



Human Capability in the Age of AI

India's Roadmap for
the Future of Skills



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GLOSSARY

Abbreviation	Full Form
AI	Artificial Intelligence
AIforAll	Artificial Intelligence for All
AI/ML	Artificial Intelligence/Machine Learning
BFSI	Banking, Financial Services and Insurance
CBSE	Central Board of Secondary Education
CDC	Centers for Disease Control and Prevention
CFO	Chief Financial Officer
CHRO	Chief Human Resources Officer
CNC	Computer Numerical Control
CRM	Customer Relationship Management
CRO	Chief Risk Officer
CSC	Common Service Centre
CTO	Chief Technology Officer
CX	Customer Experience
CXO	Chief Executive Officer and other C-Suite Executives
DART-Ed	Digital, Artificial Intelligence and Robotics Technologies in Education
DIKSHA	Digital Infrastructure for Knowledge Sharing
EHS	Environment, Health and Safety
EHR	Electronic Health Record
ESG	Environmental, Social and Governance
FAQ	Frequently Asked Questions
FICCI	Federation of Indian Chambers of Commerce and Industry
FMCG	Fast-Moving Consumer Goods
FREE-AI	Framework for Responsible and Ethical Enablement of Artificial Intelligence
GDP	Gross Domestic Product
GenAI	Generative Artificial Intelligence

Abbreviation	Full Form
GHO	Global Health Observatory
HR	Human Resources
IBF	Institute of Banking and Finance
ICRIER	Indian Council for Research on International Economic Relations
iGOT	Integrated Government Online Training
ILO	International Labour Organization
IoT	Internet of Things
IT	Information Technology
ITI	Industrial Training Institute
JSIT-R	Jobs-Skills Integrator for Retail
JTM	Jobs Transformation Map
KI	Künstliche Intelligenz (German for Artificial Intelligence)
KPMG	Klynveld Peat Marwick Goerdeler
KYC	Know Your Customer
L1	Level 1
LLP	Limited Liability Partnership
MAS	Monetary Authority of Singapore
MeitY	Ministry of Electronics and Information Technology
ML	Machine Learning
MSME	Micro, Small and Medium Enterprise
NBFC	Non-Banking Financial Company
NEP	National Education Policy
NHS	National Health Service
NSQF	National Skills Qualifications Framework
NTUC	National Trades Union Congress (Singapore)
OECD	Organisation for Economic Co-operation and Development
PIB	Press Information Bureau
PLFS	Periodic Labour Force Survey

Abbreviation	Full Form
PLI	Production Linked Incentive
PMKVY	Pradhan Mantri Kaushal Vikas Yojana
PM-SETU	Prime Minister's Scheme for Excellence in Training and Upskilling
QA	Quality Assurance
RASCI	Retailers Association's Skill Council of India
RBI	Reserve Bank of India
RFID	Radio Frequency Identification
SEBI	Securities and Exchange Board of India
SIM	Singapore Institute of Management
SME	Small and Medium Enterprise
SOAR	Skilling for AI Readiness
STEM	Science, Technology, Engineering and Mathematics
TI-Hüpe	Tehisintellekti Hüpe (AI Leap Programme, Estonia)
UDISE+	Unified District Information System for Education Plus
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-UNEVOC	UNESCO International Centre for Technical and Vocational Education and Training
VR	Virtual Reality
WEF	World Economic Forum
WHO	World Health Organization
WSG	Workforce Singapore
YUVAi	Youth for Unnati and Vikas with AI

FOREWORD BY FICCI

Artificial Intelligence is transforming tasks, workflows and decision-making, creating both challenges and opportunities for employers, educators and policymakers. As India continues its journey towards becoming a knowledge-driven economy, preparing the workforce for this transformation has become a national priority.

At FICCI, our engagement with industry, government, academia and the skilling ecosystem has consistently highlighted the fact that the discussion is no longer about whether AI will replace jobs, but about how it will redefine them. The demand for higher-order human capabilities such as critical thinking, creativity, problem-solving, collaboration, adaptability and ethical judgement will ever keep increasing. The future workforce will need to combine technological proficiency with these distinctly human skills.

This shift has important implications for India's education and skilling ecosystem. With one of the world's youngest workforces, India has a unique opportunity to build a talent base that is not only AI-ready but also future-ready. Achieving this will require stronger collaboration between industry, government and educational institutions to redesign curricula, strengthen industry-academia linkages, promote lifelong learning and ensure that skilling systems remain responsive to the rapidly changing world of work.

It is in this context that FICCI, in partnership with KPMG, has undertaken this study. Drawing upon extensive consultations with industry leaders across sectors, the report provides valuable insights into how AI is influencing workforce requirements, changing skill demands and reshaping employment across the economy. It further offers recommendations for policymakers, businesses and educational institutions to prepare for this transition.

We sincerely thank the Ministry of Skill Development & Entrepreneurship for its continued support and guidance, our industry members for sharing their valuable perspectives, and KPMG for its research, analysis and partnership in bringing this report together.

We hope this report will contribute meaningfully to the national dialogue on the future of work and serve as a useful reference for organisations developing talent strategies, institutions redesigning learning pathways, and policymakers strengthening India's skilling ecosystem.



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FOREWORD BY KPMG

Artificial Intelligence or AI has been defining theme for Industry and society alike – much like how electricity, internet and more recently mobile connectivity influenced and transformed economies and societies. AI has brought in a wave of changes that will significantly alter how businesses operate, how services are delivered, and how work is performed. Yet, as with every major technological disruption, the most important question is not what technology can do, but how people will adapt, evolve, and succeed by leveraging it.

A lot of conversations are happening around how AI is influencing job displacement and automation. But AI is not eliminating jobs, it is reshaping them. While those that are repetitive, predictable, and rules-based are susceptible to automation, activities requiring judgement, creativity, empathy, ethical reasoning and collaboration are becoming more relevant in job profiles.

What is clear is a shift in the nature of work. Across sectors, organisations are moving from executing routine processes to interpreting insights, solving complex problems, making difficult decisions, building relationships, and bringing new ideas. In my view, AI is elevating the importance of distinct human capabilities rather than diminishing them.

The future of work will require a new blend of competencies. Digital and AI literacy will become foundational requirements across occupations, similar to how computer literacy became essential in previous decades. As AI becomes increasingly dependable in generating information, analysing data, and automating workflows, human differentiation will lie in capabilities that are difficult to find or replicate from the existing repository. Critical thinking, communication, adaptability, creativity, emotional intelligence, leadership, ethical decision-making, and learning agility will become crucial.

For India, this is particularly significant. With world's youngest and largest workforce, we have a unique opportunity to shape the future of work rather by aligning to this change. India should identify for emerging job role the mix of AI fluency and enduring human capabilities. The challenge is this talent transformation at scale.

In this report, where we have partnered with FICCI, we delve into this topical issue – how in the age of AI, sustainable success will not come from choosing between human capability and technological capability, but from combining the two. The organisations, economies, and individuals that thrive will be those that harness AI to amplify human potential while continuing to invest in the skills and attributes that make us uniquely human. I hope you find this useful as a trigger to look at your organization in terms of realigning your work force with this blend of capabilities.



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1

EXECUTIVE SUMMARY

Artificial Intelligence (AI) is emerging as one of the most transformative technologies of the modern era, with the potential to reshape economies, industries and labour markets at an unprecedented scale. While concerns around automation and job displacement dominate public discourse, the evidence examined in this report points to a more nuanced reality. AI is not replacing entire occupations; it is changing the composition of work by automating some tasks, augmenting many others, and increasing the relative value of capabilities that remain uniquely human. For India, the challenge is therefore not simply preparing people for an AI-driven economy but preparing them for a future in which technological proficiency and human capabilities must coexist and reinforce one another.

Studies suggest that while a significant share of jobs will be affected by AI, only a relatively small proportion of occupations face the prospect of extensive automation. Most jobs comprise a mix of tasks, some of which are highly routine and codifiable, while others depend on judgement, creativity, empathy, trust, contextual understanding and complex decision-making. As AI assumes responsibility for routine and repetitive functions, human workers are increasingly expected to focus on higher-value activities that machines cannot easily replicate. The future of work is therefore likely to be defined not by competition between humans and machines, but by collaboration between them. This shift also places reskilling and upskilling at the centre of workforce transformation. The challenge is not simply whether jobs will disappear, but whether workers can transition into AI-augmented roles by acquiring new technical competencies and strengthening the human capabilities that technology cannot replace.

The report examines the implications of AI across six strategically important sectors: Banking, Financial Services and Insurance (BFSI); Healthcare; Information Technology; Manufacturing; Retail; and Education.

In BFSI, AI automates activities such as customer support, onboarding, claims processing and preliminary credit assessment, while augmenting roles that depend on advisory services, relationship management and risk analysis. Strategic leadership, governance, risk oversight and regulatory accountability remain highly human-centric functions.

In Healthcare, AI is improving diagnostics, documentation, analytics and administrative efficiency, but healthcare delivery continues to rely heavily on physicians, nurses, counsellors and caregivers whose work depends on judgement, empathy and direct patient interaction. In a country facing significant healthcare workforce shortages, AI is likely to extend human capacity rather than replace it.

In Information Technology, AI is transforming coding, testing and technical support while simultaneously creating demand for new AI-related occupations. Routine technical work is becoming increasingly automated, but roles involving architecture, strategy, governance, innovation and complex problem-solving remain highly dependent on human expertise.

In Manufacturing, AI and robotics are driving productivity gains through automated inspection, predictive maintenance and process optimisation. Yet decision-making, workforce leadership, safety management, product development and complex engineering tasks continue to depend on human judgement and accountability.

In Retail, AI is improving inventory management, forecasting, customer analytics and checkout processes. However, customer relationships, merchandising strategy, negotiation, store leadership and entrepreneurial decision-making remain fundamentally human activities.

In Education, AI helps automate administrative tasks and support personalised learning, but teaching, mentoring, counselling and institutional leadership continue to rely on human connection, motivation, ethical judgement and developmental guidance.

Taken together, these sectoral findings reinforce a conclusion: the most resilient occupations are not necessarily those with the highest technical complexity, but those built around capabilities that AI struggles to replicate, including critical thinking, communication, creativity, empathy, leadership, ethical reasoning and contextual judgement.

Recognising this shift, the report argues that India's future competitiveness will depend on adopting a dual-skilling approach. AI literacy and technical skills are essential, but they are no longer sufficient on their own. Workers will increasingly need the ability to interpret AI outputs, exercise independent

judgement, collaborate across teams, solve novel problems, communicate effectively and navigate ambiguity. In an AI-enabled workplace, human capabilities become complements to technology rather than alternatives to it. At the same time, large-scale reskilling of both existing and future workers will be critical to ensure that workforce transitions are inclusive, and the AI adoption translates into productivity gains rather than labour market disruptions.

India has already made significant progress in building its AI and digital-skilling ecosystem through initiatives such as the National Strategy for Artificial Intelligence, the National Education Policy 2020, Skill India programmes, FutureSkills Prime, PMKVY, YUVAi, SOAR and the IndiaAI Mission. However, the next phase of workforce development requires moving beyond standalone AI programmes toward a more integrated model that combines technical and human capabilities within a common skills architecture. International experiences from Singapore, Germany, South Korea, the United Kingdom and Estonia demonstrate that successful AI strategies focus as much on strengthening human judgement and adaptability as on teaching technical proficiency.

The report also identifies several challenges that could hinder India's transition. These include difficulties in measuring and credentialing human-centric skills, fragmented coordination across institutions, unequal access to digital infrastructure, the challenge of integrating AI skills with employability skills, limited preparedness among educators and organisations, and the risk that excessive reliance on AI could weaken independent thinking and problem-solving capabilities. These challenges are especially important in the context of India's vast informal workforce, where future readiness will require not only AI literacy but also communication skills, customer engagement, adaptability and entrepreneurship.

To address these challenges, the report proposes a comprehensive set of recommendations for government, industry, academic institutions and learners. At the policy level, it calls for integrating human-centric competencies into national skills frameworks, establishing real-time labour-market intelligence systems, modernising occupational standards and expanding access to AI skilling for underserved populations. The report also advocates embedding AI literacy and human-centric capabilities within a common skilling architecture so that workers are trained for real occupations rather than isolated technical competencies. Particular emphasis is placed on expanding reskilling and life-long learning opportunities for workers in routine and entry-level roles, improving access to skilling for informal workers and MSMEs, and ensuring that future-skills initiatives reach beyond traditional technology hubs. Industry must redesign workforce strategies around adaptability, lifelong learning and human-AI collaboration. This includes rethinking recruitment, performance management and leadership development reward capabilities such as critical thinking, learning agility, communication and ethical decision-making alongside technical expertise. Educational institutions need to rethink curricula and assessment systems to prioritise reasoning, judgement and responsible AI use alongside technical proficiency. Learners, meanwhile, must invest equally in AI literacy and durable human capabilities that will remain relevant even as technologies evolve.

To summarize the future of work in India will not be determined by AI alone. It will be determined by how effectively the country equips its people to adapt, learn and work alongside AI. As the world's largest workforce enters an era of rapid technological change, the country's demographic dividend can either become its greatest strength or a missed opportunity. The defining challenge is therefore not technology adoption, but talent transformation. If India can successfully combine AI fluency with judgement, creativity, empathy, leadership and adaptability, it will not merely respond to disruption but shape the future of work on its own terms. By investing in continuous reskilling, fostering human-AI collaboration and building workforce resilience at scale, India has an opportunity to convert technological change into inclusive growth, high-quality employment and long-term global competitiveness. In the age of AI, the countries that succeed will not be those with the most advanced machines alone, but those that are best able to amplify human potential through them.

A background image of a male worker wearing safety glasses and a denim shirt, focused on his work. He is positioned on the left side of the frame, looking down at a workbench. To his right, a robotic arm is visible, extending from the right edge of the frame. The entire image is overlaid with a semi-transparent blue filter. In the bottom right corner, there are decorative blue wavy lines. The text '2' and 'CONTEXT' is overlaid on the left side of the image.

2 CONTEXT

Artificial intelligence is poised to reshape work on a scale matched by few technologies. The World Economic Forum's *Future of Jobs Report 2025*, estimates that by 2030, 22% of existing jobs will undergo structural change. While 17 crore new jobs are expected to emerge and 9.2 crore displaced, the net outcome remains positive, with 7.8 crore jobs added globally.¹ Over the same period, 39% of workers' core skills are expected to change.² In India, NITI Aayog's *Roadmap for Job Creation in the AI Economy* highlights that the country's ₹23.28 lakh crore technology and consumer experience sector³ faces significant displacement risks in routine roles such as QA engineers and Level-1 support agents by 2031. At the same time, it projects that up to 40 lakh AI-augmented jobs could be created over the next five years if large-scale reskilling efforts begin now.⁴

More significant than the scale of AI exposure, however, is its distribution. Evidence increasingly suggests that AI's impact is concentrated rather than universal. The OECD's AI exposure measure indicates that current AI capabilities mostly impact roles focussed on routine information processing, administrative work, and codifiable tasks, while least affecting roles requiring contextual judgement, interpersonal understanding, complex decision-making, and responsibility.⁵ The ILO's occupational network analysis supports this pattern, finding that highly exposed occupations, including administrative, legal, financial, analytical, and other professional roles, occupy central positions within occupational networks. As a result, disruption in these occupations is more likely to spill over into adjacent jobs. Manual, care-oriented, and craft occupations, by contrast, tend to sit at the network's periphery and experience fewer secondary effects.⁶

Evidence from organisations already deploying AI suggests that this transition is taking shape in practice. Rather than replacing workers outright, firms are predominantly using AI to augment human work, especially in functions dependent on judgement, interpersonal interaction, and contextual decision-making. A study of AI adoption in Korean workplaces found that 71% of firms believed AI could replace no more than 10% of existing tasks.⁷ In healthcare, for example, AI is increasingly used for diagnostics, medical testing, and treatment planning, while patient interaction, complex diagnoses, and surgical procedures continue to rely on human expertise, empathy, intuition, and professional judgement.⁸

Similar findings emerge from a multi-country study of 96 AI implementation cases across Australia, Canada, France, Germany, Ireland, Japan, the United Kingdom, and the United States. The study found that AI was primarily deployed to automate specific tasks rather than entire jobs. Workers continued to perform activities requiring judgement, problem-solving, customer engagement, and contextual decision-making, while AI improved efficiency and productivity by complementing, rather than replacing, human effort.⁹

Understanding Differential AI Exposure in India

Understanding AI's labour market impact in India requires recognising a defining feature of its workforce: informality. Nearly 73.1% of Indian workers are engaged in informal employment¹⁰, often outside formal employment arrangements and social protection systems.¹¹ Importantly, informality is not confined to traditionally informal occupations. It cuts across the economy, including registered enterprises and organised industries, since employment conditions and enterprise status do not necessarily align.¹²

This distinction matters because AI's impact depends more on the nature of tasks than on industries or job titles. A large share of work in India remains manual, relationship-based, context-specific, and locally embedded. Current AI systems are most effective at automating or augmenting routine,

¹ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

² <https://www.weforum.org/publications/the-future-of-jobs-report-2025/in-full/3-skills-outlook/#3-2-drivers-of-skill-disruption>

³ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2177440®=48&lang=2>

⁴ https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

⁵ https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/05/the-oecd-ai-exposure-measure_489cfd42/f3da0f0a-en.pdf

⁶ https://www.ilo.org/sites/default/files/2026-03/Research%20Brief_Workers%20exposure%20to%20AI.pdf

⁷ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/10/artificial-intelligence-and-the-labour-market-in-korea_af668423/68ab1a5a-en.pdf

⁸ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/10/artificial-intelligence-and-the-labour-market-in-korea_af668423/68ab1a5a-en.pdf

⁹ <https://one.oecd.org/document/DELSA/ELSA/WD/SEM%282023%297/en/pdf>

¹⁰ https://dge.gov.in/sites/default/files/2026-07/Annual_Report_PLFS_2025.pdf

¹¹ Informal employment refers to employment arrangements that lack one or more forms of formal employment protection, such as written contracts, social-security coverage, paid leave or other statutory benefits. According to PLFS estimates, approximately 73.1% of India's workforce is engaged in informal employment.

¹² Organised and unorganised sectors refer to the nature of the enterprise, whereas formal and informal employment refer to the conditions of employment. Informal employment can therefore exist within organised enterprises, while formal employment may also be found within sectors traditionally viewed as informal.

codifiable, and digitally mediated tasks, but are less capable where work relies on interpersonal interaction, contextual judgement, trust-building, empathy, physical presence, or complex decision-making under uncertainty.

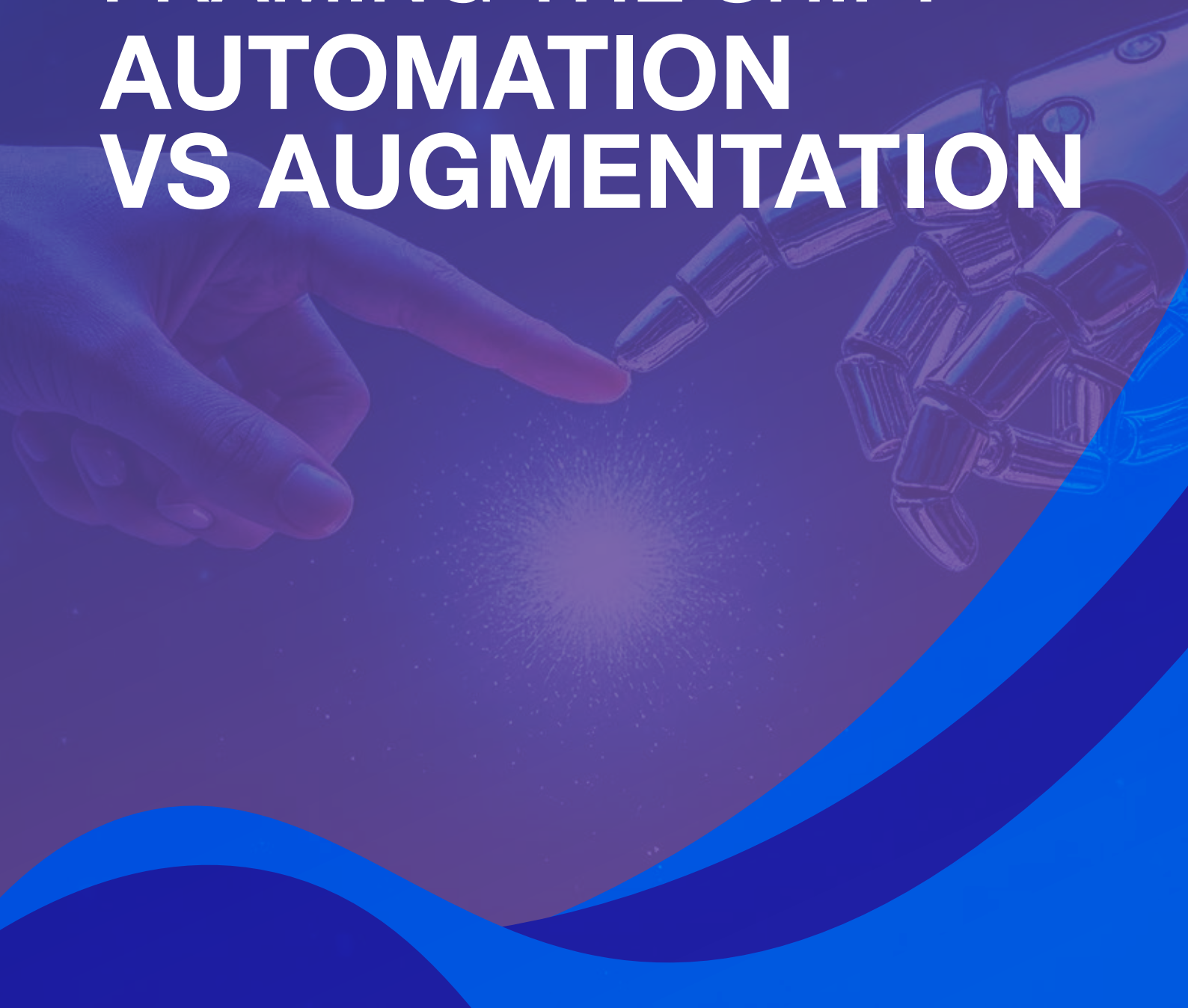
Consequently, AI exposure is not determined by the economic value of work alone. Occupations built around judgement, creativity, communication, empathy, and contextual reasoning may prove more resilient because these capabilities remain difficult to replicate. The impact of AI is therefore likely to vary across occupations: some tasks will be automated, others augmented through human-AI collaboration, while many will continue to depend primarily on human capabilities.

The key question is no longer whether AI will transform work, but how the balance between automation, augmentation, and enduring human value will evolve across different occupations and activities. The next section explores these pathways in greater detail.



3

FRAMING THE SHIFT AUTOMATION VS AUGMENTATION



As artificial intelligence has moved from research labs into everyday work, it has been accompanied by both optimism and anxiety. Concerns about job loss, reduced creativity, weakened autonomy, and the growing role of algorithms in decision-making continue to shape public debate. Yet regardless of these concerns, AI is becoming an increasingly embedded part of professional and personal life.

Much of the discussion centres on three questions: Does AI improve the quality of work or diminish it? Does it deepen thinking or merely accelerate output? And can efficiency gains be achieved without compromising creativity and authenticity?

While discussions often focus on whether AI will replace jobs, its impact is more nuanced. Broadly, AI affects work through two pathways. **Automation** involves task substitution, where a machine performs a task previously done by a worker. **Augmentation** involves task enhancement, where AI supports part of the task, enabling workers to focus on higher-value activities. While both are reshaping work, current evidence suggests augmentation is likely to affect a far larger share of tasks than complete automation.

This distinction is important because AI rarely replaces entire occupations; it is transforming specific tasks within them. The following sections examine how automation and augmentation are likely to shape different segments of India's workforce, beginning with automation, which is already visible in changing job roles and hiring patterns across sectors.

