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# AI and the Future of Employment in India's IT and BPO Industry

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### Abstract

This paper examines recent trends in AI adoption in India's IT and BPO sectors – focusing on automation of repetitive tasks, intelligent customer service (chatbots and virtual agents) and AI-powered coding assistants – and analyzes their impact on jobs and skills. We draw on the latest industry data and research (2022–2025) from sources such as NASSCOM, McKinsey, the World Economic Forum and market reports, to provide an in-depth view of how AI is reshaping work in India. We explore how Indian companies and policymakers are responding – through upskilling programs, partnerships and new business models – and what this means for India's position in the global services market. The analysis highlights the "double-edged sword" of AI: the potential displacement of routine work, alongside the opportunities it creates for the workforce to upskill and move into higher-value work, which could further strengthen India's global leadership in IT and outsourcing.

Keywords: AI in Indian IT/BPO Industry, Automation and Employment, Future of Work in India

# 1. Introduction

India's information technology (IT) and business process outsourcing (BPO) industries are global leaders, employing over 5 million people and contributing roughly 7–8% of national GDP [1]. In FY2024, Indian IT services and BPM revenues approached \$254 billion (40–50% of the global IT outsourcing market) [1], with export revenues forecast to exceed \$224 billion [2]. This industry dominance is built on India's large, skilled workforce and cost advantage, making it the world's top outsourcing destination (over 50% of global services sourcing) [3]. However, as automation, artificial intelligence (AI) and digital technologies mature, the IT/BPO sector faces a critical inflection point. These technologies promise enormous gains in productivity and new service offerings, but also threaten to displace routine jobs. AI is thus playing a dual role – acting as a disruptive force that can automate away many existing tasks and simultaneously as a catalyst that creates demand for new skills and higher-value roles.

# 2. Automation of Repetitive Tasks

A primary impact of AI in IT/BPO has been the automation of routine, rule-based tasks. Technologies such as Robotic Process Automation (RPA) and machine learning systems now handle many functions that were traditionally done manually. RPA uses software "bots" to mimic human actions on computer systems (e.g. data entry, invoice processing, simple IT support), while AI-based automation can process documents, extract information and make decisions on standard cases. In India, major IT and BPO firms





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have aggressively deployed RPA and AI to streamline processes. For example, NASSCOM notes that RPA "enables companies to automate repetitive, rule-based tasks, freeing up human resources for more complex and strategic activities," leading to higher efficiency, fewer errors and lower costs [4]. Indian IT/BPO companies use RPA for tasks like data entry, invoice processing, HR onboarding and customer record updates, which has cut turnaround times and improved accuracy.

Industry reports quantify the extent of this shift. One market analysis estimates that in 2024 over 70% of Indian BPO firms leverage AI solutions (e.g. natural language processing, NLP) in areas like call sentiment analysis and that RPA now handles **40–50% of all repetitive BPO tasks** [5]. For instance, Genpact's Cora AI platform reportedly reduced average call-handling time by 20% in customer support operations. Similarly, leading Indian IT service providers (TCS, Infosys, Wipro, etc.) are championing "hyperautomation" – combining RPA with AI and analytics – to re-engineer processes. Astute Analytica reports that Indian technology conglomerates have cut processes like telecom billing from 48 hours to 12 hours through AI/RPA integration [5]. Cloud-based workflow tools, intelligent document processing and end-to-end automation pipelines are becoming standard offerings.

The result is a fundamental change in many back-office job roles. Data-entry clerks, record-keeping and routine technical support positions are increasingly handled by machines. The World Economic Forum (WEF) reports that by 2027 an estimated 42% of current business tasks will be automated globally, with information-processing roles seeing especially high automation (up to 65% of tasks automated) [6]. In this scenario, traditional clerical jobs are "fastest-declining" worldwide [6]. In India's context, this translates to a likely reduction in low-skill BPO and support roles. A 2023 NASSCOM survey similarly warned that many existing job roles will be redefined by automation, requiring broad-based reskilling [7].

