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A STUDY OF IMPACT OF DIGITILIZATION IN INDIA

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SUBJECT:

ABSTRACT

It is a well-known fact that digital India is the outcome of many innovations and technological advancements. These transform the lives of people in many ways and will empower the society in a better manner. The 'Digital India' programme, an initiative of honorable Prime Minister Mr. Narendra Modi, will emerge new progressions in every sector and generates innovative endeavors for geNext. The motive behind the concept is to build participative, transparent and responsive system. The Digital India drive is a dream project of the Indian Government to remodel India into a knowledgeable economy and digitally empowered society, with good governance for citizens by bringing synchronization and co-ordination in public accountability, digitally connecting and delivering the government programs and services to mobilize the capability of information technology across government departments. Today, every nation wants to be fully digitalized and this programme strives to provide equal benefit to the user and service provider. Hence, an attempt has been made in this paper to understand Digital India – as a campaign where technologies and connectivity will come together to make an impact on all aspects of governance and improve the quality of life of citizens.

Key Words: Digital India, Digital Technology, e-Kranti, e-Governance

INTRODUCTION

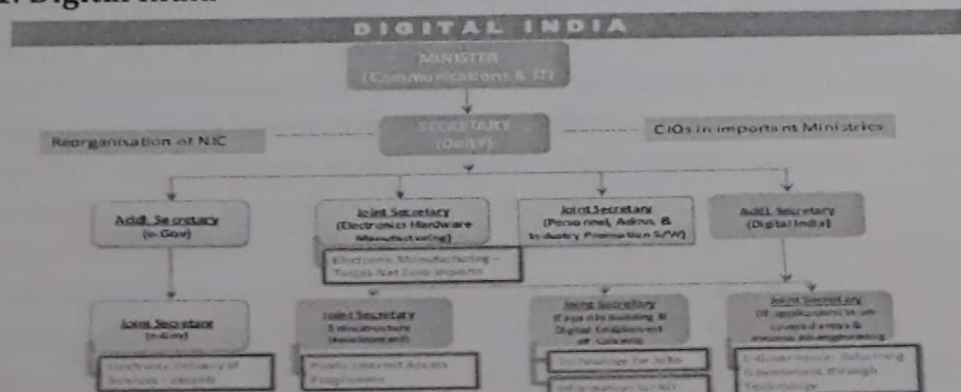
The digital world that we live in today is that where every civilian has a bright prospect to transform the lives in many ways that were hard to envision just a couple of years ago. It is the outcome of several innovations and technology advances. Today, every nation wants to be fully digitalized that will empower society in a better manner. The 'Digital India' programme, an initiative of honourable Prime Minister Mr. Narendra Modi, will emerge new progressions in every sector and generates innovative endeavours for geNext. The motive behind the concept is to build participative, transparent and responsive system. All educational institutions and government services will soon be able to provide I-ways round the clock. Digital India will provide all services electronically and promote digital literacy. Digital Technologies which includes the concept of cloud computing and mobile applications have emerged as the catalysts for express economic growth and citizen empowerment. Companies all over the world desire to invest in Digital India- the 21st century India, as a growth opportunity. Hence, an attempt has been made in this paper to understand Digital India – as a campaign where technologies and connectivity will come together to make an impact on all aspects of governance and improve the quality of life of citizens. Global investors like Sundar Pichai, Satya Nadella, Elon Musk have supported Modi's Digital India initiative.

OBJECTIVES

- ## DATA COLLECTION

DIGITAL INDIA

Figure-1: Digital India



Major Projects Under the Initiative

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Digital India comprises of various initiatives under the single programme each targeted to prepare India for becoming a knowledge economy and for bringing good governance to citizens through synchronized and co-ordinated engagement of the entire Government. Nine projects have been undertaken. These are as follows:

1. **Highways to have broadband services:** Government aims to lay national optical fibre network in all 2.5 lakh gram panchayats. Broadband for the rural will be laid by December 2016 and broadband for all urban will mandate communication infrastructure in new urban development and buildings. By March 2017, the government aims to provide nationwide information infrastructure.