Automation: The displacement of routine tasks

Automation is real, but narrower than headlines suggest. The ILO's global assessment of generative AI 2025, finds that while about one in four workers worldwide are in occupations with some degree of exposure to GenAI, only around 3.3% of global employment sits in the highest exposure gradient,¹³ jobs where a majority of tasks could potentially be performed by the technology.¹⁴

A separate ILO study, using task-level rather than occupation-level analysis, arrives at a comparable but distinct estimate: only 2.3% of global employment held high automation potential from GenAI, mostly clerical work, while 13% held high augmentation potential.¹⁵ This finding is consistent with the World Economic Forum's analysis of 867 occupations, which found that automation risk is concentrated in routine information-processing roles. Occupations such as credit authorizers and clerks, telemarketers, statistical assistants and bank tellers exhibit the highest automation potential, reflecting the greater susceptibility of repetitive and rules-based tasks to AI-driven substitution.¹⁶

Augmentation: Enhancing the workforce, not replacing it

The larger story is the redistribution of tasks between people and machines. Employers surveyed for the WEF's Future of Jobs Report 2025 estimate that today roughly 47% of work tasks are performed mainly by humans alone, 22% mainly by technology, and 30% by a combination of both, and they expect these shares to converge toward near-parity by 2030, with almost equal thirds done by humans, by technology, and by human-machine collaboration.¹⁷ This points to augmentation rather than wholesale replacement as the dominant trajectory of AI adoption. As machines take on discrete components of a task, workers

Industry Speak



Industry consultations suggest that AI's long-term impact on employment is likely to be defined as much by job creation as by automation. Neeraj Bhalla, Chief Transformation Officer, GMR Group, noted that while AI will undoubtedly automate tasks and reshape workflows, it will also create entirely new professions and specialisations. As he observed, *"The AI era will not eliminate work entirely; it will redefine what work looks like and create careers that do not exist today."* He further highlighted that in a world where information becomes increasingly abundant, capabilities such as judgement, creativity, critical thinking and ethical decision-making will become key differentiators for workers and organisations alike.

¹³ https://www.ilo.org/sites/default/files/2025-05/WP140_web.pdf

¹⁴ https://www.ilo.org/sites/default/files/2025-05/WP140_web.pdf

¹⁵ https://www.ilo.org/sites/default/files/2025-05/WP140_web.pdf

¹⁶ <https://www.weforum.org/stories/2023/09/ai-automation-augmentation-workplace-jobs-of-tomorrow/>

¹⁷ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

are increasingly expected to focus on activities that require judgement, contextual understanding, relationship-building, oversight and decision-making. The future of work, therefore, is likely to be defined less by humans competing against machines than by humans working alongside them, with productivity gains arising from the combination of technological capability and human expertise.

Enduring and low-AI exposure roles

The corollary of both findings is a third category that automation-centred narratives miss: roles that sit largely outside AI's reach, because their core is human. These are roles built on human judgement and contextual decision-making, empathy and interpersonal interaction, physical presence in non-standardised environments, and creativity and complex problem-solving. The ILO's exposure index captures this structurally: the occupations with least GenAI exposure are associated with those tasks that continue requiring human roles.

The WEF's Future of Jobs Report 2025 projects that the largest job growth by 2030, despite the technological advancement, will come from frontline and human-anchored ones, farmworkers, delivery drivers, construction workers, salespersons and food processing workers, alongside significant growth in care roles such as nursing professionals, social work and counselling professionals, and personal care aides, and in education roles including secondary and higher education teachers.¹⁸ The care economy and the education workforce, in other words, are projected to expand through the very period in which AI adoption accelerates.

Technology-transcendent roles

Technology-transcendent roles are those in which AI can complement work but cannot replace the essential human qualities such as judgement, empathy, critical thinking and social emotional attributes that define those roles.

Research indicates that in occupations at the highest risk of automation, only 18–27% of the required skills and abilities are highly automatable, rest keep the human in the job; the jobs evolve rather than completely cease to exist.¹⁹ For occupations which are at the least at risk of automation such as management, community and social service, and teaching roles, work defined by responsibility for people and outcomes rather than the execution of discrete tasks.²⁰

The next section examines these categories of tasks across priority sectors of the Indian economy, highlighting where AI is most likely to automate, augment or complement human work in alignment with the Government of India's goals for a developed nation.



¹⁸ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

¹⁹ https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/12/what-skills-and-abilities-can-automation-technologies-replicate-and-what-does-it-mean-for-workers_262a2818/646aad77-en.pdf

²⁰ https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/12/what-skills-and-abilities-can-automation-technologies-replicate-and-what-does-it-mean-for-workers_262a2818/646aad77-en.pdf

A man in a suit is shown in profile, pointing his right hand towards a large screen. The screen displays a world map on the left and various data visualizations, including bar charts and line graphs, on the right. In the foreground, a laptop is open on a desk, showing a data table. The entire scene is overlaid with a blue gradient. At the bottom, there are decorative blue wavy lines.

4 SECTORAL IMPACT

Artificial Intelligence (AI) is emerging as a significant driver of India's economic transformation, with the potential to enhance productivity, accelerate innovation and improve service delivery across sectors. Recent reports suggest that AI could contribute up to ~₹161.85 lakh crore to the Indian economy by 2035,²¹ reflecting its growing role in shaping competitiveness, investment and workforce demand. At the same time, the Economic Survey 2024-25²² notes that AI is likely to reshape labour markets by automating certain routine tasks while augmenting human capabilities in others, making workforce adaptation and reskilling critical to maximising its benefits. The Survey therefore advocates a model of “augmented intelligence”, in which AI complements rather than replaces human labour.

This report focuses on the impact of AI across six sectors - **BFSI, Healthcare, IT & Technology Services, Manufacturing, Retail & Consumer Services, and Education**, and examines how job roles within them are evolving, being augmented, or becoming redundant. These sectors have been selected because of their economic significance and close alignment with India's development priorities and the significant impact of AI adoption expected in these sectors.

Manufacturing²³ and BFSI²⁴ are central to the Government's agenda of industrial expansion, financial deepening, and digital transformation; retail²⁵ remains critical to India's consumption-led growth model; IT services underpin the country's digital competitiveness, while healthcare and education are essential for strengthening human capital and long-term economic resilience. Together, these sectors represent the key channels through which India is pursuing economic growth, technological advancement, and inclusive development.

The effects of AI, however, will not be distributed evenly within these sectors. Even workers operating in the same industry may experience AI very differently depending on the nature of their tasks. A customer service executive and a relationship manager in banking, a radiology technician and a physician in healthcare, or a content moderator and a software architect in technology services may all face distinct levels of exposure to AI-driven change.

To capture this variation, the analysis classifies occupations into three broad categories. **Highly impacted roles** are those where a significant share of routine and codifiable tasks can be automated, creating the greatest potential for task substitution. **Partially impacted roles** are those where AI is more likely to augment performance through analysis, information retrieval, decision support, or content generation, while human oversight remains central. **Least impacted or enduring roles** are those whose core value depends on human judgment, interpersonal interaction, contextual understanding, creativity, physical presence, or accountability.

4.1

Banking, Financial Services, and Insurance (BFSI) Sector

Financial services businesses, with their data-rich and language-heavy operations, are uniquely positioned to capitalise on the development of AI and have been doing so for years. The momentum behind this transformation is reflected in market projections, with the global market for generative AI in financial services expected to grow at a compound annual growth rate (CAGR) of 27.3% between 2023 and 2033. More recently, with the emergence of generative AI (genAI), research indicates that 32–39% of the work performed across capital markets, insurance and banking businesses has high potential to be fully automated, while a further 34–37% holds high augmentation potential.²⁶

India's financial regulator has been already preparing for this shift. The RBI constituted the FREE-AI Committee in December 2024,²⁷ and its report, Framework for Responsible and Ethical Enablement

²¹ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2178092®=48&lang=2>

²² <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2097938®=48&lang=2>

²³ Union Budget 2026-27 Speech

²⁴ <https://kpmg.com/in/en/blogs/2026/02/from-stability-to-scale-decoding-union-budget-2026-for-the-bfsi-sector.html>

²⁵ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2221389®=3&lang=1>

²⁶ https://reports.weforum.org/docs/WEF_Artificial_Intelligence_in_Financial_Services_2025.pdf

²⁷ <https://assets.kpmg.com/content/dam/kpmgsites/in/pdf/2025/08/rbi-free-ai-committee-report-on-framework-for-responsible-and-ethical-enablement-of-artificial-intelligence.pdf>.
coredownload.inline.pdf

of Artificial Intelligence, released in August 2025, found that 20.8% of surveyed regulated entities are already deploying AI, concentrated in customer support, sales, credit underwriting and cybersecurity, led by large banks and NBFCs.²⁸ The finding demonstrates that AI adoption in Indian BFSI has already moved beyond experimentation into operational deployment. Notably, the framework's 26 recommendations centre on governance, board-approved AI policies and human accountability,²⁹ signaling that AI in finance is to be governed by people, not substituted for them. Beyond operational efficiency, the framework places trust, accountability, fairness, explainability and safety at the centre of AI adoption,³⁰ reinforcing the view that financial services are not merely transaction-processing businesses but trust infrastructures where decisions affect savings, credit access, financial inclusion and systemic stability. As a result, the sector is increasingly moving from a human-doing model towards a human-supervising, human-deciding and human-trusting model, where AI performs routine processing while humans retain responsibility for judgement, customer confidence, regulatory interpretation and accountability.

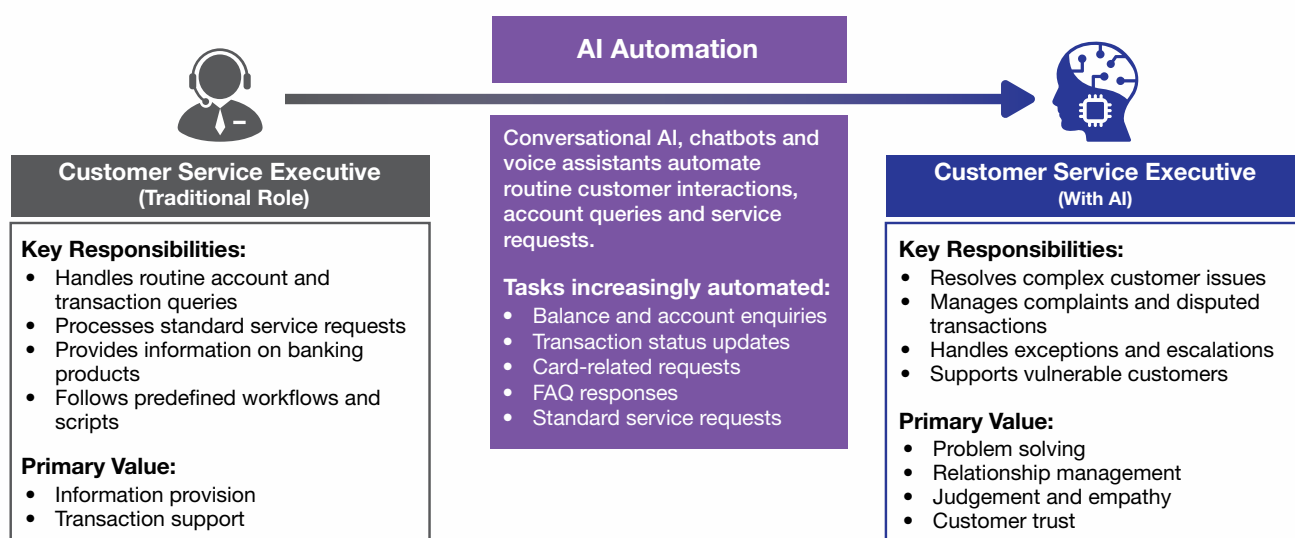
While several BFSI roles are likely to experience significant automation, augmentation and some will have least impact, the examples in **Annexure I** provide a detailed mapping of these occupations. The role journey below uses Customer Service Executive/Contact Centre Agent, Relationship Manager (Retail and Corporate Banking) and Chief Risk Officer (CRO) as representative illustrations of how work is evolving within the three categories.

Highly Impacted Job Roles (Automation-heavy): Customer Service Executive / Contact Centre Agent

The customer service executive has traditionally been the primary point of contact between banks and customers, handling routine queries related to accounts, cards, transactions and service requests across branches, call centres and digital channels. Much of this work follows standardised processes and predefined workflows.

This is also one of the functions most affected by AI.³¹ Conversational AI, chatbots and voice assistants can now handle a growing share of routine customer interactions, allowing customers to access information, raise requests and receive basic support without human intervention.

The role is not disappearing, but its focus is changing. As routine interactions become automated, customer service executives are increasingly responsible for handling exceptions, complaints, disputed transactions and other complex cases that require judgement and empathy. Their value lies less in providing information and more in resolving problems, managing relationships and maintaining customer trust.



²⁸ <https://rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=1306>

²⁹ <https://rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=1306>

³⁰ <https://rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=1306>

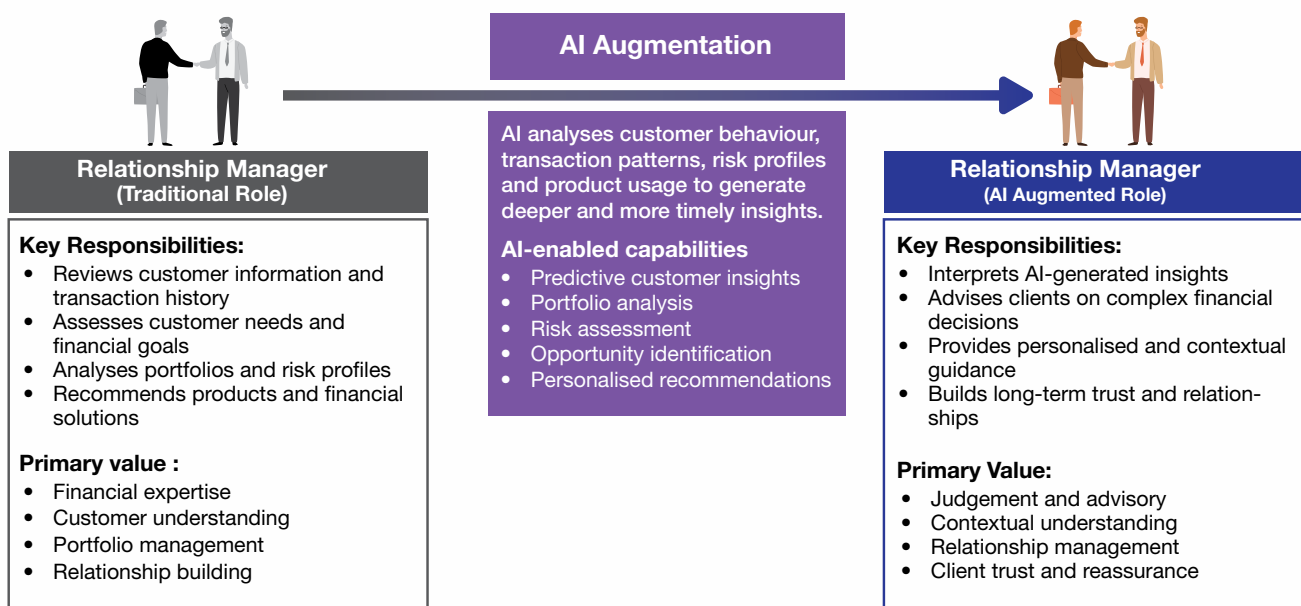
³¹ <https://kpmg.com/xx/en/our-insights/ai-and-technology/unleashing-potential-exploring-generative-ai-role-in-banking.html>

Partially Impacted Job Roles (Augmented roles): Relationship Manager (Retail and Corporate Banking)

The changing role of the relationship manager highlights how AI is enhancing, rather than replacing, human expertise. Traditionally, relationship managers spent considerable time collecting customer information, analysing transaction histories, identifying opportunities and reviewing portfolios. Their effectiveness depended on a combination of financial knowledge, experience and strong client relationships.

Today, AI enables faster and deeper insights by analysing customer behaviour, risk profiles, product usage and financial preferences at scale. It can identify emerging needs, recommend tailored solutions and flag opportunities much earlier than traditional review cycles, giving relationship managers a more complete and timely view of their clients.

Despite these advances, the essence of the role remains the same. Clients continue to value trust, reassurance and sound judgement, particularly during important financial decisions or periods of uncertainty. As a result, relationship managers are moving from spending time generating insights to focusing on interpreting them and advising clients. While AI strengthens analysis and decision support, relationship managers remain central to understanding context, building relationships and guiding customers through complex choices.

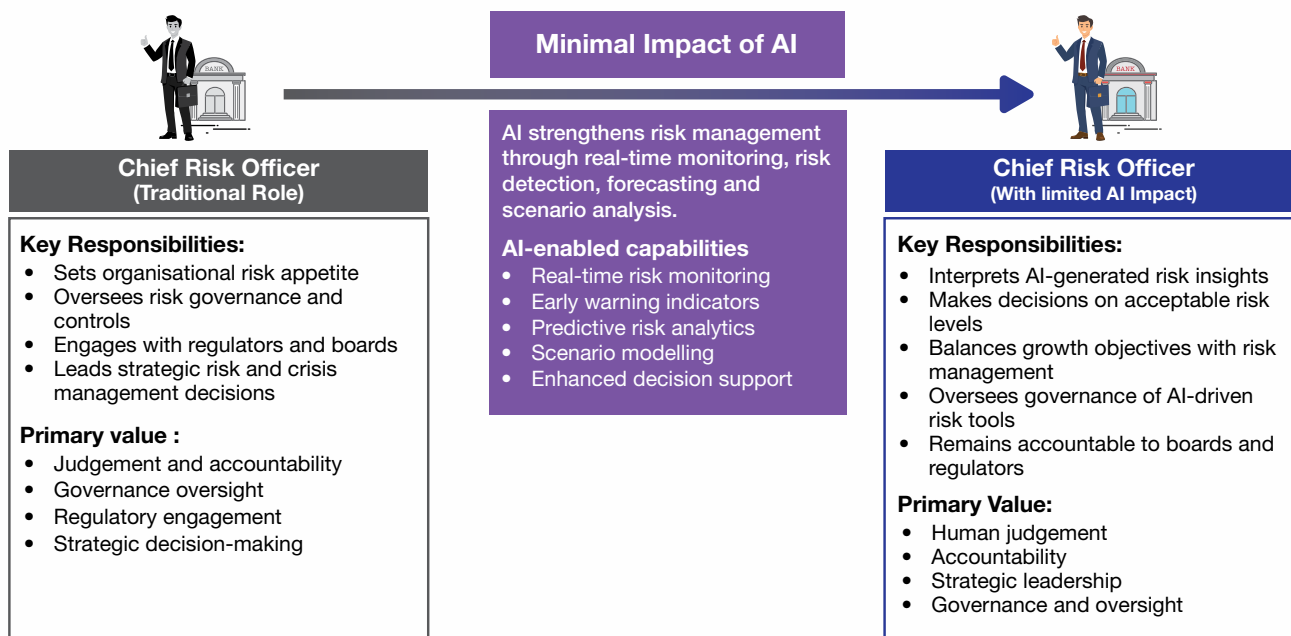


Least Impacted Roles: Chief Risk Officer (CRO)

The Chief Risk Officer (CRO) role highlights why human accountability remains critical in financial services. Traditionally, CROs have been responsible for setting risk appetite, overseeing governance, engaging regulators and advising leadership on strategic risk decisions. While risk models and analytical teams provide support, accountability has always rested with people.

AI is enhancing risk management by enabling real-time monitoring, detecting emerging threats and improving forecasting and scenario analysis. This gives risk leaders faster, deeper insights and a stronger basis for decision-making.

Despite these advances, the CRO's core responsibilities remain unchanged. Decisions about acceptable risk levels, balancing growth with prudence, managing crises and defending decisions before boards and regulators still require human judgement. As AI becomes more embedded in risk management, the need for governance and oversight only grows. Rather than reducing the importance of the role, AI is making it more strategic, with CROs increasingly responsible for both risk decisions and the oversight of how AI is used to support them.



As AI reshapes tasks across the BFSI value chain, countries are increasingly investing in workforce transformation initiatives to equip employees with both AI fluency and enduring human skills.



Singapore: Building AI and human skills in financial services

Singapore offers one of the clearest examples of a financial sector deliberately building both capabilities this report advocates: AI literacy and the human skills AI cannot replace.

A regulator-led, sector-wide approach: Rather than leaving reskilling to individual firms, Singapore treats workforce transformation as shared infrastructure. The Monetary Authority of Singapore (MAS), Institute of Banking and Finance (IBF) and Workforce Singapore (WSG) jointly developed a Generative AI Jobs Transformation Map that identifies likely AI use cases, affected roles and emerging skill needs, complementing existing frameworks for data, automation and financial-services skills.

Training both technical and human capabilities: Singapore's approach is not centred on creating AI specialists alone. It emphasises that competitive advantage comes from using AI responsibly, requiring professionals to understand both AI's capabilities and the growing importance of human judgement, accountability and oversight. Training therefore develops AI literacy alongside critical human skills.

Scaled through public-private investment: The model is backed by significant public funding and industry participation. In 2026, NTUC and IBF expanded programmes aimed at equipping up to 100,000 finance professionals with AI skills over three years. MAS and IBF have also partnered with major financial institutions to pilot workforce-transformation initiatives, while dedicated programmes support reskilling and build future talent pipelines.

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4.2

Healthcare Sector

Healthcare in India presents a distinctive starting condition: the sector is not carrying surplus labour that AI might displace, it is carrying a deficit. WHO's assessment of India's health workforce finds the country needs at least 18 lakh additional doctors, nurses and midwives to reach the WHO threshold of 44.5 skilled health workers per 10,000 population.³² As per 2024 WHO data, India currently has 9.55 doctors³³ and 27.15 midwives per 10,000 population.³⁴ In a system this constrained, AI should be seen as a tool for extending consultation to remote areas, not as a substitute for it. Industry consultations from the public-health sector reinforce this assessment. Industry consultations suggest that this pattern extends beyond clinical practice to public-health systems. According to Chaitanya Mathur, Head of Human Resource, Vital Strategies, while AI can strengthen analytics, modelling and evidence generation, many job roles in the public health area continue to rely heavily on field engagement, behaviour-change communication, stakeholder coordination and collaboration with government institutions. These activities remain deeply dependent on human interaction and contextual understanding.

A study of health occupations concludes that most health roles will benefit from AI technologies that complement rather than replace workers, with only a narrow band facing genuine automation risk, the study's classification places roles into four categories, and finds a small minority in the highest-risk band, dominated by transcription and process-driven support work.³⁵ The organization also states that as much as 36% of activities in health and social care could be automated using AI.³⁶

The impact of AI in healthcare is shaped by the underlying task mix of each role. Occupations with a higher share of codifiable, documentation-heavy, and pattern-recognition tasks are more susceptible to automation, while those requiring physical intervention, complex judgment, and human connection are more likely to be augmented or remain comparatively resilient. **Annexure II** maps healthcare occupations across this impact spectrum. The role journeys below illustrate these dynamics through three representative roles: Medical Transcriptionist, Physician/Doctor, and Mental Health Professional (Psychologist/Counsellor).

Industry Speak



Industry consultations suggest that AI's greatest near-term impact in healthcare is likely to come through productivity enhancement rather than workforce substitution. According to Vital Strategies, AI can strengthen data analytics, evidence generation and health-system intelligence, while public-health implementation continues to require significant human engagement. Similarly, representatives from Hinduja highlighted that AI is already reducing the time required for routine analytical tasks and improving access to insights, but human professionals remain responsible for interpretation, decision-making and execution. Together, these perspectives suggest that healthcare is more likely to experience augmentation than widespread automation.

Highly Impacted (Automation-heavy): Medical Transcriptionist³⁷

Medical transcriptionists have long played an important role in healthcare by converting physicians' notes, consultations and discharge summaries into formal medical records. The work required strong knowledge of medical terminology, attention to detail and a structured approach to documentation.

Advances in speech recognition, ambient listening and generative AI are rapidly changing this process. AI can now capture doctor-patient conversations, generate clinical notes, format records and update electronic health systems with minimal human intervention. Tasks that once took hours can often be completed in minutes, making transcription one of the healthcare functions most affected by language-based AI.

