

India's century – Achieving sustainable, inclusive growth

A roadmap for India Inc.

December 2022





India's Century – Achieving sustainable, inclusive growth

A roadmap for India Inc.

December 2022



सत्यमेव जयते

प्रधान मंत्री
Prime Minister

MESSAGE

It is heartening to learn about the 95th Annual General Meeting (AGM) of FICCI and the release of India's Century Study Report on the occasion. Greetings and best wishes to everyone associated with this endeavour.

The 21st century is widely hailed as Asia's century and there are great expectations from India. The joint initiative by FICCI and McKinsey to release India's Century Study Report marks another step in this direction.

Due to comprehensive reforms, the nation is attaining a new speed and scale in economic growth. While on the one hand, policy interventions have empowered citizens and transformed institutions, there is also a passionate commitment towards minimising government interference in the life of citizens and enterprises.

Towards attaining this goal, we have implemented a series of initiatives, repealing outdated laws and needless compliances to enhance ease of living, as well as ease of doing business.

Today, the world looks towards India with trust and confidence to provide solutions to global challenges. Blessed with a wealth of natural resources, the innovative spirit of our entrepreneurs and technological expertise of our skilled youth, India is being seen as an attractive partner in economic growth.

We continue to march ahead with a firm resolve to strengthen the sentiment of becoming vocal for local. At the same time, we remain equally committed to make India a hub of global supply chains.

While a lot is happening, a lot more needs to be done to ensure that our country reaches its full potential in every domain.

I am sure that the presence of business institutions and leaders at FICCI's AGM will lead to a vibrant and interactive dialogue. These deliberations will help draw up a futuristic roadmap to further enhance economic growth that is sustainable and inclusive.

The next 25 years that constitute the Amrit Kaal is an occasion to work with a spirit of oneness to fulfil the collective resolve of the people to build a strong, self-reliant India.

I once again extend my best wishes to FICCI towards making the 95th Annual General Meeting a huge success.

(Narendra Modi)

New Delhi
अग्रहायण 23, शक संवत् 1944
14th December, 2022



Preface

India is at an inflection point as the country completes 75 years of Independence, and looks forward to the next 25 years. At this juncture, the Federation of Indian Chambers of Commerce and Industry (FICCI) and McKinsey & Company are collaborating on a multi-year 'India's Century' partnership to propose a set of actions to achieve India's full potential – unlocking the benefits of digital transformation, energy transition and modern infrastructure development for sustainable and inclusive growth.

This paper launches the partnership by setting out priorities and actions for companies in 10 major sectors, and suggesting where and how state and central governments could help enable and accelerate progress. It also lays down four horizontal capabilities that can help drive innovation, skilling, the scale-up of SMEs, and enhance India's position as a destination for global capital. The proposed initiatives have been developed with inputs from more than 200 companies, over 10 academic institutions,

and through consultations with a wide range of domestic and international experts. While there is a long-term focus towards India's Century in 2047, the actions set out can begin right away, and the paper highlights specific operating metrics in each key sector which would need to be achieved in the next five to seven years.

Through the paper and associated initiatives over the next year (e.g., in the launch of Innovation Clusters), the FICCI-McKinsey & Company partnership will hopefully inspire and motivate companies, both big and small, start-ups and established leaders to drive actions that could achieve the country's potential to deliver millions of jobs and ensure sustainable and inclusive growth.

We look forward to your comments and suggestions and most of all your energy and leadership in driving actions to benefit all stakeholders.



Mr. Sanjiv Mehta

President, FICCI and CEO & Managing Director, HUL
President, Unilever South Asia & Member, Unilever
Leadership Executive (Global Executive Board)



Mr. Alok Kshirsagar

Senior Partner
McKinsey & Company



Acknowledgements

This report is the product of a 9 month-long, cross-disciplinary research effort by McKinsey & Company India and The Federation of Indian Chambers of Commerce & Industry (FICCI). We owe special thanks to the core team, co-authors, sector experts and support team who worked tirelessly on the report.

Core team

India's Century leadership	Rajat Dhawan, Rajat Gupta, Sarvesh Gupta, Anu Madgavkar, Ketav Mehta, Varun Prakash, Shirish Sankhe, Suvojoy Sengupta, Naveen Unni, Jyoti Vij and Hanish Yadav
India's Century steering committee	Neeraj Bhardwaj, Arun Chawla, Shashwat Goenka, Ajit Mohan, Kalpana Morparia, Sulajja Firodia Motwani, Mohandas Pai, Subhrakant Panda, Dr. Sangita Reddy, Dr. Anish Shah, Dr. Sachchidananda Shukla and Vipul Tuli
India's Century team	Sakshi Arora, Kanmani Chockalingam, Kushal Dalal, Shashank Gupta, Tanvi Khandelwal, Anshuman Khanna, Karthik S Krishnan, Swapnil Lohani, Chakradhar Reddy, Abhilaksh Sharma, Ayushi Singhal and Pragati Srivastava

