INDIAN TECHNOLOGY INDUSTRY: DRIVING GLOBAL BUSINESS CONTINUITY 
AND VALUE CREATION AMIDST COVID-19

Updated as on April 30, 2020

Abstract

The COVID-19 pandemic is the defining global health crisis of our time and the greatest global humanitarian challenge the world has faced since World War II. It has entailed business disruption like never before and affected hundreds of thousands of people across several countries globally. In fact, it is becoming increasingly clear that our era will witness a dramatic restructuring of our traditional economic and business order as we seek to find the “next normal.”

The Indian technology industry has demonstrated remarkable agility and resilience in responding to the crises; ensuring business continuity for all global clients while prioritizing safety of its professionals. This document summarizes various efforts taken by the Industry, the overwhelming feedback across global clients, and the critical support provided by the Government. We also discuss the critical role of tech workers; the “essential services” they are providing in combating the current COVID-19 pandemic, akin to healthcare workers; and company examples of leveraging technology expertise to help alleviate the crisis impact.

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1. IMPORTANCE OF TECH WORKERS IN A COVID-19 WORLD

As the world grapples with the impact of COVID-19, the role of technology becomes even more critical in these unprecedented times. Technology products and services are indispensable to supporting health care providers; allowing employees to work remotely; securing and servicing networks, data centers, and cloud services; enabling e-commerce and the delivery of food, medicine, and other necessities; keeping students engaged and learning; manufacturing technology products and components from microprocessors to supercomputers; and otherwise enabling governments to respond to this global health crisis.

While doctors, nurses and healthcare workers are at the forefront fighting the virus; it is worth noting the indispensable role of technology workers play to combat the COVID-19 crisis in various ways. These include developing products to combat the virus, tracking and predicting its spread, and protecting hospitals from cyberattacks. Technology workers have a history of helping the medical industry track and treat viruses. COVID-19 is witnessing a rise in digital epidemiology tools, chatbot helpers, EHR guidance tools and rapid-response test kits. Across countries, technology is helping track the outbreak, clean hospitals, deliver supplies and develop vaccines. The Aarogya Setu app by the Ministry of IT, Government of India alerts users if they have come in contact with a Covid-19 positive patient. In the U.S., Apple and Google are jointly working on technology to help trace and track the spread of the COVID-19 coronavirus. In Singapore, where open government data has enabled detailed mapping of the outbreak, robots are delivering meals and medication to patients. In China, robots are disinfecting hospitals, drones are delivering medical
supplies and AI is being used to sort scans to spot the infection. In South Korea, authorities are tracking
potential carriers using cell phone and satellite technology.

Each of these examples have dedicated teams of technology professionals at the background – coding,
developing solutions, building the customer interface and ensuring their scalability. NASSCOM\textsuperscript{1} member companies help provide such mission-critical services. Our members provide essential services to hospitals,
pharmaceutical and biotech companies, state- and local government agencies, financial institutions,
technology and communications firms, grocers, manufacturers, and thousands of other businesses across
80+ countries worldwide.

2. \textbf{EMPLOYEE SAFETY AND BUSINESS CONTINUITY: TWIN DRIVERS FOR THE INDUSTRY}

India based technology multi-national corporations are committed to maintaining safety for its employees
and business continuity for global clients. These companies have been working on enabling work from
home since the first week of March, 2020 – three weeks before India went into lockdown; and have been
shifting tech assets and configuring internal networks to make this possible. We are deploying technology
solutions and online collaboration tools for business interactions, client meetings and are also taking
measures to enable interconnecting corporate VPN to home networks with support from the Indian
Government. Today, \textasciitilde{} 90-95\% of the 4.36 million Indian technology workforce have successfully
transitioned to a work-from-home model, a remarkable achievement making it possibly the largest work
from home scale project anywhere in the world.