³² <https://cdn.who.int/media/docs/default-source/searo/india/publications/health-workforce-in-india-where-to-invest--how-much-and-why.pdf>

³³ <https://www.who.int/data/gho/data/indicators/indicator-details/GHO/medical-doctors-%28per-10-000-population%29>

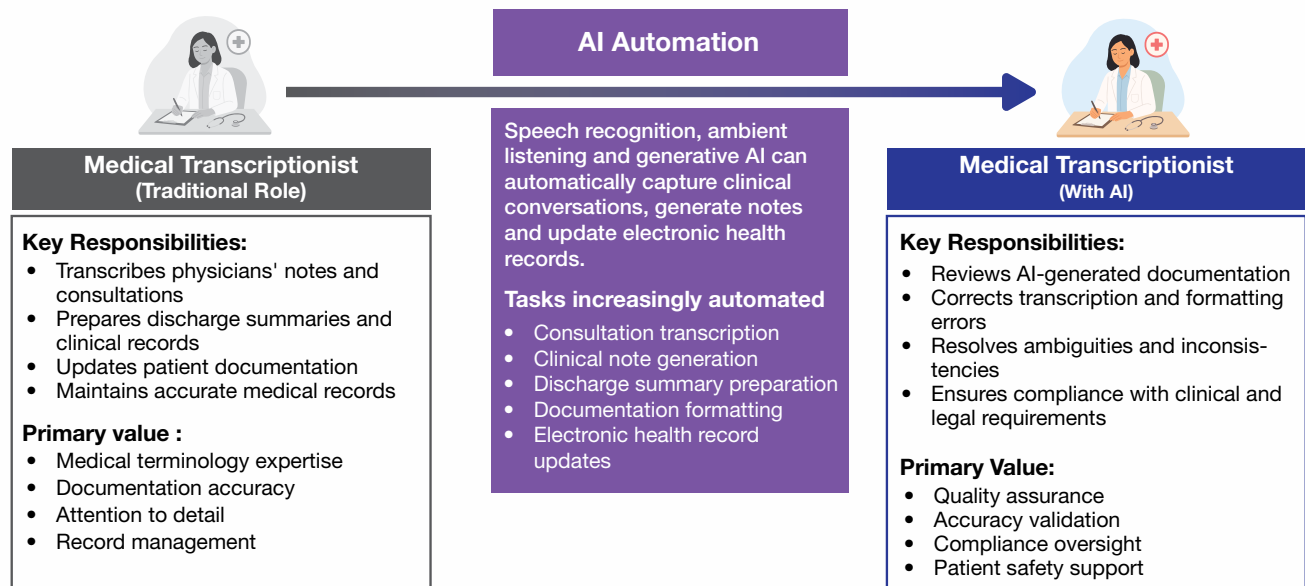
³⁴ [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/nursing-and-midwifery-personnel-\(per-10-000-population\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/nursing-and-midwifery-personnel-(per-10-000-population))

³⁵ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/05/digital-and-ai-skills-in-health-occupations_f428e5a9/5fbd42ab-en.pdf

³⁶ https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/01/ai-in-health-huge-potential-huge-risks_ff823a24/2f709270-en.pdf

³⁷ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/05/digital-and-ai-skills-in-health-occupations_f428e5a9/5fbd42ab-en.pdf

As a result, the role is shifting from transcription to quality assurance. Rather than creating records, professionals are increasingly focused on reviewing AI-generated documentation, correcting errors, resolving ambiguities and ensuring compliance with clinical and legal standards. While AI handles much of the documentation process, human oversight remains essential to maintain accuracy, record integrity and patient safety.

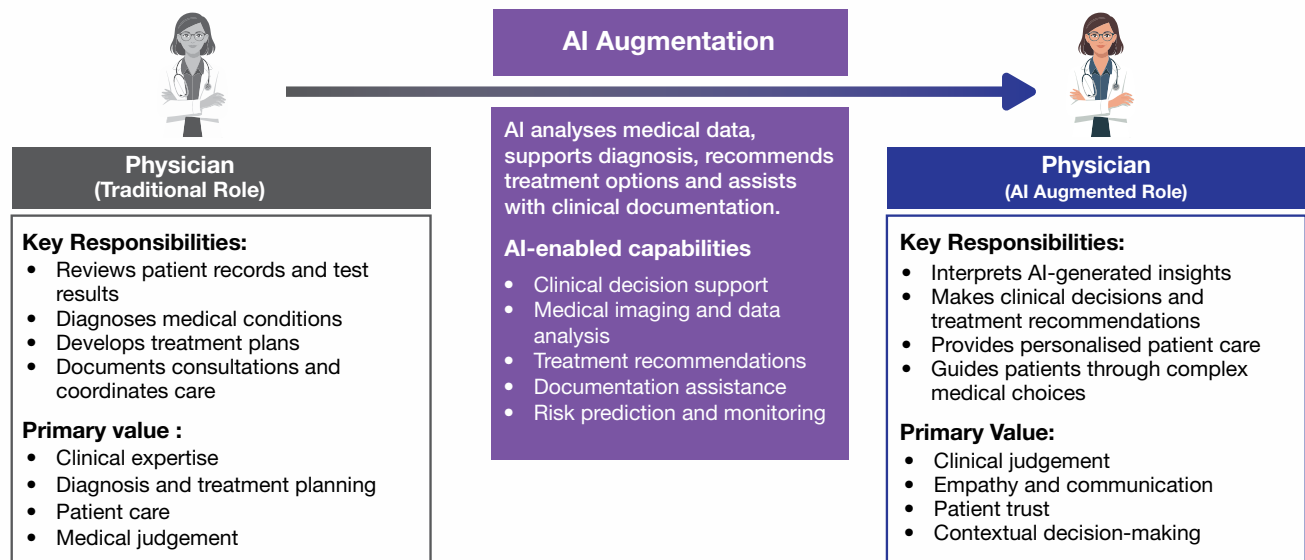


Partially Impacted Roles (Augmented roles): Physician / Doctor³⁸

Physicians have always combined medical expertise with patient care, spending significant time reviewing records, interpreting test results, documenting consultations and coordinating treatment.

AI is making many of these tasks faster and more efficient by analysing medical data, supporting diagnosis, recommending treatment options and assisting with documentation. This reduces administrative workload and gives physicians more time to focus on patients.

However, the heart of the profession remains unchanged. Patients rely on physicians for judgement, reassurance and guidance, particularly when facing complex or difficult decisions. While AI can support clinical decision-making, diagnosis, communication and personalised care continue to depend on human expertise and empathy. In this sense, AI is strengthening the physician’s role, not replacing it.



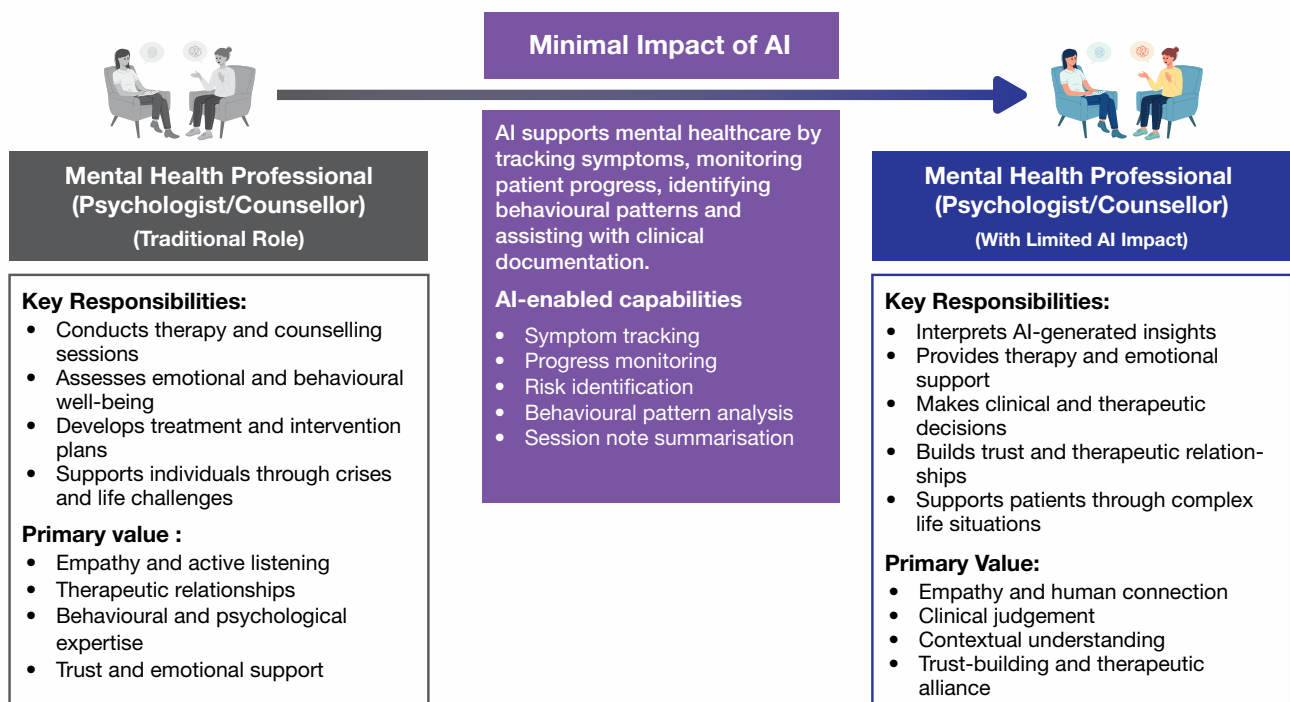
³⁸ <https://www.ama-assn.org/practice-management/digital-health/augmented-intelligence-medicine>

Least Impacted Roles: Mental Health Professional (Psychologist/Counsellor)

Psychologists, counsellors and therapists support people through emotional, behavioural and mental health challenges, with their work built on trust, empathy and human connection.

AI is beginning to support mental healthcare through tools that track symptoms, monitor progress, identify risks and provide basic guidance. It can also help practitioners by summarising notes and highlighting patterns in patient behaviour.

However, effective therapy depends on understanding, trust and personal connection, particularly during periods of crisis, trauma or major life change. While AI can support access to care and improve efficiency, it cannot replace the empathy, judgement and therapeutic relationships that sit at the heart of mental health practice. As a result, AI is likely to remain a supporting tool, while mental health professionals continue to play the central role in patient care.



Recognising that the future healthcare workforce will require both AI proficiency and human-centred capabilities, several countries are implementing targeted upskilling and reskilling programmes to prepare healthcare professionals for an AI-enabled future. The case study below highlights one such example.



The United Kingdom: the NHS Topol model for an AI-ready health workforce

The UK's National Health Service (NHS) provides a strong example of how a public health system can prepare its workforce for AI while protecting the human core of care.

A government-led foundation: The 2019 Topol Review, commissioned by the UK government and produced by Health Education England, positioned workforce development, not technology procurement, as the key to successful AI adoption. Its central premise was that AI should help free clinicians' time, enabling greater focus on patient care, a principle later reinforced in the NHS Long Term Workforce Plan.

Role-based AI capability building: The NHS adopted a tiered approach, recognising that different professions require different levels of AI expertise. Through work led by Health Education England and the NHS AI Lab, it identified workforce learning needs across three levels, from foundational AI literacy for all staff to advanced expertise for those shaping AI strategy and implementation. This was supported by initiatives such as the **AI and Digital Healthcare Technologies Capability Framework** and the DART-Ed programme.

Human judgement as a core skill: The NHS treats confidence, trust and professional judgement as essential competencies for AI adoption. Training focuses not only on understanding AI's capabilities, but also its limitations, appropriate use and required oversight, ensuring that clinical judgement and accountability remain central. AI is framed as supporting decisions and improving efficiency, not replacing healthcare professionals.

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4.3

Information Technology (IT) Sector

In the IT industry, AI is simultaneously the product and the disruptor. It is also the sector where India's AI exposure is most concentrated. As discussed earlier, NITI Aayog's assessment finds that India's ₹23.28 lakh crore technology and CX sectors face displacement risk in routine roles - QA engineers, Level-1 support agents, by 2031, while projecting up to 40 lakh new AI-augmented jobs over five years if reskilling keeps pace.³⁹ Reflecting the strategic importance of the sector, the Union Budget 2026-27 described IT as "India's growth engine" and backed this recognition by introducing a unified IT Services category for safe harbour purposes with a 15.5% margin, while also raising the turnover threshold from ₹300 crore to ₹2,000 crore.⁴⁰

³⁹ https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

⁴⁰ <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2026/feb/doc202621775901.pdf>

What makes IT the paradigm case of augmentation rather than automation is that the workforce being disrupted is also the workforce best equipped to absorb the disruption. AI is reshaping how software is specified, built, tested and supported, but it is not removing the need for people who decide what to build, judge whether it works, and answer for it when it doesn't.

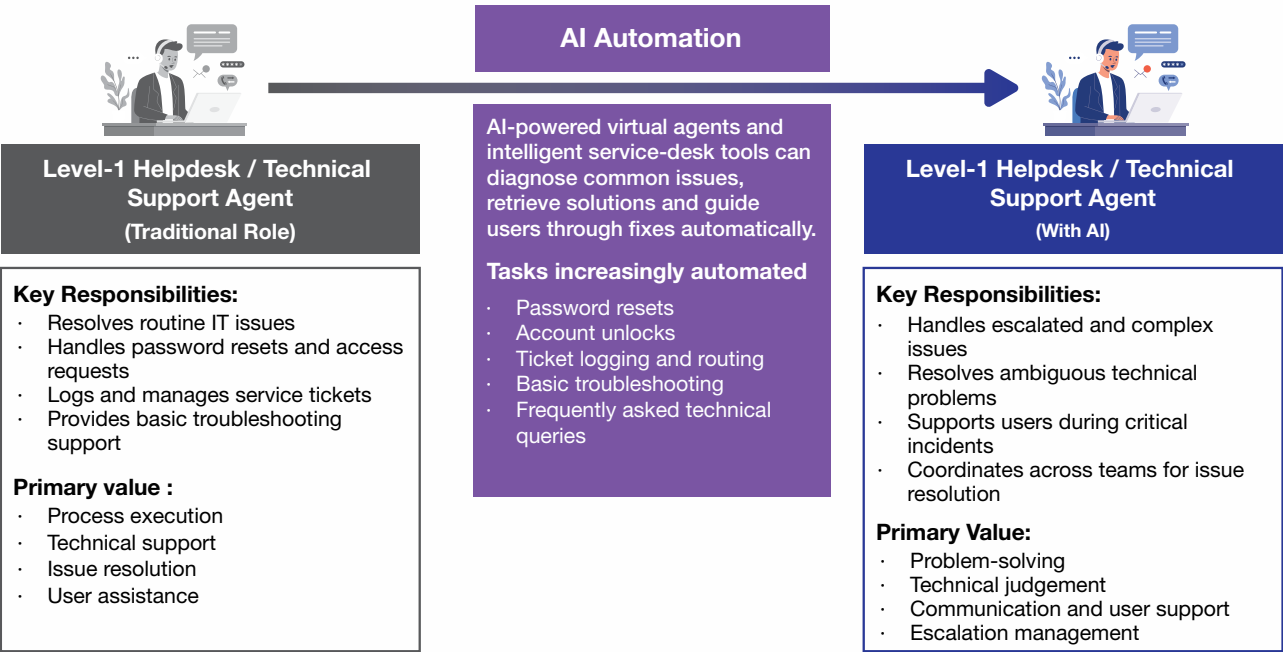
Annexure III maps IT occupations across high impact, partial impact and low impact. The role journeys below illustrate these shifts through three representative roles: Technical Support Agent, Software Engineer/Application Developer, and Technology Strategy Leader/Enterprise Architect.

Highly Impacted (Automation-heavy): Level-1 Helpdesk / Technical Support Agent⁴¹

Level-1 Helpdesk Agents have traditionally been the first point of contact for IT support, handling routine issues such as password resets, connectivity problems, ticket logging and basic troubleshooting. The role relied heavily on standard processes, knowledge bases and repeatable workflows to resolve large volumes of requests efficiently.

AI is rapidly changing this function. Virtual agents and intelligent service-desk tools can now resolve many common issues automatically by diagnosing problems, retrieving solutions and guiding users through fixes. As a result, fewer routine requests require human intervention.

However, the role is not disappearing; it is evolving. Helpdesk professionals are increasingly focused on complex or unusual issues that AI cannot easily resolve. They play a critical role in managing escalations, addressing ambiguous problems and supporting users during disruptive or high-pressure situations. While AI handles routine incidents, human expertise remains essential for problem-solving, judgement and effective communication.



Partially Impacted Roles (Augmented roles): Software Engineer / Application Developer⁴²

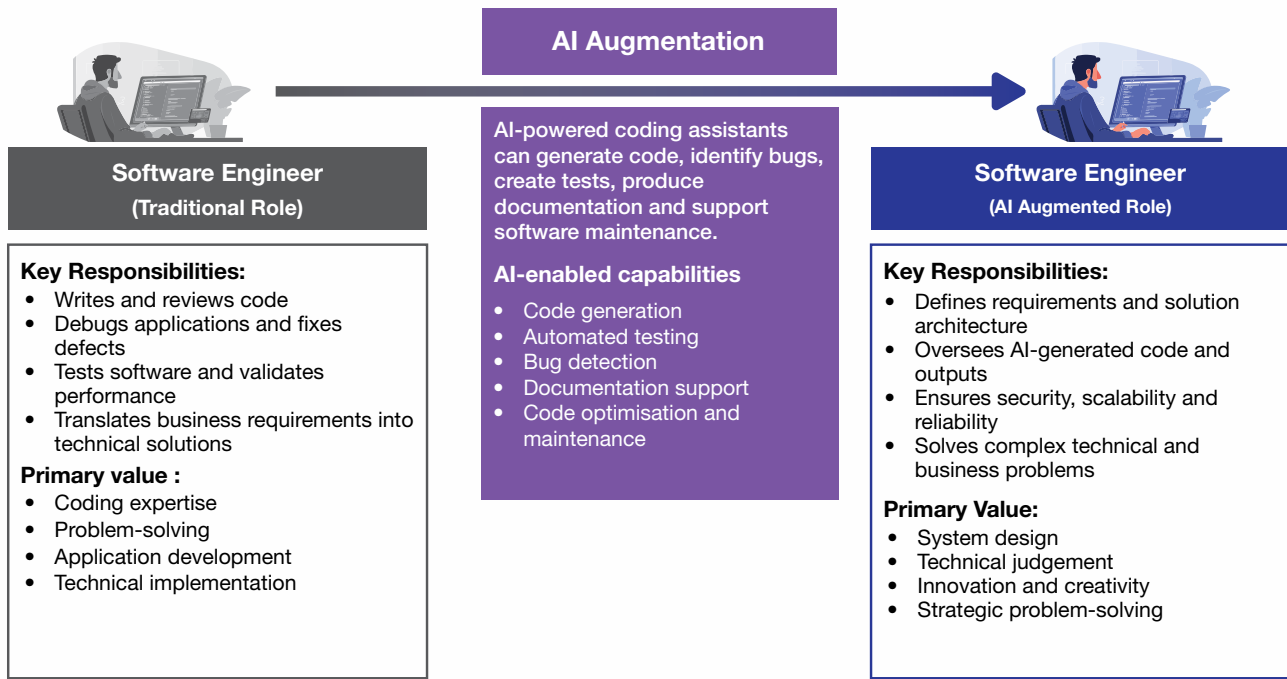
Software engineering is often cited as one of the clearest examples of AI-driven augmentation. Traditionally, software engineers spent much of their time writing code, debugging applications, testing software and translating business requirements into technical solutions.

AI-powered coding tools are changing how this work is done. They can generate code, identify bugs, create tests, produce documentation and support maintenance, allowing developers to complete routine tasks more quickly and efficiently.

⁴¹ https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

⁴² https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

However, software development involves much more than coding. Understanding business needs, defining requirements, making architectural decisions and ensuring solutions are secure, scalable and aligned with user expectations still require human expertise. As a result, the role is evolving from primarily writing code to designing, overseeing and refining solutions. While AI accelerates development, human judgement, creativity and problem-solving remain central to delivering successful outcomes.

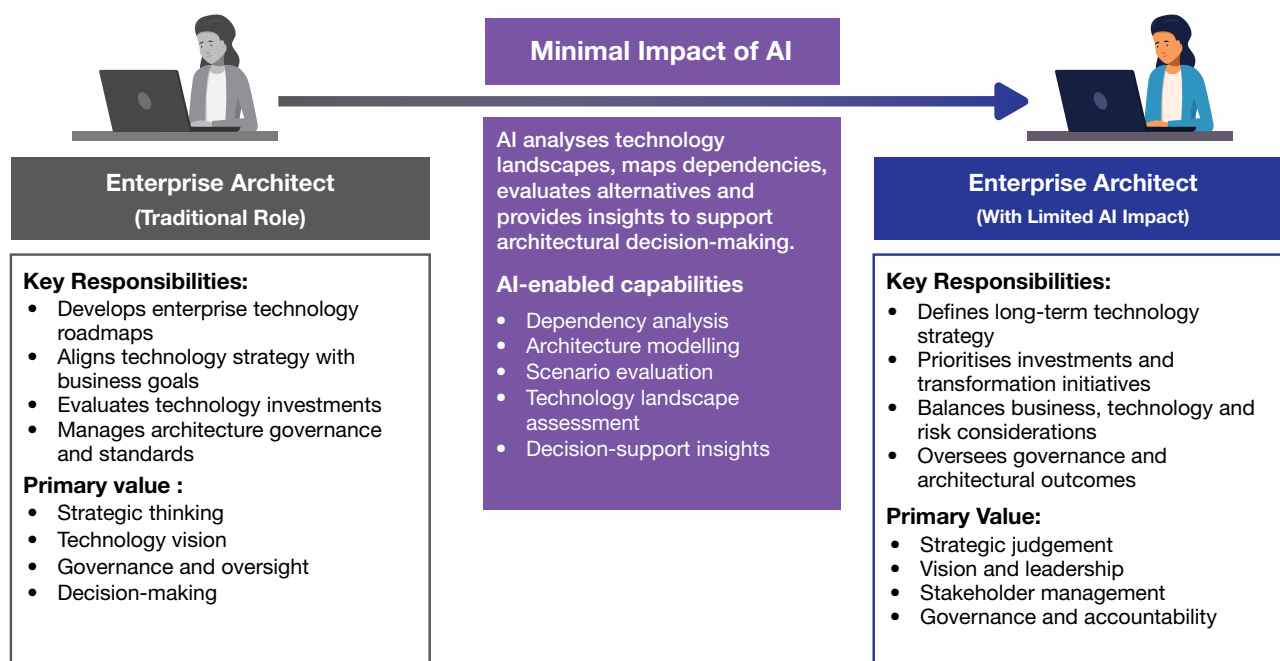


Least Impacted Roles: Technology Strategy Leader / Enterprise Architect

The Enterprise Architect role sits at the other end of the impact spectrum, as its value is rooted in strategic decision-making rather than technical execution. Traditionally, enterprise architects have been responsible for shaping technology roadmaps, guiding investment decisions and ensuring technology strategies align with business objectives.

AI is strengthening this role by analysing complex technology environments, identifying dependencies, modelling alternatives and providing deeper insights to support decision-making. This allows architects to evaluate options more efficiently and manage complexity more effectively.

However, decisions about strategic direction, investment priorities and long-term technology risks remain firmly human responsibilities. Enterprise architects must balance competing stakeholder interests, navigate uncertainty and make choices that have significant organisational consequences. As AI adoption grows, the role is becoming more strategic, not less. Rather than replacing enterprise architects, AI enhances their ability to assess options and inform decisions, while responsibility for vision, governance and outcomes continues to rest with people.



Recognising that the future IT workforce will require both AI proficiency and human-centred capabilities, several countries are implementing targeted upskilling and reskilling programmes to prepare IT professionals for an AI-enabled future. The case study below highlights one such example.



Germany: a human-centred national skills strategy for the AI era

Germany's approach to AI skilling is distinctive for its explicitly human-centred philosophy: workers are trained to use, question and oversee AI, not simply adapt to it.

A national strategy focused on responsible AI: Germany launched its national AI Strategy in 2018 and updated it in 2020, positioning AI as a driver of competitiveness while emphasising responsible development, societal benefit and alignment with ethical and legal principles.

Building AI skills at scale: Germany supports this through initiatives such as KI-Campus, a federally funded, free online platform offering AI education and learning resources, and the Zukunftszentren (Hubs for Tomorrow) programme, which helps SMEs and their employees adopt digital and AI technologies through practical, hands-on support.

Human oversight built into the model: A defining feature of the German approach is its emphasis on trustworthy and human-centred AI. Skills development is framed not only around technical proficiency but also around judgement, fairness, accountability and the ability to critically assess AI systems.

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4.4

Manufacturing Sector

Manufacturing has emerged as a key pillar of India's strategy for driving economic growth and creating large-scale employment opportunities. The Production Linked Incentive (PLI) schemes, with a total outlay of **₹1.97 lakh crore**, span 14 strategic sectors and, as of December 2025, had attracted cumulative investments of over **₹2.16 lakh crore**, generated production and sales exceeding **₹20.41 lakh crore**, and created employment for more than **1.2 lakh people**. These efforts support the government's broader objective of increasing manufacturing's contribution to GDP to 25%.⁴³ Building on this momentum, the Union Budget 2026-27 places continued emphasis on industrial expansion through measures such as scaling up seven strategic and frontier sectors, launching a **₹40,000 crore Electronics Components Scheme**, advancing **Semiconductor Mission 2.0**, and reviving **200 legacy industrial clusters**.⁴⁴

It is also the sector where AI does not arrive alone. Here it converges with physical automation—robotics, machine vision, sensor networks, so disruption operates on two fronts at once: the digital layer that plans, schedules and inspects, and the physical layer that lifts, welds and assembles. India's automation base is still building: the operational stock of industrial robots more than doubled in five years to 33,220 units in 2021, and adoption is heavily concentrated in automotive, where robot density reached 148 per 10,000 employees, far above the level in general manufacturing.⁴⁵ The pattern matters more than the number. It shows automation entering India's factories where production is high-volume and highly standardised. The consequence is a genuine policy tension: India is working to expand manufacturing employment at precisely the moment manufacturing is becoming less labour-intensive worldwide, which makes the question of which manufacturing jobs endure unusually consequential here.

Annexure IV maps manufacturing occupations across high impact, partial impact and low impact. The role journeys below illustrate these dynamics through three representative roles: Quality Inspection & Visual Inspection Operator, Process/Manufacturing Engineer, and Plant Manager/Operations Leader.

