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Digital Transformation of Public Service and Administration

ABSTRACT

This paper presents the results of a process tracing study of digital transformation in India. As the world embraces the revolution 4.0, emerging technologies such as 5G, Artificial Intelligence, among others, will transform governance efficiency and effectiveness. As the current revolution sweeps, the world and the IoT ride the wave, the reality here is that, governments of the future are destined to be digital by default. We need to prepare for this transformation for the future administration which will be digital. Government have to set for themselves Political Objectives to achieve greater trust in system, including through responsiveness and transparency, and by providing opportunities for greater engagement by service users and citizens in general.

CCS CONCEPTS

• **Applied computing** → Computing in government → *E-government*

KEYWORDS

Digital Transformation, Digital Infrastructure, eGovernance, Smart Administration

1. INTRODUCTION

India has been the leading country regarding digitalization of public services for the last several years, and has a long tradition of ICT governance and policy making to promote Internet in society, network and e-Commerce adoption in India from different points of view. The government has laid out a clear vision for digital future of India to provide good governance that leads to inclusive growth, better access to service for all citizens. The digital India program with policy initiatives, products and excellence centres, aims to fulfil this vision of making India truly digital. Successful implementation of digital technologies has

ensured and the next is to move beyond providing services and become as an instrument for good governance. The success of Digital Transformation depends on the creation of an ecosystem in which every citizen is digitally empowered and has access to key service made available electronically. The government has rolled out a number of initiatives over the last six years that have helped in driving Smart Governance.

1.1. Background

This program is cantered on the vision of offering digital infrastructure as a core utility to every citizen, providing



Figure 1: Digital Transformation

governance and services on demand, enabling the digital empowerment to every citizens. The government has adopted ICT for its own transformation for efficient and effective delivery of information and services to citizens at large. National Informatics Centre (NIC) under The Ministry of Electronics and Information Technology is an important stakeholder in the digital transformation of the Indian Government.

1.2. Aims and Objectives

This paper having clear objectives how to support the development and implementation of digital governance strategies that bring government closer to citizens and business to respond effectively to crisis situations after the COVID-19 pandemic. The COVID-19 crisis has brought new needs for digital government services and more demand on existing services. The aim is to show the presence or absence of mechanisms that contributed to digital transformation of Public Administration in India.

This paper is structured as follow. The following paragraph briefly presents the Approach. This is followed by the main results and a conclusion.

2. APPROACH

In order to investigate the problem, this paper conducts a case study in India, because case study is useful method for investigating complex real life phenomena based on information or data. Specifically the paper looked for situational mechanism, such as political structure and action formation and transformation mechanism such as strategies, PPP (stakeholders) involved in the transformation process. The data collection include government official policy and strategy reports, press information published on key Indian governmental websites such as, NIC, Digital India Program, Report written by other International Organization.

3. TRANSFORM GOVERNANCE EMPOWER CITIZENS

India is fast moving towards being a digital first economy spurred by government initiatives like “Digital India”, aimed to empower citizens via online access to government services by way of improved digital infrastructure and internet connectivity. The digital India Program with its focus on three key vision areas; infrastructure as a utility for every citizen, governance and services on demand and digital empowerment of citizens has the potential to provide an incremental 20-30% increases in India’s GDP by 2025. Significant progress has been made in several initiatives under Digital India. However, a few challenges that remain need to be addressed in order to realize the full potential of the program.

The government is focusing on developing the physical infrastructure as well as software and security infrastructure to ensure the success of its vision of providing facilities to every citizen. Till now, the government has successfully achieved the digitalization of all departments. To increase the speed of development and adoption of digital services, the government needs to increase availabilities of digital infrastructure in rural areas also, leverage existing infrastructure and improve digital awareness.

3.1. India and Digitalization

The digital India program now moves from planning phase towards execution and significant progress has been made in implementation of various initiatives. The Digital India program has three visions; digital infrastructure for every citizen, governance and service on demand, digital empowerment to every citizen under nine pillars.



Figure 2. Pillars of Digital India

The success of digital India program depends on the creation of an ecosystem in which every citizen is digitally empowered and has access to key service available. The key enablers to development of digital infrastructure in India have been Cloud Computing and Analytics. The government plans to use cloud technologies to enable seamless integration between various departments and delivery of services to the citizens. With the use of Analytics the government initiated a data repository called Electronic Transaction Aggregation and Analysis Layer (e-TAAL), which provides real time transaction data of citizens with various department and agencies with graphical form.

3.2. Situational Mechanism

India is one of the fastest digitising nations in the world; driven by an explosion in the mobile connectivity, the internet infrastructure, and the emergence of start-ups in the digital transformation that are creating new livelihoods and services for Indian. However there are still some challenges in Public Sector and Indian Administration. The current Situational Mechanism related to digital India’s challenges is as;

- 3.2.1. Digital Infrastructure: Digital infrastructure is expected to have a transformative impact on almost all sectors and provide opportunities to both new and existing players to gain recognition by innovations and providing phenomenal growth. One of the biggest challenges faced by the Digital India Program is the slow progress of Infrastructure.
- 3.2.2. Application Ecosystem: For Digital Technology significant efforts are needed to customize apps and services to cater local needs without any delay, finding such types of vendor who provide such applications has become the challenge.
- 3.2.3. Rural Connectivity and Service: The digital divide needs to address through last connectivity in remote rural areas. This is largely due to the fact that providing mobile connectivity in such area is not commercially viable for

service provider. A lack of proper working intrust in such areas by the providers.

