Operational Resilience of the Indian IT-BPM Industry during the COVID-19 Pandemic – A Case Study

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ABSTRACT

The whole world witnessed the COVID-19 outbreak in the initial months of the year 2020, including India that announced a nationwide lockdown to break the virus transmission chain. Total lockdown imposed in India laid restrictions not only on how people commute but also functioning of all government, private and commercial establishments, except emergency and essential services. Travel and tourism, aviation, hospitality sectors and other industrial establishments incurred a heavy loss throughout this lockdown period while only a few Industries were able to continue their functioning without violating the laws of the land. However, Information Technology and Business Process Management (IT-BPM) is one such Industry, which could exhibit operational resiliency in the wake of COVID-19 by providing work from home option, which was indeed not a new concept for this technology industry. It played a major role in creating a virtual workplace that could continue its operations by enabling one to be at a safe and comfort zone of their homes. Work from home would not have been successful without employee co-operation, relaxation in government regulations, technology advancement, etc. Over 32,000 registered information technology (IT) firms operate in the country. 7.9% of India's Gross domestic product (GDP) is contributed by the IT and BPM industries and about 41 lakh professionals are employed. Transitioning from a conventional work model to work from home model was not a simple task as it involved a lot of challenges like Information security threat, work life imbalance, psychological disorder, etc associated with it. This paper examines the way how IT-BPM industry enabled the work from home model during initial days of pandemic. Further operational resilience, influencing aspects, financial status and latest industrial developments related to IT-BPM Industry have also been studied. A systematic SWOC analysis has been conducted to understand the strengths, weaknesses, opportunities and challenges to the IT-BPM industry during work from home model. Some recommendations are also made based on the SWOC analysis.

Keywords: IT-BPM, operational resilience, COVID-19, pandemic, work from home

1. INTRODUCTION :

Information Technology and Business Process Management (IT-BPM) Industry is one of the major industries in India, which stands as a largest employer among the private sector by employing more than 41 lakh professionals. India's Information Technology services can be traced back to as old as 1967 with the incorporation of TATA Consultancy Services. Export of IT services began in the year of 1970's when TCS partnered with Burroughs Corporation, a computer manufacturing company located in Detroit [1]. IT-BPM sector has increased its contribution to India's GDP from 1.2% in 1998 to 7.9% in 2020 [2]. The market size of the IT-BPM industry has grown-up from approx. 67 billion US dollars in 2008–09 to 191 billion US dollars in 2019–20 [3]. IT-BPM industry has seen lot of oscillations since last two decades. It could be the dotcom bubble burst in 2000 to Great recession in 2008, which had direct financial impact on Indian IT industry. There were plenty of adverse situations, IT-BPM industry had to go through but it could withstand all kinds of adverse situations and continued to be a pioneer in the race of growth. In the month of March 2020 Government of India announced a nationwide lockdown which restricted the movement of the entire population, thereby having a negative impact on the

traditional work pattern of employees across all the sectors. Lockdown situations forced IT companies to switch on to work from home model in order to survive. The degree of implementation of work from home prior to pandemic was comparatively less. But then was commonly accepted, as it ensured operational pliability and could deliver uninterrupted services to their clients to remain functional and overcome. It does not mean that all IT-BPM companies are running profitably as financial impact as it solely depends on the sector and type of client that a company holds.

2. OBJECTIVES :

This case study is conducted to understand the Preparedness, Sustainability secrets of Industry during this Pandemic situation. Primary objectives of the study are as follows -

- To study the transition of work model and challenges faced by IT-BPM Industry at the initial phase of the Pandemic.
- To know the role of technology and factors that helped the industry during Pandemic.
- To understand the impact of the pandemic on IT-BPM Industry's Financials.
- To study the Present and Post COVID-19 challenges they could face.
- To study the Positive and Negative impact of this worse situation on Personal and Social life of IT employees.
- To suggest the areas that can be improvised by better implementation of Operational Resilience.