Highly Impacted (Automation-heavy): Quality Inspection & Visual Inspection Operator⁴⁶

Quality inspectors have long played a critical role in manufacturing, checking products for defects, verifying compliance with specifications and ensuring quality standards are met. Much of this work relied on manual inspection, measurement and experience to identify issues that could affect product quality.

AI-powered machine vision systems are changing this process by detecting defects quickly, accurately and consistently across large production volumes. Many routine inspection tasks that once required significant manual effort can now be performed automatically.

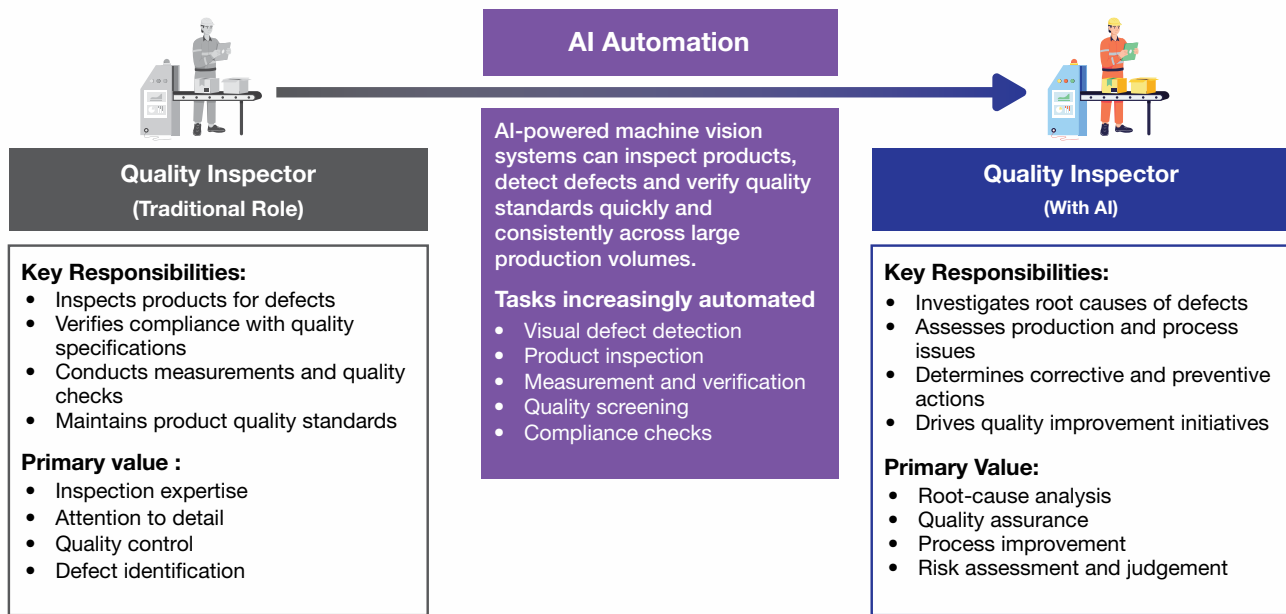
However, quality management extends beyond finding defects. Manufacturers still need professionals to investigate root causes, assess production issues and determine corrective actions. As a result, the role is shifting from routine inspection to quality assurance, exception management and continuous improvement. While AI can identify problems, human judgement remains essential for understanding their causes, managing risks and driving quality outcomes.

⁴³ <https://www.pib.gov.in/PressNoteDetails.aspx?Noteld=155082&ModuleId=3®=48&lang=2>

⁴⁴ <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2026/feb/doc202621776101.pdf>

⁴⁵ <https://ifr.org/ifr-press-releases/news/indias-robot-boom-hits-all-time-high>

⁴⁶ <https://www.ilo.org/sites/default/files/2026-03/TMDWAI-2026-EN%20-.pdf>

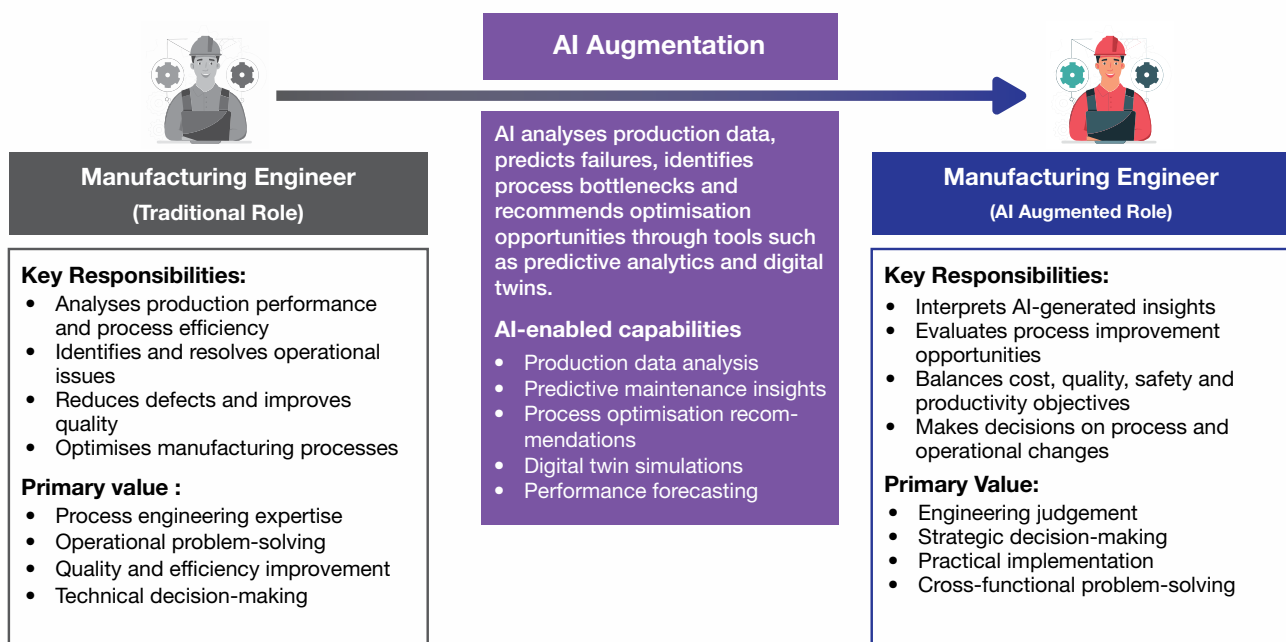


Partially Impacted Roles (Augmented roles): Process / Manufacturing Engineer

Manufacturing engineers have traditionally focused on improving production processes, reducing defects, increasing efficiency and maintaining product quality. Their work relies on analysing production data, solving operational issues and applying technical expertise to optimise performance.

AI is enhancing this role by analysing large volumes of production data, identifying patterns, predicting failures and recommending process improvements. Tools such as predictive analytics and digital twins provide engineers with deeper insights and help evaluate potential optimisation opportunities more quickly.

However, manufacturing decisions require balancing factors such as cost, quality, productivity, safety and customer requirements. While AI can generate recommendations, engineers remain responsible for interpreting results, assessing practical implications and making final decisions. As a result, the role is evolving from generating analysis to applying judgement, with AI serving as a powerful tool to support, rather than replace, engineering expertise.

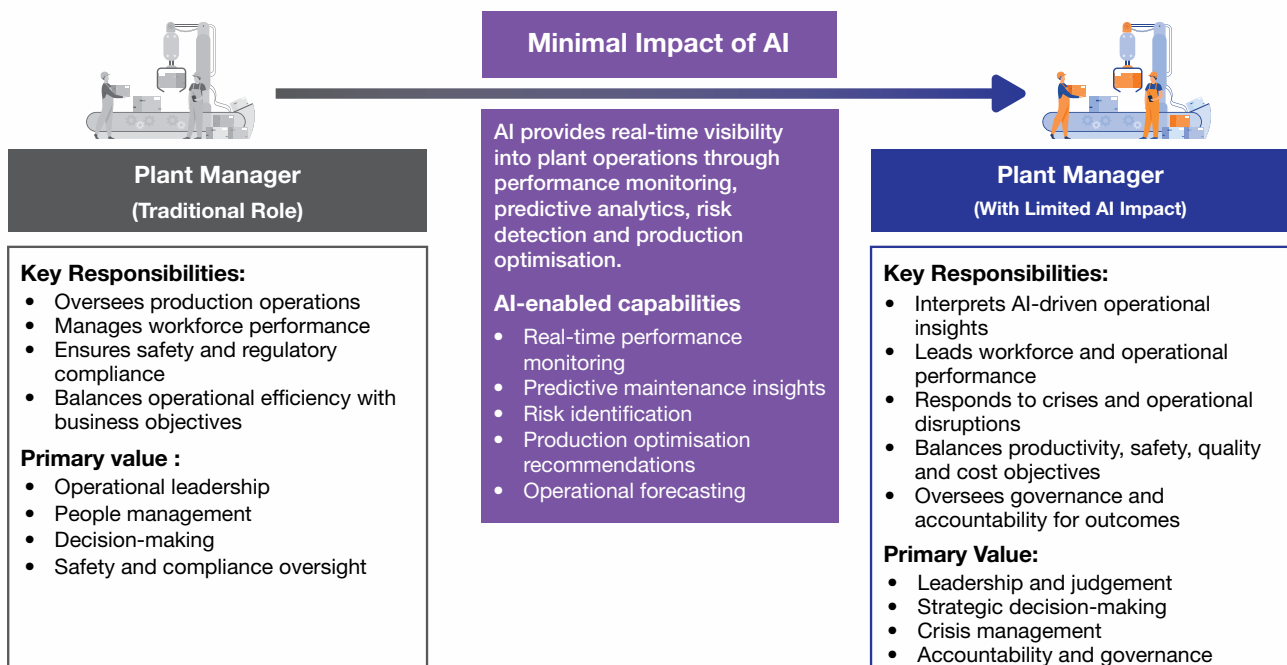


Least Impacted Roles: Plant Manager / Operations Leader

Plant Managers have long been responsible for overseeing production, workforce performance, safety, compliance and operational efficiency, while balancing business goals with day-to-day operational realities.

AI is giving manufacturing leaders far greater visibility into operations through real-time performance monitoring, predictive analytics, risk identification and production optimisation. These tools help managers make faster, better-informed decisions and respond more effectively to operational challenges.

However, leadership remains fundamentally human. Plant managers must manage people, navigate crises, balance competing priorities and make decisions that affect employees, customers and the business. They are also accountable for safety, performance and long-term outcomes. As AI becomes more embedded in manufacturing, the role is becoming more strategic, with plant managers increasingly using AI-driven insights to guide decisions while retaining responsibility for governance, leadership and organisational success.





South Korea: Skilling the workforce of the world's most automated factories

South Korea offers a manufacturing-focused benchmark for AI skilling, combining aggressive automation with deliberate investment in workforce capability.

Automation and skilling as twin priorities: As one of the world's most robot-intensive manufacturing economies, South Korea has invested heavily in AI-enabled manufacturing and smart factories. At the same time, it has paired technology investments with workforce-development initiatives, recognising that automation succeeds only when workers have the skills to operate, supervise and improve AI-driven systems.

Skills embedded in national policy: South Korea's AI Basic Act places AI talent development within the country's broader AI governance framework, requiring regular national planning and government support for building AI capabilities across the workforce.

Public investment in lifelong learning: Programmes such as K-Digital Training and AID 30+ focus on equipping both new entrants and mid-career workers with digital and AI skills, reflecting a recognition that workforce transformation requires continuous reskilling, not just new graduates.

A focus on preserving higher-order skills: A key lesson from South Korea's experience is that automation can reduce opportunities for judgement and expertise if workers are confined to operating increasingly automated systems. Policymakers and international observers therefore emphasise building complementary capabilities, such as data interpretation, problem-solving and collaboration, alongside technical AI skills.

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4.5

Retail Sector

Retail is one of India's largest and fastest-growing consumer-facing sectors, projected to reach ₹145 lakh crore by 2030 at a CAGR of 7% between 2019 and 2030, driven by rising incomes, higher consumption, and the expansion of digital, omnichannel, e-commerce and quick-commerce models.⁴⁷ It is now entering a new phase of transformation driven by AI, generative AI, automation and predictive analytics, reshaping how retailers manage inventory, understand consumers, market products and operate stores.⁴⁸

The pattern emerging, however, is complement rather than replacement. AI is proving most effective in repetitive, rules-based and data-intensive work, while retail remains built on human trust, customer relationships, complex decision-making and team leadership.⁴⁹ Industry deployment bears this out: Gen AI is being applied to supply-chain planning, catalogue creation and back-office operations by a

⁴⁷ <https://assets.kpmg.com/content/dam/kpmgsites/in/pdf/2026/06/the-indian-retail-sector-q4fy26.pdf>

⁴⁸ Role of Artificial Intelligence in Enhancing the Effective Retail Operations: An Empirical Study. (2024). *Journal of Informatics Education and Research*, 4(3). <https://doi.org/10.52783/jier.v4i3.1331>

⁴⁹ https://reports.weforum.org/docs/WEF_Global_Economic_Futures_Productivity_in_2030_2025.pdf

leading Indian fashion retailer with over 4,500 stores,⁵⁰ and to personalised recommendations, content generation and demand forecasting by leading e-commerce players.⁵¹ Furthermore, one conglomerate-backed platform's AI shopping assistant, which lifted cart additions 2.4 times within three months, is designed to hand complex cases to human agents.⁵²

The Retail Association's Skill Council of India has introduced qualifications, National Occupational Standards and micro-credentials such as Digital Customer Experience Specialist and Fundamentals of AI for Retail,⁵³ signalling demand for workers who pair retail expertise with AI fluency.

AI's impact on retail roles is determined by the underlying task mix. Activities such as forecasting, inventory management, content generation, and routine customer support are increasingly being automated or augmented, while capabilities such as judgment, relationship-building, empathy, creativity, negotiation, and leadership remain predominantly human. As a result, retail occupations span a spectrum from significant automation potential to AI-enabled augmentation and comparatively limited disruption. **Annexure V** provides a detailed mapping of these roles. The role journeys below use the Retail Cashier, Retail Merchandise Manager, and Retail Store Manager as representative examples to illustrate how work is evolving across these three categories.

Industry Speak



Industry consultations suggest that AI's impact on retail is likely to be concentrated in analytics, forecasting, inventory management, customer insights and workflow automation, while customer-facing interactions continue to rely heavily on human judgement and relationship-building. Prashant Deshpande, Vice President (Procurement and Contract) Reliance Industries Ltd., noted that although AI is increasingly capable of handling complex workflows and enhancing enterprise decision-making, customer-facing retail continues to depend on trust, contextual judgement and interpersonal interaction.

Highly Impacted (Automation-heavy): Retail Cashier

Retail cashiers have long been the final point of contact in the shopping journey, responsible for processing payments, handling returns and assisting customers with routine queries. The role has traditionally been transactional, requiring speed, accuracy and consistent service.

AI and automation are rapidly reshaping this function. Self-checkout systems, digital payments and computer vision technologies can now process many transactions with minimal human involvement, reducing the need for routine checkout activities.

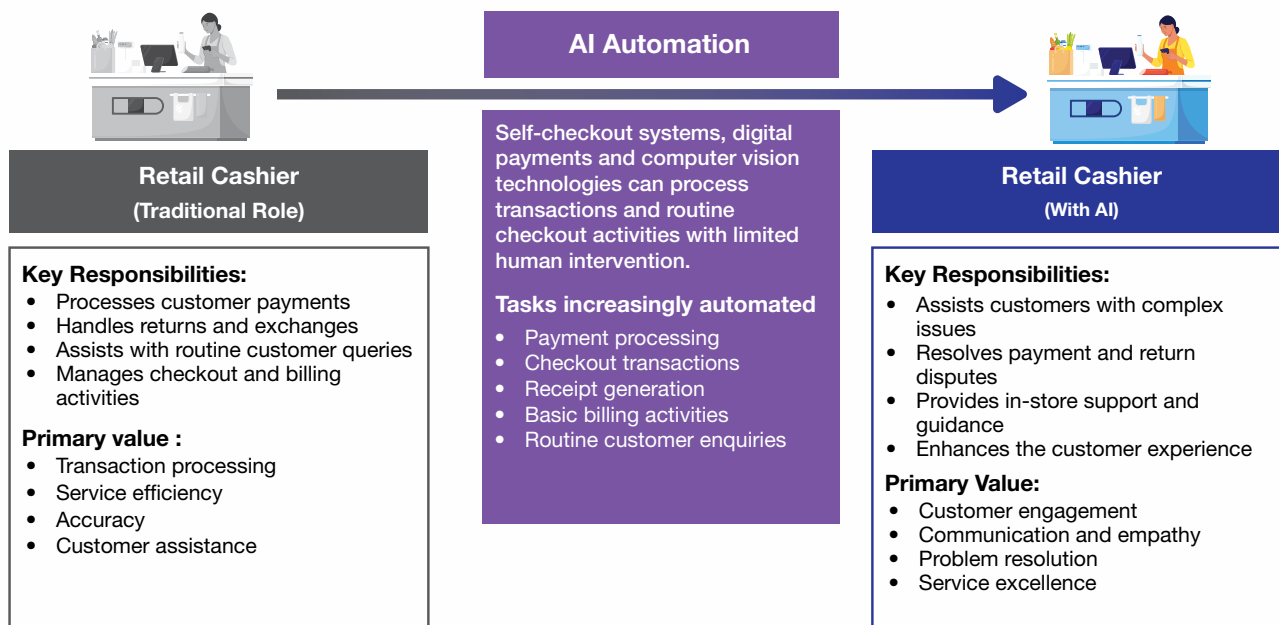
However, retail remains a people-focused industry. Customers still value human support when dealing with payment issues, returns, disputes or service concerns. As routine transactions become increasingly automated, the role is evolving towards customer assistance, problem resolution and enhancing the overall shopping experience. While technology handles the transaction, human skills such as communication, empathy and conflict resolution remain essential.

⁵⁰ <https://assets.kpmg.com/content/dam/kpmgsites/xx/pdf/2026/01/ai-in-retail-report.pdf>

⁵¹ <https://stories.flipkart.com/flipkart-ai-sandhya-kapoor>

⁵² <https://www.haptik.ai/resources/case-study/tata-cliq-case-study>

⁵³ <https://rasci.in/index.php>



Partially Impacted Roles (Augmented roles): Retail Merchandise Manager

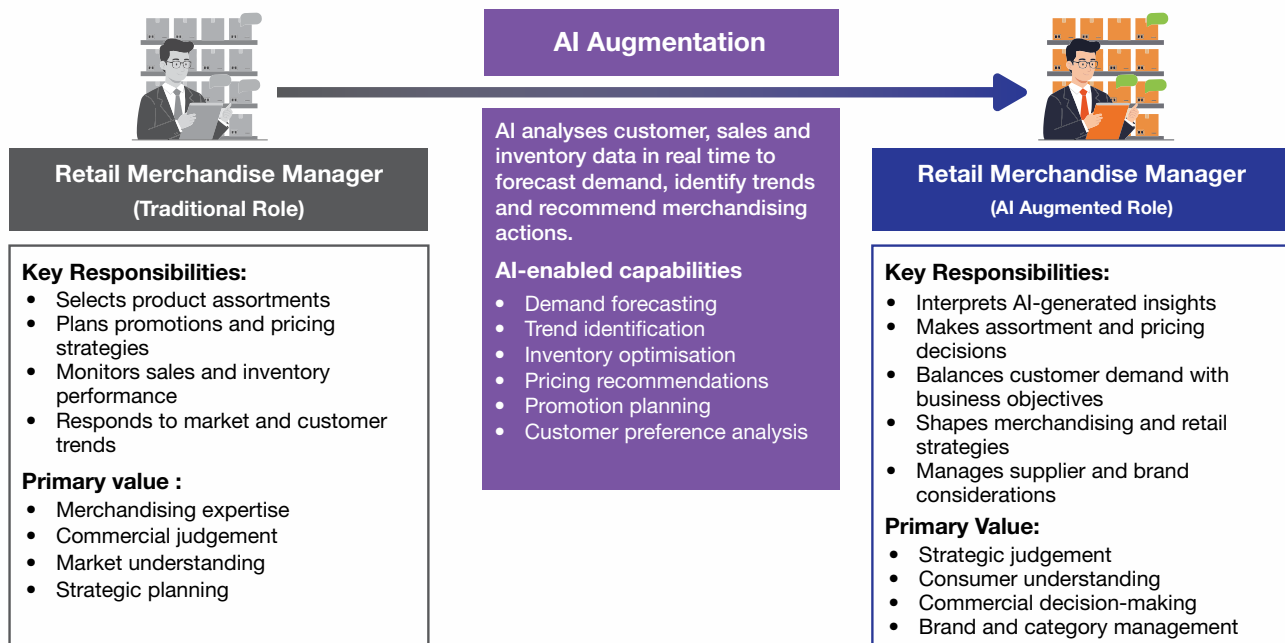
Retail Merchandise Managers have traditionally been responsible for deciding what products to stock, how to position them and when to promote them. Their decisions have relied on sales data, market trends, customer feedback and experience to balance demand, inventory and business objectives.

AI is transforming this role by analysing large volumes of customer, sales and inventory data in real time. It can forecast demand, identify emerging preferences, optimise product assortments and recommend pricing or promotional strategies with greater speed and accuracy.

However, successful merchandising requires more than data analysis. Factors such as brand positioning, changing consumer preferences, seasonality and supplier relationships still require human judgement. As AI takes on more forecasting and analytical tasks, merchandise managers are increasingly focused on interpreting insights, making trade-offs and shaping retail strategies. AI improves decision-making, but responsibility for selecting the right products and delivering a compelling customer experience remains firmly with people.

Industry Speak

As Sairam Krovi, Group Chief Financial Officer of Kalamandir Jewellers observed, AI increasingly functions as a decision-support tool that strengthens analysis and recommendations while leaving final decisions to human professionals. This is particularly evident in merchandising and assortment planning, where AI can identify patterns and opportunities, but human judgement remains essential to balancing customer preferences, brand positioning, supplier relationships and commercial priorities.

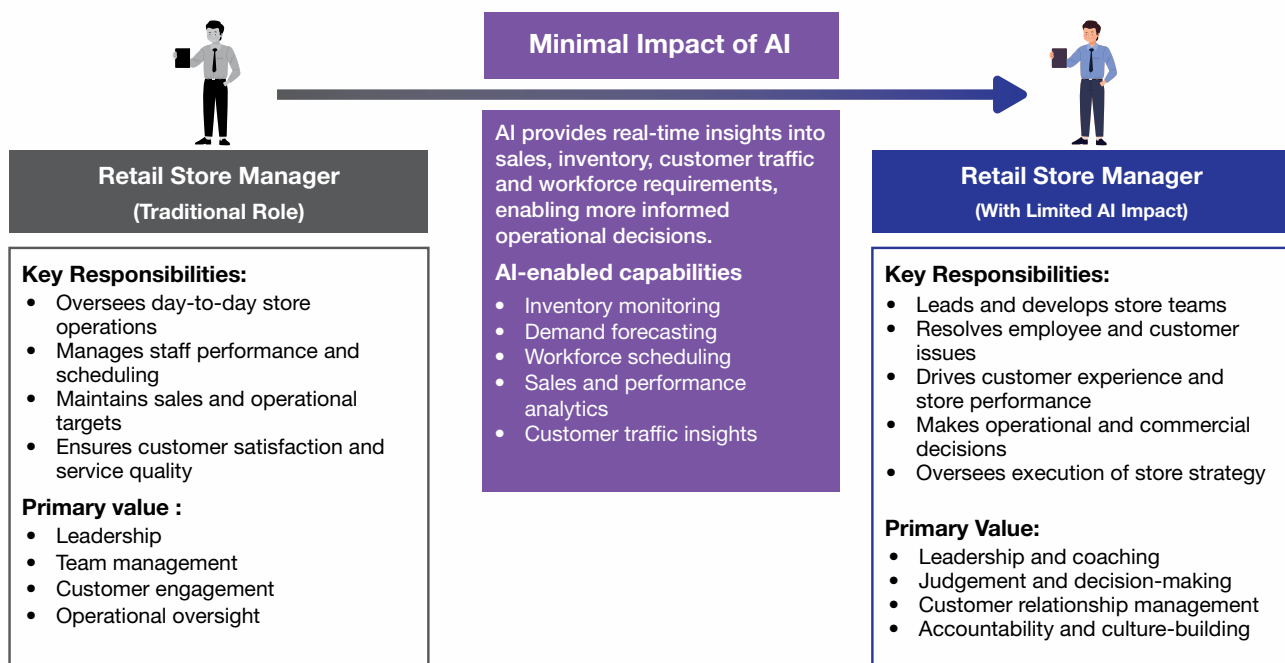


Least Impacted Roles: Retail Store Manager

Retail Store Managers sit at the other end of the impact spectrum, with their value rooted in leadership, team management and customer experience. Traditionally, they have been responsible for overseeing store operations, managing staff, maintaining performance and ensuring customer satisfaction while balancing business goals with day-to-day realities.