Sectorial experts

Manufacturing	Chetan Bijesure, Soumyadeep Ganguly, Vikram Gulati, Alok Joshi, Sulajja Firodia Motwani, Som Mittal, Sushant Naik, Bhupesh Rathore (Yes Bank), Chitradeep Sen, Manish Sharma, Jasbir Singh and Amit Syngle
Energy	Arpan Gupta, Puja Jain, Sandy Khera, Prabir Neogi, Shivanand Nimbargi, Ganesh Srinivasan and Vipul Tuli
Healthcare	Chirag Adatia, Vikas Bhadoria, Gautam Khanna, (Hony) Brig Dr Arvind Lal, Dr. Harsh Mahajan, Praveen Mittal, Siddharth Patodia, Sathya Pratipathi and Dr. Narottam Puri
Water	Reshma Anand, Naina Lal Kidwai, Arun Lakhani, Navdeep Singh Mehram, Hemant Seth and Naveen Unni
IT, ITES, SaaS	Virat Bhatia, Kushagra Gupta, Anuj Kadyan, Mohit Kapoor and Rahul Sharma
Consumer tech	Ankit Agarwal, Vikash Daga, Abhishek Malhotra, Ajit Mohan and Shivnath Thukral
Agriculture	Tejas Dave, Avinash Goyal, T R Kesavan, Sarita Koli, Nitika Nathani, Sanjay Sacheti and Sunjay Vuppuluri (Yes Bank)
Financial Services	Anubrata Biswas, Amitabh Chaudhry, Hitendra Dave, Ajay Kanwal, Prasad Lad, Anushi Shah, Shwaitang Singh, Anand Sinha and M V Tanksale
Construction and infrastructure	Nadeem Ahmad, Abhilesh Babel, Madhur Bansal, Dhruv Kotak, Neelesh Mundra, Jagannarayan Padmanabhan (Crisil), B V N Rao, Sandeep Selot and Neerja Singh
Capital markets	Vijay Chandok, Nitin Jain, Himanshu Kaji, Akash Lal, Sunil Sanghai, Abha Seth and Dushyant Singh
Education	Souvik Bhattacharya, Shishir Jaipuria, Ravi Panchanadan, Rajesh Pankaj, Praveen Raju, Dr. Rajan Saxena, Dr. Avantika Tomar (EY Parthenon) and Dr. Vidya Yeravdekar
Innovation cluster and innovation quotient	Danielle Barber, Sarika Gulyani, Anandi Iyer, Leena Jaisani, Ketav Mehta, Jagdish Mitra, Dr. Arabinda Mitra, Harkesh Kumar Mittal, Praveen Mittal, Dr. Vibhav R Sanzgiri, Nirankar Saxena and Abhinav Singh
Editing and communications	Sankalp Khandelwal, Anamika Mukharji, Fatema Nulwala, Cuckoo Paul and Raksha Shetty
Design and layout	Sarath Kumar, Saravanan Mani, Loganathan Ramachandran, Amirtharaj N Nirmalraj Ramachandran, Anand Sundaraman and Harish Karunakaran
Copy editors	Aderinsola Adebulehin, Colin Douglas and Helen Walne





Contents

Executive Summary	1
India's growth potential	4
Ten priorities by 2030	5
Turning India's vision into a reality	11
01 The pathway to prosperity by 2047	15
02 India – potential and possibilities	23
03 Unlocking potential in key sectors: Ten priorities for India Inc.	33
3.1 Agriculture	36
3.2 Manufacturing	42
3.3 Financial services	48
3.4 IT, IT-enabled services, and software as a service	54
3.5 Consumer technology	58
3.6 Healthcare	64
3.7 Emerging energy	70
3.8 Water	76
3.9 Infrastructure and logistics	82
3.10 Education	93
Seed incubators and new technology markets	99
04 Building capabilities to turn vision into reality	103
05 Appendix	116
06 Bibliography	122
07 Acronym glossary	126



Executive summary

India's Century of independence is just 25 years away. The country is uniquely poised to build on its endowments and achieve broad-based prosperity by this landmark – having 60 crore (600 million) jobs to gainfully employ a growing workforce and increasing per capita income sixfold to ₹1 million¹.

To make this growth sustainable and inclusive (Exhibit 1)², India would also need to cut carbon emissions, create access to clean water for all, and include more women in the labour force.

