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Review Article

Sailing the Ship of Digital India through the Storm of COVID-19

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Abstract

The present paper analyzes the Digital India Program, progress made on its inclusiveness across each and every target user, and the challenges it confronts. It demonstrates how the COVID-19 pandemic with its social distancing norm and lockdown scenario has made a real contribution to boost the digital aspirations of the country's citizens with the positive feedback action. To proceed further to make India truly digital, the paper suggests five strategies, viz., internet infrastructure to be leapfrogged, all stakeholders to work together as partners, capacity building of program executors, confidence building of users, and encouraging cocreation making it user centric.

Key words: Digital India, COVID-19, Inclusiveness, ICT infrastructure.

INTRODUCTION

COVID19 pandemic accelerated the digitization the world over, the CEO of Microsoft says, two years of digital transformation took place in two months, people started focusing on the virtue of the virtual. The credit for the biggest digital transformation enabler of this decade can no more be ascribed to the leadership of the chief-executive or the IT director, it goes to Coronavirus, the world after Corona is expected to be more digital than ever. The cities, and towns of different countries made infrastructure innovations to safeguard their physical systems during natural disasters such as earthquakes, tsunami, and hurricanes, but pandemics have shown that these methods aren't enough when it comes to ensuring connectivity and accessing our society during biological disasters. Epidemics are a rising threat with SARS, Zika virus, Ebola, and now COVID-19. The Corona has provided a new start for digital infrastructure development, virus related information gets disseminated amongst the masses, especially treatment protocols and healthcare services are being enabled largely online on digital multimedia. Since Digital India was launched in July 2015, the government of India has been actively promoting the use of digital technology and established nationwide online platforms to boost policy implementation, essential operations and transparency like Aarogya Setu, Mygov.in, and Namo which have been widely appreciated, endorsed, and used by millions of Indians today. Many government and private companies across the globe are engaged in developing innovative tools using hundreds of millions of facial recognition cameras reporting the body temperature and medical condition to quickly identify suspected coronavirus transporters and identify anyone with whom they have come into contact to face the pandemic and alleviate its spread through community-driven contact-tracing technologies. Using the cloud, big data and AI applications, industries are in the process of developing and building new business models that will help the country's citizens understand the severity of pandemic disease and ensure preventive measures. Lockdown declaration in the pandemic scenario has created a largescale shift towards digital collaboration and teamwork, every business is trying to figure out some level of virtual, the future of work has been advanced by 5 to 10 years. Work-From-Home norms have been rapidly established in public organizations to incubate lean and mean virtual teams. In the education sector, 285 million young learners have been suddenly asked to sit back at home because of closure of schools, college and universities (Pandey, 2020; Raman, 2020). This immediately has called for replacing the centuries old chalk-talk teaching-learning model by technology, educational institutes are forced to go online where classes are conducted over video, and countless webinars are organized using multi-media and apps. The digital technology infrastructure really

helped during the COVID-19 situation in transferring money at the click of a button to the poor and needy, benefiting crores of families, minimizing corruption, irregularities, and pilferages. Such online transactions instead of physical visits to the banks have created the necessary backbone towards adoption of social security. Social media and online platforms have emerged during this crisis as key mediums connecting citizens with governments providing the most credible information, truly powerful interfaces amid the lockdown connecting all people remotely with minimum cost. Technology has not only been fueling healthcare and emergency medical services, but also alleviating the pressures placed on the supply chains and public distribution networks. The shop owners, big or small gradually started embracing digital payments, a prime example of adaptability, that keep commerce connected, especially in times of crisis. The digital transformation with minimum government and maximum governance is the new paradigm with emergence of paperless, faceless, cashless, and contact-less scenario now. The current crisis situation is forcing now the digitally reluctant and digitally illiterate to break their complacent mindset and take their first steps away from the cash habit to sprout the digital revolution up its roots. The most transformational impact of technology happens in the lives of poor that demolishes bureaucratic hierarchies, eliminates middlemen and accelerates welfare measures. India is on the right path in its march towards leveraging technology with its initiatives of the Digital India both at the center and the state level in the wake of COVID-19.

The present paper attempts to take a critical look at the Digital India Program, and analyzes its outcome in dominant areas. It examines how the Corona pandemic has made a big boost towards digitization and suggests a path forward to transform the Digital India a reality in practice amongst its 1.38 billion citizens.