AI is helping improve store operations by providing real-time insights into inventory, sales, customer traffic and workforce scheduling. Predictive tools can identify stock shortages, optimise staffing and support faster, better-informed decision-making.

However, the most important aspects of the role remain human. Leading teams, resolving conflicts, coaching employees and handling customer issues require empathy, judgement and strong interpersonal skills. As AI takes over more administrative and analytical tasks, store managers can focus more on people, customer experience and strategic priorities. Rather than replacing managers, AI strengthens their ability to lead while leaving accountability, culture and relationship-building firmly in human hands.





Singapore: a Jobs Transformation Map for the retail workforce

Singapore offers one of the strongest government-led examples of preparing a retail workforce for AI and digital transformation.

A sector-wide approach to workforce transformation: Rather than leaving reskilling to individual firms, Singapore coordinates it through the Retail Jobs Transformation Map (JTM), developed by Enterprise Singapore, Workforce Singapore and the Ministry of Manpower. The JTM helps anticipate how retail jobs and skills will evolve, enabling workers to transition into emerging roles rather than be displaced. The retail sector contributes ₹6943.58 crore to the economy and employs more than 160,000 workers.

Targeted job and skills redesign: The JTM maps how technology, automation and changing consumer expectations are reshaping retail work, identifying the skills needed for future roles and linking these to the Skills Framework for Retail. The focus is on job transformation and augmentation rather than replacement.

Reaching a fragmented sector: To support thousands of retailers, Singapore established the Jobs-Skills Integrator for Retail (JSIT-R), led by the Singapore National Employers Federation and NTUC. The programme helps employers identify skills needs, access relevant training and connect workers to emerging opportunities.

Keeping the human element central: Singapore's retail transformation model emphasises using technology to automate routine tasks while redeploying workers into higher-value roles focused on customer relationships, service and experience, the areas where human capabilities remain most important.

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4.6

Education Sector

Education is the one sector where AI arrives in three roles at once: as a tool for delivery, as a subject to be taught, and as a challenge to the integrity of assessment. It is also India's largest human system. UDISE+ 2025-26 records 14.71 lakh schools, 24.69 crore students and 1.01 crore teachers,⁵⁴ an 8.3% rise in teacher numbers since 2022-23, with pupil-teacher ratios of 10, 12, 17 and 21 at the foundational, preparatory, middle and secondary stages, all well inside NEP 2020's recommended 1:30 ratio.⁵⁵ Higher education adds another 4.50 crore students and 17.32 lakh faculty, with the Gross Enrolment Ratio reaching 30 and STEM enrolment crossing 1.02 crore for the first time.⁵⁶

⁵⁴ <https://udiseplus.gov.in/#/en/home>

⁵⁵ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2282141®=48&lang=2>

⁵⁶ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2282525®=48&lang=2>



Industry Speak

Industry perspectives from the education sector suggest that while AI will increasingly support personalised learning, administrative efficiency and educational decision-making, the core functions of teaching, mentoring and student development will continue to depend on distinctly human capabilities. Prof. (Dr.) Banshidhar Majhi, Vice Chancellor, C. V. Raman Global University, noted that capabilities such as empathy, emotional intelligence, ethical judgement, creativity, leadership and the ability to build meaningful relationships remain among the least likely to be replicated by AI. While AI can analyse information and support decision-making, human experiences, values, intuition and the ability to understand complex social and emotional contexts will continue to be critical in shaping meaningful learning outcomes.

The binding constraint on AI in Indian classrooms, though, is not capability but infrastructure. Computer access reached 69.9% of schools in 2025-26 and internet connectivity 67.4%, both improving,⁵⁷ but a reminder that for roughly a third of India's schools the question of AI in teaching is not yet a live one. Where AI does arrive, India's policy framing has been consistent from the start: NITI Aayog's National Strategy for Artificial Intelligence observed in 2018 that AI may not completely replace a teacher, but has the potential to greatly assist teachers in managing multi-level classrooms⁵⁸, a framing that matters in a system where most schools are composite institutions teaching several stages at once. The Union Budget 2026-27 continues in that direction, investing in university townships near industrial corridors, content-creator labs across 15,000 schools and 500 colleges, and a girls' hostel in every district to widen STEM participation.⁵⁹

This makes education a classic augmentation-dominant sector: AI reshapes delivery and administration but preserves the human core of teaching.

Annexure VI maps education occupations across the high impact, partial impact and low impact. The role journeys below illustrate these dynamics through three representative roles: Student Records Administrator/Registrar Support Officer, School Teacher (Primary/Secondary), and School Principal/Academic Dean.

Highly Impacted (Automation-heavy): Student Records Administrator / Registrar Support Officer⁶⁰

Student records administrators have traditionally managed admissions data, attendance records, transcripts and student information systems. Much of their work involved data entry, document verification, records management and responding to requests, following established procedures to ensure accuracy and compliance.

AI is rapidly reshaping these functions by automating tasks such as enrolment processing, document management, transcript generation and information retrieval. Intelligent systems can also handle many routine student enquiries and administrative workflows, reducing manual effort and improving efficiency.

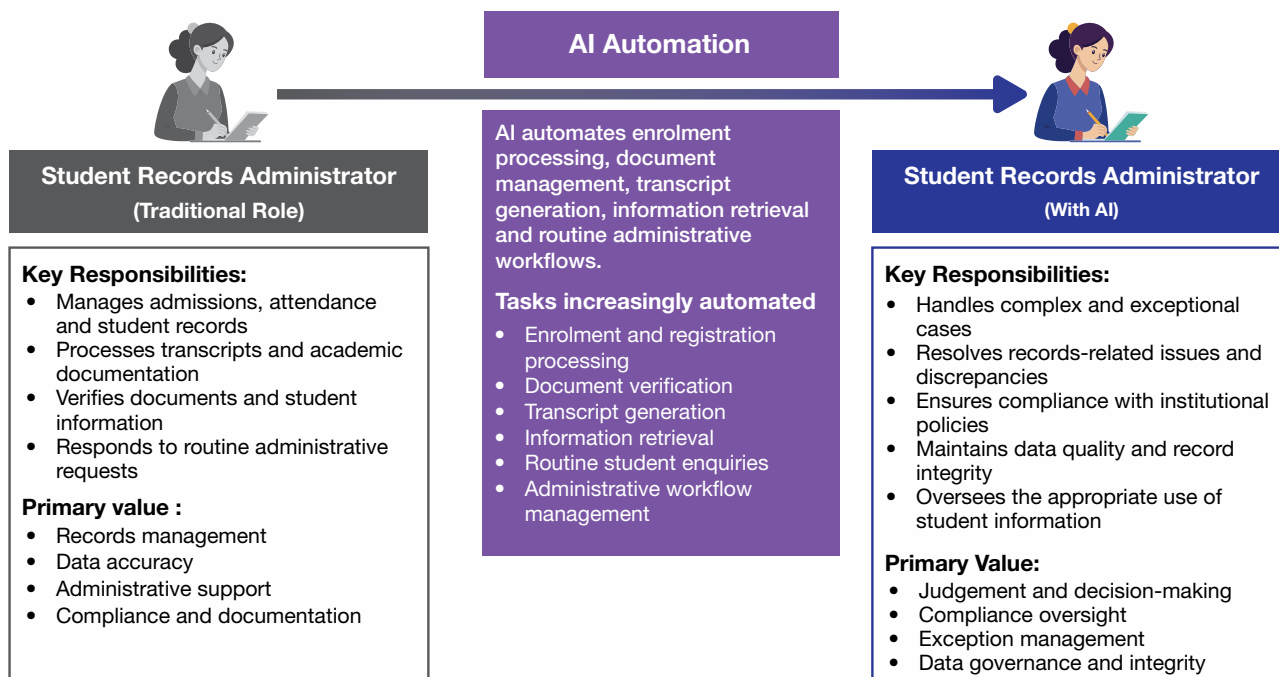
However, the role is evolving rather than disappearing. As routine processing becomes automated, administrators are increasingly focused on handling complex cases, ensuring compliance, resolving exceptions and maintaining data quality. While AI can manage information more efficiently, human judgement remains essential for addressing unusual situations, interpreting policies and safeguarding the integrity and appropriate use of student records.

⁵⁷ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2282141®=48&lang=2>

⁵⁸ <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>

⁵⁹ <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2026/feb/doc202621776101.pdf>

⁶⁰ https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/05/the-oecd-ai-exposure-measure_489cfd42/f3da0f0a-en.pdf

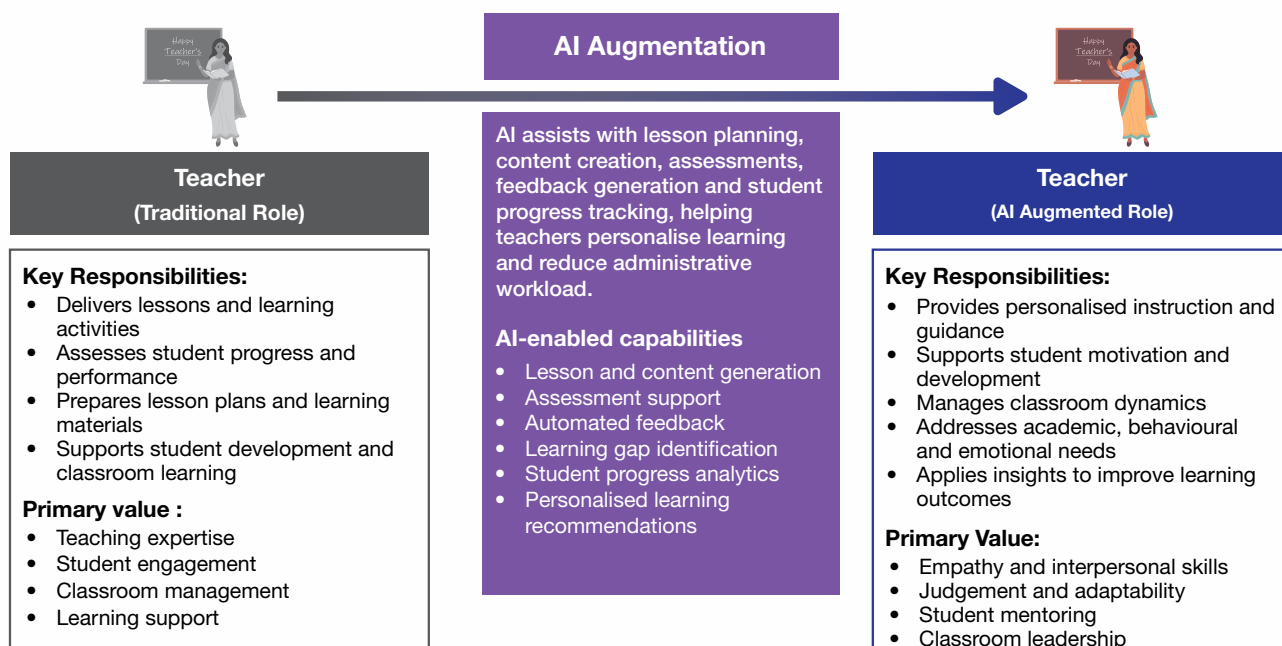


Partially Impacted Roles (Augmented roles): School Teacher (Primary/Secondary)⁶¹

Teaching has always been a deeply human profession. Beyond delivering lessons, teachers support student development, adapt instruction to individual needs, assess progress and create positive learning environments. A significant portion of their time has also been spent on lesson planning, grading and administrative tasks.

AI is helping streamline many of these activities by assisting with lesson preparation, content creation, assessments, feedback and progress tracking. It can also help identify learning gaps and provide insights into individual student needs, allowing teachers to spend more time engaging with students.

However, effective teaching is about far more than delivering information. Motivating students, building confidence, managing classroom dynamics and responding to emotional and behavioural needs require empathy, judgement and strong interpersonal skills. As a result, AI is enhancing rather than replacing the role of teachers. While technology supports learning and reduces administrative burden, teachers remain central to inspiring, guiding and supporting students.



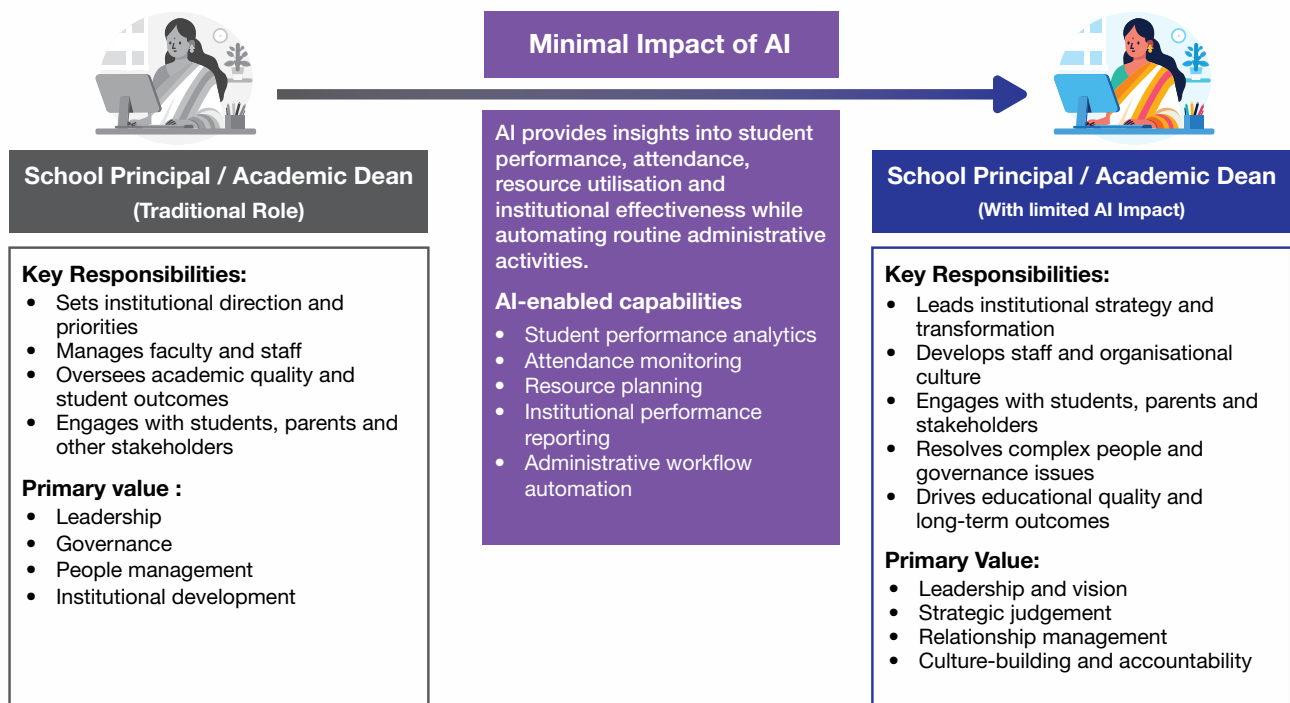
⁶¹ https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/05/the-oecd-ai-exposure-measure_489cfd42/f3da0f0a-en.pdf

Least Impacted Roles: School Principal / Academic Dean⁶²

School Principals and Academic Deans sit at the other end of the impact spectrum, with their value rooted in leadership, governance and culture-building. They are responsible for setting institutional direction, managing staff, engaging with students and parents, and ensuring educational quality and outcomes.

AI is helping education leaders by providing deeper insights into student performance, attendance, resource utilisation and overall institutional effectiveness. It can also automate administrative processes, enabling leaders to focus more on strategic priorities.

However, educational leadership is fundamentally about people. Principals and academic leaders must motivate staff, manage stakeholder expectations, resolve conflicts and make decisions that affect students, educators and the wider school community. Building trust, shaping culture and exercising sound judgement require human leadership. While AI can support decision-making, responsibility for people, values and institutional outcomes remains firmly in human hands.



As AI becomes increasingly integrated into educational institutions, leadership roles are likely to become even more important. Future education leaders will be expected not only to manage schools and colleges, but also to guide responsible AI adoption, ensure equitable access to technology and preserve the human values that underpin education itself. AI can inform decisions, but leadership, vision and accountability remain unmistakably human responsibilities.

⁶² https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/05/the-oecd-ai-exposure-measure_489cfd42/f3da0f0a-en.pdf



Estonia : AI Leap and an AI-Ready Education System

Estonia offers a strong example of how to integrate AI into education while keeping teachers and critical thinking at the centre of learning.

A national programme for AI-enabled education: Launched on 1 September 2025, **AI Leap (TI-Hüpe)** builds on the legacy of Estonia's earlier **Tiger Leap** programme and aims to provide students and teachers with access to leading AI tools and AI literacy training. The initiative is overseen by the public-private **AI Leap Foundation**, which manages AI integration across the education system.

Teachers first: Estonia deliberately prioritised teacher preparedness before large-scale student adoption. The programme's first phase covers around **20,000 upper-secondary students and 3,000 teachers**, with further expansion to vocational education in 2026. Teacher training, learning communities and curriculum development are central features of the rollout.

AI literacy, ethics and deep learning: AI Leap focuses not only on access to technology but also on critical AI literacy, responsible use, privacy and safety. Its guiding principle is that AI should **support learning and teaching rather than replace essential educational processes**, helping students develop the skills needed to use AI intelligently and responsibly.

Early national-scale adoption: By 2026, AI Leap had reached almost all upper-secondary schools in Estonia, with **94% of participating teachers** reporting use of AI in their work, supported through nationwide training and school-based learning networks.

Sources:

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<https://tihupe.ee/en/>





5

INTEGRATING AI INTO INDIA'S SKILLS ECOSYSTEM

Global evidence is converging to one conclusion: integrating AI into a nation's skills ecosystem cannot be approached as an add-on course within an otherwise unchanged education and training system.

The OECD Digital Education Outlook 2023 finds that meaningful digital transformation in education requires a system-wide approach. Rather than addressing technology in isolation, governments need to align digital infrastructure, teacher capabilities, curricula, data governance and quality assurance to ensure technology delivers better outcomes for learners. The report also notes that many of the latest technological opportunities, including AI, remain under-utilised across education systems. To realise the benefits of AI in education, there is a need for coordinated action across policy areas. This includes investing in digital infrastructure, strengthening data protection and cybersecurity frameworks, building educators' digital skills, integrating technology effectively into curricula and establishing robust quality assurance mechanisms.⁶³

Recent evidence from India reinforces this systems-based perspective. The UNESCO-MeitY Artificial Intelligence Readiness Assessment Report: India (2026) frames AI readiness across legal, educational, economic and technological dimensions, highlighting the role of institutions, infrastructure, skills and governance in enabling responsible AI adoption.⁶⁴ Similarly, ICRIER's AI in School Education: A Preparedness Framework for India (2025) argues that curriculum reform alone is insufficient without corresponding investments in teacher readiness, digital infrastructure, data governance and institutional capacity.⁶⁵ The message for policymakers is clear: AI readiness is an ecosystem property, not a course catalogue entry.

India's approach: early, and evolving fast

India moved early. NITI Aayog's *National Strategy for Artificial Intelligence (#AIforAll)* laid the foundation by making workforce skilling and reskilling central to AI adoption.⁶⁶ It called for reskilling existing workers, developing future talent through industry partnerships, and creating new employment avenues such as data annotation to absorb workers displaced by automation.⁶⁷ The strategy warned that India's demographic dividend could become a liability without adequate skilling and identified the shortage of AI talent and training opportunities as a major barrier to AI adoption. It also framed AI in education as assistive rather than substitutive, noting that AI would augment, not replace, teachers, and designated education as one of five priority sectors for AI intervention.⁶⁸

The National Education Policy (NEP) 2020 translated this vision into curriculum reform by introducing AI, coding, and other contemporary subjects from the middle grades and emphasizing 21st-century skills.⁶⁹ CBSE now offers AI skill modules from Class VI and an elective AI subject from Classes IX-XII.⁷⁰ Complementing the curriculum, initiatives such as MeitY's YUVAi programme expose students to hands-on AI problem-solving across sectors,⁷¹ while the SOAR initiative under Skill India had enrolled 1.34 lakh students and teachers by December 2025.⁷² SOAR has since expanded into a broader ecosystem comprising 50 NSQF-aligned AI and machine learning courses delivered with industry partners, creating pathways from AI literacy to workforce-ready skills.⁷³

At the higher education level, the IndiaAI Mission includes a dedicated FutureSkills pillar to expand AI education across undergraduate, postgraduate, and doctoral programmes and establish Data and AI Labs beyond metropolitan centres.⁷⁴ The Union Budget 2025-26 further announced a ₹500 crore Centre of Excellence in AI for education.⁷⁵

⁶³ https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/12/oecd-digital-education-outlook-2023_c827b81a/c74f03de-en.pdf

⁶⁴ <https://unesdoc.unesco.org/ark:/48223/pf0000397347>

⁶⁵ https://icrier.org/pdf/AI_in_School_Education.pdf

⁶⁶ <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>

⁶⁷ <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>

⁶⁸ <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>

⁶⁹ <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2025/oct/doc20251012664501.pdf>

⁷⁰ <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2025/oct/doc20251012664501.pdf>

⁷¹ <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2025/oct/doc20251012664501.pdf>

⁷² <https://www.pib.gov.in/PressNoteDetails.aspx?NotelD=157463&ModuleId=3®=48&lang=2>

⁷³ Inputs from the Ministry of Skill Development and Entrepreneurship

⁷⁴ <https://www.pib.gov.in/PressReleaseSelfFramePage.aspx?PRID=2012355®=48&lang=2>

⁷⁵ Union Budget 2025-26 speech

For working professionals, FutureSkills Prime has reached over 15.78 lakh learners, including large shares of women and learners from tier-2 and tier-3 cities.⁷⁶ For citizens, the YUVA AI for All programme offers free AI literacy in 11 Indian languages through platforms such as DIKSHA, iGOT Karmayogi, and FutureSkills Prime.⁷⁷ Vocational training has also integrated AI through PMKVY 4.0's new-age technology courses.⁷⁸

What distinguishes the current phase is that India is no longer focused solely on building AI skills but also preparing for AI's labour-market impact. NITI Aayog's *Roadmap for Job Creation in the AI Economy* projects up to 40 lakh AI-enabled jobs over five years while highlighting displacement risks in routine roles.⁷⁹ The Union Budget 2026-27 reinforced this approach by establishing a high-powered "Education to Employment and Enterprise" Standing Committee to assess AI's impact on jobs and skill requirements.⁸⁰ Together, these initiatives form a coherent national AI talent architecture spanning schools, higher education, workforce development, and economic policy.

The dual-skilling imperative

The UNESCO-UNEVOC's World Youth Skills Day Survey 2026⁸¹ highlights the dual-skilling imperative. Among more than 11,500 young respondents across 80 countries, the largest perceived skills gaps were technical and occupational skills, AI literacy, and communication and collaboration skills. At the same time, respondents identified creativity, critical thinking, complex problem-solving, empathy, and emotional intelligence as the capabilities most likely to retain value as AI automates routine tasks. The survey also revealed a mismatch between education and labour-market needs: only 32% viewed their education as highly relevant to today's job market, while 60% considered it only somewhat relevant. As a result, respondents prioritised more work-based learning and stronger integration of digital and AI skills into curricula.

Industry Speak



As industry leaders emphasise, AI readiness begins much earlier than workforce training. According to **Ankit Aggarwal, Founder & CEO, Unstop**, India's education system must move beyond rote learning towards practical, project-based learning. He argues that students need to become "builders and doers rather than just learners", applying concepts through projects and real-world problem-solving from an early stage.

For India, with its large and youthful workforce, the implication is clear. The challenge is no longer only preparing people for AI-enabled jobs, but for jobs where technical proficiency and human capabilities are rewarded together. Future workers will need to operate AI systems while providing what AI still lacks: judgement under uncertainty, ethical reasoning, empathy, creativity, leadership, and social influence. In that sense, India's AI transition is as much a human-capital challenge as a technology-skilling one.

Reaching the informal workforce

No Indian skilling strategy can stop at the boundaries of the formal economy, given that nearly 73.1% of India's workforce is informally employed.⁸² Encouragingly, the country's skilling architecture is increasingly designed for individuals rather than just organisations. Platforms such as Skill India Mission's digital infrastructure,⁸³ PMKVY's new-age technology courses,⁸⁴ extended access to AI, robotics, drones, and other skills across diverse learner groups.

⁷⁶ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2201472®=48&lang=2>

⁷⁷ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2191334®=48&lang=2>

⁷⁸ https://www.msde.gov.in/?target_lang=en

⁷⁹ https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

⁸⁰ https://www.indiabudget.gov.in/doc/budget_speech.pdf

⁸¹ https://connect.unevoc.unesco.org/up/World_Youth_Skills_Day_Survey.pdf

⁸² https://dge.gov.in/sites/default/files/2026-07/Annual_Report_PLFS_2025.pdf

⁸³ <https://www.skillindiadigital.gov.in/home>

⁸⁴ <https://www.skillindiadigital.gov.in/pmkvy-landing>

For informal workers, however, future readiness requires more than technical skills alone. Gig workers, self-employed service providers, caregivers, delivery partners, beauty and wellness professionals, repair technicians, and other customer-facing workers operate in increasingly digital markets where success depends on both technological and interpersonal capabilities. Digital and AI literacy can improve productivity, market access, and participation in emerging value chains, but communication, trust-building, problem-solving, adaptability, and customer engagement remain equally important.