While achieving this aspiration requires actions across stakeholders, this paper focuses on what India's businesses ("India Inc.") could do to realise the country's economic growth potential. It is based on insights gathered from over 200 companies on the economic opportunities that exist across every part of the economy and what India could do to seize these. The paper takes a sector-level view of global opportunities – identifying 10 priority sectors for growth over the next 25 years, and potential actions to unlock that growth.

¹ 1 million equals 10 lakhs.

² Reports (including, but not limited to, Niti Aayog's report (2021) on MDPI (OPHI, United Nations Development Programme) and calculations basis Real GDP growth and 2019 net emissions as baseline.



~60 Crore

overall jobs by 2047
(~1.3x the number of jobs today)

Sustainability



80-100%

reduction in CO₂
emission intensity



100%

access to water for all



₹ 10 Lakh

per capita income
(~6x the per capita income today)

Inclusion



45-50%

female participation in
labour force by 2047 (~2x
the participation rate today)



100%

population above
poverty line



2047

India's Century
of sustainable and
inclusive growth





India's growth potential

A relatively younger workforce, a strong presence in manufacturing, and a vibrant, growing digital economy – these endowments position India well to work towards its aspirations for 2047:

- **A talent factory for the world:** India will be home to a fifth of the global workforce.³ As developed economies age, India's relatively young population⁴ could be enabled to meet shifting global demands for products and services.
- **Leadership in global supply chains:** India already supplies the world in the IT, automotive, and pharmaceuticals sectors. It also has expertise in multiple other growth sectors, such as chemicals, electronics, and software. As global supply chains shift in the wake of recent events, India could capture an increased market share of between \$800 billion and \$1.2 trillion by 2030.⁵

- **Rapidly growing a large digital economy:** With over 650 million internet users and low-cost data, India is one of the largest and fastest-growing markets for digital consumers.⁶ In addition, it is likely to add over 350 million online shoppers in the next four to five years and develop a \$5 billion online gaming and entertainment market.⁷

As India and Indians look to the future, it would be important to also account for the differing priorities and starting points of India's states. For example, higher-income states such as Delhi, Gujarat, Kerala, and Maharashtra are growing at a rate 1 percent higher than lower-income states like Bihar, Madhya Pradesh, Uttar Pradesh, and West Bengal. Agriculture accounts for more than 30 percent of all jobs in three states (Uttar Pradesh, Punjab, and Haryana), but makes up less than 10 percent in more than 20 states and territories.⁸ Similarly, states in South and West India have a higher rate of female participation in the labour force than those in North and East India.⁹

³ World population prospects data, Population Division of the Department of Economic and Social Affairs of the United Nations.

⁴ Based on 2021 UN WPP data, the median age in India is 27 years, which is lower than the median age range of 30-40 years in China, countries in the European Union and North America, Australia and New Zealand, for example.

⁵ Thomas Baumgartner, Yogesh Malik, and Asutosh Padhi, Reimagining industrial supply chains, McKinsey, August 2020.

⁶ Digital India: Technology to transform a connected nation, McKinsey Global Institute, March 2019.

⁷ E-commerce Industry in India, India Brand Equity Foundation, August 2022.










⁸ Handbook of Statistics on Indian states 2021-2022, Reserve Bank of India.

⁹ The power of parity: Advancing women's equality in India, McKinsey Global Institute, November 1, 2015.

Ten priorities by 2030

To help India realise its vision, ten sector-wise priorities for India Inc. could be considered.¹⁰

Aspirations across 10 Priorities for Sustainable, Inclusive Growth

Sector / themes	Drivers	From (2022)	To (2030)
 Agriculture	Exports (\$Bn)	~\$50Bn	~\$100 Bn
 Manufacturing	High value exports in prioritized value chains	\$140bn	\$400bn
 Consumer Tech	E-retail transactors (#)	~160 Mn	770 Mn
 IT / ITES	Workforce trained in digital skills (%)	25-30%	100%
 Financial services	MSME Formal Credit Lending (%)	<40%	>80%
 Healthcare	Medical Doctors per 10,000 pop.	7-8	~20
 Infrastructure and Logistics	Logistics Costs (% of GDP)	13-14%	8-10%
 Emerging energy	Share of RE Generation capacity	155GW	500GW
 Water	Households with Tap Water Connections	50%	100%
 Education	Higher education Gross enrolment ratio	~27%	40-50%

¹⁰ A more detailed set of aspirations and unlocks by sector appear on the India's Century microsite, and these will be tracked and updated each year. We will also add to the priorities for each sector and introduce priorities for additional sectors in future iterations.