As an illustrative example, Wipro executed business continuity procedures (BCP) for key clients within
seven hours across four cities: Hyderabad, Bangalore, Chennai and Mumbai. In 12 hours, they made sure
Wipro had enabled complete work from home across all their locations. All along, they kept their clients
posted -- twice every day -- to reinforce their commitment and assure them that they do not fail to meet
their promises. Their devices were updated, security controls checked, and ports hardened before they were
moved. Remote management was in place once the users were home and logged in to confirm that the
network and applications were working smoothly. Once the movement was completed, the team sent out
individual mails to 170+ client managers, assuring them of business continuity.

ITC Infotech developed a “COVID-19 BCP Cockpit” to manage business continuity and ensure
productivity. It provides company leaders and their central operations teams with a dashboard for real-time
and integrated visibility into IT operations across various metrics and KPIs. ITC Infotech is leveraging this
solution to manage its business operations with real-time visibility into customer health, employee
productivity, resource allocation, services and support, and delivery status. This was initiated as 99\% of
ITC Infotech’s workforce is enabled to work from home from Day 1 of lockdown in India on 23 March.
These are just two of the several thousands of similar examples across the Indian tech industry.

\textsuperscript{1} NASSCOM is a global trade association with over 2,900 members, including virtually all the major global technology companies. Our members
provide vital technology services to enterprises across 80+ countries worldwide, helping them innovate, compete, and grow.
The industry is doing all it can to be there for those employees and their families that need our support the most, while prioritizing the safety and wellbeing of our entire global workforce. For several of our industry professionals presently deputed on client locations worldwide, we are facilitating their continued stay at their present location during the period of the lockdown, and enabling travel back to India once the restrictions are lifted. Through concerted efforts with the Government of India, various Indian Missions worldwide, as well as foreign governments in our key export markets – we are doing everything possible to ensure safety of each employee and their families.

Across the globe, clients of the Indian tech industry have appreciated our agility and adaptability in the present scenario. The resilience of Indian technology companies; across industry segments including IT services, engineering R&D, BPM, has drawn praise. Whether it is processing global payrolls, managing the massive surge in airline cancellations and customer queries, building and deploying COVID-19 priority applications, designing and engineering complex technology products across industries, managing global IT infrastructure of clients, or many other mission critical services, the needs of companies worldwide have been serviced seamlessly. Indian IT companies are constantly reviewing the evolving situation and activating sustainable measures to ensure continuity of all client operations and deliverables.

In a recent survey conducted by Feedback Insights covering global clients of the Indian tech services companies, 95% clients indicated they were happy about how effectively their service providers have responded to the current crisis to ensure business continuity and minimal service disruption.
3. **INDIAN TECH INDUSTRY SECURING THE GLOBAL CYBER SPACE**

Cyber Security is invariably taking a central role in the current and changed context of new-age technology adoption to enable WFH and ensure business continuity. Indian tech companies have created special capabilities to support at-scale work-from-home model. As more and more workforce is adopting digital technologies to do their work, it has increased the threat surface and hence Cyber security has become another key priority. This demands sophisticated solutions to quickly enable a secured WFH environment.

Indian security services industry has been serving large pool of customers across the globe for many decades. With deep capabilities on MSS, cloud & infrastructure, MDR, VAPT, IAM and consulting services, Indian companies are well equipped to serve the globe in the given changed situation.

Cyber GCCs present a distinct support to their global organizations with commercial, competitive and abundant talent pool. Over the years of support, it has become very clear that Cyber GCCs are continuously adapting to changed technology dynamics. Thus, in the given situation GCCs are prepared to ensure business continuity.

Indian product industry has already marked its footprint in the global market with their in-depth capabilities in respective domain, with the strong customer support. One-third of the product companies are leveraging emerging technology stack, such as AI/ML, blockchain, quantum in the core offerings. As 80% of product companies are cloud-ready, they have strategic advantage of supporting WFH and many of them are serving global and domestic customers. The Indian security companies are also offering secure BYOD solutions with malware protection, cloud sand-boxing, DLP, protection from shadow-IT and zero-day protection capabilities.