3. METHODOLOGY :

Most of the information used in this case study are based on the Secondary data collected from various sources like Journals and Conference Proceedings, Company Websites, Internet Articles, Focus Group Discussions, Books and Analysis Framework - SWOC Analysis as per the industry analysis procedure [4].

4. IT-BPM INDUSTRY OVERVIEW :

IT-BPM Industry comprises of four sub sectors - IT Services, Business Process Management, Software Products, Engineering Research and Development. The key jobs along with a brief detail of each sub sector of IT-BPM Industry are discussed below [5].

4.1 IT Services:

Project Management, Software Development, Deployment, Maintenance, IT consulting, IT Service Management are part of the IT service subsector. In recent years the sector has grown to provide overall IT solutions, such as consulting, system integration, testing, IT infrastructure services. Banking, Financial services and Insurance (BFSI) industry is considered as the largest patron while Healthcare and Retail are the other key customers. Though major parts of IT services are exported to North America, there are also large customer bases in the Middle East, Europe and Latin America.

4.2 Business Process Management:

This subsector is engaged with overall management and improvement of business processes of enterprises. It follows a systematic approach for identification, designing, executing, documenting, measuring, monitoring, improvising and controlling of all kind of business process to attain the expected results in accordance with the strategic goals of the organization. Customer support-voice and non-voice, Financial & Accounting Management, Human Resource Administration, Knowledge Services, Management of Supply chain, etc. are some other areas that are handled by BPM subsector.

4.3 Software Products:

A subsector of the IT-BPM industry that offers services in the software product field is known as a Software Products subsector. Software products are made available to users in the form of either commercial or noncommercial product. The users are subjected to pay one time-licensing cost to use commercial software products under perpetual licensing model, whereas Subscription-based software usually known as Software as a Service (SaaS) will charge users on monthly or annual basis. Integration and Deployment of Software, Product Support, Quality Assurance and Testing are some responsibilities that comes under software products.

4.4 Engineering Research and Development:

Engineering Research and Development, a subsector of IT-BPM industry brings technology resources to processes. It involves product or service invention, optimization and enhancement of the product or asset outcomes. The largest contribution to the revenue base of the Engineering Research and Development subsectors comes from the Telecom, Semiconductor and automotive industries, as they are engineering research intensive industries. Some of the key responsibilities are Engineering Analysis, Hardware and Software, Development, Research and Development

5. OPERATIONAL RESILIENCE OF IT-BPM INDUSTRY :

5.1 What is Operational Resilience?

The ability of any organization to withstand or recover from the impact of any adverse situation and to remain in business by adapting to such a situation is called Operational Resilience [6]. During lockdown, the IT industry exhibited operational resilience by shifting its workforce from conventional work model to work from home or work from anywhere model. Almost 90% of the IT employees started operating from remote locations within a couple of weeks since then. It enabled them to be in the game even when the entire nation was under the shadow of lockdown.

5.2 Work from Home

Work from home can be defined as employees doing their work from home or any other preferred location than the work area for which they are paid by the employer [7]. Much before the announcement of lockdown, all the necessary technologies and solutions were readily available to cater the work from home (WFH) model. Pre-pandemic, there were mixed opinions among the companies about the adoption of work from home model due to the security challenges, client's requirement, preset mentality etc. Hence, only few companies were allowing a limited number of workforces to work from home. Pandemic only accelerated the adoption of work from home model. Transition to work from home was not a smooth sail as most of the companies were not prepared to move the entire workforce to operate from remote locations. Only few companies have adopted no-desktop policy, as for them transition to WFH was not a big challenge. However, most of the companies were deploying desktop computers to their employees and only limited senior employees had laptops. Arranging rented laptop was not an easy task as there was a scarcity of the laptops in the market due to increased demand. The case was same with availability of the new laptops. Companies had to deviate from their standard procurement policy as they had not much choice in terms of configuration and cost. Eventually, many companies had to let their employees take their desktops from office to home for work. Majority of the IT Service companies and Business Process Management companies were functioning in multiple shifts, thereby using the same desktop by multiple users in different shifts. This situation forced the companies to look for additional systems as they had to function with less than half of their strength due to the shortage of systems. Bring Your Own Device (BYOD) or use your own device was one of the solutions, which came to rescue when companies were facing challenges with the shortage of systems and were unable to deliver the available systems to outstation employees. BYOD enabled employees to use their personal laptop or desktop to carry out their official duty. Hardening and securing such personal devices was a real challenge for the IT department. Starting from allowing employees to use office desktop to enabling BYOD contributed its own share in making work from home model successful.

