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### RESEARCH ARTICLE

#### TOWARDS A DIGITAL INDIA: AN OVERVIEW OF CHALLENGES, SUCCESSES AND OPPORTUNITIES

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#### Abstract

As one of the world's foremost emerging markets, India holds great potential in areas of trade, technology, innovation and manufacturing. An important facilitator for this would be the digital connectivity and permissivity in the country. Digitalization of processes and services across its length and breadth would help pave the way for more industrialization and development in the fastest growing economy. It is important to note that India has made rapid strides in this and achieved a lot of digital permissivity. While the huge population of India and its industrious populace offer a huge opportunity in this direction, many challenges remain in navigating this path. Digitalization ultimately has to reach the grass root level and this paper examines these aspects on a broad scale.

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#### Introduction:-

Since India's independence in 1947, a lot has been left to be achieved by our indigenous population and digitalisation has always been a key goal at every stage. India has always played 'catch-up' with the west not only in digitalisation, but also in other areas such as innovation, research and manufacturing. While one of the main reasons for this is the fact that India missed the industrial revolution, this is an important background worth noting before analysing India's progress and delving into a critical analysis of the same.

As India today stands on the cusp of unprecedented economic development driven by a robust market economy that has improved the quality of life vastly, it goes without saying that digitalization has been a key part of this and will continue to do so in greater proportion well into the future. The adoption of digital processes and widespread access to digital resources have come relatively late. However, there is a conspicuous urgency among the population to adapt to digital means. At the same time, digital illiteracy is also a significant concern. Moreover, the vital cog in digitalization, which is internet penetration and connectivity, is also an area where much needs to be achieved, especially in rural areas and among the lower economic groups.

The vast population of India offers significant advantages and disadvantages in our adoption of 'digital'. We attempt to understand these in the following sections.

#### Challenges:

##### Last-mile Connectivity:

As discussed earlier, digitalization has to penetrate right down to the grassroots level. There is a serious lack of this penetration in India. While it was around 64% in urban areas, it stood at only 18% in December 2017 [4].

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There are a few possible reasons for this. One could be that many activities, whether industrial or domestic, have not yet been digitalized. Another is the fear that of disruption that digitalization will bring. Notwithstanding these, digitalization initiatives usually focus only on a particular segment or a few specific segments of a process and not on the entire assembly line, so to say.

**Extending digitalization to rural areas:**

Another important challenge regarding widespread digitalization is the extension of digital services and digital literacy to rural areas in the country. For digitalization to occur, it is important for the public to have access to efficient internet access and digital devices. In rural areas, this has not yet been achieved on a large scale. Internet access is not ubiquitous and has certainly not penetrated the home of every family. Moreover, existing internet facilities do not provide state-of-the-art technologies and connectivity. Furthermore, there is also a lack of digital devices that can cater to the technologies in vogue.

Another significant challenge emanating from the urban-rural divide is the illiteracy levels in general and digital illiteracy in particular. Unlike the urban societies, there is a lack of inherent urgency to digitalize among the rural populations. This should be attributed to the low awareness of and exposure to digital practices.

**Adapting to 'digital' in day-to-day life:**

One of the major reasons for the acceleration in digitalization that has taken place over the last two decades is the push to modernize lives and experience easier ways of doing tasks. While this is true in the case of India as well, there is also a considerable reluctance among Indians to truly digitalize their lives. Digitalization is largely restricted to mainstream processes but it has not truly penetrated Indian lives. This is a result of the inertia stemming from decades of non-digital practices, compounded by uncertainty and doubt over the efficiency and security of digital methods.

**Digital Transactions and concern of privacy:**

Digital transactions are gaining traction among a large section of Indians today. However, most of these transactions are relatively small scale. Not all transactions are also digital. This is due to the fact that there are major privacy concerns regarding online transactions.

**Signs Of Success:**

There was a major impetus given to digitalization through the Digital India initiative with a vision to transform India into a digitally empowered society. Growing awareness among all sections of society in this regard has been a major contributor towards digitalization in India. In this section, we examine some of the areas in which India has displayed significant growth contributing to digitalization.

**Internet Connectivity and Penetration:**

At the end of 2013, the number of broadband subscribers, both urban and rural, was 15.05 million, wired users 21.61 million and wireless 143.20 million. At the end of 2014, the respective numbers were 60.87 million, 18.50 million and 233.09 million. By the end of 2016, the numbers were a whopping 149.75 million, 20.44 million, and 322.21 million respectively, and by the end of 2018, they were 412.60 million, 21.24 million, and 472.72 million respectively. The number of urban subscribers grew from 194.80 million at the end of 2015 to 348.13 million at the end of 2018. While this is expected, the number of rural subscribers has grown impressively from 107.56 million in 2015 to 145.83 million in 2018 [1].

