

**Think Digital, Think India!**

Resilience  
to

**Resurgence**

**Technology Sector in India 2022**



Plot 7 to 10, Sector 126, Noida 201303, India

**Phone:** 91-120-4990111

**Email:** [research@nasscom.in](mailto:research@nasscom.in)

First Print: February 2022

**Published by NASSCOM**

NASSCOM is the industry association for the technology sector in India. A not-for-profit organization funded by the industry, its objective is to build a growth led and sustainable technology and business services sector in the country with over 3,000 members. NASSCOM Insights is the in-house research and analytics arm of NASSCOM generating insights and driving thought leadership for today's business leaders and entrepreneurs to strengthen India's position as a hub for digital technologies and innovation.

## Disclaimer

The information contained herein has been obtained from sources believed to be reliable. NASSCOM and its advisors & service providers disclaims all warranties as to the accuracy, completeness or adequacy of such information. NASSCOM and its advisors & service providers shall have no liability for errors, omissions or inadequacies in the information contained herein, or for interpretations thereof. The material or information is not intended to be relied upon as the sole basis for any decision which may affect any business. Before making any decision or taking any action that might affect anybody's personal finances or business, they should consult a qualified professional adviser.

Use or reference of companies/third parties in the report is merely for the purpose of exemplifying the trends in the industry and that no bias is intended towards any company. This report does not purport to represent the views of the companies mentioned in the report. Reference herein to any specific commercial product, process or service

by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favouring by NASSCOM or any agency thereof or its contractors or subcontractors.

The material in this publication is copyrighted. No part of this report can be reproduced either on paper or electronic media without permission in writing from NASSCOM. Request for permission to reproduce any part of the report may be sent to NASSCOM.

## Usage of Information

Forwarding/copy/using in publications without approval from NASSCOM will be considered as infringement of intellectual property rights.

# Foreword

The year 2020 tested human resilience, and 2021, our ability to revive and resurge – with more trust, more technology, and chart-bursting innovation!

Hybrid operating models, customer centricity, personalized employee engagement, digital skilling, and sustainable business models will accelerate and drive strategic government, corporate, and community decisions in 2022.

With the pandemic continuing in 2021, technology emerged as the panacea for all - helping public healthcare management, enabling business momentum, and ensuring productivity and engagement in the new hybrid work order. 2021 global technology spend (excl. hardware) stood at over \$1.7 Tn, and global technology sourcing deals grew a stunning 12-14% to touch \$240+ Bn, the highest growth ever.

Many other macro-events marked 2021, driving us to study the most impactful ones that are likely to drive global strategies for this Techade - global talent pool transformation, global supply chain replanning, global big tech regulation, ESG-led business models, formalization of circular economy, and tech4good. With billions and trillions of dollars in cost, competitiveness, and a sustainable future at stake, technology-led solutions will be key.

At home in India, the technology industry has made historic achievements in FY2022 - **>2X revenue growth from the pre-pandemic FY2019**, reaching \$227 Bn in total revenue. Most importantly, the **industry added its latest \$100 Bn in just 10 years**, while the first \$100 Bn took 30! The industry added 445,000 net new hires in FY2021 – highest ever – to cross the **total industry workforce of 5 Mn**. Persistent focus on customer centricity, domain-specific solutioning, go-to-market agility, digital-first talent pool, and a laser sharp focus on creating future-ready solutions have paved the market-defining growth.

For FY2023, growth projections remain positive, globally, and for India. IMF estimates a 4.4% global growth, outperforming the 3% growth in 2019. Indian CXO sentiment, as assessed in NASSCOM's Enterprise CXO Survey 2022, is net positive on overall growth, and bullish on technology spend. Even as enterprises continue to balance the twin priorities of employee safety and wellness and enterprise digital transformation, they plan to spend big on digital – 60% companies plan 6% higher technology spend in FY2022. R&D spending is back in focus, and over 75% CEOs have expressed confidence in achieving double-digit revenue growth. The sentiment is truly resilient and resurgent!

These testing times have accelerated the challenges too. As hybrid work models evolve, coherent policies and continuous communication will be required. The FY2023 budget announcements that impact the industry will need diverse expert voices to collaborate, in a trust-based environment, to bring out the best for the technology industry and the digital transformation enablement of our country.