However, automation also raises the productivity of IT/BPO operations and can enable new service models. For example, by freeing human staff from mundane tasks, companies can redeploy workers to higher-value functions (e.g. analytics, strategic client support, problem-solving roles). NASSCOM and industry analyses emphasize that RPA complements human labor by taking on rote work, allowing people to focus on tasks requiring creativity or advanced judgment [8]. In fact, economists note that automation tends to polarize the workforce – displacing middle-skilled routine work while increasing demand for both high-skill and some low-skill roles [8]. Thus, for Indian IT/BPO, the automation of repetitive tasks is both a challenge (in potential job displacement) and a productivity opportunity (in enabling new, more complex services and freeing talent for higher-level tasks).

# 3. Intelligent Customer Service: Chatbots and Virtual Agents

Another area of rapid AI adoption is customer service and help-desk operations, a core component of the BPO industry. AI-driven chatbots, voicebots and virtual agents (using NLP and machine learning) are now widely used to handle customer interactions. These systems can answer frequently asked questions, troubleshoot issues, route inquiries and even handle transactional tasks (e.g. order changes, bill payments), often without human intervention. Gartner found that by 2022 over **54% of businesses** with an online presence already used conversational AI for customer support [9]. This global trend is reflected in India's BPO sector as well: many Indian BPOs and contact centers have implemented chatbots on websites and messaging platforms and voicebots in call centers, to enhance efficiency. The Astute report notes that ">70% of firms leverage AI solutions such as NLP for sentiment analysis" in call centers [5], exemplified by Genpact's deployment.



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The impact on service delivery can be dramatic. Chatbots operate 24/7 without downtime, offer instant responses and scale to millions of customers at low incremental cost. This greatly reduces average handling time (AHT) and workload on human agents. For example, the aforementioned Genpact case saw a 20% drop in AHT, while other implementations have reported similar improvements. Conversational AI also enables multilingual support and personalization. Notably, India's IT sector has embraced this: Microsoft's GitHub Copilot (an AI assistant) now supports coding in Hindi and other AI agents have been trained on Indian languages – suggesting similar progress for customer bots (although Hindi coding is a developer example, it shows emphasis on local adaptation [10]). Major Indian AI startups (e.g. Uniphore, Yellow.ai, Haptik) focus on voice and chatbot solutions for Indian enterprises, illustrating strong domestic innovation.

The workforce effect in customer service is significant. Many routine support queries (e.g. password resets, basic troubleshooting) are now handled by AI, reducing the number of human agents needed per call volume. Entry-level call-center jobs are therefore at risk of shrinkage. The WEF report indicates that roles like "customer service clerk" will face high automation risk [6]. Indeed, a recent Indian industry survey suggests that as much as 30–40% of contact center inquiries could be managed by AI today [9]. One analysis even claims Indian call centers saw ~30% cost savings after AI integration due to faster handling and fewer transfers [11]. At the same time, companies still require skilled staff for complex or escalated cases and for training and supervising the AI systems. New roles are emerging – such as "AI trainer" or "bot curator" – responsible for monitoring bot performance, refining AI responses and ensuring good customer experience. Upskilling existing agents to work with AI tools (e.g. taking over from bot when needed) is a key focus of many BPOs.

From a strategic standpoint, firms are framing chatbots not as replacements, but as force multipliers. For example, Indian BPO leaders emphasize a hybrid model: bots handle L1 issues, while human agents address L2/L3 (complex) problems [5]. This raises overall service levels while keeping headcount growth modest. In fact, Astute notes that industry majors like TCS and Infosys are marketing "hyperautomation" services, targeting higher-end digital transformation work, suggesting confidence that India's service exports will shift up the value chain [5].

In summary, intelligent customer service agents are automating vast volumes of routine support tasks (e.g. inquiries, data lookups, simple troubleshooting), cutting costs and handling times. This inevitably displaces some of the lower-skill workforce, but also creates new roles in AI operations, oversight and more skilled support, as well as enhancing India's competitiveness by offering advanced service capabilities.