5.3 Virtual work environment

A virtual workplace is a work area independent of any physical location where management and employees use a virtual private network or internet to perform office work and use tools such as virtual conferencing, cloud-based collaboration tools for communication without being bound to any geographical boundaries [8]. Work from home model operates on virtual work environment technology. Their implementations vary depending on the business needs and the kind of project handled by the company. Banking, Insurance, Health-care related projects demand more secured work environment where card holder data, Protected Health information, personally identifiable data etc. are classified as sensitive information and needs to be protected.

6. INFLUENCING ASPECTS OF OPERATIONAL RESILIENCE :

There were many influencing factors such as Technology Adoption, Government Policies, employee

aspiration, Clients Approval etc., which played a vital role in achieving a successful work from home model thereby ensuring an Operational Resilience. Various influencing factors would be discussed in the trail mentioned sections.

6.1 Technology Adoption

Technology played an essential role thereby enabling to work from home. During the pandemic, Technology helped to keep day-to-day life moving without being affected by the virus and adhering to the regulations set by the government. High speed Internet connectivity over optical fiber and 4G enabled Wi-Fi hotspot ensured seamless connectivity to the IT employees who worked from home. Most of the companies had VPN capability built-in their edge devices, which helped them to provide VPN access to their workforce helping them to operate from home and get connected to the corporate network in order to access the office resources. Cloud based solutions such as Software as a service (SaaS), Infrastructure as a Service (IaaS), Desktop as a Service (DaaS), VPN as a Service (VPNaaS) removed dependency on corporate network. The ease of access and deployment reduced overhead cost and location independent accessibility made these cloud based solutions popular and inevitable.

Software as a service (SaaS)

In this model of software distribution, applications are hosted on cloud and available to the end customers on a monthly or yearly subscription basis. SaaS model reduces the burdens on individual companies to set up and maintain applications on their own workspace. High availability, scalability and cost effectiveness, etc are some of the advantages of SaaS model.

Identity Management Systems, Human Resource Management Systems, Emails Services, Customer Relationship Management, Financial Management tools etc are some of the common tools delivered via SaaS model. Some of the major SaaS providers present in the market are Microsoft, Adobe, Google and Intuit [9].

Infrastructure as a Service (IaaS)

To meet varying business needs, companies should be quick enough in expanding their IT infrastructure such as servers, storage spaces, network capabilities, etc. Infrastructure as a Service, A cloud-based solution that works on either subscription model or a pay-as-you-go model provides virtual infrastructure on a need basis without the hassle of any hardware procurement and deployments. This also gives flexibility to scale up and scale down the IT infrastructure based on business needs. Some of the major IaaS service providers are Google, Microsoft and Amazon Web Services [10].

Platform as a Service (PaaS)

A cloud based model where providers that delivers both hardware and software tools that are required for application development. This solution works on pay on a per-use basis and enables developers to have their development environment on the cloud [11]. Mobile application and cross-platform application developers find PaaS useful due to its flexibility and scalability. Some of the Plat form as a Service types available in the market are Public PaaS, Private PaaS, Hybrid PaaS, Communications PaaS, Mobile PaaS and Open PaaS. Major PaaS providers are Microsoft, Google, Amazon Web Services, IBM and Redhat.