2. **Easy access to mobile connectivity:** The government is taking steps to ensure that by 2018 all villages are covered through mobile connectivity. The aim is to increase network penetration and cover gaps in all 44,000 villages.

3. **IT Training for Jobs:** This initiative seeks to train 10 million people in towns and villages for IT sector jobs in five years. It also aims to train 0.3 million agents to run viable businesses delivering IT services. Additionally, the project involves training of 0.5 million rural IT workforce in five years and setting up of BPOs in each North-eastern state.

4. **Manufacturing of electronics:** The government is focusing on zero imports of electronics. In order to achieve this, the government aims to put up smart energy meters, micro ATMs, mobile, consumer and medical electronics.

5. **Provide public access to internet:** The government aims to provide internet services to 2.5 lakh villages which comprises of one in every panchayat by March 2017 and 1.5 lakh post offices in the next two years. These post offices will become Multi-Service centres for the people.

6. **E-Governance:** The government aims to improve processes and delivery of services through e-Governance with UIDAI, payment gateway, EDI and mobile platforms. School certificates, voter ID cards will be provided online. This aims for a faster examination of data.

7. **E-Kranti:** This service aims to deliver electronic services to people which deals with health, education, farmers, justice, security and financial inclusion.

8. **Global Information:** Hosting data online and engaging social media platforms for governance is the aim of the government. Information is also easily available for the citizens.

9. **MyGov.in is a website** launched by the government for a 2-way communication between citizens and the government. People can send in their suggestions and comment on various issues raised by the government, like net neutrality.

10. **Early harvest programs:** Government plans to set up Wi-Fi facilities in all universities across the country. Email will be made the primary mode of communication. Aadhar Enabled Biometric Attendance System will be deployed in all central government offices where recording of attendance will be made online.

Is India Digitally Ready

There is no doubt in it. India is ready for this. Immediately with the introduction of this campaign, many organizations came forward to lend their hands for achieving India a digitally equipped country. Organizations like BSNL, Reliance Ltd. are coming forward to spread digitalization among rural areas. And over 42000 villages all over India will be having seamless mobile connectivity by 2018. The Internet Saathi initiative aims to cover 4,500 villages over the next 18 months, starting with Gujarat, Rajasthan and Jharkhand. India is aiming to achieve universal digital literacy across the country. The prime importance is to make sure every individual can be able to leverage the potential of

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Digital India. The focus is at least one person in a household should transform into an e-literate. This can be achieved by BBNL which is planning to connect 2, 50,000 panchayats under the scheme. This will ensure the digitization and connectivity of local institutions like panchayats offices, schools, other government offices and libraries etc. India is reforming its government through technology in the name of E-Governance with the advancement of technology and digitalization. Under the e-governance programme, out of 252 schemes planned, 222 services have been provided in short span of time. The nine pillars of Digital India programme clearly confirms that India as a nation is at its nascent stage. One can easily assure that India will be digitally ready in the next three years.