Government agencies are providing re-assurance by issuing multiple advisories on WFH security, for example, recent guidelines issued by Department of Telecommunication (DoT) on use of static and dynamic IP. Additionally, CERT-IN is issuing regular advisories on emerging threats to the country across sectors. For example, recent advisory on web-conference security, securing enterprise Virtual Private Network (VPN) and securing mobile devices and application etc.

4. **LEVERAGING OUR TECHNOLOGY EXPERTISE TO COMBAT THE COVID-19 IMPACT**

The Indian tech industry are responsible global citizens, with significant commitment to the communities in which we live and work. Our innovation prowess is a key strength, enabling the industry to deliver disruptive solutions and technology across domains. Amidst the COVID-19 crisis, our companies are deploying the best of their technology innovations to support schools, students, families, and communities across the world to tackle several economic, social, and humanitarian challenges.

Various companies are helping governments as well as drug developers identify new solutions to combat the pandemic, create simulations on how the virus spreads, and build digital tools for clinical trials. Not
only have these companies contributed as technology partners, they have also deployed software engineers, data scientists and medical experts to find ways to stop the spread of the pandemic.

TCS Innovation Labs in Hyderabad, India is using AI to find new molecules to target the COVID-19 virus. Persistent Systems is helping Biocomplexity Institute, a research organization specializing in bioinformatics at the University of Virginia, to identify patterns that can help predict the spread of the virus. Cognizant teams from around the world are doing critical behind-the-scenes work to support the frontline healthcare workers and life sciences companies as they race to save lives from COVID-19. Cognizant’s 1,000+ professionals across 11 countries provide application development, support and maintenance for a global medical device giant approved to provide coronavirus tests using molecular technology, valued for its high degree of accuracy. Cognizant is working with its U.S. clients to improve the supply chain in order to make ventilators and other medical devices more available and manage clinical data for drug trials.

Tech Mahindra MAKER’S LAB is leveraging their tech expertise to create and compare the protein structures of the Coronavirus vis-à-vis other viruses. Tech Mahindra has designed COVID specific apps and solutions for their U.S. clients, e.g., COVID Patient Tracking App helps to track persons currently in quarantine; register as a healthcare worker; self-assess in case of symptoms, among others. The COVID Screening App repurposes image analysis and thermal scanning AI Modules to screen COVID patients. The Computational Drug Discovery solution is a Machine Learning based solution that helps to find potential molecules from approved list of drugs which can cure COVID-19. The COVID ChatBot is used for information dissemination on COVID-19. QuEST is supporting medical device OEMs to hasten the supply chain operations during Covid-19, building software in ventilator development programs, development and sustenance activities of medical devices relevant in emergency care, e.g., patient monitor, imaging systems etc. QuEST has created the AI based technology module using conventional chest X-Ray image to screen Pneumonia associated with Covid-19. This is an accelerator for the traditional Imaging OEM’s, to integrate Covid-19 screening solution into their existing Radiology Imaging based platforms.

A key challenge of the COVID-19 induced lockdowns is school and university closures. UNESCO estimates that 1.37 billion children risk having their education interrupted. In the U.S., TCS has made their proprietary distance learning software platform available for free to educational institutions. The TCS iON Digital Glass Room is a mobile and web education platform for schools and colleges, which empowers educators to engage with students in real time by sharing lessons, videos, worksheets, assignments, and assessments. This is done using interactive methods like polls, debates, quizzes, surveys, and many more tools. As an add-on, the platform also provides an embedded live classroom, which simulates live classroom teaching. TCS is also working with their STEM education partners in the United States to ensure that vital programs like GoIT and Ignite My Future are available to teachers, students and parents digitally, to keep the education cycle going during school closures related to COVID-19.