Internet penetration rate was 4% in 2007, 7.5% in 2010 and 18% in 2014. However, there was sudden jump by 9% to 27% in 2015. Concurrent with this, there is also a noticeable increase in the same regard from 38.02% in 2018 to a very significant 48.48% in 2019. Similarly, social network user penetration has grown from 19.13% in 2015 to 46.44% in 2019 [1].

**Role of Technology Trends:**

Since smartphones play a vital role in enabling the digital drive across the country, smartphone activity can show relevant progress in this aspect. The total number of smartphone users in India itself has grown from 76 million in 2013, 123.3 million in 2014 to 304.51 million in 2016 and 394.82 million in 2017 [3]. As of January 2018, 21% of smartphone activity involved visiting a social network, 16% on watching videos, 15% on search engines and 4%

each on looking for product information and playing games. By November 2019, this had respectively increased to 39%, 20%, 19%, 8% and 9% [3].

**Digital Transactions:**

The total value of online transactions in India has grown from USD 28845 million in 2017 to USD 40340 million in 2018 to USD 55136 million in 2019 [3]. The suspected motivation behind this could be the fact that consumer demands for digital payments grew by 106% from Jan 2019 to Jan 2020 and also the 383% growth in digital transactions throughout the country [10] In December 2020 alone, the transactions through electronic transfer alone totaled Rs 2558304.2 lakh crore [11].

**Online Education:**

Online education is another industry which has displayed considerable growth. Between 2015 and 2018, there has been a six-fold increase in the number of students whose education is facilitated online. In 2019, the number of rural users at 227 million was higher than that of urban users, which was 2015 million. The value of the Indian online education market was expected to grow from USD 247 million in 2016 to USD 1.96 billion in 2021 [2].

**Government Initiatives:**

The curration of Aadhaar cards detailing digital identity has benefited more than 1 billion Indians. UPI (Unified Payments Interface) witnessed 800 million transactions with a total value of Rs 1.33 lakh crore in March 2019 alone [9]. Under the same initiative, 119,000 gram-panchayats in rural and far-flung areas have been connected by digital optical fibre [8].

DigiLocker, the government's cloud storage portal has witnessed a huge growth from 20.13 lakh users and 24.13 lakh documents in July 2016 to more than 3.3 crore users and 372 crore documents in December 2019 [6]. The UMANG app used for availing government has been expanded to offering 600 services in Feb 2020 from 162 in 2017 [7].

**Opportunities:-****Youth Population:**

As of 2019, India lead the world in terms of youth potential and its supply pool. About 65% of the population is of the age group 15-35 and this lead is projected to last for the next forty years [5]. This age group is also the most fertile for promoting technology and innovation and this evinces a huge opportunity for India. Our youth population is thus our biggest opportunity as far as digitalization is concerned.

**Growing want of 'ease' of operation:**

This is perhaps the most important reason that has driven digitalization across the world and will continue to do so. In a rapidly growing economy like India, it will give greater emphasis to the digital drive. The growing literacy and modernization will certainly lend a helping hand in this regard.

**E-commerce:**

The market size of the e-commerce industry in India displays an exponential growth, improving from USD 14 billion in 2014 to USD 39 billion in 2017. It is expected to reach USD 84 billion by 2021 and a staggering USD 200 billion by 2027. This could be attributed to the number of digital buyers in India, which has risen from 54.1 million in 2014 to 130.4 million at the end of 2016 and which is expected to have reached 329.1 million by the end of 2020 [3].

An industry growing at such a fast rate promises great digital transformation at the grass root level and will usher in digital literacy among the masses.

**Online Education:**

Online education, as highlighted in the previous section, while displaying significant signs of growth, has also attempted to touch almost all levels of education (primary, secondary and so on) and also, in a way, forced the young population to come to terms with learning through the online mode. This has been providential in increasing awareness of 'digital' mode and also increased digital literacy. In the future, it can be expected to create a greater impact, especially in the post-COVID period.

**Conclusion:-**

Digitalization is a much needed phenomenon in the context of India. Challenges abound in this direction and it must be noted that they will continue to be impediments in the immediate future as well. At the same time, India has also made rapid strides in digitalization with a plethora of public initiatives and private undertakings. There is a sentiment of urgency in adopting digital practices for greater efficiency and growth among the population, which bodes well for an aspiring India. The opportunities must also not be discounted, with our large population offering great advantage in this regard. The success of this initiative in the future and the disruption offered by 'digital' can be considered as an area of future research.

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