Desktop as a Service (DaaS)

DaaS model provides Virtual Desktop Infrastructure (VDI) hosted in a third-party data center there by reducing the burden on companies to maintain their own hardware and licensing infrastructure to enable in-house VDI solution. The flexibility of this solution is end users can access fully loaded and secured virtual desktops from device of their choice and location. Since services are delivered over an internet, users are not bound to any physical location. Users are responsible for maintaining their individual virtual desktop, leaving the rest of the backend work such as patch management, security, availability, etc. to the service provider. Some of the major DaaS service providers are Microsoft (Windows Virtual Desktop), Amazon Web Services (AWS) Workspaces, Citrix Managed Services and VMWare Horizon Cloud [12].

VPN as a Service (VPNaaS)

Virtual Private Network is used to establish a secure channel over public Internet to communicate, access internal data without compromising security from remote destination network [13]. During

pandemic, there was a necessity to establish a secure channel between corporate office and the employees working from their home. Some of the IT companies could deploy in-house VPN solution to enable secure channel between their employees and office location. Whereas companies, which had no VPN product in place or those who were running out of VPN licenses or resources would have to embrace VPN as a service. In this cloud-based model IT companies could create an IPSec site-to-site tunnel to cloud based VPN as a Service network, and end users could gain access to their office resources by creating a remote access VPN link to the service provider's VPN concentrator. VPN as a service can also be used to access IaaS and PaaS deployments over a secure channel. VPNaaS reduces the cost toward in-house deployment and licensing. They are also flexible and reduces the security related risks.

6.2 Employee Aspiration

Work life balance is one of the important aspirations for most of the IT professionals [14]. This option helped the Employees to improve their work life balance [15]. The work life balance can be defined as the balance between the time spent at work and outside the work environment, which can be family responsibilities, relationships and hobbies. Work from home was considered to be a safe working environment during this pandemic due to the threat of virus contraction. The announcement of nationwide lockdown further reduced the chances of continuing with the conventional working model. As a result, employees welcomed the new work model and began to embrace the new normal. Depending on the nature of the job, employees could work on flexible hours or on specific shift times.

6.3 Clients Consent

Most IT companies have asked their clients to work-from-home waivers at the onset of the pandemic to ensure business continuity. While work from home acknowledgment is conflicting with contractual agreements and not appropriate, however with responsiveness to governance negotiation to work towards a change order to reduce risk, most clients have accepted for work from home model with additional clauses [16]. Information security is a main concern during work from home as it is highly impossible to give office ambience to meet the integrity, availability and confidentiality of the client's data. With the implementation of the right kind of security tool such as Virtual Private Network, Data Leakage Prevention, End Point Protection etc., these concerns can be addressed up to a certain extent. Security awareness training also plays a major role here by educating users to efficiently handle the security threats such as social engineering and phishing attacks. Keeping all these security and operational measures in mind, most of the clients have agreed towards offshore service providers and switched to work from home model.

6.4 Government Policies

In the wake of COVID-19, Government of India relaxed some of the stringent norms of Other service provider (OSP) guidelines such as 1 crore rupees bank guarantee, availing VPN services from approved VPN service providers etc., to facilitate work from home [17]. Timely relaxation of such OSP rules helped IT industry to get the necessary approvals from the client and initiate the work from home model before the announcement of nationwide lockdown.

7. FINANCIALS :

Across the world's economies, the growth of the IT industry in India is remarkable. In the last two decades, all the sub-sectors of this industry have made progress in profitability and driven the Indian economy's growth. Revenue from the IT & BPM industry were estimated at US $191 billion in Financial year 2020 at 7.7 percent year over year growth and is estimated to increase to US $350 billion by 2025 [18]. Fig. 1 below shows an exponential growth of India's IT industry's market size. Due to pandemic situation and global lockdown many of the industries such as aviation, travel and tourism, hospitality underwent financial crisis worldwide. As Indian IT industries heavily dependent on these industries it incurred a heavy loss. Meanwhile, many companies experienced digital transformation to overcome COVID-19 challenges and to be in the business. In fact, this created a demand for managed services, such as hosting, IT support, network management, customer care etc. According to International Data Corporation- A research firm, India's IT growth may slow down to 6.5% in 2020 due to COVID-19 situation [19].