This makes AI skills and Human centric skills complementary rather than separate priorities. AI can assist with tasks such as scheduling, record-keeping, customer acquisition, recommendations, diagnostics, and information retrieval, but workers must still interpret outputs, exercise judgement, respond to unexpected situations, and maintain human relationships. The point is especially evident in care-related occupations, where technology can enhance service delivery but cannot readily replace empathy, observation, reassurance, and context-specific decision-making.

The Next Steps

The next step in India's skilling evolution is therefore not simply to expand AI training or training for human-centric skills independently, but to integrate the two into a common capability framework. Existing programmes already provide elements of both: PMKVY combines occupational training with modules on soft skills, entrepreneurship, financial literacy and digital literacy, while the ITI ecosystem is being modernised through initiatives such as PM-SETU to improve alignment with evolving industry requirements. The challenge now is to redesign curricula around occupations rather than subjects. A healthcare worker using AI-enabled diagnostics, a gig worker managing platform-based demand, a retail entrepreneur using generative AI for customer acquisition, or a technician using AI-assisted troubleshooting all require technical proficiency and human capabilities simultaneously.

The scale of the opportunity makes this integration urgent. FutureSkills Prime has already reached more than 15.78 lakh learners, with 85% of participants coming from Tier-2 and Tier-3 cities and around 41% being women,⁸⁵ demonstrating both the demand for digital skills and the potential to reach workers beyond traditional technology hubs. Yet scale alone is not the challenge. The nature of the jobs being created increasingly demands integrated capabilities. The Government's PM-SETU programme aims to upgrade 1,000 Government ITIs (200 hub ITIs and 800 spoke ITIs) with industry-aligned courses, smart classrooms, modern laboratories and stronger industry linkages, explicitly to improve employability outcomes in emerging sectors.⁸⁶ More importantly, the scheme recognises that employability depends on more than technical competence, incorporating soft skills in the training modules.⁸⁷

This points to the next stage of India's skilling evolution: moving beyond teaching technical subjects and employability skills separately towards training designed around occupational outcomes.

The same principle should increasingly guide skilling for the informal economy. Targeted modules for gig workers, caregivers, allied health professionals, self-employed service providers and micro-entrepreneurs should combine AI and digital tools with customer management, communication, financial decision-making, problem-solving and trust-building competencies. In such occupations, productivity gains come not from technology alone but from the ability to apply technology in human-centred contexts. India's next-generation skilling architecture should therefore focus less on teaching technical and soft skills as separate domains and more on developing integrated occupational capabilities that reflect how work is actually performed.

⁸⁵ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2201472®=3&lang=1>

⁸⁶ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2222121®=3&lang=1>

⁸⁷ <https://pmsetu.nimi.co.in/about-us>

Singapore's SkillsFuture, launched in 2015, is built on the idea that technical/AI skills and soft skills should be one integrated system, not two separate tracks. Run by SkillsFuture Singapore (SSG), it treats upskilling as a lifelong entitlement for every citizen.¹

With courses like AI-Literate: Critical Reasoning and Analytical Thinking for Professionals and AI-Literate: Human-Centric Design Thinking and Collaborative Problem Solving for Professionals, the programme teaches technical skills like prompt engineering and soft skills like problem solving, analytical thinking, design thinking, etc. The programme also identifies 16 critical core skills, grouped in 3 essential areas, that are crucial for employability and career mobility. These include: Thinking Critically (creative thinking, problem solving, decision making), Interacting with Others (communication, collaboration, influence), and Staying Relevant (adaptability, digital fluency, self-management, learning agility).¹

Notably, Digital Fluency sits inside the soft-skills framework, Singapore treats adapting to AI tools as a matter of judgment and adaptability, not just technical know-how.¹

For India, the lesson isn't to copy SkillsFuture but to borrow its design principle. Integrating AI and soft skills in India's skilling ecosystem will prepare the existing and future workforce to navigate the challenges of future workplaces.

Sources:

<https://courses.myskillsfuture.gov.sg/>,

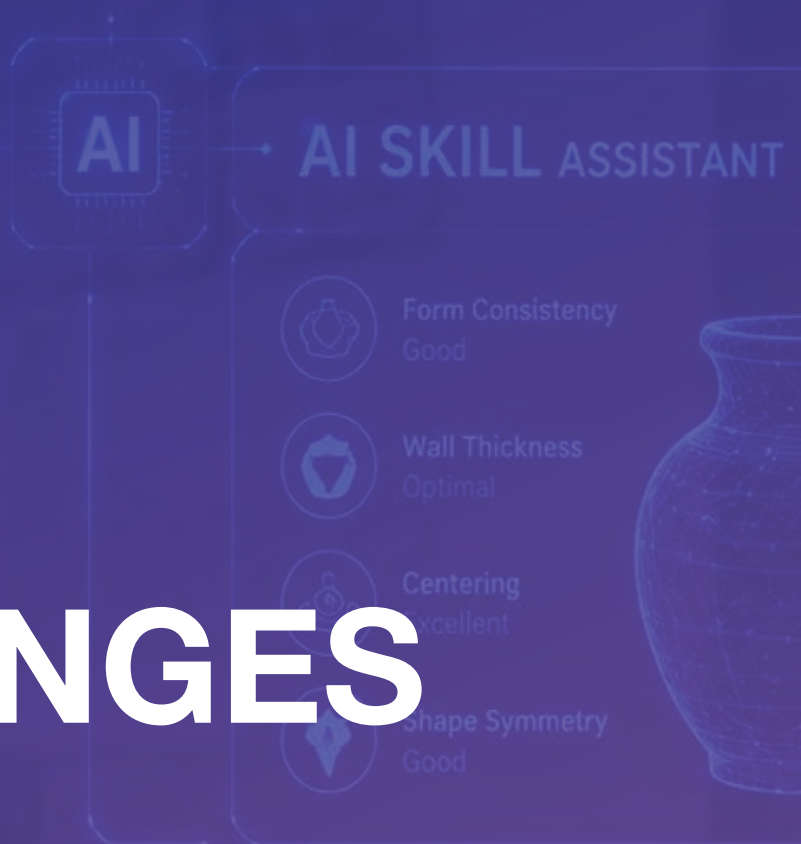
<https://www.skillsfuture.gov.sg/>,

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6 KEY CHALLENGES



Across sectors, a common pattern emerges: AI is automating tasks, augmenting expertise and increasing the value of uniquely human capabilities. The challenge for India is therefore not simply to build AI skills, but to ensure that technological proficiency develops alongside judgement, creativity, adaptability and human-centred decision-making.

6.1

Government

- **Human-centric skills remain difficult to formalise and recognise within skilling and labour-market systems:** National qualification frameworks, occupational standards and workforce planning mechanisms are designed around observable and standardised competencies, making it difficult to define, assess and adequately recognise skills such as judgement, ethical reasoning, adaptability, empathy, mentoring and interpersonal problem-solving.
- **AI and human-skill development are insufficiently integrated within skilling ecosystems:** Public skilling initiatives often develop AI capabilities and human capabilities through separate programmes, limiting focus on the combined competencies required for effective human-AI collaboration.
- **Skills frameworks struggle to keep pace with AI-driven workforce change:** Periodic updates to Qualification Packs and National Occupational Standards, combined with the absence of real-time skills intelligence, make it difficult to identify emerging AI-related skill requirements and rapidly adapt skilling priorities.
- **Uneven access to AI readiness and future-skills development persists:** Regional, socio-economic and demographic disparities in digital access and literacy, alongside limited mechanisms to reach informal, gig and self-employed workers, create unequal opportunities to participate in AI-related skill development.
- **Fragmented institutional coordination constrains a coherent future-skills strategy:** Building AI readiness requires alignment across education, skilling, labour and digital-governance institutions, yet cross-ministerial coordination remains fragmented.

6.2

Industry

- **Organisations struggle to identify, measure and embed human-centric capabilities in workforce practices:** While technical competencies are often well-defined, many organisations lack robust mechanisms to assess, develop and reward capabilities such as judgement, adaptability, collaboration and ethical decision-making across the employee lifecycle.
- **Talent strategies remain oriented toward technical expertise rather than workforce adaptability:** Recruitment and talent management processes frequently prioritise certifications and tool-specific knowledge, while undervaluing transferable capabilities such as critical thinking, learning agility and complex problem-solving that are essential in rapidly evolving AI-enabled workplaces.
- **AI adoption is outpacing workforce-wide capability building:** AI literacy and expertise are often concentrated among specialist teams, while managers, frontline employees and business functions receive limited support to effectively use AI in day-to-day work.
- **Organisations lack mature workforce models for AI-augmented work:** Many firms have yet to clearly define how responsibilities should be shared between humans and AI systems, while managers often lack the capabilities required to lead, supervise and optimise human-AI teams.

- **Workforce learning and development models are not keeping pace with AI-driven change:** The decline of routine task-based learning opportunities, combined with reliance on periodic training approaches, makes it difficult to build professional judgement and sustain continuous reskilling in rapidly changing work environments.
- **MSMEs face disproportionate barriers to workforce transformation:** Smaller firms often lack the financial resources, learning infrastructure and specialist expertise needed to invest in AI adoption and future-ready workforce development at scale

6.3

Academic Institutions

- **Assessment systems are struggling to remain effective in the AI era:** Traditional examinations and assignment-based assessments are increasingly challenged in measuring reasoning, critical thinking, problem-solving and responsible AI use when AI tools can generate outputs on demand.
- **Faculty capability and instructional readiness constrain effective AI integration:** Many educators require support to use AI tools, design AI-enabled learning experiences and teach responsible AI practices, while growing reliance on AI-generated content, grading and feedback may gradually weaken instructional and evaluative expertise.
- **Curricula do not sufficiently prioritise judgement and higher-order skills:** Educational programmes often focus on AI tool usage and technical proficiency, while placing less emphasis on evaluating outputs, challenging assumptions, exercising human judgement and applying ethical reasoning.
- **Developing human-centric skills places growing demands on institutions:** Capabilities such as communication, collaboration and ethical decision-making require coaching, feedback and experiential learning approaches that are resource-intensive and difficult to scale.
- **Educational programmes struggle to keep pace with evolving workforce requirements:** Limited integration of industry feedback, combined with weak research ecosystems in some institutions, constrains the ability to incorporate emerging AI competencies and future skill requirements into curricula.
- **AI capability remains insufficiently embedded across disciplines:** Many institutions continue to treat AI as a specialised technical subject rather than integrating AI literacy and application skills across fields where graduates will increasingly work alongside AI systems.

6.4

Learners

- **Learners often prioritise technical AI skills over durable human capabilities:** Strong market demand for AI tools and certifications can encourage learners to focus on technical proficiency while underinvesting in communication, judgement, adaptability, creativity and other capabilities that remain essential complements to AI.
- **Human-centric skills lack clear incentives and recognition mechanisms:** Because capabilities such as critical thinking, collaboration and ethical judgement are often difficult to certify and signal to employers, learners may perceive less value in investing time and effort in developing them.
- **Overreliance on AI risks weakening cognitive and problem-solving capabilities:** Frequent dependence on AI for information retrieval, content generation and decision support can reduce opportunities to develop independent thinking, deep learning, analytical reasoning, professional judgement and other foundational cognitive skills.

- **Changing labour-market dynamics are reducing opportunities for experiential learning:** Automation of routine and entry-level tasks can limit access to workplace experiences that traditionally helped individuals build practical expertise, professional judgement and domain knowledge.
- **Learners face uncertainty in navigating rapidly evolving AI skill requirements:** Fast-changing technologies make it difficult to determine which capabilities will retain long-term value, creating confusion between pursuing tool-specific knowledge, foundational AI literacy and broader transferable skills.
- **Access to AI learning and effective human-AI collaboration skills remains uneven:** Language barriers, limited awareness of skilling opportunities and unequal access to learning pathways can restrict participation, while many learners also lack capabilities such as prompt design, verification, critical evaluation and AI workflow integration that are necessary for effective human-AI collaboration.





7

RECOMMENDATIONS

Given the nature of the challenges, the recommendations should focus on strengthening the complementary relationship between AI skills and human-centric skills, while ensuring each stakeholder receives recommendations that align with its role in the ecosystem.

7.1

Government

- **Integrate human-centric capabilities into national skilling frameworks:** Expand NSQF, Qualification Packs and Occupational Standards to explicitly incorporate capabilities such as critical thinking, ethical reasoning, communication, adaptability and collaboration. While these skills may be difficult to standardise, competency descriptors and behavioural indicators can provide a basis for recognition and assessment.
- **Mainstream dual skilling across the national skilling ecosystem:** Embed AI literacy and human-centric skills as co-equal pillars of workforce development. Government-led skilling programmes, qualification frameworks and funding mechanisms should incentivise training models that simultaneously build technical AI capabilities and complementary human skills such as judgement, communication, creativity, empathy and problem-solving. This approach should be supported by flexible lifelong-learning opportunities that enable workers to continuously reskill and upskill as occupations evolve, particularly in roles experiencing significant AI-driven task transformation. This would help create a workforce that can effectively collaborate with AI rather than compete with it.
- **Establish a national AI skills observatory:** Develop a real-time labour-market intelligence platform that continuously tracks changes in occupations, tasks and skill demand resulting from AI adoption. Insights should directly inform curriculum updates, skilling priorities and workforce planning.
- **Accelerate skills-standards revision cycles:** Introduce modular and dynamic approaches to updating occupational standards, allowing emerging AI competencies to be incorporated more rapidly than traditional qualification review processes permit.
- **Expand AI-skilling access for underserved populations:** Invest in multilingual learning platforms, low-bandwidth training delivery and community-based digital-skilling infrastructure to reduce barriers faced by rural, low-income and disadvantaged populations.
- **Design targeted pathways for informal workers:** Leverage CSCs, Skill India centres, gig-worker platforms, cooperatives and industry associations to provide flexible, bite-sized AI and digital capability programmes tailored to informal workers and MSMEs.
- **Recognise and value human-centric work:** Update occupational classifications and workforce policy frameworks to better recognise interpersonal, care-related and advisory skills that are expected to become increasingly valuable in AI-enabled economies.
- **Create a whole-of-government future-skills strategy:** Strengthen coordination between education, skilling, labour and digital ministries through common goals, shared metrics and aligned funding mechanisms focused on AI workforce preparedness.

7.2

Industry

- **Build competency frameworks that combine technical and human skills:** Workforce planning should assess not only AI proficiency but also judgement, creativity, collaboration, learning agility and ethical decision-making as core business capabilities.
- **Shift hiring from credentials to capabilities:** Recruitment processes should assess problem-solving, adaptability, communication and critical thinking alongside technical qualifications through simulations, case-based assessments and work-sample testing.
- **Democratise AI literacy across the workforce:** Move beyond specialist training and provide function-specific AI capability programmes for managers, analysts, customer-facing staff and operational teams.
- **Redesign entry-level learning pathways:** As routine tasks become automated, organisations should create structured apprenticeship, mentorship and rotational programmes that deliberately develop professional judgement and decision-making capability.
- **Define competency models for AI-augmented roles:** Update job descriptions, performance measures and career frameworks to reflect how employees are expected to work alongside AI systems rather than independently of them.
- **Institutionalise continuous learning:** Replace one-time training initiatives with ongoing learning models that support frequent updates to AI-related knowledge and skills through microlearning, certifications and workplace practice. Organisations should also establish structured reskilling pathways that help employees transition into evolving and AI-augmented roles, ensuring workforce capabilities remain aligned to changing business requirements and technological advances.
- **Develop leaders capable of managing human-AI teams:** Leadership programmes should equip managers with skills in AI governance, human-AI task allocation, change management and responsible adoption.
- **Support MSME capability development:** Large enterprises, industry bodies and sector skill councils should provide shared AI-learning resources, advisory support and affordable training solutions for smaller firms.

7.3

Academic Institutions

- **Redesign assessment around thinking processes:** Shift assessment from evaluating outputs alone to evaluating reasoning, problem-solving approaches, reflection, source validation and responsible AI use.
- **Establish continuous faculty AI development programmes:** Provide educators with structured opportunities to build AI literacy, pedagogical skills and confidence in integrating AI into teaching and assessment. Institutions should also promote a culture of continuous learning and reskilling among faculty, enabling educators to adapt to evolving technologies, changing workplace requirements and emerging interdisciplinary applications of AI throughout their careers.
- **Teach AI judgement, not only AI tools:** Curricula should focus on evaluating AI outputs, identifying bias, handling uncertainty and exercising human judgement alongside technical proficiency.
- **Embed human-centric skills across disciplines:** Communication, ethical reasoning, collaboration and problem-solving should be integrated into learning experiences rather than taught as standalone employability modules.

- **Maintain educator oversight in core teaching functions:** AI should augment, not replace, professional educator judgement in assessment, mentoring and learner support.
- **Strengthen AI-related research ecosystems:** Increase collaboration with industry, research institutions and global academic networks to ensure teaching remains aligned with frontier developments.
- **Create structured industry feedback mechanisms:** Institutionalise advisory boards, curriculum review panels and employer partnerships that provide regular input on emerging skill requirements.
- **Promote interdisciplinary AI education:** Embed AI literacy across disciplines such as business, healthcare, law, public policy and the humanities to prepare graduates for AI-enabled workplaces.

7.4

Learners

- **Balance AI skills with human capabilities:** Invest equally in communication, critical thinking, creativity, adaptability and interpersonal skills, which are most likely to complement AI over the long term.
- **Build demonstrable evidence of human skills:** Use portfolios, projects, internships, leadership experience and community initiatives to make human-centric capabilities visible to employers.
- **Practice independent judgement when using AI:** Treat AI as a support tool rather than a substitute for reasoning by regularly validating outputs, challenging assumptions and making independent decisions.
- **Focus on transferable capabilities rather than specific tools:** Develop foundational AI literacy, data interpretation and problem-solving skills that remain valuable even as tools and platforms evolve.]
- **Seek experiential learning opportunities:** Participate in internships, apprenticeships, live projects and real-world problem-solving experiences that build contextual judgement.
- **Leverage multilingual and accessible learning resources:** Utilise local-language learning platforms and community programmes to overcome language and accessibility barriers.
- **Actively engage with emerging skilling opportunities:** Monitor government platforms, industry programmes, professional networks and educational institutions for AI-related learning pathways. Adopt a lifelong learning mindset by regularly reskilling and updating both technical and human-centric capabilities, recognising that evolving technologies and job roles will require continuous adaptation throughout one's career
- **Learn effective human-AI collaboration:** Develop skills in prompting, output evaluation, fact-checking, workflow integration and responsible AI use to maximise productivity while maintaining human oversight.

Across all stakeholders, the central objective should be to shift from viewing AI skills and human skills as competing priorities to treating them as complementary capabilities. Success in an AI-enabled economy will depend less on creating large numbers of AI specialists and more on developing a workforce that combines AI fluency with judgement, creativity, adaptability, ethical reasoning and collaborative problem-solving.

8 CONCLUSION



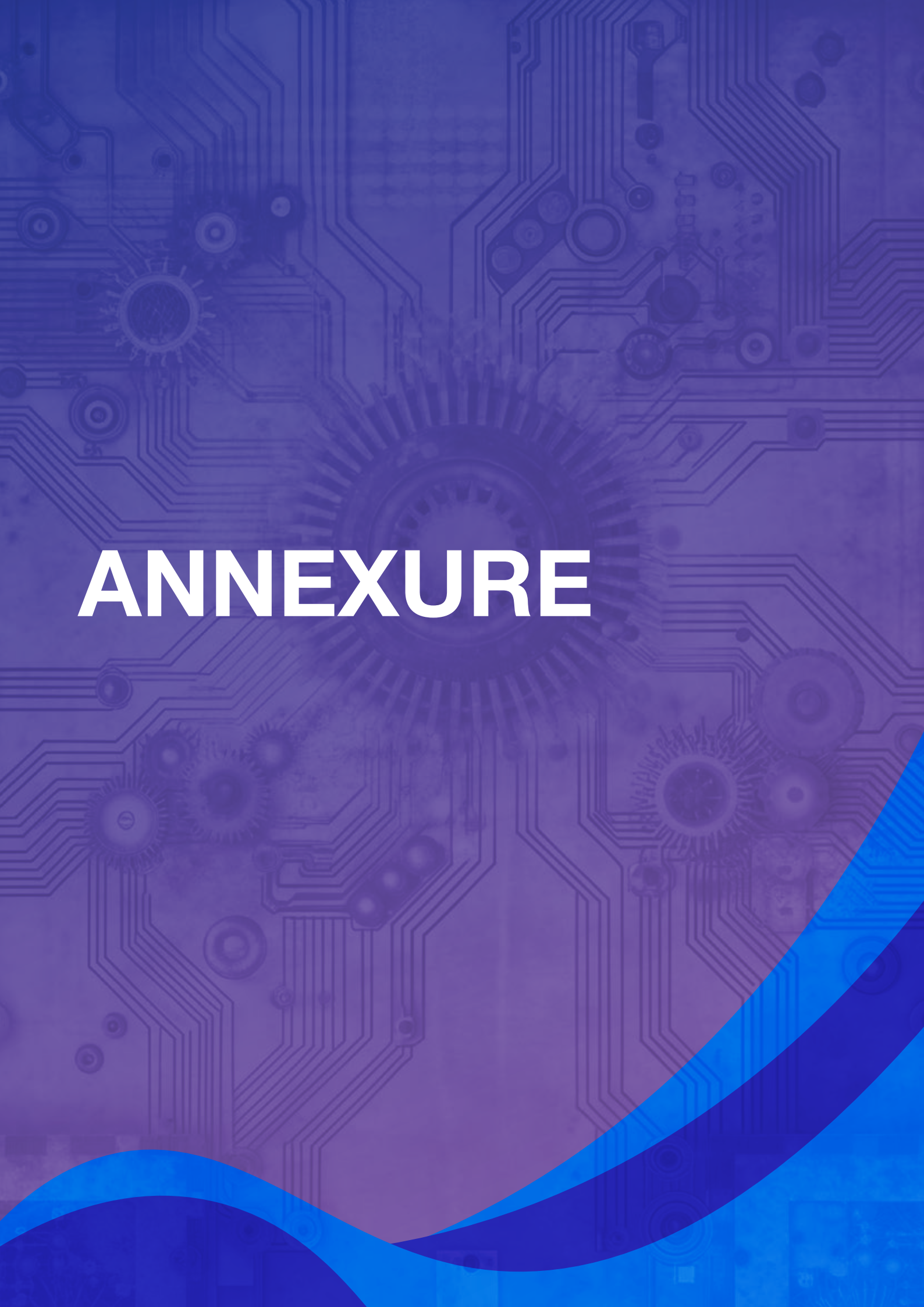
Artificial intelligence will undoubtedly reshape the world of work, as the composition of work changes, automating some tasks, augmenting many others, and increasing the value of capabilities that remain uniquely human. Across banking, healthcare, technology, manufacturing, retail and education, a consistent pattern emerges, while routine and codifiable activities are increasingly susceptible to automation, work that depends on judgement, creativity, empathy, leadership, trust and contextual decision-making continues to rely on human capability. In many cases, AI is not reducing the importance of these capabilities; it is making them more valuable.

The challenge for India is not simply preparing workers for AI-enabled jobs but preparing them for a labour market in which AI skills and human capabilities are rewarded together. As the sectoral analysis demonstrates, the future is likely to be shaped less by full automation and more by human-AI collaboration.

India enters this transition with important advantages: a young workforce, a growing digital ecosystem, and an expanding skilling architecture that increasingly recognises the need to build both technological fluency and human-centric capabilities. At the same time, the scale and diversity of India's labour market, particularly its large informal workforce, mean that the benefits of AI will depend on how effectively skilling, education and workforce-development systems can support workers across different sectors, occupations and geographies.

Ultimately, the future of work will not be determined by AI alone, but by how societies prepare people to work alongside it. For India, the opportunity is not merely to adapt to technological change, but to shape a model of growth in which AI strengthens human potential rather than substitutes for it. If the country can successfully integrate AI capability with the creativity, resilience, judgement and adaptability of its people, its greatest advantage in the AI era will not be artificial intelligence itself, but the human capabilities that allow it to be used wisely, productively and inclusively.