Digital India Program

Digital India is a flagship program of the Government of India which has been launched on July 01, 2015 with a vision to transform India into a digitally empowered society and knowledge economy. It is centered on three key vision areas: i) digital infrastructure as a core utility to every citizen, ii) governance and services on demand, and iii) digital empowerment of citizens. Digital India is an umbrella program that covers multiple Government Ministries and Departments. It weaves together a large number of ideas and thoughts into a single, comprehensive vision so that each of them can be implemented as part of a larger goal. Digital India is to be implemented by the entire Government with overall coordination being done by the Department of Electronics and Information Technology. Digital India aims to provide the much needed thrust to the nine pillars of growth areas, namely Broadband Highways, Universal Access to Mobile Connectivity, Public Internet Access Program, e-Governance: Reforming Government through Technology, e-Kranti - Electronic Delivery of Services, Information for All, Electronics Manufacturing, IT for Jobs and Early Harvest Program. To make the Digital India program a success, the basic requirement is to build the Information and Communications Technology (ICT) infrastructure. The Government of India has taken many initiatives in this regard, a summary of which is presented below in the Table-1 (Deloitte & ASSOCHAM, India, 2016).

Table-1: Government of India initiatives to build ICT infrastructure for Digital India

Initiative	Aims	Present status
BharatNet	Aims to provide broadband access to 250,000 Gram Panchayats (GPs) through a network of optical fiber cable initiated in 2011 (earlier known as National Optical Fiber Network program)	Rs.6 000 crore budget allocated in 2020-21 to link 100 000 Gram Panchayats this year
Smart Cities	Aims to develop 100 smart cities (with provision of special purpose vehicle, city level advisory forums and project management consultants) selected since 2015	According to the Economic Survey 2019-20, as many as 5,151 smart city projects with a cost of Rs 2 lakh crore are in various stages of implementation. 5 new smart cities have been proposed in budget 2020-21
Common Service Centers (CSCs)	Aims to develop CSCs as access points for e-governance and government to citizen services to villages	Currently there are 255 798 active CSCs across the country as per govt report of July 09, 2020
Digitization of Post Offices	Aims to digitize post offices including setting up centralized data centers, networking of all post offices and enabling digital payments	Under Wide Area Network (WAN), 27 431 locations networked; Core Banking Solution made operational in 23 782 offices and 997 ATMs; Under Digital Advancement of Rural Post office for A New India (DARPAN), 129 080 branch post offices computerized (as per Annual Report of India Post, 2019-20)
Universal Access to Mobile	Aims to provide mobile access to more than 55,600 villages that do not have mobile coverage	As part of the comprehensive development plan for the North East, providing mobile coverage has been initiated in a phased manner

Initiative	Aims	Present status
Public Wi-Fi Hotspots	Creation of public Wi-Fi hotspots in India to enable citizens to access content without depending on mobile data	India has 0.3 million Wi-Fi hotspots by the year 2019-20, estimated to increase by seven folds to 2.1 million by the year end 2021-22. India should have 8 million Wi-Fi hotspots to meet the global average of one hotspot for every 150 people
India Stack	Aims to develop a Bharani set of open APIs (Application Payment Interface) that allows payment-enabled applications using Aadhaar as the base for identification.	Rapid adoption of the JAM (Jandhan-Aadhaar-Mobile) trinity has enabled customer identification and access, based on which several other digital transactions can be carried out. The open API ecosystem combined with the digital literacy mission can go a long way in creating apps that are customized to suit local needs.
National Cyber Coordination Center (NCCC)	Aims to set up an operational cybersecurity and e-surveillance agency in India to screen communication metadata and coordinate the intelligence gathering activities of other agencies	NCCC expected to entail an investment of INR 9 billion. In view of growing cybersecurity threat, the Government of India to setup center of excellence to skill cybersecurity professionals

Internet connectivity scenario in India

The internet technology landscape is changing every year, more people than ever are online. Using the data from internetworlds, 4834 million of the world population are using internet with penetration rate of 62 percent as of June, 2020, and ways people are accessing the web all over the world are also changing. Mobile phones made up 16.2 percent of the world web traffic in 2013, and increased to 52.2 percent by the end of the last year. More and more people are using their mobile devices to access internet because of easy accessibility than desktops in most developing countries which is where internet use and penetration rates are growing the most quickly. China is heading the list of internet users in the world with 802 million users by last year end and 98 percent of them access the internet via mobile phones, 90 percent of which spent on using apps. The total internet users in India has been increasing over the years from 302 in 2015 to 697 million in 2020 (Figure-1A) with penetration rate increased from of 27 to 50 percent (as shown in the Figure-1B). India is next to China in internet users of which 80 percent use mobile phones to access the internet. In fact, mobile internet played an excellent role in achieving the vision of Digital India. Internet traffic has been increased by almost 40% due to the lockdown scenario (IANS, 2020). The penetration rate in India is just over 50% now (increased from 27% five years earlier) as against 88% in the US and 61% in China. The internet penetration rate of India being 50% means that almost half of India's population still needs internet connectivity.