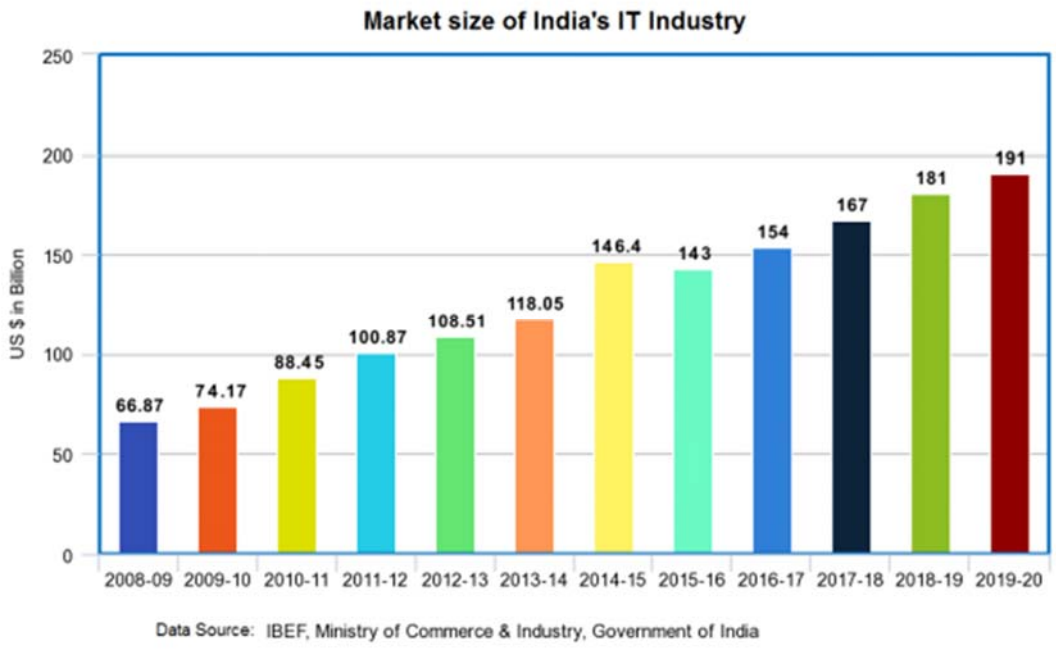

Fig 1: Market size of India's IT Industry [20].

Fig.2 shows the Indian IT industry's share in GDP. The Indian IT industry's contribution to India's GDP was about 7.7 percent in 2019–20 and this is expected to grow by 10 percent by 2025. The Table. 1 shows the percentage of contribution by IT industries to India's GDP since 1992.