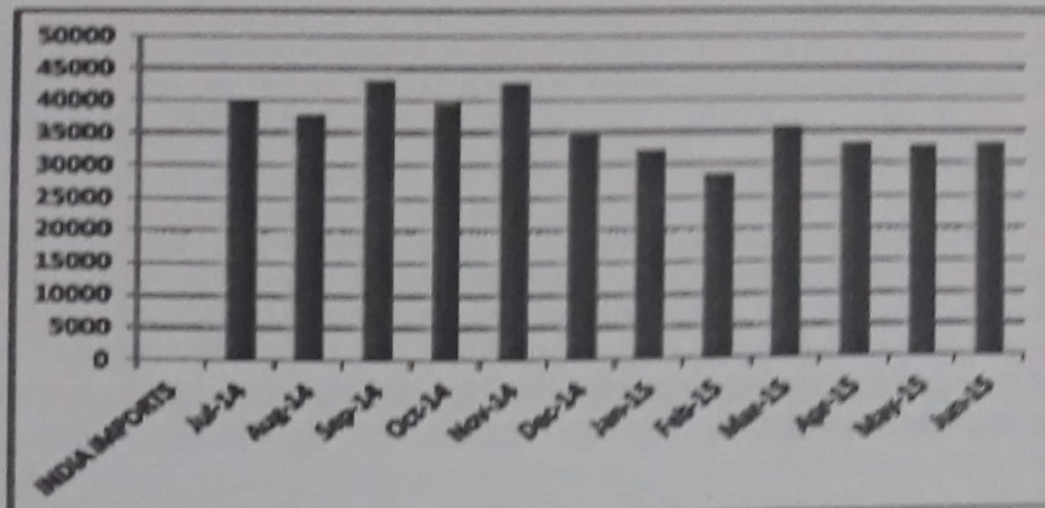
IMPACT

India's economy has witnessed a significant economic growth in the recent past by growing 7.3 per cent in 2015 as against 6.9 per cent in 2014. The steps taken by the government in recent times have shown positive results as India's gross domestic product (GDP) at factor cost at constant (2011-12) prices 2014-15 is Rs 106.4 trillion (US\$ 1.596 trillion), as against Rs 99.21 trillion (US\$ 1.488 trillion) in 2013-14, registering a growth rate of 7.3 per cent. This clearly shows that the Digital India initiative introduced by Indian government has contributed a lot to boost the economy of the country. The Digital India project itself will create employment opportunities for 17 million people directly or indirectly which will help in fighting against unemployment problems in India. Government has planned to give IT training to 100 million students in smaller towns and villages as employment opportunity in IT sector is very high in India. In the next 5 years, India will emerge to be a leader in using IT in sectors like health, defence, education, agriculture and banking. Also the service sectors will be digitally empowered. In the field of education, it also assures broadband connectivity in all panchayats, schools, libraries and other public places. Apart from Broadband connectivity, every village is provided with universal phone connectivity across the country. Mobile and internet banking can improve the financial inclusion in the country and can create win-win situation for all parties in the value-chain by creating an interoperable ecosystem and revenue sharing business models. Telecom operators get additional revenue streams while the banks can reach new customer groups incurring lowest possible costs. The digital inclusion among the country ensures the manufacturing sector to revive the electronics manufacturing.

With the Make in India campaign and Digital India, the nation is planning to achieve net zero imports by 2020. This ensures the exports will be equal to the imports and this helps in the economic development of the nation. With the introduction of mobile connectivity in all villages, unique single portal can be maintained for all government related services. This ensures that all databases and information should be in electronic form and not manual. Next to crude oil, Electronics **hardware** comprises major parts of imports in India. Since India is a service based country and till now we have focused only on software development, with the advent of Digital India, with its stress on making India a manufacturing hub will change the trend.

Figure-2: India's Import of Software and Hardware
(In Million USD)

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World's leading research firm McKinsey has commented that the adoption of new technologies and innovative ideas across sectors by the Digital India programme will help India boost its GDP by \$550 billion to \$1 trillion by 2025.

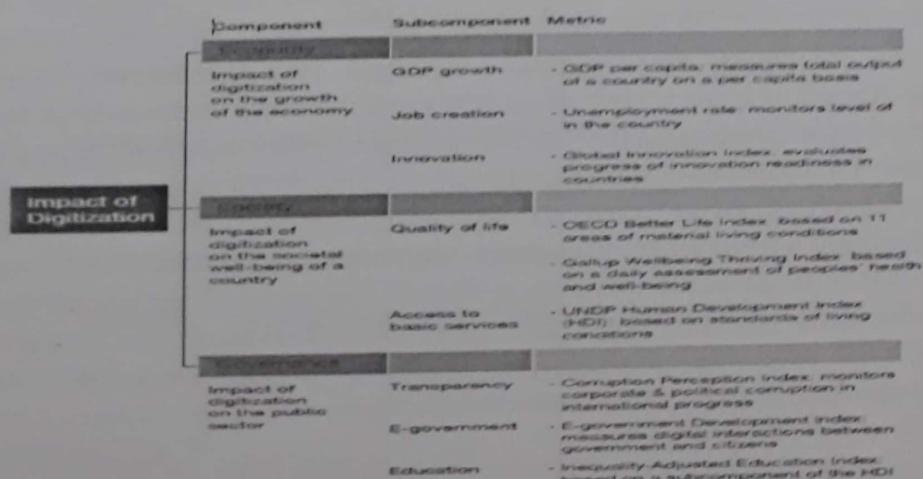
Thus, the estimated impact of Digital India by 2019 would be cross cutting, ranging from broadband connectivity in all Panchayats, Wi-Fi in schools and universities and Public Wi-Fi hotspots. The programme will generate huge number of IT, Telecom and Electronics jobs, both directly and indirectly. Success of this programme will make India Digitally empowered and the leader in usage of IT in delivery of services related to various domains such as health, education, agriculture, banking, etc.