Strategic Review 2022 reflects on technology sector's resilient growth, provides a glimpse of its long-term future, and most importantly, celebrates the resurgent human spirit. We hope you enjoy reading it, and we welcome your feedback and comments.

**Debjeni Ghosh**

President, NASSCOM

# Acknowledgements

The Technology Sector in India report is NASSCOM's annual flagship publication that analyses the performance of the industry, traces its continual evolution and highlights key trends that are influencing and driving the sector forward. The NASSCOM Insights team relies heavily on both primary and secondary research, internal and external research reports, and reaches out to stakeholders across the board – industry, government, research firms, etc. – for their inputs that add value to the report. We would like to thank all our stakeholders and for their invaluable contributions, without which this report would not have been possible.

We would like to thank NASSCOM member organisations, who provided relevant data and insights about various industry trends and developments. We acknowledge the inputs and insights from all our research partners and various government bodies.

We would also like to thank all the leaders who participated in our Annual CEO Survey 2022 and shared their views on the future of the technology sector.

A detailed list of Contributors is given in the Appendix.

# Contents

## 6

### Executive Summary

## 90

### Chapter #3

**NASSCOM TECHScope: 25  
High-Impact Digital Solutions  
to Watch Out for in 2022**

## 13

### Chapter #1

**The Year 2021: Resilience to Resurgence,  
in the Techade**

## 102

### Chapter #4

**2022-23 Annual Outlook**

## 24

### Chapter #2

**India Annual Technology Performance  
FY2022**

**26 India Technology Performance FY 2022**

**32 Themes that Defined FY2022**

- 33 The year digital & innovation went deep
- 43 Margin defense through operational excellence
- 47 Accelerated digital capability building
- 54 Platformisation play drives India tech adoption
- 60 Everything as a service becomes prominent
- 65 When tech start-ups started to scale-up fast
- 70 India as a digital talent nation
- 76 Leading a hybrid work models
- 82 The O+O shift in ecommerce
- 86 The tech value proposition evolution for this decade

## 117

### Appendix

- 118 Glossary
- 121 Contributors
- 122 Publications 2021-2022
- 129 Insights Team



# Executive Summary

“Being positive in a negative situation is not naive.  
It’s Leadership.”

**Ralph Marston**



# The Year 2021: Resilience to Resurgence, in the Techade

2021 saw governments across the world roll out stringent vaccination programs to stem the spread of the pandemic. Businesses continued to work in remote mode due to mobility restrictions and industries continued to feel the pressure of demand contraction, supply chain disruptions, semiconductor shortage, extreme weather conditions, and geopolitical tensions.

In this scenario, the IMF estimated global GDP for 2021 at 5.9% growth. However, this doesn't reflect regional variations, esp. of emerging nations, that struggled for access to both the vaccine and the funds to purchase/disburse these.

The need to keep businesses running even during the lockdown phases pushed enterprises to look at technology as a panacea; consumers also spent heavily on online platforms – gaming, digital content, social media and eCommerce. These factors pushed global technology spend (excl. hardware) to over \$1.7 Tn in 2021, at nearly 9% y-o-y growth, and is expected to reach \$1.8 Tn at 6.5% growth in 2022. The global sourcing market also witnessed significantly higher growth at 12-14% reaching \$238-243 Bn in 2021.

## Emerging Global Megatrends

NASSCOM's research suggests that there are six major global megatrends that will refocus policies, strategies, and investments at a global scale, over the next 5-8 years and beyond. These trends have been shaping up since before the pandemic and have been bolstered with a global awareness towards the collective potential impact on businesses, employees, and citizens:

1

### Global Talent Pool Transformation

57% of employees indicate strong interest in remote global opportunities



2

### Global Supply Chain Replanning

\$3-5 Tn potential trade opportunity flowing out of China by 2030



3

### Global Big Tech Regulation

>\$1 Bn in fines levied by several countries in 2021



4

### ESG-Led Business Models

\$35+ Tn global ESG asset under management in 2021, and rising



5

### Formalization of Circular Economy

\$4.5 Tn global market opportunity by 2030



6

### Tech4Good @Pace and Scale

\$12 Tn global market opportunity and 377 Mn new jobs by 2030



# Indian Technology Industry Overview – FY2022

While the global economy and multiple industries continued to grapple with the challenges thrown up by the extended pandemic, India's technology industry has seen big bang growth in FY2022. This was primarily because technology became the fulcrum which allowed businesses to not just keep the lights on, but also to accelerate their journey towards becoming future-ready, agile, and resilient.