#### 4. AI-Powered Software Development (Coding Assistants)

A newer and rapidly growing AI application in IT is **AI coding assistants** – tools like GitHub Copilot, TabNine and Amazon CodeWhisperer that use large language models to help software developers write code. These tools suggest code snippets, complete functions, identify errors and even generate unit tests, based on natural-language descriptions or context. While still in an early stage, they have already begun to change software development workflows. Survey data shows that global developers have enthusiastically adopted AI coding tools: for instance, a 2023 developer survey found that **44%** of developers were already using AI tools in their workflow and 26% planned to soon; ChatGPT (83%) and GitHub Copilot (56%) were the most commonly used [12]. Notably, developers in India are among the highest adopters – over 70% of Indian respondents reported using or intending to use AI coding tools,



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the highest rate among surveyed countries [12]. This reflects India's very large developer base and techsavvy workforce.

The adoption of AI coding assistants can significantly improve developer productivity. Microsoft's own research claims Copilot users experienced **faster completion times and higher job satisfaction** and that such tools handle the "tedious parts of coding," freeing developers to focus on architecture and creative problem-solving. While India-specific productivity data is scarce, the trends suggest that Indian IT companies (which employ a large share of the country's developers) are likely to benefit from these efficiency gains. For example, Microsoft and GitHub have specifically invested in India: as mentioned earlier, at GitHub Universe 2024, Microsoft announced support for Hindi in Copilot and launched a GitHub "Center of Excellence" in Bengaluru in partnership with Infosys [10]. These moves are indicative of an intent to further the adoption of AI coding assistants among India's 17 million-plus developers and keep India at the forefront of AI-driven software innovation [10].

However, AI coding assistants also raise questions about the future of programmer jobs. They could reduce the need for very junior or routine-coding work (e.g. boilerplate code, unit tests). Junior developers may find that some basic coding tasks can be automated. In principle, this could compress entry-level job growth. Yet early evidence suggests a somewhat different outcome: most developers report that Copilot complements, rather than replaces, their work – making them more productive and engaged [12]. Indeed, GitHub predicts India will become the world's largest developer community by 2028 (overtaking the U.S.) and is banking on India's growth by empowering devs with AI tools [10]. In practice, AI coding assistants often serve as "co-pilots" that speed up development and improve code quality. They also create new needs: for example, developers must now be skilled in prompt-engineering (writing good natural-language prompts to get desired code) and companies need engineers who can integrate AI tools securely and manage potential code-quality issues.

In sum, AI coding assistants appear to be amplifying Indian developers' productivity. As one industry blog notes, adopting such tools has moved beyond hype into "real-world usage," with users reporting efficiency gains and greater job satisfaction [13]. In India, this aligns with the ongoing trend of developers wanting more challenging work – AI can take over routine coding so humans concentrate on design, debugging and innovation. Over time, we expect these tools to raise the skill floor: entry-level developers might start at a higher level of productivity, enabling Indian firms to deliver more complex software and services. But it also means upskilling developers in AI-related skills (like model evaluation, security and advanced software architectures) will be crucial, as coders become what WEF calls "AI and machine learning specialists," among the fastest-growing roles [6]. In summary, AI coding assistants are currently a *productivity catalyst* in India's software sector, likely expanding the capacity of the developer workforce rather than eliminating it wholesale, but demanding significant learning and adjustment.

# 5. Workforce Impacts: Disruption vs. Upskilling

The spread of AI in India's IT and BPO industries is reshaping the workforce in complex ways. On one hand, many jobs and tasks are **directly disrupted** by automation; on the other hand, AI is creating demand for new skills and roles, forcing a major workforce transformation. This dual effect is borne out in both global surveys and India-specific analysis.

# 5.1 Job Displacement in Routine Roles

As noted, roles involving structured tasks (clerical work, basic customer support, routine coding) face



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the highest automation risk. Global forecasts echo this: the WEF 2023 Future of Jobs report finds that administrative and clerical positions (cashiers, data-entry clerks, postal workers, back-office clerks) are the fastest-declining roles [6]. In India, this translates to large segments of the BPO workforce (e.g. basic contact center agents, back-office processing) and some IT roles (e.g. QA testers, simple coding). For example, WEF shows that record-keeping and data-entry roles are expected to lose 26 million positions globally by 2027 [6]. Indian industry analysts similarly warn that up to **30–40%** of current customer service tasks could be automated, implying significant job shifts in call centers [9,11]. Even in software services, some lower-level developer tasks can be partially automated.