The Digital India program is just the beginning of a digital revolution, once implemented properly it will open various new opportunities for the citizens.

ASSESSING THE IMPACT OF DIGITIZATION

After developing a methodology to determine a nation's level of digitization, the next step was to understand the contribution of digitization to economic strength, societal well-being, and effective governance (see Exhibit 3).

Figure - 3
The framework for measuring digitization's socioeconomic impact



Source: World Bank; World Economic Forum; INSEAD 2011; OECD

ECONOMIC IMPACT

Our analysis confirms that digitization has a material economic impact, which we assessed with three variables: growth in per capita GDP, job creation, and innovation. We analyzed 150 countries using a classical production function model to assess economic impact, controlling for a number of variables.¹²

We found that an increase in digitization of 10 percentage points triggers a 0.50 to 0.62 percent gain in per capita GDP. By contrast, previous studies that focused mainly on broadband penetration established that a 10 percentage point increase in broadband penetration contributes a gain in per capita GDP of just 0.16 to 0.25 percent.¹³ Thus the GDP impact from digitization is more than twice as large as the impact of broadband penetration (see Exhibit 4).

Additionally, the economic impact of digitization accelerates as countries transition to more advanced stages. Constrained digital economies realize a 0.5 percent increase in GDP per capita for every 10 percent increase in digitization, while advanced digital economies show a 0.62 percent increase in GDP per capita for every 10 percent digitization increase.

Figure - 4
The impact of increased digitization

	Variable	Metrics	Positive Impact of Digitization
Economy	GDP Growth	GDP per capita: Overall	0.60%*
		GDP per capita: Constrained Stage	0.50%*
		GDP per capita: Emerging Stage	0.51%*
		GDP per capita: Transitional Stage	0.59%*
		GDP per capita: Advanced Stage	0.62%*
Society	Job Creation	Unemployment rate	-0.84%*
	Innovation	Global Innovation Index	6.27 points ↑
	Quality of Life	OECD Better Life Index	1.29 points ↑
	Access to Basic Services	UNDP HDI: Constrained & Emerging	0.13 points ↑
		UNDP HDI: Transitional & Advanced	0.06 points ↑
Governance	Transparency	Corruption Perception Index	1.17 points ↑
	E-Government	E-Government Development Index	0.10 points ↑
	Education	Inequality-Adjusted Education Index: Constrained & Emerging	0.17 points ↑
		Inequality-Adjusted Education Index: Transitional & Advanced	0.07 points ↑

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The digitization index and analysis will be an invaluable tool for countries to understand their current level of digitization and how to build on it.

In recent years, both developing and developed countries have invested significantly in broadband infrastructure, ensuring that their citizens have high-speed access to the Internet and communications services. But this investment is not enough. We studied the countries that have made rapid advances through the four stages of digitization to see what measures and policies contributed to their progress and found that policymakers can play a pivotal role by focusing on five key imperatives.

These imperatives are critical for all countries — both the mature economies that have reached the advanced stage of digitization, and the developing economies that fall primarily into the constrained, emerging, and transitional stages of digitization. They are:

Elevate digitization on the national agenda: Ensure that national policy and senior government stewardship provide the platform for progress; create a plan for digitization that is tracked and monitored, with accountability residing at senior levels of government.