FY2022 is expected to be a breakthrough year for India's technology industry – total industry revenue is set to reach ~\$227 billion in FY2022 (15.5% y-o-y growth). If the industry crossed \$100 bn. in FY2012, it has doubled this within 10 years.

## FY2022: Year of Milestones Achieved, Records Made and Broken

**7.4%**

### Leading India's Economic Recovery

- Relative share to India's GDP
- **51%** relative share in services exports

**5.1 Mn**

### Highest Ever Hiring

- Technology industry workforce
- **4,45,000** net new hires

**~25K**

### 3<sup>rd</sup> Largest Tech Start-up Hub in The World

- Number of tech start-ups
- **2,500+** new start-ups; **42** new unicorns

**138K**

### Increased Focus on Innovation

- Tech patents filed during 2015-2021
- ~ **10K** patents filed at the end of 2021 by top 5 Indian tech firms

**30-32%**

### Digital Revenue Acceleration

- Share of Digital revenue, growing at 25%
- **1.6 Mn** digital skilled employees, 32% share of employee base

**36%**

### Strengthening Diversity, Equity & Inclusion

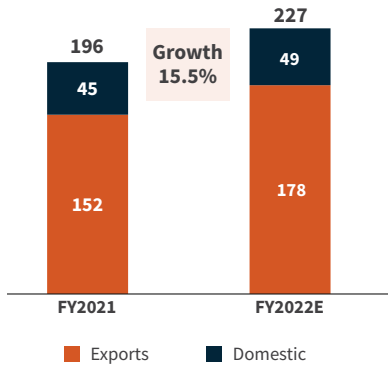
- Share of Women in India's tech workforce
- Talent from 150+ nationalities



An obsession with customer centricity, domain specific solutioning, agility to respond quickly to customer needs, a digital-first talent pool, and a laser sharp focus on creating future-ready solutions - have been the key pillars that enabled technology firms to respond proactively to emerging customer demand throughout the pandemic.

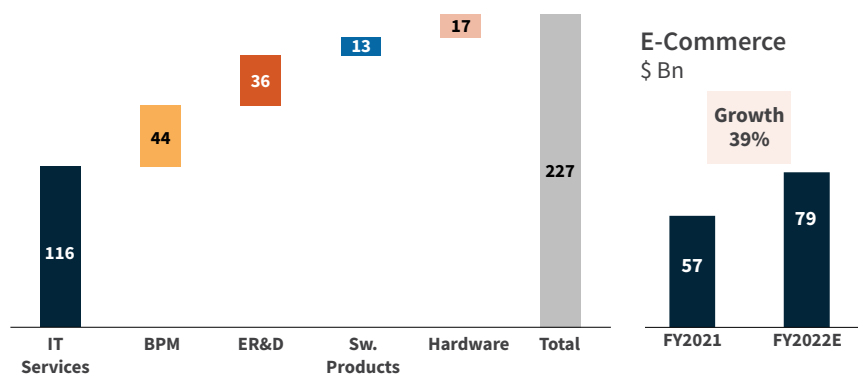
### India's Technology<sup>1</sup> Market Set to Cross \$227 Bn, a 15.5% Y-O-Y Growth

\$ Bn



### FY2022E- Segmented Breakup

\$ Bn



All segments of the industry are seeing high double-digit growth:

- **IT services:** ~17% growth; demand for infrastructure management and networking services in a distributed setting; cloud-based software testing services; consulting services around cloud migration and digital transformation
- **BPM:** 13.5% growth; this sector is building specialised capabilities in data monetization leveraging cloud-based AI & analytics; growth in platform-based services and automation

- **Software products:** Fastest growing segment at ~19%; Customer enterprises continued their investments in communication & collaboration, cybersecurity, content management solutions, etc.
- **ER&D:** Not only did this sector emerge out of a negative growth year (FY2021), but driven by pent-up demand, ER&D is likely to see ~17% revenue growth in FY2022, the most since FY2014
- **eCommerce:** Unsurprisingly, growth rate has been exponential during the pandemic period as businesses rapidly expanded their online presence, restrictions on mobility pushed online purchases. This segment is estimated to grow 39% over last year