01 In agriculture, double exports from \$50 billion to \$100 billion by 2030 and the food processing industry from \$300 billion to over \$600 billion¹¹ by:

- Creating end-to-end (e2e) value chains (for items such as fruit, vegetables, milk, and spices) by setting up export-oriented food parks and infrastructure (pre-processing and cold-chain, for example), harmonising export standards, educating farmers, establishing commodity-specific digital export platforms, and leveraging public-private partnership (PPP) models.
- Building low-capex pre-processing centres near farms — such as mango-ripening chambers and facilities for the osmotic dehydration of pineapples – to reduce spoilage, and upgrade processing units to handle multiple products that could increase utilisation from about 70 percent to over 90 percent.
- Supporting farmer producer organisation schemes (FPOs) by giving farmers agricultural start-up or micro, small, and medium enterprise (MSME) status. This would help improve access to benefits like tax exemptions, credit guarantees, and priority-sector lending.
- Developing AI-powered subscription products or services that build on data compiled from the Internet of Things (IoT), and remote sensors to customise the right solutions at the right time – such as ideal sowing windows, crop disease prevention, and storage mechanisms.
- Partnering with agriculture research and development (R&D) institutions, such as ICAR, IARI and NABARD,¹² Indian Agricultural Research unit (ICAR), to provide incentives and commercialisation support. Possible research areas include precision-farming technologies (including AI and IoT-driven robots), climate resilient and water efficient seed varieties, and organic solutions for crop protection and nutritional supplements.

02 In manufacturing, triple high-value manufacturing exports to \$400 billion, increase overall manufacturing productivity, drive down import manufacturing as a percentage of imports to 15 percent,¹³ by:

- Growing India's presence in five to six specific global value chains (e.g., electronics, chemicals, medical devices) by developing port-proximate clusters like the Mumbai—Thane—Raigad cluster for electronics and chemicals, adopting contract manufacturing to raise capacity utilisation to over 80 percent, launching supplier development programs (e.g., innovation grants), and facilitating single-window clearance.
- Becoming a green manufacturing capital by prioritising green alternatives such as bio-based feedstock and sustainable packaging, aligning industry standards for green labels, setting up recycling hubs, and boosting competitiveness with global firms by, for example, investing in high-volume giga-factories.
- Scaling up digitisation and software-enabled manufacturing, focusing on high-impact use cases (for example, using advanced analytics to digitise e2e supply chains at a stock-keeping-unit level to build value-chain resilience). Technology grants and international joint ventures could help secure technology expertise that would help to propel manufacturing into the digital future. Additionally, building capability through partnerships with academia, as well as upskilling employees on emerging technologies, could boost adoption of technologies such as blockchain.

¹¹ 15th Finance Commission's HLEG on agricultural exports submits reports, Government of India Finance Commission, July 2020.

¹² Indian Council of Agricultural Research (ICAR), Indian Agricultural Research Institute (IARI), National bank for agriculture and rural development (NABARD).

¹³ BharatNet is the central government's flagship scheme to provide internet connectivity to all the 2.5 lakh gram panchayats (i.e., local village councils) in the country.

03 In consumer technology, grow the number of e-retail transactors to 770 million by 2030 from 162 million in 2021, and increase the share of the digital and organised market in consumer spend from 27 percent in fiscal year 2020 to 54 percent, by:

- Integrating datasets of national importance, (e.g., health data, grain value chain, land records, weather etc.) and developing digital platforms and ecosystem businesses by leveraging the digital India Stack through open APIs. Examples of applications could include personalising and pre-empting patient care based on health records and lifestyle data, leveraging the Agri Stack to reduce inefficiencies in logistics and enabling real-time monitoring of value chains.
- Supporting the development of industry standards and governance in data privacy, data management, and the right to repair, and emerging technologies like blockchain and cybersecurity. Government bodies could also build regulatory sandboxes to enable free experimentation with new technologies.
- Using Indian 5Gi standards to develop connectivity solutions, such as communications modules optimised for rural coverage, to ensure 5G access for over 90 percent of the population, and supporting the Ministry of Electronics and Information Technology (MeitY) to accelerate the execution of BharatNet.¹⁴
- Supplementing school curricula with technology literacy modules and strengthening learning outcomes through newer methodologies such as simulation or gamification (or both) to develop widespread proficiency in data analytics, basic coding, web development, and more.¹⁵ Similarly, adult literacy courses could be designed, with an emphasis on the use of India Stack and technology, for banking, healthcare, and agriculture services.