Infosys Foundation USA is providing free access to their Pathfinders Online Institute to any teacher, parent or student who seeks innovative computer science or maker education lessons at home. This platform features a variety of educational activities and resources from multiple providers and plans to host livestreamed lessons, such as virtual family code nights, to support a dynamic homeschooling experience.
Infosys is part of the Rhode Island Business Advisory for opening up businesses post COVID-19. The company is developing a Salesforce enabled Health Cloud Community Portal linked mobile contact tracing app built on the “Location Based Services Platform” IP which uses geo fencing and chatbots. The platform is expected to be live by May 8th 2020 when businesses open in Rhode Island. Once this is implemented in Rhode Island; it will be rolled out to other States as well. Infosys is also working on a reskilling initiative for Connecticut where they help people who lost jobs in the state to reskill and match them to the companies which are hiring. Currently, this is being centrally run from the Connecticut Governor’s office to help the State workforce.

Wipro has assisted a large North American based carrier client to reduce their call waiting by 64% in just 3 days. The carrier was facing a massive upsurge in call volumes and three of their offices in Manila had shut down due to COVID-19; their customers had to wait for 2-3 hours just to get through to a representative. Wipro team identified, trained and re-deployed 100+ professionals in just 24 hours; to ensure the client’s business disruption is timely managed.

For people living in hot spots of the pandemic, a large payment processor in the U.S. found it necessary to provide its customers with access to credit to purchase essentials like groceries or prescriptions, without worrying about past payment history. TCS developed and implemented an overnight solution for this customer that enabled seamless transactions and provided options to defer payments or waive late fees for customers in financial constraints.

Hexaware has launched specific services to help National/ State/ Local Governments across countries to strengthen their response to Covid-19. The “Single pane of Glass: Online Command centre” coordinates COVID-19 responses with visual data dashboards across cities, states or across the entire country. Hexaware provides multi-platform solutions to interact and engage with citizens and volunteers, and provide them real time policy and response updates.

Freshworks Inc. is providing solutions to help businesses, especially small and medium enterprises ensure business continuity via free and unlimited access to their customer engagement tools, Freshchat and Freshcaller, for the next 6 months. These cloud based solutions allow enterprises to substitute in-person meetings with digital channels and ensure sales and support online. This is being offered to all global small enterprises with 50 or less employees, irrespective of their location city/ country.

Infosys assisted the UK NHS onboard retired doctors and nurses to help fight the ongoing pandemic. The COVID-19 Rapid Response Service was developed to identify solutions supporting NHS Trusts’ workforce requirements; and has helped in recruiting for NHS Nightingale hospitals in London and Manchester. The platform, which includes vital components such as registration, document checks and compliance, was designed and deployed in just 3 days. It enables any healthcare worker with professional registration or otherwise, and with appropriate prior experience to be placed at any NHS Trust, as quickly as in 24 hours.

Infosys BPM, in association with NASSCOM, is working with the Government of Karnataka (a state in India), to facilitate outreach to people in the state, returning from overseas travel, about self-quarantining
practices and testing facilities. Infosys Foundation is partnering with the state government in Karnataka to help set up a medical facility to address the healthcare needs of citizens affected by the coronavirus. Together with NASSCOM, Infosys developed a mobile app, Sahaaya Setuve, for the local municipal body Bangalore, India. This is a one-stop platform currently being used by citizens, NGOs and volunteers in the fight against COVID-19. Witnessing the success in Bangalore, replications across India are underway and Government of India has decided to replicate the mobile app in at least 50 cities before 30 April 2020.

Post the lockdown in India, Tech Mahindra partnered with Delhi Police to design an Online Movement Pass (COMPASS) solution. The “e-Curfew Pass /Movement Pass” can be applied and downloaded online within ~30-60 minutes, and avoids any manual paperwork and movement. The system is integrated with the Delhi Police dashboard so that District DCPs can have a real time view of pending passes and take necessary action.

ITC Infotech’s COVID-19 Rapid Assist Program helps companies scale up their service desk teams esp. with work from home being a norm for most employees and the consequent rise in IT support needed. The company has also developed a “Fight Karo Na” app providing a comprehensive repository of guidelines as employees work remotely, and also includes useful external sources of information on COVID-19. ITC Infotech is offering its “Fight Karo Na” app to its client companies at no cost, to help them tide through the present crisis.