The net effect is that many mid- and entry-level positions may shrink or change substantially. NASSCOM's Future of Work 2024 report highlights a surge in demand for AI-related job families ( $1.6 \times$  growth) and implies that many existing job roles "may no longer be sufficient" without new skills [7]. Also, companies are prioritizing traits like "learning attitude" and the ability to apply new knowledge [7], signalling that static job roles are evolving. Reports estimate that tens or hundreds of thousands of current positions could be displaced by AI in coming years (globally and in India), especially in tasks amenable to automation.

However, Indian industry leaders often emphasize that outright layoffs are not the immediate outcome; rather, roles will be **redefined**. A McKinsey study notes that nearly 75% of companies plan to adopt AI and about 50% of organizations expect net job growth (while 25% expect losses) due to AI over the next three years [6]. Indeed, the shift tends to be more towards *redeployment than mass unemployment*. For example, Indian IT firms have historically managed transitions (e.g. offshoring, onshoring, digitalization) without large layoffs, instead moving talent into emerging areas (cloud, data analytics, cybersecurity). Some companies report that when they automate a function, the freed-up workers are retrained for higher-value tasks. This points to the "catalyst" side of AI: it forces upskilling and makes the workforce more productive overall.

#### 5.2 Demand for New Skills and Upskilling

On the positive side, AI is creating strong demand for new competencies. The fastest-growing jobs are technology-driven: AI and machine learning specialists, data scientists, cybersecurity experts and cloud engineers top the lists [6]. Indian industry is keenly aware of this. For instance, the 2025 NASSCOM Strategic Review highlights that FY2025 saw expanded "AI-led delivery" in IT services and an "age of transformation" in BPM, implying new digital offerings [2]. Indian firms are hiring many more data scientists, ML engineers and AI architects than before. LinkedIn and industry surveys confirm rising demand for AI and data skills in India (e.g. data science jobs are among the fastest-growing postings).

The workforce implication is a massive upskilling challenge. A NASSCOM-Deloitte report projects that India's AI talent pool must grow from roughly 600–650 thousand to ~1.25 million by 2027 (15% CAGR) to keep up with market growth [14]. In other words, the demand-supply gap is large: the AI sector's projected 25–35% annual growth in software/services requires far more trained professionals than currently exist. This is echoed in WEF findings that 58% of workers globally will need new skills to perform their jobs effectively [15]. Indian companies, therefore, are investing heavily in training. For example, one BPO report notes that ~60% of the BPO workforce now receives 20–40 hours of AI/cloud training each year, through initiatives like NASSCOM's FutureSkills Prime program (which alone trained 150,000 professionals in AI/cloud in 2023–24) [5].

Surveys indicate that employees are eager to learn new AI skills. Both NASSCOM and independent studies find that learning agility and continuous education are seen as top priorities by workers and HR



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leaders alike [15]. In one industry survey, HR leaders rated "learning attitude" as the most essential trait for future employees [7]. Many Indian IT companies have launched internal upskilling programs, partnerships with ed-tech providers and "innovation labs" to get staff hands-on with AI tools. For instance, Infosys runs a large GenAI academy for its developers and Larsen & Toubro Infotech instituted a GitHub Copilot pilot to train its engineers. The government too has promoted AI education: India's National Education Policy mandates introduction of coding and AI concepts in schools and government-funded programs like Digital India include AI training components.

The combined result is that while some workers may be displaced from old roles, new opportunities are emerging. NASSCOM's Future of Work report highlights a "1.6X increase in demand for AI-led job families" and stresses that mismatches remain between employer needs and available skills [7]. To bridge this gap, companies are adjusting job roles (e.g. adding data analytics tasks to roles), adopting skill-based hiring and encouraging internal mobility. A global McKinsey survey found that Indian executives are *extremely* optimistic about AI's potential – 55% expect it to boost revenues by over 10% in the next three years, the highest in the world [16] – which correlates with a willingness to invest in workforce transformation to capture those gains.