04 In information and communication technology, increase India's share of global software-as-a-service (SaaS) revenue from 1 percent to around 6 percent by 2030, and strengthen India's position as the global factory for digital, cloud, and analytics, by:

- Aligning on an industry-wide skilling and certification mandate to continually qualify and upskill technology professionals in high-growth digital areas such as AI and machine learning (ML), IoT, product management, and user interface (UI) and user experience (UX) design. Furthermore, a standard curriculum and skill taxonomy could be shaped with industry bodies, such as NASSCOM and SaaSBOOMi to ensure a 100 percent digitally skilled workforce in IT-enabled services (ITES) by 2030.¹⁶
- Establishing India as an R&D hub for leading product companies through supportive policies, streamlined intellectual property (IP) protection laws, enabling infrastructure (for example, land and prototyping laboratories), and annual grants to scale up postgraduate research talent – especially in physics, mathematics, IT, embedded systems, and biology.
- Boosting at-scale SaaS companies tenfold by strengthening sales and go-to-market capabilities, forming partnerships with large technology firms to jointly pilot or develop offerings, and providing access to international target-customer segments.¹⁷

¹⁴ BharatNet is the central government's flagship scheme to provide internet connectivity to all the 2.5 lakh gram panchayats (i.e., local village councils) in the country.

¹⁵ A collaborative effort under the National Education Policy, launched in 2020. It involves state government collaborations with technology firms, industry bodies, and sector experts.

¹⁶ Future skilling for the digital economy, NASSCOM, February 2020.

¹⁷ Companies with less than \$1 billion in annual revenues.

05 In financial services, double the credit penetration of micro, small, and medium enterprises to 80 percent and remove gaps in the cost of commercial borrowing, by:

- Launching use cases of the account aggregator (AA) framework for processes such as quick loan applications and tax filing for MSMEs, and leveraging beyond-banking data (such as GST, utility bills, online transactions etc.) to transform credit bureaus into credit and information bureaus.
- Promoting co-lending through product standardisation, commercial contracts, and accounting and reconciliation practices. Opportunity also exists to set up industry-wide digital debt platforms via API protocols, subject to regulatory provisions.
- Accelerating the creation of digital securities for various physical collaterals, such as land, property, and vehicles, to allow for digital verification and lien marking. The AA framework could be leveraged to accelerate information collateral adoption, such as utility bills, bank statements, income-tax filings, invoices, and receipts to increase credit penetration.
- Creating differentiated standards for non-performing assets in MSME sectors, based on sector-specific cash-flow cycles (such as crop cycles for agricultural traders, monsoon lows in construction, and tourism seasonality), and creating special provisions within the Credit Guarantee Trust for Micro and Small Enterprises scheme to enhance the adoption of MSME credit in key sub-sectors.

06 In healthcare, double the number of doctors, nurses, and allied healthcare professionals per capita, reduce disease-adjusted life years by over 30 percent, and become a hospital to the world, by:

- Leveraging digital healthcare solutions, such as telehealth solutions, under Ayushman Bharat Digital Mission (ABDM) to empower community healthcare workers¹⁸ – including accredited social health activists, multipurpose health workers, and auxiliary nurse midwives – and to deliver higher-quality primary care for underserved segments (such as maternal and neonatal care, and disease screening).
- Boost MBBS graduates by allowing older medical colleges to double their intake of students within the next 3 years and enabling private hospitals to collaborate with medical colleges to enter an arrangement where pre and para clinical courses are conducted at the medical colleges whereas clinical courses are conducted at the hospitals. This could be accompanied by a parallel national campaign to promote nursing as an aspirational profession and boost enrolment in nurse training programmes.
- Enhancing insurance coverage through efficient underwriting for reduced premium costs by building on actuarial databases on top of PM Jan Arogya Yojana data and electronic medical records.

¹⁸ Includes accredited social health activists, multipurpose health workers, and auxiliary nurse midwives.

07 In infrastructure and logistics, reduce logistics costs from 14 to 8 percent of the GDP, reduce infrastructure project cost overruns from 20 percent to less than 5 percent and increase skilled construction workers as a percentage of total workforce from less than 10 percent to more than 40 percent by:

- Deploying digital tools (such the use of digital twins) across project lifecycles and industrialising construction (for example, modular design and on-site assembly, to accelerate infrastructure execution timelines by over 50 percent).
- Encourage the registration, training, and accreditation of construction workers, leveraging various government initiatives like the e-Shram portal and others, and providing incentives to workers in the form of reimbursement of lost wages due to training, and rewards for the completion of accreditation courses.
- Enabling access to the national logistics ecosystem data (e-way bills, Goods and Services Tax Identification number, FASTag, Aadhar identification, and Vahan vehicle registration) to enable logistics players to analyse freight patterns, plan capacity deployment, develop inter-modal supply chains, and more.
- Formulate industry wide standards across cargo (packaging, palletization, labelling, handling), IoT based cargo tracking, warehouse automation etc., to boost delivery efficiency across multiple providers. Unified Logistics Interface Platform (ULIP) launched under National Logistics Policy aims to simplify logistics processes, improve efficiency and transparency and reduce logistics cost and time.¹⁹

08 In energy, double the share of renewables in power generation to 40 percent and become the world's cheapest producer of green hydrogen by producing five million tonnes per annum, by:

- Setting up a central renewable-energy (RE) infrastructure planning and project monitoring agency tasked with creating a database of land pockets (especially wasteland with RE potential), and facilitating land acquisition in coordination with states such as Gujarat, Rajasthan, Maharashtra, Karnataka, and Andhra Pradesh (that account for about 45 percent of total usable wasteland in India, with a combined solar power generation potential of 9,000 gigawatts), all aimed at cutting down the commissioning time for RE projects by 50 percent.²⁰
- Setting up innovation clusters to facilitate shared infrastructure arrangements, a financial ecosystem, R&D opportunities, prototyping and scaling of new energy technologies, such as developing novel chemistries for the storage of perovskites, thorium-based nuclear, and electrolyzers, among others.
- Proposing market reforms to unlock RE demand in a variety of ways. These could include rationalising the tariff structure by enacting a time-of-day tariff or cost-reflective tariff, enabling open access to boost demand, fast-tracking electricity derivatives and futures to push consumers towards green energy sources, and setting up capacity markets for conventional power plants.
- Ensuring a stable round-the-clock supply for the country by scaling up energy storage systems by 2030 to five times the current size via dedicated tenders, regulatory mandates, and feed-in tariffs (FITs).

¹⁹ Unified Logistics Interface Platform (ULIP) receives tremendous response as 13 organisations sign Non-Disclosure Agreement (NDA) to access data on ULIP, Press Information Bureau, October 2022.

²⁰ "Vision 2047," Ministry of New and Renewable Energy (MNRE).

09 In water, grow the percentage of households with tap water connections to 100 percent,²¹ significantly increase the percentage of wastewater treatment from 30 percent to 100 percent, and reduce the use of non-revenue water, by:

- Establishing a market-making body that could aggregate demand across urban local bodies (ULBs). This body (possibly under the Jal Shakti ministry) could also act as a credit intermediary to ease the cash crunch often faced by ULBs and create standardised bidding documents for municipal water treatment through PPPs to boost water treatment rates.
- Boosting the adoption of advanced zero-liquid discharge (ZLD) and water re-use technologies in water-intensive industries (such as tanneries and textiles) and developing domestic-supplier or start-up capacity to use low-cost technology, such as desalination and microbial fuel cells, for the supply and treatment of water. Technology could also be used to monitor the water-supply network to detect leaks.
- Promoting water-efficient agricultural practices, such as the establishment of an agriculture water-sustainability mission under industry bodies to drive the development and adoption of water-efficient germplasm, shift the acreage towards alternative crops, like millets (driven by the marketing and development of new food categories), and encourage a wider adoption of micro-irrigation.

10 In education, improve the higher-education gross enrolment ratio to 60 percent and the student-teacher ratio to 1:15 in primary schools and 1:20 in higher grades by:

- Developing a student-centric education model that incorporates design thinking (such as role playing), practical apprenticeships, and vocational models for grades 6 to 12 into the existing curriculum to align skills attainment with industry needs.
- Enhancing digital and physical infrastructure, ensuring access to digital tools in all schools, improving access to low-cost digital solutions, introducing modernised ways of learning (such as augmented reality (AR) and gamification), and integrating predictive data solutions to map learning outcomes.
- Enabling faculty training across global universities to deliver a high-end teaching quality, equipping higher education institutions with the latest technologies, building accelerated career-progression models, and creating a network of schools for peer learning.

In addition to these ten priorities, India Inc. could seed emerging technologies and business models to stay ahead of the innovation curve, growing the country's share of the global space-tech market to 10 percent, and increasing the gaming market to nearly \$20 billion by 2030.^{22,23} This could be achieved by:

- Enabling private participation in the space sector, including space object registration, unmanned aerial vehicles, geospatial data guidelines, and enabling private start-ups to use the Indian Space Research Organisation's infrastructure at scale.
- Scaling up investments in next-generation technology (for example, metaverse gaming and retail experiences) through increased R&D and innovation competitions for autonomous vehicles (such as the DARPA Grand Challenge in the United States), space exploration (Ansari XPRIZE), and marine energy (Scotland's Saltire Prize), as well as acquiring cutting-edge IP through programmatic mergers and acquisitions.

²¹ Jal Jeevan Samvad, National Jal Jeevan Mission, May 2022.

²² Shine Jacob, "How SSLV could bump up India's share of international space economy to 10%," Business Standard, Updated on August 21, 2022.

²³ "Leveling up: India's gaming market 2021," Lumikai, November 2021.

Turning India's vision into a reality

To achieve India's Century ambitions, India Inc. would need to strengthen four important capabilities and prioritise them over the next 12 to 18 months.