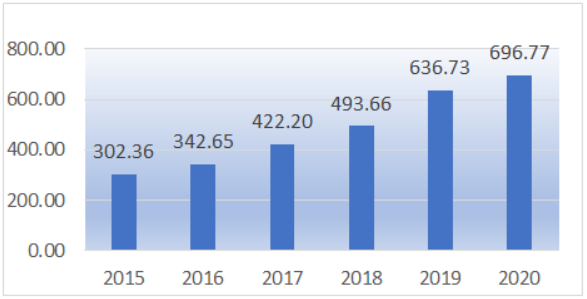

Fig-1A: Internet users in India (million

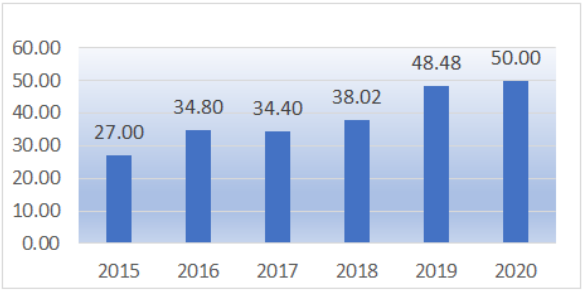

Fig-1B: Penetration rate percent

Rural divide

Internet connectivity in the rural India is on the rise. To facilitate the development of villages and assist the local administration, 142 740 Gram Panchayats (out of total about 250 000) in far-flung locales have been connected by optical fiber network as of August 2020 (as per Bharat Broadband Network Limited). Internet users in the rural India have in fact surpassed the urban area by 10% (227 as against 205 million users) in last November. The Indian economy being predominantly rural with over two-thirds of its population and workforce residing in rural areas, thus the penetration rate of internet users in the rural India is just on the halfway mark of the overall penetration rate of 50%. In fact, there are many remote rural areas in India that do not have access to electricity, far off from internet connectivity.

Age of users divide

As regards the age distribution of Indian internet users, using the data from statista.com, around 54 percent belongs to 20 to 39 years age, whereas only 6 percent in 50 years and above age bracket. If we look at the world average, one third users are in the age group between 25 to 34 years, around 24% users belong to 50 years and above age group. In India, people in the age bracket 50 years above consists of 20 percent of country's total population. That means penetration rate for people of 50 years and above age group in India is just 30 percent (6 percent out of 20 percent population) which is much lower than current average of 50 percent. This means India is missing out a major chunk of knowledge and views of their experienced citizens on the digital media which may be quite important for the growth and development of the country's economy.

Male-Female divide

Amongst the total internet users in India, using the data from statista.com, it is found that around 70% of them are male, and the remaining 30% female. But hardly any difference is there amongst the male and the female internet users in the developed countries like in the US (77.6% male and 76.8% female), and the Europe (84.9% male and 80.3% female). Economic empowerment of women in India is just 0.354, far off from equality of 1.0 which may be the most compelling reason for such a significant digital gender gap (World Economic Forum, 2020).

Internet speed and state-wise divide

The quality of internet coverage remains a constraint for India, as the country ranked 132 out of 139 countries for the quality of mobile connectivity in a study conducted by Speedtest.net in April, which was below neighboring countries such as Nepal and Pakistan (Sharma, 2020). As per Speedtest Global index, the mobile internet speed in India is just 40% of global average speed (10.87 compared to 27.44 Mbps global average in June), the highest being for South Korea of 90.06 Mbps. India's 4G download speed is just 11% of South Korea's speed of 103.18 Mbps. On the fixed broadband front, India occupies 74th position in June, 29.06 Mbps against global average of 59.45 Mbps for downloads, Singapore being at the top of the list with download speed of 195.88 Mbps. There is a wide variation in internet service availability amongst the states of India, less developed state gets less reliable internet. If we look at twenty large cities in India, there is wide variation in internet speed, Chennai having the fastest for downloads, 58% faster than India's average, whereas Patna being the slowest, 62% slower than the average (Mcketta, 2018). In the current lockdown scenario, mobile and home broadband services especially those in urban areas have seen network speeds slow down by 20% because of 30% surge in consumption on an average, especially of videos data consumption increased by 30% in the lockdown period (Sengupta, 2020).

Progress made towards digitization

The government of India demonetized 86 percent banknotes in November, 2016 with a wide array of objectives. Besides stripping the Indian economy of its black money, it has the objective to promote the Digital India movement and make India a cashless economy. No doubt, because of sudden demonetization, people had to wait several hours in queues to get limited amount of cash, but since then, cashless payments have gathered momentum. Cashless transactions are growing in India now, faster than in other emerging markets around the world (Detrixhe, 2019; Kundu, 2018) as presented in the Figure-2 (expressed in CAGR percent).