ANNEXURE

Annexure I

BFSI Sector: What will Change, What will Endure

Based on KPMG analysis and research from leading global institutions, the following roles are expected to be impacted by AI-driven automation, augmentation and will have low impact:

High Impact (Automation – Heavy) Job Roles

Job Role	Description	Why AI will have High Impact	Human skills required despite automation
Customer Service Executive/Contact Centre Agent	Responds to routine customer queries related to accounts, products, transactions, cards, claims, and service requests.	Customer interactions are increasingly handled through conversational AI and intelligent virtual assistants. KPMG identifies customer service as a leading GenAI use case in banking, while the RBI found customer support among the most common AI deployment areas across regulated entities. As routine enquiries become automated, human agents are expected to focus on complex cases and escalations. ⁸⁸	• Empathy and emotional intelligence • Conflict resolution and de-escalation • Active listening • Handling complex customer issues • Relationship management; judgement in non-standard cases
Loan Processing Officer	Reviews applications, validates documentation and prepares files for underwriting.	Loan processing is highly document-intensive and rules-based, making it well suited to AI-enabled document extraction and analysis. AI is already accelerating underwriting and loan review processes: KPMG reports one global bank reduced loan processing times from days to under one hour, while other AI-driven underwriting implementations have cut processing cycles from 30 to 16 days. As routine processing becomes increasingly automated, human effort is shifting towards exception handling, risk assessment and final decision-making. ⁸⁹	• Risk awareness; attention to detail • Judgement in exception cases • Stakeholder communication • Problem-solving • Regulatory and compliance awareness • Decision support for complex applications
Credit Assessment Analyst (Entry-Level) ⁹⁰	Conducts preliminary borrower assessments and compiles credit analysis information.	Credit underwriting is already one of the most active areas of AI adoption in the Indian financial sector. The RBI's FREE-AI Committee found that, among 583 AI applications in production or under development across regulated entities, 13.7% were focused on credit underwriting, making it the second most common AI use case, after customer support. ⁹¹ AI can automate data aggregation, credit scoring and preliminary risk assessment, reducing manual effort in first-level credit analysis.	• Critical thinking • Credit judgement • Analytical reasoning • Identifying anomalies and fraud indicators • Ethical decision-making • Risk interpretation • Business understanding

⁸⁸ <https://kpmg.com/xx/en/our-insights/ai-and-technology/unleashing-potential-exploring-generative-ai-role-in-banking.html>

⁸⁹ <https://assets.kpmg.com/content/dam/kpmg/ie/pdf/2025/02/ie-intelligent-banking.pdf>

⁹⁰ <https://rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=1306>

⁹¹ <https://rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=1306>

Insurance Claims Processing Executive⁹²	Reviews claim documentation, verifies completeness, records information and initiates claim workflows.	Claims processing is characterised by repetitive administrative activities, including document review, data validation and workflow management. These tasks closely align with the types of structured processes that are increasingly being automated across financial services through AI-enabled information extraction and workflow tools.	• Empathy in customer interactions • Investigative reasoning • Evidence evaluation • Fairness and ethical judgement • Dispute resolution • Communication skills • Handling exceptional or suspected fraud cases
KYC / Customer Onboarding Analyst⁹³	Verifies identity documents, screens customers and maintains onboarding records.	KYC processes involve repetitive document review and validation activities. AI-driven data extraction and screening tools can perform these activities faster and at scale, shifting human involvement towards exception management and regulatory oversight.	• Professional scepticism • Judgement in high-risk or unusual cases • Regulatory interpretation • Customer communication • Escalation management • Ethical decision-making and vigilance against fraud
Sales Support Associate	Supports customer acquisition activities, proposal preparation, CRM updates and administrative sales tasks.	The RBI identifies sales as one of the primary AI deployment areas within regulated entities. GenAI can automate customer profiling, document drafting, meeting summaries and CRM administration, reducing the manual workload associated with sales support functions. ⁹⁴	• Relationship-building • Communication and persuasion • Customer understanding • Problem-solving • Contextual judgement • Stakeholder management

Partial Impact (Augmented) Job Roles

Job Role	Description	Why AI will have Partial Impact	Human skills required despite augmentation
Relationship Manager (Retail/ Corporate Banking)	Manages customer relationships, provides financial advice, recommends products and serves as the primary point of contact for clients.	AI can analyse customer behaviour, spending patterns, product usage and financial goals to generate personalised recommendations and customer insights. However, relationship-building, trust, negotiation and client retention remain fundamentally human activities. KPMG identifies personalised banking and recommendation engines as key AI use cases in financial services. ⁹⁵	• Trust-building • Client relationship management • Communication, negotiation • Empathy and advisory judgement

⁹² https://reports.weforum.org/docs/WEF_Artificial_Intelligence_in_Financial_Services_2025.pdf

⁹³ https://reports.weforum.org/docs/WEF_Artificial_Intelligence_in_Financial_Services_2025.pdf

⁹⁴ <https://rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=1306>

⁹⁵ <https://dextralabs.com/blog/ai-agents-reduce-underwriting-delays-banking/>

Wealth Manager/ Financial Advisor	Provides investment advice, portfolio management and long-term financial planning services to individuals and businesses.	AI can support portfolio analysis, market monitoring and personalised investment recommendations. However, clients continue to rely on human advisors for judgement during market volatility, life events and complex financial decisions. ⁹⁶	• Financial judgement • Behavioural coaching • Client counselling • Trust-building and strategic thinking
Branch Manager/ Regional Manager	Oversees branch operations, sales performance, customer experience, compliance and workforce management.	AI can provide real-time dashboards on business performance, customer activity, service quality and operational risks, improving decision-making. However, leadership, team management and customer escalation responsibilities remain human-led.	• Leadership • People management • Conflict resolution • Business judgement and local market understanding
Risk Management Professional	Identifies, assesses and monitors financial, operational and enterprise risks across the institution.	AI can rapidly analyse large datasets, detect anomalies and identify emerging risk patterns. However, evaluating materiality, determining risk appetite and deciding mitigation strategies require human judgement.	• Risk interpretation, • Critical thinking • Strategic judgement and decision-making
Compliance Officer⁹⁷	Ensures adherence to regulatory requirements, internal policies and compliance obligations	AI can automate compliance monitoring, regulatory scanning and document review. However, regulatory interpretation, escalation decisions and governance accountability remain human responsibilities. The RBI's FREE-AI framework specifically emphasises governance and accountability in AI-enabled decision-making.	• Regulatory interpretation • Professional scepticism • Governance oversight • Ethical judgement
Fraud Investigation Analyst⁹⁸	Investigates suspicious activities, fraud alerts and potential financial misconduct.	AI can prioritise alerts, identify anomalous behaviour and strengthen fraud detection capabilities. However, determining intent, evaluating evidence and recommending action continue to require human investigators.	• Investigative reasoning • Evidence evaluation • Judgement

Low Impact (Enduring) Job Roles

Job Role	Description	Why AI will have low impact	Human skills necessary
Chief Risk Officer	Oversees enterprise risk, credit risk, market risk, operational risk, model risk and institutional risk appetite.	AI can improve risk analytics, early-warning indicators and scenario modelling, but final responsibility for risk appetite, governance and institutional accountability remains human-led. ⁹⁹	• Risk judgement • Governance, accountability • Regulatory credibility • Crisis decision-making • Institutional stewardship

⁹⁶ <https://www.ijtsrd.com/papers/ijtsrd99889.pdf>

⁹⁷ <https://kpmg.com/ca/en/insights/2025/04/you-can-transform-financial-services-with-ai.html>

⁹⁸ <https://kpmg.com/xx/en/our-insights/ai-and-technology/unleashing-potential-exploring-generative-ai-role-in-banking.html>

⁹⁹ SEBI | Consultation Paper on guidelines for responsible usage of AI/ML In Indian Securities Markets

Chief Compliance Officer / Regulatory Affairs Lead	Interprets regulations, designs compliance controls, manages supervisory engagement and ensures institutional conduct.	AI can summarise circulars, scan policies and flag compliance gaps, but regulatory interpretation, policy approval and defence of institutional conduct before regulators require human accountability. ¹⁰⁰	• Regulatory interpretation • Ethical judgement • Professional scepticism • Policy governance • Communication
Board / CXO Leadership	Sets strategic direction, risk appetite, governance standards, culture and institutional priorities.	AI can support dashboards, market intelligence and decision modelling, but it cannot replace fiduciary responsibility, strategic judgement, culture-setting or public accountability. ¹⁰¹	• Leadership • Strategic judgement • Accountability • Culture-building • Stakeholder management • Crisis leadership
Stressed Asset / Restructuring Specialist	Handles restructuring, settlement strategy, recovery negotiation and resolution of stressed loans.	AI can support covenant tracking, early-warning signals, legal document review and recovery analytics, but restructuring requires negotiation, legal-commercial judgement and assessment of business viability. ¹⁰²	• Negotiation • Legal-commercial reasoning • Recovery strategy • Stakeholder management • Judgement under uncertainty
Grievance Redressal Officer	Reviews complex or disputed claims, manages customer grievances and supports fair settlement decisions.	AI can help detect anomalies and triage claims, but disputed claims, exclusions, medical distress, fraud suspicion and grievance handling require human explanation and fairness. ^{103 104}	• Empathy • Evidence evaluation • Fairness • Negotiation, • Communication • Grievance handling

¹⁰⁰ Reports- Reserve Bank of India

¹⁰¹ reports.weforum.org/docs/WEF_Artificial_Intelligence_in_Financial_Services_2025.pdf

¹⁰² KPMG 2025 Global Banking and Capital Markets CEO Outlook

¹⁰³ India CX Report* 25: Financial Services

¹⁰⁴ Reports- Reserve Bank of India

Annexure II

Healthcare Sector: What will Change, What will Endure

Based on KPMG analysis and research from leading global institutions, the following roles are expected to be impacted by AI-driven automation, augmentation and will have low impact:

High Impact (Automation – Heavy) Job Roles

Job Role	Description	Why AI will have High Impact	Human skills required despite automation
Medical Transcriptionist¹⁰⁵	Transcribes physician dictation, discharge summaries, and consultation notes into electronic health records.	Advances in speech recognition, ambient listening tools and generative AI can automatically transcribe, summarize and format clinical conversations into medical records, significantly reducing manual documentation effort.	• Quality assurance • Interpretation of complex terminology • Error correction and Judgement • Compliance review
Pharmacy Technicians¹⁰⁶	Assist pharmacists by preparing prescriptions, managing inventories, dispensing medications, maintaining records and interacting with patients.	AI can automate prescription processing, medication verification, inventory management, drug-interaction screening and routine patient enquiries, reducing the administrative workload.	• Managing exceptions • Patient communication • Medication counselling support • Verifying unusual prescriptions • Exercising caution where patient safety is involved
Clinical Laboratory Technologists¹⁰⁷	Conduct laboratory tests, analyze specimens, operate diagnostic equipment and generate test reports that support clinical diagnosis.	AI-powered diagnostic systems can automate image analysis, pattern recognition, result interpretation, anomaly detection and report generation, particularly for routine testing workflows.	• Oversight of test quality • Troubleshooting equipment issues • Validating abnormal findings • Interpreting complex cases • Ensuring adherence to laboratory standards
Dietitians and Nutritionists¹⁰⁸	Assess nutritional needs, develop dietary plans, counsel patients and support disease management through nutrition interventions.	AI can generate personalized meal plans, analyze dietary data, track patient progress and provide recommendations using health and lifestyle information.	• Behavioural coaching • Patient motivation • Cultural and socio-economic considerations • Empathy • Adapting recommendations to individual circumstances

¹⁰⁵ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/05/digital-and-ai-skills-in-health-occupations_f428e5a9/5fbd42ab-en.pdf

¹⁰⁶ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/05/digital-and-ai-skills-in-health-occupations_f428e5a9/5fbd42ab-en.pdf

¹⁰⁷ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/05/digital-and-ai-skills-in-health-occupations_f428e5a9/5fbd42ab-en.pdf

¹⁰⁸ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/05/digital-and-ai-skills-in-health-occupations_f428e5a9/5fbd42ab-en.pdf

Physical Therapist Assistants¹⁰⁹	Support physical therapists in delivering rehabilitation treatments, helping patients perform therapeutic exercises and monitoring recovery progress.	AI can assist with treatment planning, motion tracking, progress monitoring, exercise recommendations and remote rehabilitation through digital tools.	• Physical assistance • Observing patient discomfort • Motivating patients • Adapting exercises in real time • Providing hands-on therapeutic support
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Partially Impacted Roles (Augmented Roles)

Job Role	Description	Why AI will have Partial Impact	Human skills required despite augmentation
Physician / Doctor¹¹⁰	Diagnoses illnesses, develops treatment plans, and manages patient care.	AI can support diagnosis, summarize records, generate documentation, and identify treatment options, but final clinical responsibility remains with physicians.	• Clinical judgment • Ethical decision-making • Trust building • Patient communication
Radiologist¹¹¹	Interprets diagnostic imaging.	AI can identify abnormalities, prioritize urgent scans, and automate measurements, but radiologists remain responsible for interpretation and diagnosis.	• Diagnostic reasoning • Clinical accountability • Multidisciplinary collaboration
Public Health Analyst / Epidemiologist	Analyzes population health trends and disease outbreaks.	AI can accelerate disease surveillance, forecasting, and pattern identification across large datasets.	• Policy interpretation • Stakeholder engagement • Public communication
Clinical Research Coordinator / Research Scientist	Supports clinical trials and healthcare research.	AI can assist with literature reviews, patient matching, data analysis, and protocol management.	• Scientific reasoning • Ethics oversight • Research design • Interpretation of evidence
Health Information Manager	Oversees healthcare data governance, medical records management, data quality, privacy, compliance, and health information systems.	AI can automate data extraction, record classification, interoperability tasks, data quality checks, and large-scale analytics. However, healthcare organizations still require professionals to govern data usage, ensure regulatory compliance, and oversee information integrity. CDC identifies AI as a key enabler for health data modernization and rapid analysis of health information.	• Data governance • Privacy oversight • Regulatory interpretation • Risk management • Stakeholder coordination • Ethical decision-making regarding health information

¹⁰⁹ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/05/digital-and-ai-skills-in-health-occupations_f428e5a9/5fbd42ab-en.pdf

¹¹⁰ <https://www.ama-assn.org/practice-management/digital-health/augmented-intelligence-medicine>

¹¹¹ https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/11/artificial-intelligence-and-the-health-workforce_c8e4433d/9a31d8af-en.pdf

Least Impacted Roles

Job Role	Description	Why AI will have low impact	Human skills necessary
Registered Nurse (Direct Patient Care)	Provides bedside care, monitoring, education, and patient support.	Core work involves physical care, patient interaction, and real-time judgment that cannot be fully automated. AI mainly reduces documentation burden.	• Empathy • Caregiving, patient advocacy • Teamwork • Clinical intuition
Mental Health Professional (Psychologist/Counsellor)	Provides therapeutic and behavioural health services.	Effective therapy relies on trust, emotional connection, and nuanced interpersonal understanding.	• Empathy • Active listening • Counselling • Crisis management • Emotional intelligence
Social Worker/ Care Coordinator	Supports patients and families through social, financial, and care-system challenges.	Success depends on relationship-building, advocacy, and navigating complex family and community situations.	• Advocacy • Negotiation • Cultural awareness • Stakeholder management
Physical Therapist/ Occupational Therapist	Helps patients regain mobility, function, and independence.	Treatment requires observation, physical coaching, and adapting exercises to individual needs.	• Motivation • Interpersonal communication • Hands-on guidance, adaptability
Healthcare Leader/Hospital Administrator	Directs strategy, operations, governance, and organizational performance.	While AI supports analytics and forecasting, leadership decisions require balancing competing priorities and managing people.	• Leadership • Change management • Negotiation • Strategic thinking • Influence

Annexure III

IT Sector: What will Change, What will Endure

Based on KPMG analysis and research from leading global institutions, the following roles are expected to be impacted by AI-driven automation, augmentation and will have low impact:

High Impact (Automation – Heavy) Job Roles

Job Role	Description	Why AI will have High Impact	Human skills required despite automation
QA/Manual Test Engineers ¹¹²	Execute test cases, log defects, run regression cycles against defined specifications	Testing is rule-bound and repeatable, test case generation, execution and regression are now largely automatable.	• Exploratory testing instinct • Judgement on what “acceptable quality” means for a given user • Risk prioritisation under deadline pressure • Communicating quality trade-offs to product and business stakeholders
Level-1 Helpdesk / Technical Support Agents ^{113 114}	First-line resolution of standard IT issues via ticket, chat or call, following documented scripts	The work is script-driven and pattern-matched, precisely what conversational AI handles at volume.	• Empathy and de-escalation with frustrated users • Active listening to diagnose what the user means rather than what they said • Judgement on when to escalate • Explaining technical issues to non-technical people
Customer Experience (CX) Voice & Chat Process Agents ¹¹⁵	Handle high-volume inbound customer queries, complaints and transactions for outsourced clients	India's CX sector is named alongside technology as facing displacement in routine roles; scripted, high-volume interaction is the clearest automation candidate	• Emotional regulation under hostility • Cultural and linguistic context • Complaint recovery and relationship repair • Discretion in exceptional cases that fall outside policy
Data Entry & Data Processing Operators ¹¹⁶	Capture, transcribe, validate and migrate structured data between systems	Codifiable, digitally mediated, high-volume work with minimal judgement content. WEF's Future of Jobs Report 2025 places data entry clerks among the fastest-declining roles globally	• Anomaly detection, noticing when data “looks wrong” • Contextual verification against real-world knowledge • Exception handling where rules don't fit
Routine / Entry-Level Coding Roles	Implement well-specified components, boilerplate code, standard integrations and basic front-end builds	Code generation from clear specifications is now the strongest demonstrated AI capability in software work; the codifiable share of these roles is high	• Problem framing, translating an ambiguous business need into a technical requirement • Code review judgement • Collaboration across teams • Learning agility as tooling shifts

¹¹² https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

¹¹³ https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

¹¹⁴ https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

¹¹⁵ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

¹¹⁶ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

Partially Impacted Roles (Augmented Roles)

Job Role	Description	Why AI will have Partial Impact	Human skills required despite augmentation
Software Engineers/ Application Developers¹¹⁷	Design, build and maintain applications; own architecture decisions and code quality across a product or module	AI now generates, refactors and documents code at scale, absorbing the implementation layer. But specification, architecture and accountability for system behaviour stay human.	• Architectural judgement under trade-offs • Code review and design critique • Collaboration across product, design and business teams
Data Engineers & Data Analysts¹¹⁸	Build and maintain data pipelines; model, clean and interpret data for business decisions	Pipeline boilerplate, query generation and routine analysis are increasingly automated. What remains is deciding which question matters, whether the data can bear the weight of the answer, and what the finding means for the business.	• Analytical judgement on data quality and validity • Scepticism toward plausible-but-wrong outputs • Translating findings into decisions for non-technical stakeholders • Ethical judgement on data use
DevOps & Cloud Engineers¹¹⁹	Manage build-deploy pipelines, infrastructure-as-code, monitoring and reliability	AI handles configuration generation, log analysis and first-pass incident triage. But production accountability, escalation judgement and system design decisions remain human.	• Incident leadership under pressure • Risk judgement on what to ship and when to roll back • Cross-team coordination during outages • Ownership of consequences
Cybersecurity & Information Security Analysts¹²⁰	Monitor threats, investigate incidents, manage security posture and compliance	AI dramatically improves detection, correlation and alert triage, but adversaries also use AI, and the judgement calls (is this a real threat? what do we shut down? what do we tell the regulator?) carry consequences no model can own.	• Judgement under incomplete information • Ethical decision-making on disclosure and privacy • Communication with leadership and regulators during crises • Adversarial thinking
Business Analysts & Product Owners	Translate business needs into technical requirements; prioritise backlogs; manage stakeholder expectations	AI can draft user stories, summarise research and generate documentation, but the core of the role is negotiating between competing human interests and deciding what not to build.	• Stakeholder negotiation and influence • Empathy for end-user context • Prioritisation judgement under constraint • Navigating organisational politics
Support & Systems Engineers	Resolve escalated technical issues requiring diagnosis across systems, and non-standard problems	Unlike L1, this work is diagnostic rather than scripted, the problems are novel by definition, since anything routine has already been resolved upstream. AI assists with hypothesis generation; the human owns the diagnosis	• Diagnostic reasoning in ambiguity • Persistence through non-obvious failures • Judgement on business impact and priority • Clear communication with both engineers and customers

¹¹⁷ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

¹¹⁸ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

¹¹⁹ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2177440®=48&lang=2>

¹²⁰ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

Least Impacted Roles

Job Role	Description	Why AI will have low impact	Human skills necessary
AI / ML Researchers & Scientists ¹²¹	Develop new models, algorithms and techniques; advance the state of the art rather than apply it	The work is generative and original by definition, creating capability that does not yet exist.	• Creativity and original problem formulation • Scientific judgement on what is worth pursuing • Tolerance for ambiguity and failure • Peer collaboration and critique
Technology Strategy Leaders (CTOs, Enterprise Architects)	Set technology direction, make build-vs-buy calls, own long-horizon architecture and investment decisions	AI can generate options' it cannot own a decision. These roles turn on high-consequence, low-precedent choices made under ambiguity and stakeholder disagreement, where AI is weakest, and carry personal accountability that cannot be delegated to a system.	• Strategic judgement with incomplete information • Influence and stakeholder alignment • Accountability for consequences • Reading organisational and market context
Responsible AI / AI Governance & Ethics Specialists ¹²²	Set AI usage policy, assess model risk and bias, ensure regulatory and ethical compliance	This role exists precisely because AI decisions require human accountability.	• Ethical reasoning and values-based judgement • Ability to weigh competing stakeholder interests • Communication with regulators and boards • Moral courage to say no
Client Partners/ Engagement & Delivery Leaders	Own client relationships, commercial outcomes and delivery accountability across multi-year engagements	The value delivered is trust and accountability, not output. When a programme goes wrong, the client wants a person who owns it, a function that cannot be delegated to a system	• Relationship building and trust • Negotiation under conflict • Empathy for client pressures • Leadership of distributed teams • Accountability for outcomes
AI Trainers & Sentiment Analysts ¹²³	Curate, evaluate and correct AI outputs; interpret human sentiment, tone and cultural nuance in data	These roles exist because AI needs human judgement about human meaning, an AI cannot be the final arbiter of whether its own output is appropriate, accurate or culturally apt. NITI Aayog names both among the emerging AI-first roles India should build toward	• Cultural and linguistic nuance • Contextual interpretation • Ethical judgement on acceptable outputs • Attention to subtext and tone

¹²¹ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

¹²² https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

¹²³ https://www.niti.gov.in/sites/default/files/2025-10/Roadmap_for_Job_Creation_in_the_AI_Economy.pdf

Annexure IV

Manufacturing Sector: What will Change, What will Endure

Based on KPMG analysis and research from leading global institutions, the following roles are expected to be impacted by AI-driven automation, augmentation and will have low impact:

High Impact (Automation – Heavy) Job Roles

Job Role	Description	Why AI will have High Impact	Human skills required despite automation
Quality Inspection & Visual Inspection Operators ¹²⁴	Check components and finished goods against specification; identify defects, dimensional errors and surface flaws	This is pattern recognition against a fixed standard, the single task machine vision performs most reliably. AI-enabled vision systems now inspect continuously, at line speed, without fatigue or inter-inspector variation. The ILO identifies AI vision systems among the core deployments at the manufacturing stage	- Judgement on ambiguous or first-of-kind defects the system hasn't seen - Root-cause reasoning back into the process - Deciding when to stop a line - Communicating quality issues across production and engineering teams
Assembly Line Operators (repetitive assembly) ¹²⁵	Perform fixed, repeating assembly operations at a defined station and cycle time	The work is physically standardised and performed in a controlled environment, the exact conditions under which industrial robots are cost-effective. India's robot installations are concentrated in automotive, where this role profile dominates	- Adaptability during model changeovers and short runs - Noticing when something "sounds" or "feels" wrong - Team coordination on the line - Safety awareness and judgement in abnormal situations
Machine Operators (routine CNC, forming, casting)	Load, run and monitor machines executing programmed operations	Machine learning controllers and hybrid physics-ML models now stabilise process conditions, predict tool wear and reduce defects in machining, casting, forming and welding, absorbing the monitoring and adjustment that defined the role	- Tacit machine knowledge built over years - Troubleshooting non-standard faults - Improvisation when tooling or material behaves unexpectedly - Judgement on when to intervene
Material-Recording, Stock-Keeping & Warehouse Clerks ¹²⁶	Record inventory movements, reconcile stock, maintain material records	Codifiable, high-volume record-keeping now handled by connected inventory systems and automated material handling. WEF places material-recording and stock-keeping clerks among the fastest-declining roles globally	- Exception handling when physical stock and system records diverge - Coordination with suppliers and production under disruption - Physical problem-solving in non-standard layouts