<sup>1</sup> Includes IT services, BPM, ER&D, Sw. Products and Hardware

- **Hardware:** Domestic (India) hardware market is growing on the demand for remote networking infrastructure; education sector pushed PC sales as the industry continued in online mode

Another landmark is that the total industry workforce (direct employees) is most likely to cross the 5 million mark, a net addition of 445,000 over FY2021 – the highest ever. The industry hired freshers in bulk to meet the growing digital demand; today, 1 in 3 is a digitally skilled employee.

## Themes that Defined FY2022

1

**The year digital & innovation went deep**



6

**When tech start-ups started to scale-up fast**



2

**Margin defense through operational excellence**



7

**India as a digital talent nation**



3

**Accelerated digital capability building**



8

**Leading in hybrid work models**



4

**Platformisation play drives India tech adoption**



9

**The O+O shift in ecommerce**



5

**Everything as a service becomes prominent**



10

**The tech value proposition evolution for this decade**



# NASSCOM TECHScope

## 25 High-Impact Digital Solutions to Watch Out for in 2022

COVID-19 has accelerated the pace of digital transformation across most of India's end user industries, witnessed in the growing size of investments, more complex technology convergence use-cases, and the prioritization of enterprise-scale data and Cloud strategy. 72% of companies in a NASSCOM Enterprise CXO Survey 2022 indicated significantly increasing their tech investments in 2022. With rapid digitalization across the value chain, end user industries are primed to adopt holistic and high-end enterprise performance solutions in an evolutionary journey over the near to long-term, with the aim to contribute \$350-400 bn. to the \$1 tn. digital economy of India by 2025.

To further study, analyse, and support India's digital transformation imperatives, NASSCOM has initiated an assessment of the top technology-driven initiatives that

companies across 18 of India's core sectors should prioritize in the next 3, 5, and 10 years.

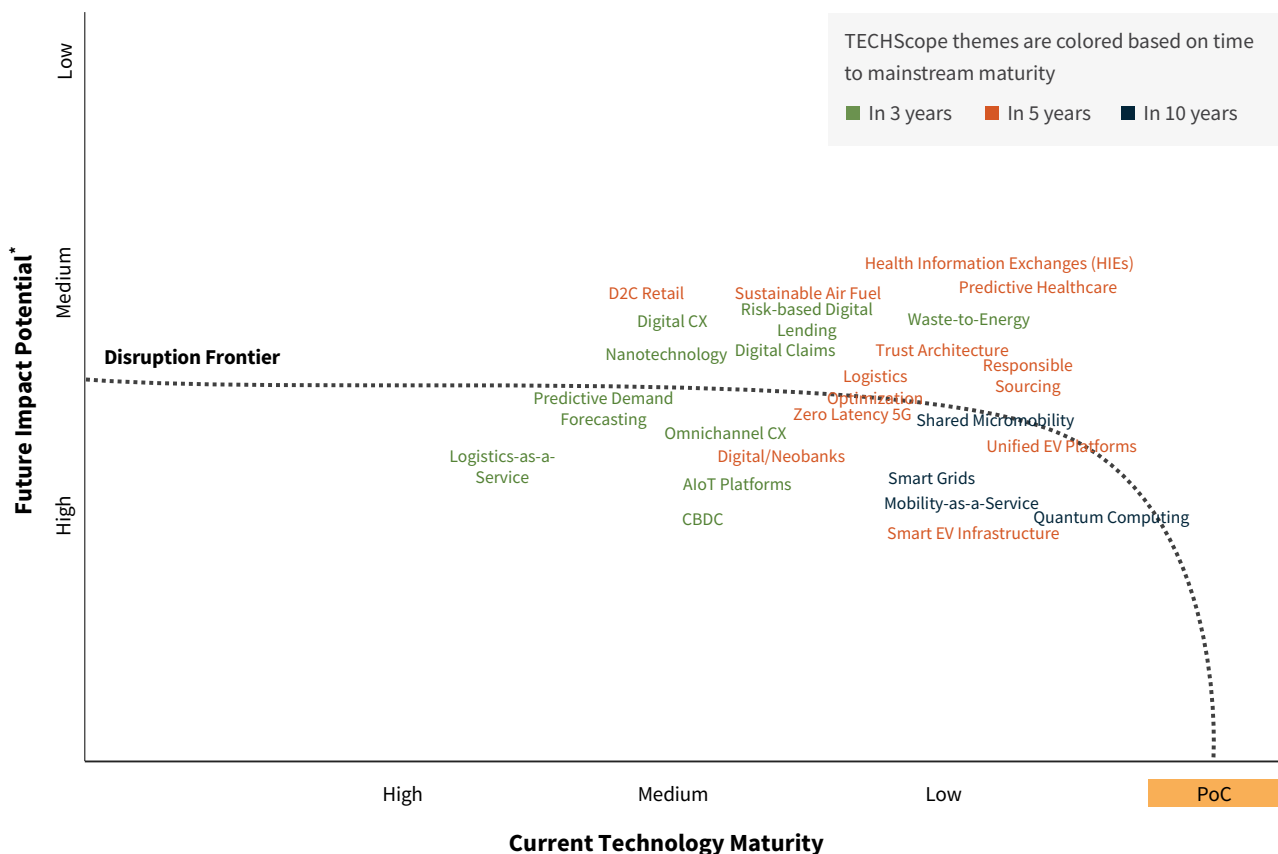
We have put this maturity model in place to enable the industry to be better prepared to take on future advancements.