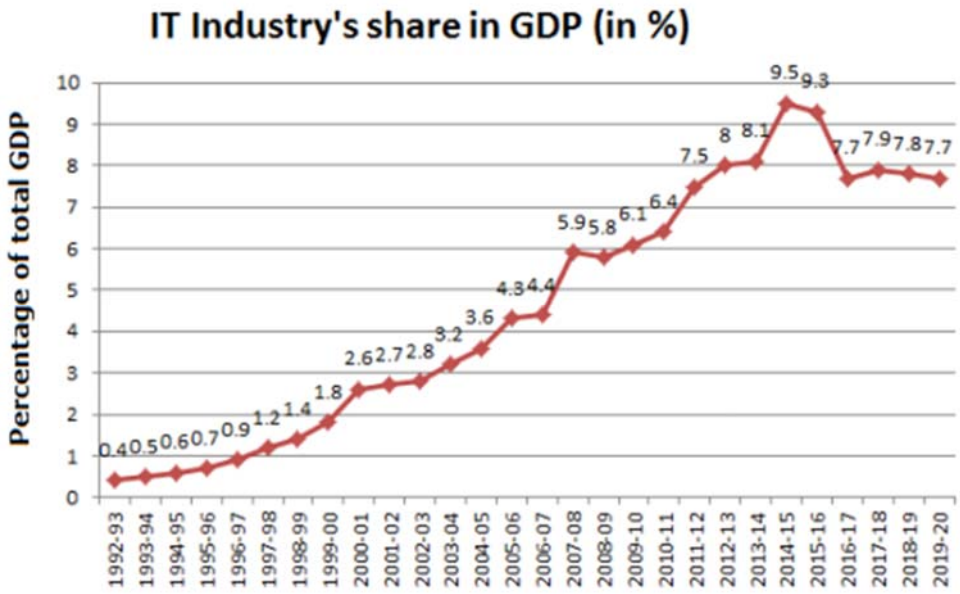

Fig 2: IT Industry's share in GDP [20].

Table 1: Percentage of GDP

Year	Percentage of Total GDP
1992-93	0.4
1993-94	0.5

1994-95	0.6
1995-96	0.7
1996-97	0.9
1997-98	1.2
1998-99	1.4
1999-00	1.8
2000-01	2.6
2001-02	2.7
2002-03	2.8
2003-04	3.2
2004-05	3.6
2005-06	4.3
2006-07	4.4
2007-08	5.9
2008-09	5.8
2009-10	6.1
2010-11	6.4
2011-12	7.5
2012-13	8
2013-14	8.1
2014-15	9.5
2015-16	9.3
2016-17	7.7
2017-18	7.9
2018-19	7.8
2019-20	7.7

HCL Technologies third quarter revenue in 2020–21 financial year increased by 6.4 percent to Rs 19,302 crore compared to Rs 18,135 crore in the comparable period last year. Wipro's year-on-year net profit increased by 20.8 percent to Rs 2,970 crore, while revenue increased by 1.3 percent to Rs 15,670 crore in the October-December quarter. On a pro forma basis, the company's revenue increased by 3.7%. For the quarter, Infosys's gross revenue increased by 12.3 percent to Rs 25.927 crore. On a steady path, it was rise 5.5 per cent. Revenue growth was 6.6 percent in constant monetary terms [21].

8. THE LATEST INDUSTRIAL DEVELOPMENTS :

8.1 Technology Trends:

In the day-to-day lives of human beings, COVID-19 has accelerated technology adoption, resulting in a huge demand for smart technology products and solutions. Some of the popular developments in industry are as follows, [22]

Online shopping and delivery

Online shopping was the preferred choice of the people to maintain the social distance and avoid being exposed to the virus. This in fact forced many businesses to go digital.

Contactless Digital payment

Just like online shopping digital payment gained popularity due to its nature of contact less payment

Remote working

Work from anywhere ensured operational resilience of the IT industry and many companies are

planning to continue this model.

Distance learning

The Education sector witnessed a new trend during this pandemic. Distance learning gained a wide popularity as educational institutions were closed down.

Tele-health

Tele health proved to be helpful and a better alternate during lockdown period when patients were not in a position to commute to clinics and hospitals.

Online Entertainment

Online entertainment gained wide popularity and industry witnessed a steep increase in traffic towards entertainment sites. Digital media and Over-the-top (OTT) platforms witnessed an increase in fresh subscriptions during the pandemic.

Robotic

In order to minimize human dependency during pandemic it is necessary to develop more sophisticated robots which can carry out tasks that would be lethal to human beings.