5. TECH WORKERS ARE ESSENTIAL SERVICES

Tech workers support key IT infrastructure, manage data and global processes for some of the most critical sectors of economies worldwide -- including healthcare, banking, ecommerce, supply chains & logistics, telecom, and the internet, among others --which are essential to mitigating the COVID-19 crisis. Countries need access to those working in health care sector as well as those essential technology workers who are keeping critical infrastructure operating, ensuring that hospitals and first responders have the IT systems they need, building and maintaining the systems to help children need to learn remotely, helping industries to remain open and operating, and playing key roles in efforts to develop treatments and a cure for this disease -- to name but just a few vital services.

To manage these the most critical and sensitive processes, a small percentage of our mission critical staff needs to come into their offices. We have worked with the Indian Government to ensure this is classified as “essential service”; and is exempt from the Indian lockdown. The industry is deeply conscious of the risk to some of our employees’ health that this brings and are taking every reasonable precaution: from recommissioning facilities, more rigorous cleaning routines, to implementing social distancing, the best practices and maintaining readiness to evacuate, we are committed to making our workspaces safe. This ensures that global clients of the Indian Technology Industry will face no disruption for critical enterprises, and it takes care of our most precious resource: the people in our industry. Further, both global and India based tech multinational companies (MNC’s) will be able to seamlessly deliver any mission critical mandate from India.
NASSCOM is a signatory to the global business community call by the Information Technology Industry Council (ITI) to policymakers worldwide to adopt clear and consistent guidance on including technology workers as essential services during the COVID-19 pandemic. Ensuring that employees responsible for providing essential services can continue to work during this time is vital to the companies and governments we serve. However, inconsistent guidance from different implementing jurisdictions could jeopardize their ability to provide products and services that people need during this challenging time, especially in the face of government lockdowns, shelter-in-place orders, or other health-based restrictions on personal movement. Along with 25+ associations representing the tech, communications, and business communities from around the world, the Indian tech industry strongly urges for consistent policy norms.

This is also in alignment with recent guidance published by the U.S. Department of Homeland Security’s Cybersecurity and Infrastructure Security Agency (CISA) that designates key categories of Information and Communication Technology (ICT) workers as essential services. In introducing the guidance, CISA stated: “Functioning critical infrastructure is imperative during the response to the COVID-19 emergency for both public health and safety as well as community well-being. Certain critical infrastructure industries have a special responsibility in these times to continue operations.”

6. GOVERNMENT-INDUSTRY COLLABORATION TO MAINTAIN INDIA’S LEAD ROLE IN THE GLOBAL TECH SERVICES INDUSTRY

The support that the Indian Government is extending to the tech industry, including granting exceptions from the lockdown for key personnel delivering essential and mission-critical services to our clients, is going a long way in helping us be effective. All of this is strengthening our ability to respond constructively to new challenges that emerge as the COVID-19 situation evolves. Given below is the summary of some of the swift measures and relaxations introduced by Govt to provide necessary support to the tech industry.
1) **Enabling Work from home:** ITeS/BPMs companies with international voice and data operations need to comply with strict telecom conditions if the employees are to be allowed to do the voice/data work for international clients from home. On March 13, the Department of Telecommunications (DoT) quickly responded to industry’s requirements to ease Work from Home (WFH) conditions by easing the requirements on Other Service Providers (OSPs) around stiff security deposits, service provider provisioned VPN solution.² In addition, the department also removed the requirement of obtaining prior approval for enabling WFH. These timely relaxations were instrumental in enabling the ITeS/BPMs companies including the GCCs in maintaining business continuity. NASSCOM along with OSPAI organised multiple webinars for industry to configure their system to enable WFH. As the lockdown was extended, DoT on industry’s feedback, on April 15, 2020, further relaxed the requirements by allowing ease of configuring the corporate VPNs using dynamic IPs as an alternate to the earlier requirement of static IP.³

² DoT March 13, 2020. See: https://dot.gov.in/sites/default/files/Relaxation%20inT%26C%20of%20OSP%2013.3.20.PDF
2) **Easing Movement of IT personnel and IT assets:** The Govt came out with full support for units operating under the Software Technology Parks in India (STPI) and Special Economic Zones (SEZ) by taking suo moto measures including introducing online approvals process to enable movement of IT personnel and critical IT assets outside of STPI and SEZ premises to ensure health and safety of IT employees and business continuity of the IT operations.