### 5.3 "Disruptor vs Catalyst" Duality

Taken together, these trends illustrate AI's dual role. On the one hand, AI **disrupts** employment by automating away many current tasks, especially routine ones, threatening traditional career paths in support and low-end development. Indian IT/BPO workers with static, repetitive roles face significant change. On the other hand, AI is a **catalyst** for improving job quality and creating new work. It forces companies to upskill workers and it enables growth in the industry (by making services faster, cheaper and more innovative), which in turn can generate new jobs. Economic history and research suggest that technological shifts often induce this cycle of disruption followed by new growth [8].

In India's case, the net effect is expected to be mixed but potentially positive if managed well. The workforce will see a shift in composition: fewer bulk data-entry or call-center agents, more engineers, analysts and creative roles. WEF's global forecasts suggest a net creation of jobs in sectors like digital commerce, education and health care – areas where Indian IT can contribute. Furthermore, Indian companies and young professionals have shown themselves to be adaptable: with the right training policies, the "future of work" in IT may emphasize higher-order cognitive and creative skills, which Indian education systems are gradually emphasizing. However, if upskilling lags behind automation, there is a risk of unemployment or wage stagnation at the lower end. Hence the intense focus by industry bodies (e.g. NASSCOM's FutureSkills initiative) and government, on massive reskilling.

#### 6. Implications for India's Position in the Global Services Market

The AI-driven shifts in IT and BPO have important implications for India's standing as a global services hub. India's advantages – large talent pool, cost competitiveness and global reputation – remain strong, but the nature of India's service exports is evolving. On one hand, automation could erode India's cost advantage for purely labor-intensive services. Clients might source more work to lower-cost locales or onshore with automated tools. On the other hand, AI and digital transformation could deepen India's leadership by enabling it to offer cutting-edge, high-value services.

Current data show India is doubling down on the latter. The country now accounts for roughly **57% of the global IT-BPM outsourcing industry**, making it the world's largest destination [3]. It also has nearly 38% of the global BPM (contact center and back-office) market [3]. These shares are buoyed by



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India moving up the value chain: major service providers are increasingly delivering AI-enabled analytics, cloud services and digital products to global clients. For example, NASSCOM notes that growth segments include "analytics, cloud and cybersecurity" [1] and the Strategic Review mentions the convergence of enterprise AI and GenAI adoption as a key theme [25]. This suggests that Indian firms are capitalizing on AI by building new capabilities, not just replacing workers with bots.

Moreover, India's large and growing developer community is itself a strategic asset. According to GitHub's latest data, India has about 17 million active software developers (a 28% increase in 2024 [10]) and is contributing massively to open-source and generative-AI projects [10]. India has become the fastest-growing developer population globally [10]. This wealth of technical talent bodes well for India's role as a global innovation hub. Microsoft and GitHub's initiatives (e.g. Copilot in Hindi, developer centers) explicitly aim to leverage and expand India's talent base, underlining that companies view India as central to the future AI workforce [10].

However, these shifts also raise competitive pressures. Other countries are promoting AI skills and trying to attract outsourcing work. India's historical edge has been its mix of English fluency, skilled workers and cost. Automation effectively raises the skill/technology component of the work. India must ensure that its workforce is among the best trained in AI and digital skills to maintain that edge. That is why industry and government emphasize becoming a **"global technology and innovation hub."** The NASSCOM 2025 Strategic Review even notes that India is strengthening its position as a global innovation hub, with its IT industry charting a course towards "Viksit Bharat 2047" (a vision of a developed India) [2]. This rhetoric is backed by data: domestic and export revenues in technology are projected to reach \$283 billion in FY2025 [2].

In global services, clients are now seeking not just bodies for rote tasks, but strategic partners in digital transformation. India is well-positioned to meet this demand. The widespread adoption of AI and GenAI among Indian firms means they can offer sophisticated analytics, automated workflows and AI-driven customer experiences – which few other labor hubs can match at scale. For example, Indian BPOs are experimenting with augmented reality for remote support and with AI-driven marketing agents [5], pointing to new service niches.