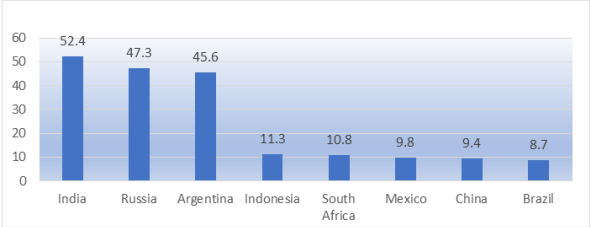

Fig-2: Growth rate % in digital payments in emerging markets

This shift has attracted many tech companies, backed by foreign investors, battling for market share. India has a very large population with mobile penetration rate increasing over the years. A large part of the population may not be well served by existing banking services could possibly be another reason for such a digital growth. The country has more than 10 million locations that can accept digital payments, according to KPMG Report, 2016, up from around 1.5 million when the government outlawed banknotes. Digital transactions got a real boost from the Unified Payments Interface (UPI) platform introduced in 2016 that facilitates real-time payments between bank accounts from their smartphones. The scale and the speed that UPI carries is unimaginable through the use of unique digital identity of 1230 million Indian citizens in the form of Aadhaar card and their mobile phones. As many as 143 Indian banks are live on UPI platform. In Oct 2019, UPI crossed 1 billion transactions and has over 100 million active users on its platform. Nowhere in the world neither there is any such facility available nor such a number of transactions have ever happened on one single platform**.** UPI put India far ahead in the world in money transfer; no one could imagine country with so much diversity will transfer money on mobile phone (Dethe, 2019). India has more than 45 mobile wallet providers, and some 50 UPI-based wallet providers, according to KPMG Report, 2017. However, in India, there are only 18 cashless payments per inhabitant on an average in 2018, compared with 142 in China and 529 in Sweden, according to the Bank for International Settlements (BIS), as reported by Detrixhe, 2019. This signals that there is still a lot more scope for digitization in India.

Then the Corona outbreak appeared in the scene to make a real surge in digital transactions (Beniwal & Ghosh, 2020). The positive feedback action of COVID-19 pandemic along with its social distancing norm and the lockdown scenario on the success of Digital India is reflected in the Figure-3. The value of transactions on the UPI reached an all-time high as people feared to handle banknotes amid the pandemic. People started using digital payments for everything from groceries, electricity bills and cab fares. People who have never paid a bill online or purchased groceries online started switching over to online. What would have taken 5 years have happened in the last 3 months, says the CEO of Get Simpl-Technologies Pvt Ltd. Three fourth of Indian consumers reported greater use of digital payments since the virus outbreak (Bloomberg, 2020). In the Corona pandemic scenario, however, the overall digital transactions declined by 12% in the last 101 days compared to a 30% drop in the first 30 days of lockdown (March 24 to April 23). With the economy inching towards normalcy, digital payment transactions have rebounded by 23% in the last 30 days between June 3 to July 2 (PTI News, 2020).

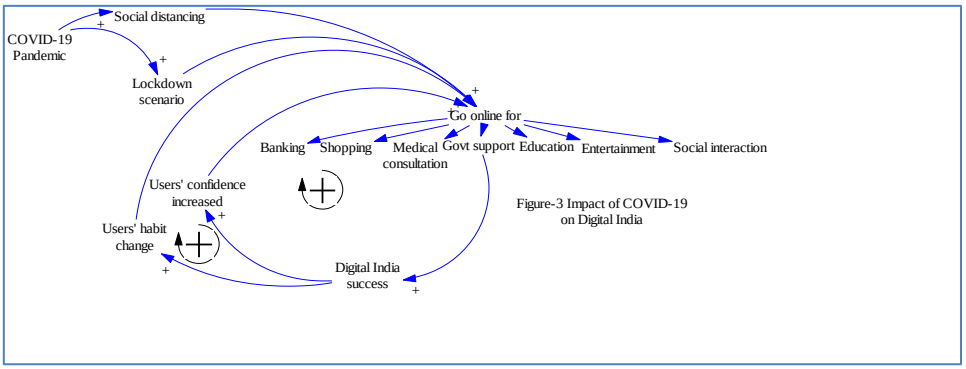

Figure-3 Impact of COVID-19 on Digital India

Cash still the king in India

No doubt, the runaway success of the JAM has provided a digital identity to more than a billion of Indian citizens as well as access to the banking system to millions of Indians who were earlier excluded from the formal economy. There has been a perceptible shift in favor of digitization in recent years, as per an internal study by RBI, but "cash is still the king in India" (Roy, 2020). Cash-on-delivery and offline shopping is still dominant in India, barring people from trusting the reliability of digital payments. Currency in circulation of 11.2% of GDP in India is high than in most major economies (Bloomberg, 2020). For many citizens living in rural areas, cash is still the bedrock of daily existence because of lack of facilities, keeping money in hand for emergencies or hospitalization may be a must as perceived by many citizens in the country. In spite of a massive push made through JAM in 2014, still 190 million adults in India are without a bank account, as per the World Bank report, 2018, making the country as the world's second largest unbanked population after China. Up to 80% of Indians now have a bank account, the same proportion that have a mobile phone, but financial inclusion levels are still among the world's worst, lower than sub-Saharan Africa on some counts. The proportion of the Indian population accessing financial institution accounts from their phones or the internet, making digital payments or using mobile money wallets is significantly lower than in other developing countries. In 2017, 5 percent of Indians accessed a financial institution account from their phone or the internet and 2 percent of the population owned a mobile money account as per the Global Findex data, whereas 89 percent of people in the US use mobile banking now, up from 83 percent in 2017. On per capita digital transaction basis, India continues to lag behind BRICS (Brazil, Russia, India, China, and South Africa) with just 22 annually as compared to Russia's figure of 200 by the end of the last year. In fact, India has been gradually improving on per capita digital transaction over the years, increased from a nominal figure of 4.06 in 2015 to 22 by the end of last year (PWC, 2019).