9. COVID-19 CHALLENGES AND IMPACTS ON IT EMPLOYEES :

COVID-19 not only had a negative effect on people's physical wellbeing, but also on psychological and social health. Most of the IT employees were facing the same challenges as rest of the society was going through such as fear of virus contraction, availability of the aid during any untoward situation, etc [23]. A paradigm shift that took place with workplace invited some additional challenges. At the same time change in work model witnessed both positive and negative impact on day to day life of IT Employees. Some of the employees felt it difficult to cop up with the office work from home as they were facing lot of personal problems such as lack of inspiration, negative trust factor, missing team spirit, lack of self-organized work culture, loneliness, domestic disturbances from family members, unavailability of the suitable work space at home etc. Unstable Internet connectivity, delayed IT support are examples of some of the technical challenges faced by the IT professionals [24]. High stress on job security was observed as employees were afraid of job loss or pay reduction due to the extreme absenteeism, poor performance, reduction of business operations, etc [25]. Some of the problems faced during pandemic conditions were, distorted work life balance, lack of social interactions, longer working hours from home, etc [26].

However, pandemic situation had certain positive impacts on IT employees like reduced travelling hassles, increased productivity and improved work life. Meanwhile, some portion of the IT employees developed health related issues such as mental stress, anxiety, insecurity, sleeplessness due to the challenges discussed earlier. Handling of such challenges and converting them into opportunity is purely person specific. Majority of the challenges discussed earlier can be overcome by adopting some changes such as proper time management, meditation, consultation, re-skilling, by maintaining a healthy and constant touch with colleagues and dear ones.

10. SWOC ANALYSIS :

SWOC analysis is a well known internal analysis framework for company analysis [27-28]. SWOC Analysis has been conducted on IT-BPM Industry to understand the Strengths, Weaknesses, Opportunities and Challenges during work from home situation due to COVID-19 pandemic. Even though functioning of IT industry is not heavily interrupted by a pandemic situation it is wise to analyze the ongoing challenges, so that an improvised better solution can be proposed. SWOC Analysis is a technique that can be used to evaluate the internal and external environment of an Industry, organization, and person to develop strategic planning [29].

10. 1 Strengths:

Work from anywhere is considered to be the greatest strength of the IT-BPM industry as it has ensured business resilience without affecting employee health. Some of the IT companies have decided to continue work from anywhere model even post-pandemic. For most of their workforce, considering the benefits such as better work life balance, reduced office maintenance cost, and reduced carbon foot print. During pandemic, major IT companies observed a steep decline in the attrition rate and this trend

will continue for next few quarters as employees are willing to stay in the present company where they are working [30]. Most of the urban cities in India were well equipped with high-speed Internet connectivity, which facilitated employees to do their day-to-day work and video conferencing seamlessly. The Government of India's renunciation of security deposits for work from home and relaxation of restrictions on the use of VPN technology is known to be a revolutionary step at the beginning of the pandemic situation. Companies could hire suitable candidates from any part of the country as working location was not a constraint during work from anywhere model. This benefited those talent pool that were not able to work in a traditional work environment, especially homemaker's, due to their personal commitments. Most of the Indian IT companies had implemented international management system standards such as ISO, COBIT, etc., which highlights the importance of business continuity, disaster recovery, risk assessment, incident management, business resilience, etc. This reduced the burden on IT industries while planning for business resilience during a pandemic. The availability of the Cloud Technology Infrastructure helped IT companies to continue their operations even when they were out of office locations. SaaS, DaaS, VPNaaS products were some of the unavoidable elements during work from home situation.

Table. 2: SWOC Analysis

Strengths	Weaknesses
• Work from anywhere • Lower attrition rates • High speed internet at urban areas • Government Policy relaxation • Recruiting with no borders • Wide Adoption of International Management system standards • Cloud Technology Infrastructure	• Time Management • Collaborating • Social Interaction • Workforce Management • Poor Internet connectivity in rural areas • Dependency on external market • Minimal hardware manufacturing units
Opportunities	**Challenges**
• Digital transformation in other sectors • Increased demand for e-commerce, online entertainment etc. • New business opportunities due to change in OSP regulations.	• Global economic slowdown • Increased attack vectors • Competition from other countries • Anti-outsourcing sentiment • Opposition from labour unions