In sum, AI's impact on India's global position is twofold: it raises the bar on skill and innovation, but offers a path for India to deepen its lead. India's response – through massive upskilling, fostering AI startups and evolving service models – will determine whether it cements its status as the world's premier IT and BPO powerhouse or cedes ground to competitors. Early indicators (surging developer counts, active industry efforts) suggest India is proactively pivoting to the AI era.

# 7. Industry and Corporate Strategic Responses

Indian IT and BPO companies are actively adapting to the AI disruption. A common strategy is **workforce upskilling**: many firms have launched training programs to teach AI, machine learning, data science and cloud skills. For instance, tech giants are integrating AI education into employee training curricula: Infosys created a GenAI academy, TCS has "Ignio" (an AI platform) and trains staff in it and Wipro has the "AI Practice." Similarly, BPO companies are retraining agents on digital tools. One case is that Concentrix (a large BPO provider) reduced attrition by offering Python and data-visualization (Tableau) upskilling, integrating such training with employee benefits [5].

Partnerships are another approach. Many companies are collaborating with global AI platform providers. A notable example: GitHub partnered with Indian firms (Infosys) to launch a Copilot Center of



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Excellence in Bengaluru, aiming to accelerate AI adoption in enterprise software [10]. Companies like IBM and Accenture run innovation hubs in India focusing on cloud/AI. Even non-tech firms are investing: banks (e.g. Axis Bank, mentioned as Copilot users [10]) and retail chains in India are building in-house data science teams and AI chatbots for customer service.

Importantly, companies are redesigning business models around AI. For IT service companies, this means embedding AI into solutions (e.g. predictive maintenance, AI-driven analytics) and shifting toward outcome-based contracts (e.g. clients pay for efficiency gains). BPO firms are moving from voice to digital processes, from entry-level tasks to knowledge- and analytics-intensive BPM. Some Indian services firms are positioning themselves as partners in clients' AI strategy. The Astute report notes that major players (TCS, Infosys, Wipro) are "championing hyperautomation" to attract new projects [5]. There is also a push to expand into emerging segments like IoT support, AR/VR services and AI consulting.

On the hiring side, recruiters in India are searching more aggressively for AI/ML talents. New roles are being created: beyond "ML engineer", companies now hire "AI ethics leads," "AI trainers," "prompt engineers," and cross-functional roles where domain experts work alongside data scientists. Employee experience is also a focus: as NASSCOM reports, after pandemic-related disruptions, Indian companies are re-emphasizing in-office collaboration and ESG initiatives to attract talent [7], but also emphasizing learning & growth as top priorities [7]. The synergy of these efforts is to make careers in IT/BPO more attractive by promising upskilling in AI and digital tools.

Finally, internal culture is being reshaped. Many Indian firms encourage employees to experiment with AI tools. For example, some companies have internal "hackathons" for GenAI projects. NASSCOM notes that GenAI tool usage has jumped past proof-of-concept into real applications [7]. Leadership training now includes AI literacy and companies are creating AI governance frameworks to ensure ethical use (in line with global best practices). By making AI part of the corporate fabric, Indian companies aim to stay competitive globally. These corporate responses – re-skilling, partnering, business-model innovation – are critical to ensuring AI acts as a catalyst rather than solely a disruptor.

# 8. Government and Policy Initiatives

The Indian government has also stepped in to support the industry's AI transition. At the highest level, India's National Digital Communications Policy (2023) and earlier National Strategy for AI emphasize developing human capital in AI and automation. Under "Skill India" programs, the government funds AI courses and bootcamps (often in partnership with NASSCOM FutureSkills and private vendors) to upskill millions of workers. For example, the India BPO Promotion Scheme (IBPS), a government initiative, commits ₹500 crore to create 120,000 BPO jobs in 100+ Tier 2/3 cities [5]. While the IBPS scheme is partly aimed at regional employment, it also encourages technology adoption in those centers by requiring AI-enabled BPO operations, thus spreading AI upskilling outside big cities.