Barriers to digital inclusion

Financial literacy has become one of the top priorities for most of the world today as it is directly proportional to the economic growth of a country. The government of India took the initiative of making 60 million Indians digitally literate through its Pradhan Mantri Gramin Digital Saksharta Abhiyan (DMGDISHA). But still the financial literacy rate in India is way behind other countries. India is home to almost 20 percent of the world population, however, according to the Standard & Poor survey of 2014 on financial literacy, 76 percent of its adult population is not even aware of the basic financial concepts, only 24 percent of Indians are considered as financially literate. As per Global Literacy Ranking by Atlas, India ranked 121 out of 141 countries with percent score of 24 compared to Norway at the top of the list with a score of 71 percent. Another area of concern is the affordability of the technology required to access digital services for the low-income Indian consumers. No doubt, the mobile broadband prices in India is many times cheaper than elsewhere, 1 GB data in India costs $0.26 compared to $12.37 in the US, $6.66 in the UK and the global average price $8.53 (BBC News, 2019). The hyper competition in India has made such low

prices in India, but still the affordability of digital service is a question mark, particularly when the unemployment level in the country has reached as high as 27 percent now in the pandemic situation (CMIE, 2020). Apart from speed of internet services which is just 40 percent of global average as pointed out earlier, many a times issues come up with online or card transactions due to poor network or problem with card swiping machine. When these issues can take place frequently in metropolitan cities, they would be a major issue in rural areas where usually people may not have the expertise and familiarity with the technology. Continuous availability of reliable digital service even in towns and cities is a question mark, not to talk of rural areas where link failure is a common term. In fact, link failure has diverse range of meanings from internet not functioning to an Aadhaar-link failure. In the pandemic scenario, many internet providers are having a real difficult time to deal with the surge in digital traffic and continue to provide reliable service. Everything comes at a cost, even the convenience of a cashless transaction. The intermediary Paytm usually charges 1% of the amount as service charge (Upadhyay, 2020).

Availability, quality and reliability of the digital system apart, the Digital India campaign avoids basic values of consent and right to privacy. People are apprehensive of the misuse of data bases linking personal information on the web platform. Confidence of customers in the data secrecy and reliability of digital financial transaction is paramount. As technology has been advancing, people's brains are also innovating newer forms of corruption and frauds. India has consistently recorded thousands of digital transaction frauds. With regard to ATM/ Debit card, Credit card and internet banking transactions of over Rs. 1 lakh, there were 1367 frauds reported in the financial year 2016-17, 2127 frauds in 2017-18, and 1477 frauds in 2018-19 (Minister of State for Finance said in a written reply in the Rajya Sabha). Digital payment frauds makeup for a significant proportion, up to half of all bank fraud cases. No doubt, risks of cybersecurity are also present in the advanced economies, but any loss becomes a too much loss for the majority of Indians, and that make them really hesitant to go online for financial transaction. This really threatens to become the Achilles heel for the dream of Digital India unless stricter norms and framework are institutionalized as plan and control measures by RBI (Sharma, 2019).

Challenges before the education sector

In the midst of Corona pandemic and keeping social distance norm, when all schools, colleges, and universities are closed, various alternatives and drastic changes are being considered to face the challenge. Online classes using various platforms have already become a popular reality. Academicians have long been debating on the virtues of online learning and many researchers have been working on optimal ratio of face-to-face versus online proportion in blended learning mode to make the education more and freer from geographical barriers. Today's COVID era has forced us to think in favor of online classes to keep continue with the knowledge delivery for our young minds.

But the main hindrance for switching over to online classes is the digital divide due to the non-availability of high-speed internet in rural and remote areas. Any educational system has to be inclusive for the whole target group; it cannot function keeping the underprivileged out of this system. The second issue arises from the financial backwardness of students. A large section of our society still cannot afford to buy a good quality smartphone or laptop which is an absolute necessity for the online educational system. In the pandemic scenario, more and more people have become jobless that also increases the gravity of the situation. To make online education successful, the internet infrastructure in the country needs to be reengineered to be really adequate. Penetration of the internet network to rural interiors must get top priority to make the online education for one and all.