Increasing India's innovation quotient

India has made progress on innovation and has jumped from 81 to 41 in World Intellectual Property Organization (WIPO) Global Innovation Index rankings.²⁴ To know where they stand as innovators, companies can assess their "innovation quotient" (IQ). A multi-year platform newly launched as part of India's Century initiative, the Innovation Quotient Diagnostic, benchmarks company readiness, strengths, and execution capabilities for innovation. It generates relevant, company-specific insights to help leaders strengthen their company's innovation capacity in line with best practices of global frontrunners. In the first edition of IQ rolled out more than 150 respondents, Indian companies demonstrate strengths in focus on consumer, ability to scale optimised offerings and internal idea sourcing. There is potential to strengthen areas such as using quantified metrics and creating accountability, strengthening project governance, adopting risk mitigation practices, differentiating priorities and sourcing external ideas.

Sector-focused innovation clusters could also enhance the environment for innovation – economic hubs where capital, expertise, and talent collaborate on developing new or nascent technologies, industries, and ways of doing business.

As part of the India's Century initiative, nine clusters are planned across clean energy, smart mobility, water adequacy, life sciences, digital frontiers (metaverse, AI/ ML etc.), electronics, space technology, next-gen materials, and quantum computing. The first such cluster is being formed in the clean energy sector. As a partnership between industry, academia, and government, this cluster would focus on alternative energy storage solutions, improved technologies for lower-cost production and transportation of green hydrogen, decarbonisation in high-emission sectors, and more.²⁵

This could be followed by smart-mobility and water-adequacy clusters.

Scaling up India's SMEs to grow 1,000 mid-sized and 10,000 small firms into global challengers

India has a "missing middle": a dearth of mid-sized firms that typically grow into formidable competitors for large companies.^{26,27} India's peer emerging economies have more than double the number of mid-sized and large firms per trillion dollars of GDP than India.^{28,29} India needs to nurture about 10,000 small firms to become mid-sized to bridge this gap, and about 1,000 mid-sized firms to become large ones by 2030.

To grow into global challengers, these firms require easier access to low-cost capital, simpler one-stop processes to start and run their businesses, and support for resources they cannot always afford to hire, such as in-house lawyers and company secretaries.

India's small and mid-sized companies would need to be able to access more than \$800 billion in capital. Supportive schemes, such as leveraging an AA framework, could enable financial institutions to build digital lending solutions for MSMEs, with a focus on small-ticket loans, in conjunction with the open credit enablement network (OCEN) protocol. This could be further supported by the continuation of government credit guarantee schemes for MSMEs. Schemes such as the Emergency Credit Line Guarantee Scheme, the Credit Guarantee Fund Trust for Micro and Small Enterprises, and Pradhan Mantri MUDRA Yojana could underwrite risks for lenders.

In addition, policy makers could create state-specific, one-stop-shop portals for small and medium enterprises (SMEs) to make it easier for them to comply with all business processes, such as Singapore's GoBusiness platform that streamlines over 300 government-to-business services.³⁰

Small businesses can integrate with Open Network for Digital Commerce (ONDC) or Government e-Marketplace (GeM) to access new markets and suppliers, and leverage digital solutions to enhance customer experience and optimise operations.³¹ Such supportive measures could scale up the GDP contribution of SMEs from 30 percent to match the global 50 percent.³² This could raise the number of mid-sized firms to challenge larger companies, especially in manufacturing, trade, construction, and real estate, which contributed around 40 percent to India's GDP in 2020 and whose SME segments have a high potential to scale up.³³

²⁴ Global Innovation Index assesses the strength of innovation ecosystems using indicators from institutions, human capital and research, infrastructure, market sophistication, business sophistication, knowledge and technology outputs, as well as creative outputs.

²⁵ The cluster's launch is being discussed with relevant stakeholders and is subject to approvals.

²⁶ Mid-sized firms are companies with revenue of \$40 million to \$500 million.

²⁷ Large firms are companies with over \$500 million in revenue. Empirically, large firms in India are 11 times more productive than the overall economy. They are also more than twice as productive as mid-sized firms and their profitability is 1.2 times greater.

²⁸ Peer emerging economies include China, Malaysia, Thailand, South Korea, and Vietnam.

²⁹ India's turning point: An economic agenda to spur growth and jobs, August, 26 2020.

³⁰ "GoBusiness – A central touchpoint for government-to-business e-services," Singapore Government Portal, August 2022.

³¹ For more, see the Open Network for Digital Commerce (ONDC) website.

³² "MSMEs day 2020," World Trade Organization.

³³ "MSMEs to contribute 50% to India's GDP, provide cr jobs in 5 years: Gadkari," The Economic Times, Updated on July 5, 2019.