10.2 Weaknesses:

Poor time management during work from home will result in either productivity loss or extending working hours beyond normal shift timings. Taking proper breaks, signing out on time is necessary for work life balance. Even though virtual collaboration technology allows employees to collaborate on virtual platforms, it is not as effective as is collaborating in real on the work floor. Social interaction during the pandemic was happening only on social media and other virtual platforms. Some of the employees would undergo serious implications such as anxiety, isolation etc., which can further lead to depression [31]. Managing remote employees is a first time experience for most of the companies, and the majority of the companies have not managed the entire workforce remotely. Even though urban areas had 4G and high speed broadband connections, stable Internet connectivity is still a challenge in rural areas. Indian IT industry is heavily dependent on US and European markets. Any political, environmental, natural disturbances to these countries will have a direct impact on Indian IT-BPM industry. Indian IT companies are pioneers in software development, Business process outsourcing and Tele support etc. But the same kind of importance has not been given to hardware-manufacturing units.

10.3 Opportunities:

The greatest opportunity for technology companies is to turn the current crisis into an opportunity by developing solutions that are helpful to the rest of the industry and to the community. Digital transformation is becoming a new trend in non-IT sectors to overcome the disruptions caused by

Pandemic situation. Increased demand for online shopping, online entertainment, telemedicine, etc that forced a large number of industries to adopt digital technology. Recently, certain guidelines for other service providers (OSP) have been relaxed by the Department of Telecom (DoT). All the above changes are positive outcome of the pandemic situation and IT industry will see an increased demand for hosting, maintenance, cloud integration services etc.

10.4 Challenges:

The new projects will likely be delayed by the global economic slowdown. If economic condition worsens further, there will be a serious impact on IT industry. Attack vectors increased by thousand times as employee workstations are now directly exposed to the internet. Those who have implemented less stringent security control will be targeted by the hackers and malware. India is not a sole exporter of software or IT service provider, many other countries such as Vietnam, Philippines are on the line to give a tough competition to Indian IT sector [32]. The growth of the Indian IT industry will be hampered by rising anti-outsourcing sentiments in certain countries. Labour unions in India raised a concern over work from home model as they feel it would be beneficial for employers to reduce the wages and disrupt the labour market [33-34].

11. SUGGESTIONS FOR FURTHER IMPROVEMENT :

We propose suggestions for further improvements and to build a better Operational Resilience system on the basis of the above SWOC analysis. Firstly, investing more in Cyber security to strengthen the security capabilities at each level of the organization is an essential need of the hour. Secondly, introducing innovation in employee collaboration and socialization will help to maintain employee's mental health. Companies will have to provide the necessary consultation facility for employees to cope with a stressful situation due to the pandemic. Thirdly, IT leaders should work with government bodies in order to ensure seamless internet connection and uninterrupted power supply to rural areas, so that' work from anywhere' can also be extended to remote villages. Reskilling of employees is also required to ensure they are up to date and have sound knowledge to the latest technologies. Considering work life balance of employees, it is advisable to adopt a hybrid work model where part of employees will work from office and rest can work from home based on business and project requirement.

12. CONCLUSION :

The IT industry has proven its capability to withstand the challenges thrown by COVID-19 pandemic by migrating entire workforce to work from anywhere model during crises situation and resume business activities without many disruptions. Non-IT sectors such as finance and Accounts, Sales, Training and Health-care industries etc., realized the importance of IT modernization and digital transformation. Since work from home is proven as an efficient business continuity option, there will be a huge demand for cloud-based applications that reduces the dependency on legacy systems hosted inside the office network. Post pandemic some of the companies may move away from new normal to conventional model, whereas the majority of the companies are expected to be continuing with remote work or hybrid team. Lessons learned and experience gained through COVID-19 pandemic will make IT industry more resilient to such types of adverse situations in the future.

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