Evolve sector governance: Segregate regulatory and policy roles; clarify both ownership and accountability for ICT and digitization.

Adopt an ecosystem philosophy: Address the convergence of telecommunications, media, and information technology; develop a strategy that addresses all stages of the value chain in a holistic way; and consider the local ecosystem as well as export opportunities.

Enable sustainable competition: Develop a competitive ICT model that stimulates both innovation and adoption, while ensuring sector sustainability and investments.

Stimulate demand: Invest in boosting digitization usage and service adoption; ensure that public services are available through e-channels.

Depending on their current stage of digitization, countries will vary in how they can implement these imperatives.

ELEVATING DIGITIZATION ON THE NATIONAL AGENDA

To reach the advanced stage of digitization and realize the wide-ranging benefits it offers, countries need support from the highest levels of government. National leaders must formulate and commit to a national digitization policy, with oversight at the executive branch level. Governments need to play a leading role in setting the agenda for digitization because many participants are seeking to stake a claim in this fast-growing arena. As a result, without a coherent strategy and oversight, the sector may devolve into a "tragedy of commons" in which too many competitive stakeholders impede progress. Governments also need to recognize the importance of the ICT sector for overall economic growth and treat it accordingly, rather than focusing on the direct tax revenues it can offer. Many developing countries still struggle to make the transition from viewing the sector as a source of tax revenue to understanding it as an enabler of socioeconomic development. But countries that have made that transition have been rewarded. For example, in recognition of the sector's role as a vital economic enabler, Qatar has reduced the royalties paid by the telecommunications sector and as a result has incentivized investments, growing the ICT sector's contribution to Qatar's GDP by approximately 16

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percent for the last five years and doubling Qatar's share of total ICT activity in the Middle East region.

Another essential element of elevating digitization to the national level is to create an effective system that measures, tracks, and demonstrates conclusively the significant impact of every dollar that is invested in it. First, policymakers need to create a detailed national- and sector-level digitization plan, clearly identifying goals, milestones, and corresponding metrics. Second, policymakers need to institutionalize systems to measure and monitor digitization progress against those plans, while creating accountability for the targets defined.

Irrespective of their stage of digitization development, most economies are still in the process of establishing the relevant metrics. Some developed countries have revised and refined their plans; for example, the United States has laid out its National Broadband Plan. Its six goals (ensuring high-speed Internet in 100 million homes, providing leadership in mobile innovation, developing a ubiquitous and robust broadband network, ensuring affordable broadband service, establishing wireless nationwide access for first responders, and enabling a clean energy economy) are intended to bring "the power and promise of broadband to us all."²¹

CONCLUSION

It has been clear to policymakers for several years that digitization has the potential for dramatic economic, social, and political improvements. Anecdotal evidence abounds: water utilities have installed sensors that reduce leakage, saving water and money; healthcare organizations send text messages to pregnant women with advice on prenatal care, creating a healthier new generation before children are even born; fleets of trucks use digital GPS devices that direct them to shorter routes, cutting down on their greenhouse gas emissions.

The challenge for all stakeholders in the ICT ecosystem has been to quantify the impact of digitization. Numerous organizations, including the World Economic Forum with its evolution of the Networked Readiness Index, are taking steps in that direction. Our hope is that this analysis, which illustrates the need to define and measure ICT beyond broadband access, can provide an input on such efforts.

However, realizing the opportunity that broadband presents will require that policymakers undergo a shift in their thinking. They must go beyond considering ICT and focus instead on digitization, with an emphasis on ICT usage rather than just access. They must take into account their current level of digitization in order to ensure that they are focusing on the right investments to advance to the next stage. And they need to look with fresh eyes at policies that were developed a decade ago to understand how they can be updated for a new era.

Policymakers are hopeful about this opportunity, and many are committed to action. The steps they take in the coming years will determine whether they can translate opportunity into reality.

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