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Industry 4.0 adoption in India can help manufacturing sector meet national growth targets and contribute 25% to GDP by FY26

New Delhi/Mumbai, March 1, 2022 - The [National Association of Software and Services Companies](#) (NASSCOM), in collaboration with [Capgemini](#), today announced the findings of a research study on the adoption of Industry 4.0 in India's manufacturing sector. Titled, '[India Industry 4.0 Adoption: A Case to Mature Manufacturing Digitalization by 2025](#)', the report sheds light on the maturity of digitalized manufacturing in India, and recommends a focus on increasing investments, scaling up foundational technology readiness, and enhancing capabilities. These recommendations, cites the report, will help facilitate globally connected smart factories that will enable India's manufacturing sector to become an intelligent industry and achieve the national growth target of \$1.1tn by FY26.

Global Industry 4.0 evolution drivers

From comprising 5% of manufacturing IT spend in 2011, to 20% by 2021, Industry 4.0 has witnessed over a decade of transition since 2011. It has also grown by 9.6 times during the same period, from \$10.5 billion in 2011 to \$103 billion in 2021, driven by business growth, resilience and sustainability needs.

According to the report, investments in Industry 4.0 have grown by approximately 10X in the last decade and are expected to grow to \$200+ bn by 2025. Countries such as US, UK, China, India and Brazil are expected to supplement this with new investments, amounting to a total of \$100+ bn. This investment will predominantly be in digital technologies like IoT, AI/ML, IT-OT integration, robotics, and human-machine interfaces. These will account for almost 40% of all manufacturing technology spend. Servitization, integrated customer and employee experience, and an urgent need for flexible operations and business agility are set to be the biggest drivers of Industry 4.0 in the next decade.

Debjani Ghosh, President, NASSCOM, said, "Industry 4.0 has reached a tipping point in Indian manufacturing, with strong demand for increased investment in the next two years likely to create exceptional customer experiences and long-term business models. Moving forward, it will be fascinating to watch how prepared the Indian manufacturing industry is to adopt and scale Industry 4.0, which is largely determined by the use cases selected, the capacity to scale Proofs of Concept, and the alignment of IT and OT capabilities."

Commenting on the potential of Industry 4.0 to build interconnected factories of the future, **Ananth Chandramouli, Managing Director and Head of the India Business Unit, Capgemini**, added: "It is evident that by 2025, more than two-thirds of the Indian manufacturing sector will embrace Industry 4.0. We have seen that Indian manufacturers today are talking about holistic digital transformation. This research shows that this decade is going to experience an amalgamation of Digital Insights (sensors and embedded software in products), Digital Continuity (creating and managing virtual models) and Digital Convergence (digitalization of core processes in an extended ecosystem of enterprise IT systems). Enterprises will begin

to concentrate on new business models, and on understanding the needs of end customers so that they can innovate new products and become truly intelligent.”

India Industry 4.0 spend in discrete and process manufacturing segments

With accelerated investment in foundational tech like Cloud and IoT, the Indian manufacturing sector has started pivoting to digitalization, cites the report, with \$5.5 - \$6.5 billion spent on Industry 4.0 in FY21. This accounts for nearly 50% of the annual technology spend by Indian manufacturers. 75% of this is led by discrete manufacturers in Auto, Electricals, and Electronics, while Chemicals and Pharma are leading the process manufacturing segment.

MSMEs (Micro, Small and Medium Enterprises) in India account for 33% of the manufacturing output and 45-50% of exports, across textile, food processing, chemical, and electrical or equipment. The research shows that while the sector is facing challenges around scaling up Industry 4.0 solutions, financing, and leadership constraints are presenting opportunities to mitigate these challenges. The report highlights digital solutions to aide growth could include cloud and SaaS-based solutions to outsource non-core activities and minimize upfront or fixed costs; a reduction in the cost of quality inspection and rework/defects with AI-based computer vision; and big data analytics to minimize risk impact.

Investment focus for the next two years is key

The report concludes that Industry 4.0 is at an inflection point in Indian manufacturing. There's an urgent need to increase investments in the next 2 years and drive a rapid shift from proof-of-concept to a more ROI driven, outcome-based deployment. Over the next 18-24 months, enterprises in the sector need to prioritize investments across emerging connectivity tech, big data analytics, central and remote-controlled monitoring, and process automation. These new investments will consist of a combination of scaling-up existing IoT and Cloud deployments for rapid PoC-to-production of new use cases and industrial automation.

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About NASSCOM

The National Association of Software and Services Companies (NASSCOM®) is the premier trade body and chamber of commerce of the Tech industry in India and comprises over 3000-member companies. Our membership spans across the entire spectrum of the industry from startups to multinationals and from products to services, Global Capability Centres to Engineering firms. Guided by India's vision to become a leading digital economy globally, NASSCOM focuses on accelerating the pace of transformation of the industry to emerge as the preferred enablers for global digital transformation. Our strategic imperatives are to reskill and upskill India's IT workforce to ensure that talent is future-ready in terms of new-age skills, strengthen the innovation quotient across industry verticals, create new market opportunities - both international and domestic, drive policy advocacy to advance innovation and ease of doing business, and build the industry narrative with focus on Talent, Trust and Innovation. And, in everything we do, we will continue to champion the need for diversity and equal opportunity.