Challenges towards digitization of healthcare services

At the very outset, it is worth highlighting and appreciating how the government has swiftly adapted to the recent pandemic time. The launch of App, Aarogya Setu has been remarkable in keeping people informed of the deadly Coronavirus. It is effectively giving precautions to citizens, sending them alerts and providing services, all in real-time, to substantially limit the spread of Covid-19 in the country. The app has been a catalyst in anxiety management for the masses, relieving them from diverse news all over the media. Today, the clinical data of patients, be it a public or private hospital or a private medical practitioner, are hardly computerized, and in fact, whatever little data is available, it resides in silos and usually, access of this data is not extended to the patients, who often struggle with paper-based record keeping. Today, with the growing trend of a citizen centric healthcare system from an institution centric, the Ministry of Health and Family Welfare jointly with Ministry of Electronics and IT, Govt. of India has developed a Personal Health Record Management System (titled MyHealthRecord) for creating a digital database of every Indian's medical record that can be accessed by doctors and hospitals, aimed at transforming the healthcare in the country. Electronic Health Record (EHR) Standards for India have been developed in 2016 by the Ministry of Health and Family Welfare. The EHR for each individual patient has the ability to enhance quality and safety of care besides improved management of health information and clinical data. It will also increase portability of clinical information including the better interaction between patient and health service provider. This will help public health experts to understand disease trends and better diagnose diseases. Also, from

the patients' perspective, it enables improved services and reduces the redundant clinical tests. But to come up and maintain such a digital database, the government hospitals and dispensaries have very little ICT infrastructure, only some major public hospitals like AIIMS, and PGIMER have computers and connectivity (Sharma, 2018). A report has been prepared by the Ministry of Electronics and Information Technology reveals how the country lacks the basic requirements to implement the system (Srivastava, 2016). With a very large network of public healthcare facilities, it needs a huge investment in both hardware and software. With more than 75 percent of outpatients and more than 60 percent of inpatients in India being treated in private healthcare facilities, the report said that it is necessary for the government to bring these establishments on-board for using EHR. Besides the creation of the basic ICT infrastructure, there are many challenges pertaining to policy and regulations, and setting standards and to ensure interoperability. The maintenance of the digital system and online recording and up-dating of each patient's records will be a huge task as well, particularly when a doctor in India has to examine many more patients compared to developed countries (40 to 60 patients a day in India as compared to 18-20 in the US (Mehrotra, 2019) and physicians need to input clinical notes themselves in the EHR.

Status of e-governance

To make the working of government more efficient, responsive and transparent, many developed and developing countries have taken some useful steps for the expansion of e- governance in their respective countries. The government of India also took various initiatives like Digital Locker, e-education, e-health, e-sign, e-Hospital, and National heath portal, National Scholarship Portal, e-Sampark and many more. MyGov.in is a crowdsourcing platform created by the government to inform citizens on policy issues and governance. It has sparked a healthy exchange to generate ideas from citizens. The initiative has paved the way for a more democratic framework, empowering the common man to influence policies and implementation. Applications like Unified Mobile Application for New-Age Governance (UMANG), Bharat Interface for Money (BHIM), and mPassport developed by the Government have transformed the way in which the government delivers services to the citizens and citizens interact with the Government (Mandhyan, 2020). The launch of COVID India Seva is one of the latest efforts by the government to build a direct channel of communication with the people and respond to their queries in real-time. Any citizen can ask questions and post feedback in the public domain about the performance of the administration. Public distribution system tried to move to digital sphere for public welfare schemes, linking recipients' biometric information through Aadhaar and PAN. The Government Direct Benefit Transfer (DBT) scheme being free from bureaucratic impediments ensures instantaneous and safe financial transactions reaching all deprived and deserving Indians. The government's 365 000 citizens' service centers (CSCs) are providing employment to a million small entrepreneurs as well as access to information and services to millions (Kumar, 2019). Cloud computing is also becoming a big force to enhance the delivery of services related to e-governance, while optimizing ICT spending of the Government. With such efforts, India enters the list of the top 100 in the UN e-governance index of 2018, ranked 96th amongst the 193 countries with Denmark heading the list. However, India has slipped now 4 places to rank 100th in the UN's E-Government Survey 2020. No doubt, e-governance is getting momentum in India, but still public awareness and digital divide are indeed important issues that need to be addressed.

Suggested Strategies

To transform India to make a truly digital country, here five strategies have been suggested. First is the internet infrastructure that needs to be leapfrogged to close the digital gap between the rural and urban, the poor and rich, the old and young, and across the states of India to enhance digital inclusiveness and make the Digital India program a success as presented in the cause and effect diagram with positive feedback in action reflected in the Figure 4A.

