidized loans
- Facilitate discussions with industry to channel corporate social responsibility (CSR) funds to support AI investments
- Develop a funding toolkit for MSMEs

Lead: Central or state MSME ministry

Outcomes: Lower financial barriers and increased willingness to invest in AI

Phase 4:
Recognition and continuous improvement

1 Recognize SME AI pioneers

- Evaluate AI pilot outcomes; select top AI adopters in the cluster for recognition
- Publish case studies, transformation journey; conduct knowledge-sharing events

Lead: Steering committee and MSME association

Outcome: Publicity of AI success stories and inspiration for entire cluster

2 Continuous feedback and improvement

- Gather stakeholder feedback to refine experience centre, sandbox and training programmes
- Evaluate and update cluster AI acceleration plan at regular intervals

Lead: Steering committee and MSME ministry

Outcome: Up-to-date AI adoption programme reflecting cluster feedback and emerging AI technologies

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Endnotes

1. The terminology used in India, Pakistan and Bangladesh for large numbers includes the terms “lakh” (100,000) and “crore” (10 million). Therefore, 6 crore is 60 million.
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