3) **Classifying IT-ITeS operations as essential:** Recognising the critical role played by the tech industry, the Ministry of Electronics and Information Technology (MeitY) came in full support of the IT industry and issued relevant communications to other central and State government departments to classify IT/ITeS as essential services and allow movement of people including data center and ecommerce operations to ensure there is no disruption to the mission critical services.¹

4) **Relaxations in commencement of operations by SEZ units:** In view of the disruption caused by COVID-19, Ministry of Finance extended its support to IT sector by Introduction of an Ordinance on March 31, 2020.⁵ As a relief, applicability of section 10AA exemption under Income Tax Act has been extended till June 30, 2020 for units approved to set up operations in SEZ prior to March 31, 2020. This will remove hardships for the units which were unable to start operations in SEZ due to restriction on movement of people and goods other than essential services.

5) **Relaxation in compliance for Special Economic Zones (SEZs):** Department of Commerce, Ministry of Commerce and Industry provided relaxations in various compliances to be done by units / developers / co-developers of SEZs.⁶ Further, all extensions of Letter of Approvals (LoAs) and other compliances will be facilitated through electronic mode in a time-bound manner by the authorities

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6) Support from DGEP on movement of equipment’s from STPI units: The Directorate General of Export Promotion (DGEP) acted swiftly to industry requirements in the current crisis by clarifying to NASSCOM that there is no requirement of prior approval from Customs authorities for temporary removal laptops, computers, etc. from units in STPI. Instead, endorsement of certificate issued by STPI unit to its employees detailing the description of goods being taken out temporarily and its acknowledgement to AC/DC of Customs will suffice.

7) Rental waiver to small IT SMES: Given the hardship on the businesses due to Covid-19 pandemic, the MeitY has announced the waiver of rentals for the IT units/ Start-ups operating in 60 STPI units across the country for the period of four months. The move is expected to provide relief to 200 small and medium IT SMEs supporting 3000 jobs in the country.

8) Cross sectoral measures to provide operational flexibility and ensure business continuity. Highlights:
   a) Ministry of Finance recently introduced an Ordinance to bring into effect compliance relief measures for taxpayers that were announced by the Finance Minister on March 24, 2020.5
   b) Ministry of Corporate Affairs (MCA) allowed companies to conduct virtual Board meetings for approval of annual financial statements, Board reports etc.7 This relaxation is available till June 30, 2020. The relaxation provides the much-needed relief to companies, while safeguarding health of individuals and ensuring compliance with statutory provisions.

7. INDUSTRY-INDUSTRY COLLABORATION TO ENSURE BUSINESS CONTINUITY

Collaboration with the Telecom Service Providers: Telecom being the critical infrastructure for the tech industry, NASSCOM along with the leading telecom services providers such as Airtel and Reliance Jio

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collaborated together to ensure telecom service remain available for the tech industry and its employees. Joint webinars were conducted to also ensure seamless connectivity and availability of network /bandwidth for the employees working from home. Over 1,500 members got benefited from these sessions.

8. CONCLUSION

The next normal will look unlike any in the years preceding COVID-19, the pandemic that changed everything. Successful enterprises will need to be resilient to withstand short-term shocks, as well as agile enough to quickly adapt to evolving business demands and norms. So far, the Indian technology industry has demonstrated remarkable efficacy on both these counts. Going forward, concerted efforts of the industry and government will be pivotal to mitigate the human impact of the current crises; while simultaneously ensuring business continuity and minimizing risks.