Educational reforms are in progress: the National Education Policy 2020 makes coding and computational thinking mandatory in schools, which will build a pipeline of AI-ready talent. Universities and technical institutes are setting up AI research centers; public-private collaboration is encouraged (e.g. NITI Aayog's Centre of Excellence on Data Science and AI). On labor market data, initiatives like the AICTE/Ministry of Education's FutureSkills Prime program (co-run with NASSCOM) have already certified hundreds of thousands of students in emerging tech.

Policy incentives also play a role. The government offers tax holidays for new technology startups and



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has launched "AI for All" programs. While not specifically about AI, Digital India investments in nationwide broadband and digital infrastructure create a foundation for AI services (cloud, connectivity). Moreover, dialogue on AI ethics and regulation is emerging – India has already imposed data localization rules in several sectors and draft AI policy talks about ethical guardrails (aimed at ensuring public trust in AI systems). This regulatory clarity is important to foster corporate adoption; firms need to know how data privacy and AI safety will be managed.

In the telecom sector, BharatNet and 5G rollouts increase data speeds across India, which indirectly benefits AI by enabling remote work and cloud AI services. Also noteworthy is the Production-Linked Incentive (PLI) scheme for IT hardware, which could encourage domestic manufacturing of chips and infrastructure that supports AI workloads [5].

Finally, industry bodies like NASSCOM are acting in quasi-policy roles: they publish strategic reviews, partner with academia on curriculum development and run public awareness campaigns about AI. For instance, NASSCOM's strategic publications (the Future of Work report, annual Strategic Review) set the industry narrative and are often referenced by policymakers [7,2]. NASSCOM's alignment with government goals (e.g. promoting "AI skills in Bharat") helps ensure that policies address on-the-ground industry needs.

In summary, a combination of government funding schemes, regulatory initiatives and education reforms is underway to ensure India's IT/BPO workforce can adapt. By explicitly targeting AI skills development and new economy jobs, policymakers aim to complement industry efforts and secure India's competitive position. However, much depends on execution – rapidly expanding high-quality training and connecting it to industry demand remain challenges.

#### 9. Conclusion

AI is reshaping India's IT and BPO industry in profound ways. Automation of repetitive tasks and the rise of intelligent systems are already transforming service delivery: many routine processes are now handled by RPA bots and chatbots [4,5]. AI coding assistants are boosting developer productivity and contributing to India's rapid growth in software development capability [12,10]. These changes threaten certain types of jobs – especially low-skill clerical, support and routine coding roles – in line with global forecasts [6]. At the same time, AI is driving demand for new skills and expanding higher-value roles. India's technology firms recognize this as a strategic opportunity: they are investing heavily in AI upskilling, developing new services and positioning the country as a leader in generative AI and deeptech [7,2].

For India's IT/BPO workforce, the message is clear: adaptation is imperative. Workers must evolve from performing manual tasks to working alongside AI – managing it, interpreting its outputs and focusing on complex problem-solving. The industry's large-scale training initiatives (e.g. NASSCOM's FutureSkills, company-led AI academies) reflect this shift. If successfully implemented, these efforts could make the Indian workforce more skilled and more productive than ever, reinforcing India's brand as a technology hub. As GitHub's CEO said, "The odds are ever in India's favor to rise and win the age of AI" [10] – a sentiment rooted in India's demographic advantage and growing capabilities.

However, risks remain. Uneven access to training, potential tech disparities between metro and smaller city workforces and the lag between AI deployment and worker readiness could create gaps. Indian policymakers and industry leaders must continue to align education with industry needs, ensure that workers have pathways to transition and monitor the socioeconomic impact. But the current trajectory



suggests a positive outcome: India seems poised not just to weather the AI revolution in services, but to lead it. By harnessing AI as both a productivity tool and an upskilling engine, India's IT and BPO sectors can strengthen their global position. The world's enterprises will still rely on India's talent – but that talent will increasingly be defined by advanced AI and digital skills.

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