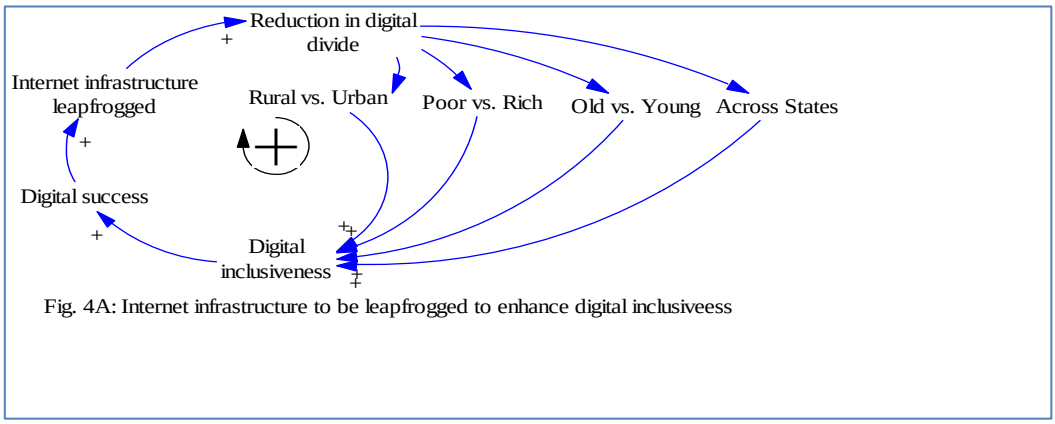

Fig. 4A: Internet infrastructure to be leapfrogged to enhance digital inclusiveess

Secondly, in the process of building, execution, monitoring and control, the various agencies that are associated with the Digital India program like the policy planners, Telecom Regulatory Authority, mobile manufacturers, developers (platform, web, apps, etc.), telecom operators, innovators (Cloud, AI, Big Data, IoT); and the service providers, all must work as partners of an integrated system. Each component and the overall system need to be compatible with the ground realities of service recipients like the individuals, businesses, and the government to optimize the overall digital system effectiveness to make it a success. This strategy in action is presented in the Figure 4B.

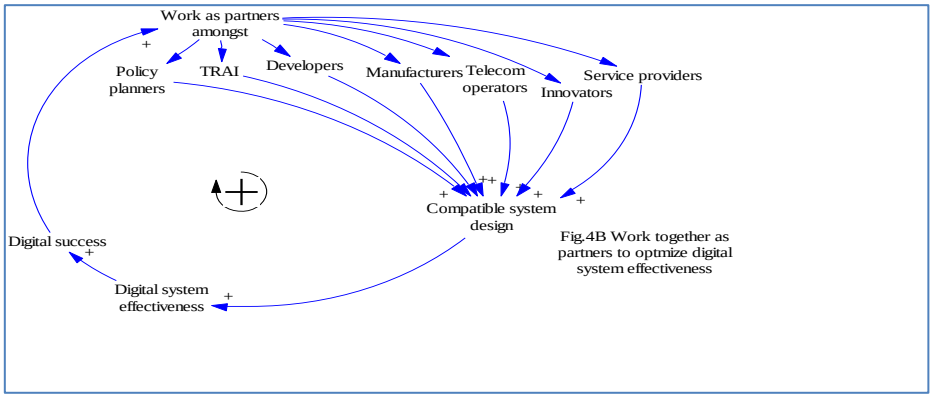

Fig.4B Work together as partners to optmize digital system effectiveness

Then we need to build the adequate capacity of program executors like the bureaucrats, elected and nominated representatives of the government hierarchy, the departmental staff, etc. who are the custodians and administrators of the program. Their digital literacy level has to be ensured to fully appreciate the modalities of operations of the system and provide need-based support to the digital program users. Total system approach needs to be followed by program executors on each and every aspect of management of digital database, documents, knowledge transmission, files, and grievance of users at each and every level down the hierarchy. The impact of capacity building of executors towards the success of Digital India program is reflected in the Figure 4C.