¹²⁴ <https://www.ilo.org/sites/default/files/2026-03/TMDWAI-2026-EN%20-.pdf>

¹²⁵ <https://www.ilo.org/sites/default/files/2026-03/TMDWAI-2026-EN%20-.pdf>

¹²⁶ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

Production Planning & Scheduling Clerks	Prepare production schedules, track order status, update plans against capacity	Scheduling optimisation is a classic decision-analytics application, the ILO identifies decision support and analytics among AI's core manufacturing capabilities, and algorithmic management is now applied directly to production control and workforce planning ¹²⁷	• Negotiation between production, sales and supply chain when plans break • Trade-off judgement under conflicting priorities • Escalation and stakeholder communication during disruption
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Partially Impacted Roles (Augmented Roles)

Job Role	Description	Why AI will have Partial Impact	Human skills required despite augmentation
Process/ Manufacturing Engineers	Optimise machining, casting, forming and welding processes; set parameters, reduce defects and improve yield	The role splits into an analytical layer and a decision layer, and AI is absorbing only the first. What remains human is the traded-off calls, Hence, the engineer moves from producing the analysis to owning the decision.	• Judgement on cost-quality-throughput trade-offs • Diagnosing why a model's recommendation fails on the actual shop floor • Translating between operators and management • Accountability for process changes
Design & Product Development Engineers	Develop new products and components; evaluate design alternatives against performance, cost and manufacturability	Creative and assistive AI tools now support engineers in exploring large design spaces, rapidly analysing alternatives and improving product performance, expanding the option set rather than choosing from it. ¹²⁸ Selection still rests on judgement about customer, cost and constraint	• Creativity in problem framing • Understanding user and customer context • Design judgement under competing constraints • Collaboration across engineering, production and commercial teams
Production Supervisors/Line Managers	Direct shop-floor teams, allocate work, manage output, quality and safety in real time	This role sits directly in the path of algorithmic management. The ILO observes that algorithmic management systems reshape key elements of the employment relationship, including supervision, autonomy and performance evaluation. The system can allocate and monitor; it cannot motivate a team, resolve a dispute, or be trusted by workers	• Leadership and team motivation • Conflict resolution; fairness judgement when the system's allocation is impractical • Safety leadership • Leading morale and fatigue
Maintenance Technicians & Reliability Engineers	Service equipment, diagnose faults, plan and execute preventive and corrective maintenance	Prediction is the most readily augmentable layer of manufacturing operations. AI can enable a shift from schedule-based maintenance to condition-based maintenance. However, physical diagnosis and repair in constrained, non-standard environments remain predominantly human responsibilities.	• Diagnostic reasoning • Improvisation when parts are unavailable • Risk judgement on run-versus-repair

¹²⁷ <https://www.ilo.org/sites/default/files/2026-03/TMDWAI-2026-EN%20-.pdf>

¹²⁸ <https://www.ilo.org/sites/default/files/2026-03/TMDWAI-2026-EN%20-.pdf>

Least Impacted Roles

Job Role	Description	Why AI will have low impact	Human skills necessary
Plant Managers & Operations Leadership	Own plant performance, capital decisions, labour relations and regulatory compliance across the site	AI can model options and forecast outcomes, but it cannot make a commitment or answer for one. The work is low-frequency, high-consequence decisions taken under ambiguity, with contested stakeholders and personal accountability attached.	• Strategic judgement under uncertainty • Labour relations and negotiation • Crisis leadership; ownership of consequences • Reading organisational and community context
Skilled Trades: Toolmakers, Die-makers, Prototype Machinists	Produce one-off tooling, dies, fixtures and prototypes to fine tolerances, often from incomplete specifications	Automation economics depend on repetition; this work is defined by its absence. Every job is different, the specification is often a conversation rather than a drawing, and the skill is in the hands.	• Manual dexterity and tactile judgement • Interpretation of intent from incomplete specification • Improvisation and workaround • Tacit knowledge built over years
Installation, Commissioning & Field Service Engineers	Install, commission and troubleshoot equipment at customer sites and in live production environments	The environment is the obstacle: no two sites are identical, conditions are unpredictable, and the engineer is simultaneously diagnosing a machine and managing a customer under pressure. Surveys find that current AI capabilities furthest from occupations requiring contextual judgement, interpersonal understanding, complex decision-making and responsibility	• Diagnostic reasoning in unfamiliar settings • Customer communication under pressure • Physical problem-solving • Judgement on safe operation and sign-off
EHS & Industrial Safety Managers	Own workplace safety, environmental compliance, incident investigation and regulatory liability	These roles exist to carry responsibility. A system can flag a hazard; it cannot be held liable for a fatality, face a regulator, or decide that production stops.	• Ethical judgement and moral courage to halt production • Incident investigation across human and technical causes • Regulator and workforce communication • Safety culture leadership
Industrial Designers & Complex Systems Engineers	Shape product form and user experience; architect integrated plant and production systems end-to-end	The work is synthesis rather than optimisation, reconciling human use, manufacturability, cost and constraint into a coherent whole. AI can generate and evaluate options within a defined space only.	• Creative synthesis • Empathy for the end user • Systems thinking across interdependencies • Judgement on trade-offs no model can weigh
Shop-floor Trainers & Apprenticeship Supervisors	Train apprentices and new operators on live equipment; transfer tacit skill and safety judgement	Skill transfer on a shop floor is relational and physical, demonstration, correction, and knowing when a trainee is ready.	• Mentoring and patience • Reading a learner's confidence and competence • Safety judgement on when to let a trainee proceed alone • Tacit knowledge transfer

Annexure V

Retail Sector: What will Change, What will Endure

Based on KPMG analysis and research from leading global institutions, the following roles are expected to be impacted by AI-driven automation, augmentation and will have low impact:

Highly Impacted (Automation-heavy)

Job Role	Description	Why AI will have High Impact	Human skills required despite automation
Retail Cashiers	Process customer purchases, handle billing, accept payments, issue receipts, and support transaction completion within the retail environment. ¹²⁹	AI-enabled self-checkout, digital payments, and automated billing systems can perform payment processing with minimal human intervention. AI is increasingly automating retail operational tasks and self-checkout functions while reducing labour requirements for routine transactions. ¹³⁰	• Customer service and interpersonal communication • Empathy and handling customer concern • Conflict resolution and complaint management • Judgment in handling exceptions, disputes, and payment issues • Trust-building and customer relationship management
Retail Store Operations Assistants	Receive, move, store, and deliver products while supporting store operations and inventory movement. ¹³¹	AI-enabled inventory management systems, predictive replenishment tools, RFID tracking, and automated warehouse technologies can increasingly manage stock visibility, replenishment decisions, and inventory movement. ¹³²	• Problem-solving in operational disruptions • Adaptability and decision-making in dynamic store environments • Coordination and teamwork across store functions, Safety awareness and situational judgment • Stakeholder communication and escalation management
Retail Order Fulfilment Assistants	Receive and store goods, process customer orders, coordinate/perform deliveries, handle payments, customer queries, and product returns. ¹³³	AI systems can automate order processing, routing, inventory allocation, delivery scheduling, returns management, and customer notifications. Retail AI applications are increasingly being deployed across fulfilment and supply chain operations to improve speed and operational efficiency. ¹³⁴	• Customer communication and expectation management • Judgment in resolving delivery, return, or inventory exceptions • Prioritization and coordination across multiple stakeholders • Problem-solving during service disruptions • Attention to detail and accountability

¹²⁹ Role of Artificial Intelligence in Enhancing the Effective Retail Operations: An Empirical Study. (2024). *Journal of Informatics Education and Research*, 4(3). <https://doi.org/10.52783/jier.v4i3.1331>

¹³⁰ Here's how artificial intelligence can benefit the retail sector, World Economic Forum

¹³¹ Role of Artificial Intelligence in Enhancing the Effective Retail Operations: An Empirical Study. (2024). *Journal of Informatics Education and Research*, 4(3). <https://doi.org/10.52783/jier.v4i3.1331>

¹³² Retail is no longer just about scale. The next decade will belong to companies built on intelligence, World Economic Forum

¹³³ Role of Artificial Intelligence in Enhancing the Effective Retail Operations: An Empirical Study. (2024). *Journal of Informatics Education and Research*, 4(3). <https://doi.org/10.52783/jier.v4i3.1331>

¹³⁴ https://reports.weforum.org/docs/WEF_Global_Economic_Futures_Productivity_in_2030_2025.pdf

Digital Cataloguers	Create and maintain digital product catalogues, product descriptions, product attributes, categories, and online listings ¹³⁵	Generative AI can automatically generate product descriptions, classify products, organize catalogues, and optimize content for search and discovery at scale. ¹³⁶ The role therefore shifts from content creation to content verification and quality control.	• Critical thinking and content validation • Quality assurance and accuracy assessment • Brand judgment and contextual understanding • Creativity in product positioning and merchandising • Ethical judgment and governance of AI-generated content
Telemarketers	Conduct outbound customer calls, answer standard queries, promote products and services, and support customer acquisition. ¹³⁷	AI-powered voice bots, conversational AI, and automated customer engagement platforms can handle large volumes of standardized customer interactions, promotional messaging, and basic information requests more efficiently and at lower cost than human agents. ^{138 139}	• Persuasion and influencing skills • Building rapport and trust with customers • Emotional intelligence and active listening • Negotiation and objection handling • Contextual sales judgment for complex customer needs
Routine Customer Query Processing Roles	Manage repetitive customer enquiries related to order status, product information, returns, refunds, store information, and FAQs ¹⁴⁰	Generative AI chatbots and customer service assistants can answer common customer questions, track orders, process returns and provide product information 24/7. AI is increasingly being used to automate routine customer service interactions, leaving humans to handle exceptions and complex cases. ^{141 142}	• Empathy and customer-centric problem solving • Handling complex or emotionally sensitive cases • Conflict resolution and de-escalation • Critical thinking and judgment for non-standard situations • Relationship management and customer retention

¹³⁵ Role of Artificial Intelligence in Enhancing the Effective Retail Operations: An Empirical Study. (2024). *Journal of Informatics Education and Research*, 4(3). <https://doi.org/10.52783/jier.v4i3.1331>

¹³⁶ <https://link.springer.com/article/10.1007/s00170-024-14127-0>

¹³⁷ https://reports.weforum.org/docs/WEF_Global_Economic_Futures_Productivity_in_2030_2025.pdf

¹³⁸ https://reports.weforum.org/docs/WEF_Global_Economic_Futures_Productivity_in_2030_2025.pdf

¹³⁹ <https://assets.kpmg.com/content/dam/kpmgsites/xx/pdf/2026/01/ai-in-retail-report.pdf>

¹⁴⁰ https://reports.weforum.org/docs/WEF_Global_Economic_Futures_Productivity_in_2030_2025.pdf

¹⁴¹ https://reports.weforum.org/docs/WEF_Global_Economic_Futures_Productivity_in_2030_2025.pdf

¹⁴² <https://assets.kpmg.com/content/dam/kpmgsites/xx/pdf/2026/01/ai-in-retail-report.pdf>

Partially Impacted Roles (Augmented Roles):

Job Role	Description ¹⁴³	Why AI will have Partial Impact	Human skills required despite augmentation
Retail Sales Assistants and Retail Sales Executives	Retail Sales Assistants display merchandise, engage customers, understand needs, and facilitate product sales. Retail Sales Executives provide specialized customer service, product demonstrations, sales support, and payment processing.	AI can provide real-time product recommendations, customer preference insights, inventory visibility, and personalized offers. ¹⁴⁴ However, converting customer interest into sales still requires trust-building, persuasion, product demonstration, and relationship management. AI functions as a decision-support tool rather than a substitute for customer-facing sales interactions.	- Relationship building - Customer trust - Persuasion - Negotiation - Emotional intelligence - Handling complex customer queries - Conflict resolution - Product storytelling - Service recovery
Merchant Relationship Executives	Function as an interface between e-commerce platforms and sellers by identifying, acquiring, onboarding, supporting, and managing merchant relationships.	AI can identify prospective sellers, automate onboarding workflows, analyse seller performance, and support query management. However, merchant acquisition, relationship-building, issue resolution, and negotiation require human interaction and trust. The role becomes more strategic and advisory rather than administrative. ¹⁴⁵	- Stakeholder management - Trust-building - Negotiation - Merchant acquisition - Influencing skills - Relationship development - Problem resolution - Partnership management
Salespersons and Junior Supervisors (Sales) – FMCG	Salespersons manage retail and wholesale outlet relationships, drive product sales, create demand at point of sale, and expand distribution. Junior Supervisors drive sales targets, oversee sales teams, develop channels, and support market penetration.	AI can optimize route planning, forecast demand, identify growth opportunities, analyse outlet performance, and support workforce planning. However, distributor management, retailer engagement, coaching salespeople, negotiation, and market development remain highly dependent on human relationships and field presence. ¹⁴⁶	- Distributor and retailer relationship management - Coaching and mentoring sales teams - Negotiation - Market intelligence gathering - Influence - Leadership - Adaptability to local market conditions
Marketing Managers	Marketing Managers in e-commerce and retail are responsible for developing marketing channels, driving customer acquisition, overseeing campaigns, and making operational business decisions.	Generative AI can create content, personalize campaigns, segment customers, automate marketing execution, and generate consumer insights. However, brand strategy, positioning, campaign direction, competitive differentiation, and strategic business decisions continue to require human judgment and creativity. ¹⁴⁷	- Strategic thinking - Creativity - Brand positioning - Campaign direction - Consumer insight interpretation - Decision-making under uncertainty - Stakeholder alignment - Innovation

¹⁴³ Role of Artificial Intelligence in Enhancing the Effective Retail Operations: An Empirical Study. (2024). Journal of Informatics Education and Research, 4(3). <https://doi.org/10.52783/jier.v4i3.1331>

¹⁴⁴ How AI Is Revolutionizing Retail: Exclusive Insights From An Industry Expert, Forbes

¹⁴⁵ Navigating the AI Tsunami in Retail: Clarity Amid Chaos, by Srikant Gokhale, IIM Udaipur Business Review

¹⁴⁶ Retail Associated Skill Council of India (RASCI)

¹⁴⁷ Flipkart's AI Playbook: Sandhya Kapoor Reveals How AI is Building the Future of Indian E-commerce

Retail Merchandise Managers	Analyse merchandise performance, plan assortments, and follow organisational strategies to improve merchandise performance.	AI can forecast demand, optimize assortments, recommend pricing actions, analyse trends, and simulate business scenarios. However, decisions involving brand positioning, consumer preferences, supplier relationships, and commercial trade-offs require human oversight and accountability. ^{148 149}	• Commercial judgement • Consumer behaviour understanding • Supplier relationship management • Strategic assortment planning • Decision-making • Balancing business trade-offs • Accountability for business outcomes
Business Data Analyst (Retail)	Analyse retail data, support business processes, generate insights, and drive strategic decision-making across sales, marketing, supply chain, and customer service functions.	AI can automate data preparation, reporting, trend identification, forecasting, and visualization. However, analysts are required to interpret results, identify business implications, evaluate risks, and recommend actions. The role evolves from data processing to strategic interpretation and decision support. ^{150 151}	• Critical thinking • Business acumen • Contextual interpretation • Problem-solving • Storytelling with data • Stakeholder communication • Strategic recommendations • Decision support.

Least Impacted Roles

Job Role	Description ¹⁵²	Why AI will have low impact	Human skills necessary
Retail Store Managers	Manage overall store operations and profitability, supervise staff, ensure product availability, maintain merchandising standards, drive customer satisfaction, optimize financial performance, and manage store safety and security.	Store managers continuously make trade-offs between sales, staffing, customer satisfaction, inventory availability, and operational efficiency. AI can provide data and recommendations but cannot assume accountability for business outcomes. Key enduring characteristics: Human judgment and contextual decision-making (balancing competing store priorities), high relationship intensity (managing employees and customers), and non-standardized environments (responding to local market conditions, store-specific issues, and crises). ¹⁵³	• Leadership • People management • Conflict resolution • Customer relationship management • Decision-making under uncertainty • Crisis management • Operational judgement • Accountability • Team motivation

¹⁴⁸ AI in retail: Global lessons from strategy to storefront, KPMG

¹⁴⁹ Retail Associated Skill Council of India (RASCI)

¹⁵⁰ Flipkart's AI Playbook: Sandhya Kapoor Reveals How AI is Building the Future of Indian E-commerce

¹⁵¹ Retail Associated Skill Council of India (RASCI)

¹⁵² Role of Artificial Intelligence in Enhancing the Effective Retail Operations: An Empirical Study. (2024). Journal of Informatics Education and Research, 4(3). <https://doi.org/10.52783/jier.v4i3.1331>

¹⁵³ Retail Associated Skill Council of India (RASCI)

Deputy Managers and Team Leaders	Build and manage store teams, understand customer preferences and competition, organize merchandise, and drive team and sales performance.	Success depends on motivating people, coaching employees, resolving conflicts, and maintaining team performance. AI can support workforce planning but cannot lead people. Key enduring characteristics: Human judgment and contextual decision-making (performance and staffing decisions), high relationship intensity (employee coaching and stakeholder management), and non-standardized environments (daily operational issues requiring adaptive responses) ¹⁵⁴	• Coaching and mentoring • Employee engagement • Leadership • Performance management • Conflict handling • Interpersonal communication • Team building • Situational judgement
Visual Merchandisers and Experience Designers	Implement visual merchandising concepts, create displays, and translate brand guidelines into engaging in-store experiences.	AI can generate design concepts but cannot fully replace the human understanding of aesthetics, brand identity, cultural context, and customer behaviour. Key enduring characteristics: Creativity and complex problem-solving (designing effective customer experiences), human judgment and contextual decision-making (adapting concepts to specific stores and customers), and non-standardized environments (physical retail spaces vary significantly). ¹⁵⁵	• Creativity • Design thinking • Aesthetic judgement • Customer empathy • Cultural awareness • Innovation • Brand interpretation • Experiential problem-solving
Retailers and Store Owners	Own and operate retail businesses, manage inventory, customer service, marketing, sales strategies, staffing, and overall business performance.	Entrepreneurs make strategic decisions under uncertainty and bear responsibility for business success or failure. AI can provide insights but cannot replace entrepreneurial judgment. Key enduring characteristics: Human judgment and contextual decision-making (investment and growth decisions), high relationship intensity (customers, suppliers, employees, and partners), non-standardized environments (market volatility and local conditions), and complex problem-solving (business growth, competition, and risk management). ¹⁵⁶	• Entrepreneurial thinking • Strategic decision-making • Risk assessment • Negotiation • Business relationship management • Resilience • Leadership • Adaptability • Commercial judgement
Digital Customer Experience Specialists	Deliver seamless customer experiences across digital and physical channels using AI-powered recommendation tools, AR/VR interfaces, IoT systems, and CRM platforms.	The role involves combining technology with customer understanding. AI can personalize interactions, but humans design experiences that create trust, loyalty, and engagement. Key enduring characteristics: High relationship intensity (understanding customer needs and behaviours), human judgment and contextual decision-making (designing customer journeys), and creativity and complex problem-solving (integrating physical and digital experiences effectively). ¹⁵⁷	• Customer empathy • Journey design • Creativity, stakeholder collaboration • Behavioural understanding • Problem-solving • Trust-building • Strategic experience design

¹⁵⁴ Retail Associated Skill Council of India (RASCI)

¹⁵⁵ AI in retail: Global lessons from strategy to storefront, KPMG

¹⁵⁶ Retail Associated Skill Council of India (RASCI)

¹⁵⁷ AI in retail: Global lessons from strategy to storefront, KPMG

Annexure VI

Education Sector: What will Change, What will Endure

Based on KPMG analysis and research from leading global institutions, the following roles are expected to be impacted by AI-driven automation, augmentation and will have low impact:

Highly Impacted (Automation-heavy)¹⁵⁸

Job Role	Description	Why AI will have High Impact	Human skills required despite automation
Student Records Administrator / Registrar Support Officer	Maintains student records, transcripts, enrolment documentation, attendance records and academic databases.	Work is highly structured, rules-based and documentation-intensive. The surveys identifies recordkeeping, filing and administrative occupations among the most AI-exposed because AI is already highly capable in language processing, classification and information management.	• Data governance • Handling exceptions • Privacy compliance • Judgement in unusual cases • Stakeholder communication
Admissions Processing Officer	Processes applications, verifies documents, updates systems and manages applicant data.	Relies heavily on document review, data entry, workflow management and structured decision processes. These activities closely resemble administrative occupations that show the lowest AI capability gaps in the report.	• Candidate assessment in exceptional cases • Contextual decision-making • Handling appeals • Relationship management
Examination & Assessment Administrator	Coordinates exams, prepares schedules, processes results and maintains assessment records.	Much of the role involves repetitive information processing, scheduling, records management and reporting, all areas that AI can automate due to task standardisation	• Managing exceptions • Academic integrity investigations • Crisis management • Policy interpretation
Educational Content Developer (Standardized Learning Materials)	Produces lesson plans, study guides, training manuals and assessment content aligned to predefined curricula.	Generative AI is already proficient at drafting, summarising, synthesising knowledge and creating structured content.	• Quality assurance • Pedagogical judgement • Curriculum alignment • Cultural/contextual adaptation, innovation
Library Clerk / Library Administrative Assistant	Catalogues resources, manages inventories, supports information retrieval and maintains library records.	Information retrieval, classification, cataloguing and administrative support are strongly aligned with the routine information-processing occupations which can be automated by AI	• User support • Research assistance • Information literacy guidance • Handling specialised requests

¹⁵⁸ https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/05/the-oecd-ai-exposure-measure_489cfd42/f3da0f0a-en.pdf

Partially Impacted Roles (Augmented Roles)¹⁵⁹

Job Role	Description	Why AI will have Partial Impact	Human skills required despite augmentation
School Teacher (Primary / Secondary)	Delivers curriculum, facilitates learning, assesses student progress and manages classroom activities.	AI can assist with lesson planning, content creation, personalized learning materials, quizzes, grading support and administrative tasks.	- Classroom management, student motivation - Emotional intelligence - Behavioural management - Pastoral care and contextual decision-making
Tutor	Provides individualized academic support and tailored instruction to learners.	AI can generate explanations, practice exercises and learning pathways, but individualized coaching and adaptation to learner needs remain human strengths.	- Relationship building - Mentoring, diagnosing learning gaps - Encouragement and adapting teaching approaches in real time
University Lecturer / Postsecondary Teacher	Delivers higher-education instruction, develops course content and supports student learning.	AI is increasingly capable in language processing, knowledge retrieval and content generation. However, higher-order reasoning, discussion facilitation and academic judgement remain important.	- Critical thinking facilitation - Academic mentorship - Discussion leadership - Professional judgement and student engagement
Curriculum Developer / Instructional Designer	Designs learning programs, instructional materials and educational frameworks aligned to learning outcomes.	AI can rapidly produce draft content, assessments and instructional resources, significantly improving productivity. However, humans are still needed to determine pedagogical effectiveness, learning sequencing and contextual relevance.	- Pedagogical expertise - Curriculum alignment - Creativity in learning design
Academic Advisor / Student Success Advisor	Guides students on course selection, progression pathways, academic challenges and career planning.	AI can provide information, recommendations and administrative support. However, many advising situations require contextual understanding, nuanced judgement and interpersonal engagement.	- Coaching - Empathy - Trust-building - Complex decision support - Conflict resolution - Personalized guidance

Least Impacted Roles¹⁶⁰

Job Role	Description	Why AI will have low impact	Human skills necessary
Special Education Teacher	Provides individualized instruction and support for students with diverse learning, behavioural, physical or developmental needs.	Requires continuous adaptation to student needs, behavioural management, emotional support and contextual decision-making.	- Empathy, relationship-building - Behavioural intervention - Ethical judgement - Adaptability - Trust-based interactions

¹⁵⁹ https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/05/the-oecd-ai-exposure-measure_489cfd42/f3da0f0a-en.pdf

¹⁶⁰ https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/05/the-oecd-ai-exposure-measure_489cfd42/f3da0f0a-en.pdf

School Counsellor / Student Wellbeing Counsellor	Supports students' academic, emotional, social and personal development through counselling and guidance.	Requires social interaction, interpersonal judgement and context-sensitive decision-making that only a human can do.	• Active listening • Emotional intelligence • Trust-building, crisis intervention • Ethical decision-making • Empathy.
Educational Psychologist / Learning Support Specialist	Assesses learning challenges and designs interventions to support student development and wellbeing.	Requires interpretation of complex human behaviour, contextual assessment and professional judgement.	• Diagnostic reasoning • Nuanced interpretation, • Empathy, • Stakeholder engagement • Professional judgement.
Early Childhood Educator / Preschool Teacher	Supports cognitive, social and emotional development of young children through play-based and experiential learning.	Involves intensive social interaction, developmental observation and nurturing relationships.	• Caregiving • Emotional connection, • Observation, • Developmental support, • Adaptability and communication with families.
School Principal / Academic Dean	Provides institutional leadership, oversees strategy, manages stakeholders and ensures educational quality and outcomes.	Require a human responsibility, judgement, negotiation and complex decision-making requirements.	• Strategic leadership, • Stakeholder management, • Conflict resolution, • Ethical judgement, • Decision-making under uncertainty • Institutional accountability.

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