Empowering India's next generation of talent for a meaningful livelihood

India's growing workforce will need to have the relevant skills and talent for success in sectors that offer the greatest scope for employment and growth. Three key levers could be employed:

First, this could be achieved by bolstering foundational skills to match the requirements of high-potential sectors, such as banking, healthcare, IT services, and manufacturing. Central government, as well as state governments, could partner with the private sector to provide educational training, for example, on financial and basic technology literacy.

Second, large-scale skilling and reskilling the existing workforce would be vital – training academies could set up by industry bodies that provide standard certification programmes across job roles, for example, NASSCOM's FutureSkills programme that aims to upskill 400,000 IT employees in B2B companies by 2025.³⁴

Finally, creating the future workforce would require modernised teaching methods, with a greater focus on practical apprenticeship. This could happen, for example, by using simulations, gamified modules, or live projects. Certification programs could be set up in high-growth topics, such as green manufacturing.

Shaping India into the preferred destination for global capital

India's push to unlock productivity and growth across sectors creates the need and opportunity for more foreign investment. Companies in the country depend heavily on bank lending, sourcing 68 percent of their money from banks compared to 31 percent for companies in the United States, for example.³⁵

India could become a magnet for global capital and deeper capital markets are one way to achieve this. Companies could attract international investors with a broader set of products and services, such as high-rated ESG securities. Unicorns, start-ups, and unlisted companies could attract foreign currency funds through trading or initial public offers with securities listed on the GIFT/IFSC exchange. Additionally, industry bodies could accelerate market access for private companies by launching digital platforms (for example, Axial and iSTOX) that connect companies with institutional and accredited individual investors.

Policy makers, meanwhile, could support India's entry into the Global Bond Index, potentially unlocking foreign portfolio investment inflows of \$40 billion.³⁶ They could also enhance efforts to make the business environment more investor friendly with a one-stop shop for clearances and approvals, similar to the efforts made by the Gujarat, Uttar Pradesh, and Karnataka states. At the same time, e-governance for businesses could be set up at the state level and files and records further digitised.

These initiatives could allow India to double its market capitalisation to GDP ratio, raise foreign investment stock to 70 percent of its GDP, and grow India's share of private investments across the Asia-Pacific region from the current 20 percent to around 30 to 35 percent.³⁷

³⁴ Future skilling for the digital economy, NASSCOM, February 2020.

³⁵ Structural changes in banking after the crisis, Bank of International Settlements, January 24, 2018.

³⁶ "India: Primed for bond index debut," Morgan Stanley, October 13, 2021.

³⁷ UNCTAD (Foreign Direct Investment Stock), IMF (Portfolio Liabilities Stock) – used for calculating FDI and FPI stock respectively (for 2020).

Short-term actions

As India builds momentum towards its aspirations, the country could consider the following measures to action these pivotal changes in the next year:

- **Strengthen the digital landscape across high-potential sectors** with pilot initiatives such as, in healthcare, establishing “hospital of the future” with digital patient-flow management systems and centralised medical resource management platforms and in agriculture, piloting Agri Stack projects in key districts, focusing on the digitisation of farm-level data and financial services.
 - **Catalyse innovation across India and accelerate entrepreneurship and breakthrough ideas by** rolling-out three innovation clusters across clean energy, smart mobility and water adequacy and expanding the Innovation Quotient Diagnostic to more companies to set innovation targets and monitor annual progress.
 - **Mobilise efforts to design state-level priorities and actions** in line with the India’s Century aspiration and their respective starting point. This could start with larger states such as Uttar Pradesh, Bihar, Madhya Pradesh and West Bengal that will have a large bearing on the ability to achieve the India’s Century aspiration.
 - **Accelerate the adoption of existing digital capabilities** by encouraging a 90 percent adoption rate of the GeM portal by FICCI member companies and complementing this by achieving a 100 percent registration rate
- on the Ayushman Bharat Digital Mission Healthcare Professionals Registry. Business accelerator programmes could be created to onboard MSMEs onto digital public platforms such as ONDC, with at least 100 member companies across the e-commerce, retail, logistics, and payments sectors.
- **Roll out structured training programmes and ventures** in collaboration with industry bodies and education technology (edtech) companies to provide an additional three to four million people with skills required for employment in high-demand sectors. Industry-wide taxonomy needs to be aligned on new concepts, such as green manufacturing and certification programmes that are recognised and promoted by the Apex industry alliances (for example, the Healthcare Sector Skill Council under the National Skill Development Corporation).
 - **Drive water sustainability with industry campaigns for net-zero consumption commitments and adoption of water efficient practices such as ZLD technology, industrial water efficiency, water sustainability audits and certification programmes.**

India’s aspirations for 2047 could be realised through inspired leadership from India Inc., careful management, and collective action (with regular check-ins) at an unprecedented scale to ensure that India adapts to the world’s rapidly changing realities.