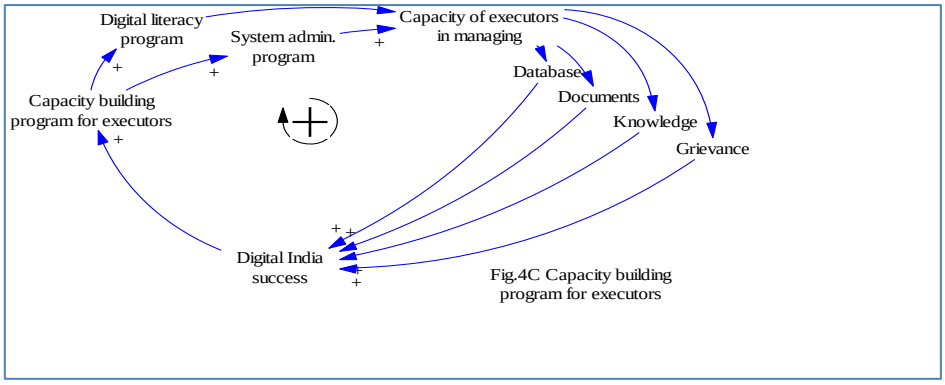

Fig.4C Capacity building program for executors

Then comes the vital link that pertains to the users of the system, their capacity and confidence on the system. For any system to work, it has to be used by the people for whom it is built. What is important is to make people aware of the system, its benefits, and how to use the system through appropriate digital awareness campaign and digital literacy program. Financial support needs to be provided to deal with financial backwardness along with promotion and incentive measures to make the digital program inclusive. To move from the habit of dealing directly with cash to online transaction, what is crucial is the confidence building amongst the individual citizens. Strict norms and monitoring by RBI and TRAI need to be ensured and demonstrated in practice to infuse confidence amongst the individuals. Cyber and data security support is also of paramount importance for confidence building. Once the confidence is built on the use of modern digital system, more and more individuals will start enjoying the flair of tech satisfaction. The capacity and confidence building process in action for individuals and businesses in the positive feedback loop is presented in the Figure-4D.

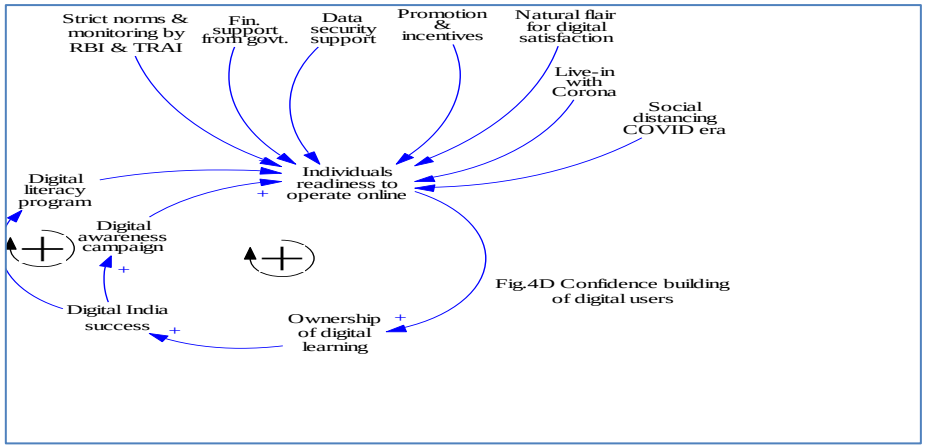

Fig.4D Confidence building of digital users

Finally, what is important is cocreation of the system, participation of users along with the policy planners in the digital program design, and implementation. The ideas and views of citizens on policy formulation, prioritizing, budget process, standardization, execution modalities, design of regulatory and control framework need to be considered. Their participation in the discussion forums with the government departments in the setting up process will make the individuals and business houses responsible for the whole system. The cocreation process of moving from government centric to user centric towards making the Digital India program a success is presented in the Figure-4E.

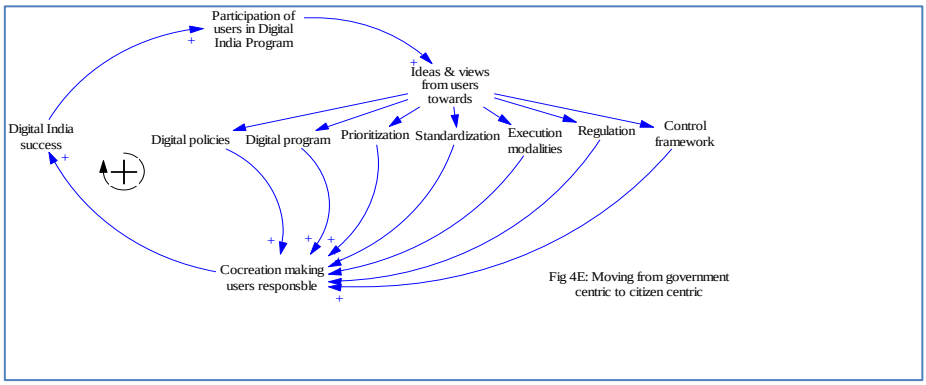

Fig 4E: Moving from government centric to citizen centric

CONCLUSIONS

The entire world is trying to find order in chaos, and adapt to the change in the challenging COVID-19 scenario. We have to deal with health crisis and follow the social distancing norm and lock us down as far as possible within the four walls, but the lockdown declaration makes the unemployment rate shoots up and causes the economic crisis and financial hardships to country's masses. The Digital India program is really a boon to deal with the health crisis and the economic crisis in tandem. More and more individuals and business houses are in search of the virtue of the virtual, and adopt digital mode as much as possible, be it a work-from-home, medical consultation, learning, shopping or entertainment. To energize still more the users into the game of digitization, we need to know more about our users, what shakes them off from the age-old cash-habit and excites them to learn and go digital. That will lead us to transform India truly digital.

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