TECHScope featured solutions for 2022 are important as they will deliver impactfully on bring more FDI, increased consumption, accelerated business growth above pre-pandemic levels, and deliver substantially towards India's digital economy maturity.

NASSCOM TECHScope offers a view of the 25 highest priority technology solutions that will invite large investments; these solutions will have a strong impact on the core industry, the value chain, and the overall Indian economy.

### Top 25 NASSCOM TECHScope Themes

2022 and Onwards



\*Future Impact Potential is a composite score calculated using weighted average of Potential Business Impact Score, Potential Ecosystem Readiness Score, and Potential Economic Impact Score

# 2022-23 Annual Outlook

As the COVID-19 pandemic continues to cast its shadow on the global economy IMF's Jan-2022 global GDP projection for 2022 is estimated at 4.4%. This sentiment is further reflected in global CXO sentiment that points towards a positive, but fairly muted outlook.

In this setting, enterprises are balancing the twin priorities of employee safety & wellness and enterprise digital transformation. According to the NASSCOM Enterprise CXO Survey 2022, 60% CXOs indicate a 6% higher tech spend in 2022 over 2021, with focus areas around customer service, supply chain and sales & marketing. End-user enterprises are emerging as technology job creators – about 30% of respondents intend to increase their technology team by over 15%.

## Emerging Global Megatrends

FY2023 growth estimates for the industry reflect the optimism of FY2022 with 70% technology CEOs indicating FY2023 tech spend to be in line with FY2022. R&D investments are expected to grow between 10% and 20% over last year for over one-third of the technology firms as they explore opportunities for innovation & build new products and services.

Four verticals – BFSI, Healthcare, Manufacturing, and Retail/eCommerce – are expected to be the primary consumers of technology, with solutions focused on leveraging AI, Analytics, Automation and Cloud.

The positive outlook of this sector is further reflected hiring plans for next year – 90% respondents intend to either increase or maintain their hiring in line with FY2022.

FY2023 growth opportunities are likely to be driven by demand for Infrastructure and managed services, consulting services; Platform BPM, data management & RPA; ER&D will see deeper penetration of engineering cloud as ER&D firms up their Softwarization component. The software product segment will see greater offtake of productivity software, cybersecurity solutions – as enterprises further saasify their tech portfolio. Finally, eCommerce industry is set to get further disrupted by the fast-growing interest around metaverse, driven by the need for more personalised experiences.





# Chapter #1

## The Year 2021: Resilience to Resurgence, in the Techade





# NASSCOM®



Plot 7 to 10, Sector 126, Noida – 201303, India

Phone: +91-120-4990111

Email: [research@nasscom.in](mailto:research@nasscom.in)



[www.nasscom.in](http://www.nasscom.in)  
[community.nasscom.in](http://community.nasscom.in)