- 3.2.4. Policy Framework and Administration: challenges in policy, such as in governmental norms and procedures, right of way, restrictive regulations, lack of clarity in policies, local government working intention are majors blocks in realizing the vision of digital India.
- 3.2.5. Contracting: Implementation of the Digital India Program has been hampered by contracting challenges such as; several projects assigned to PSUs are delayed given challenges related to skills, experience and technical capabilities. Sometimes is PSUs there are totally depended on external service provider.
- 3.2.6. Digital Literacy and Security: Lack of digital knowledge and lack of awareness are the main reason for not using internet. Non availability of Network is major concern in digital program. With the proliferation of cloud based services, data security has emerged a major challenge.

4. ACTION FORMATION

Action formation for Transformation of Public Service and Administration needs development of digital infrastructure a critical component of the program. To further enable the development in these programs; following measures should be considered;

- 4.1.1. Uniform Policy: First needs of Uniform Policy for Central and State Governmental Procedures as well as Inter-States Regulations. Properly linkage between Centralize and Decentralize process. PPP Models need to be explored for sustainable development of digital infrastructure. Efforts to make high spend and continuous data network. Needs advanced software application and platforms to integrate data and user interface, analytics, automation technologies.
- 4.1.2. Infrastructure Development: Digital infrastructure is one of the key enabling technologies for an interconnected and instrumented world which enables IoTs, where physical objects such as devices are both smart and connected, with the ability to collect and share data without any difficulties. Existing government infrastructure assets should be further leveraged for provision of digital service. In rural and remote areas, private sector players should be incentivized to provide connectivity and service. Proper utilization of funds for digital infrastructure growth is further needed. Digital infrastructure can also provide enhance transformation opportunities for business with new capabilities and value added service for citizens.

- 4.1.3. Collaboration with Private Sector and E- Commerce Mechanism: Effective collaboration with the prompt private sector is critical to use development of the digital infrastructure. Innovative engagement models that ensure commercial viability needs to develop jointly, this will encourage private sector participation and ensure a better response to infrastructure development.
- 4.1.4. Complementary Technology: Satellite communication solution could be used to speed up broadband access in rural and remote areas and Institutions like PRIs for providing better service to citizens without and governmental interference and honesty.

Digital India focuses on transforming India into digitally empowered society and a knowledge economy, thus impacting all facets on businesses, citizens, and environment. It is projected that Digital India has the potential to provide incremental 30% increase in GDP by 2025. The Digital India Program has the potential to impact the lives of citizens by creating employment opportunities, enhancing the quality and speed of service delivery, providing access to administration and improving social and economic inclusion.

Governmental Strategies for Digital Transformation in COVID-19 Pandemic

Digital Government Policy Response to COVID-19

Time horizon	Policy action	Digital government response
Short-term	React	<ul style="list-style-type: none"> Use digital platforms (i.e., online portals, social media) for accurate and timely information-sharing Lead two-way communication with people and foster e-participation (i.e., hackathons, brainstorming events) Protect people's privacy and sensitive data and take into consideration unintended consequences of technologies
Mid-term	Resolve	<ul style="list-style-type: none"> Form effective multi-stakeholder partnerships (i.e., private sector, international organizations, academia) on regional, national and local levels Leverage lessons learned and policy ideas from the ongoing crisis
Long-term	Reinvent	<ul style="list-style-type: none"> Invest in innovative technologies (i.e., AI, blockchain, robots, drones) to increase resilience of healthcare, the national economy and public services delivery Revisit data protection and privacy legislation along with lessons learned Invest in innovative technologies (i.e., AI, blockchain, robots, drones) to increase resilience of healthcare, the national economy and public services delivery

Figure 3. Digital Government Policy Response to COVID-19,
(Source: UN DESA)

The COVID-19 Pandemic is forcing governments to turn towards digital technologies to responds to the crisis in the short term, resolve socio-economic repercussions in the mid-term and reinvent existing policies and tools in the long term. Our digital infrastructure needs strengthening to deal with the impact of COVID-19 and future public health crises management. Better integration of Artificial Intelligence in to the public health system. Analysis a big data relating to the citizen's movement, disease transmission patters and health monitoring could be used to aid prevention measures.

5. CONCLUSION

The COVID-19 crisis has brought new needs for digital government services and more demand on existing services in India. First of all, there are a number of situational mechanisms that are at the basis of the present India digitalization level. India is with high population, has a relatively high unemployment level and overall educated and uneducated population with sufficient capital infrastructure. The Indian Public Sector is characterized by high level of decentralization. The Indian administrative and political structure has been changed over the years to adapt to e-government developments and make its implementation possible. To further strengthen the development of infrastructure, services, capacity building and enhance their impact, the government needs to take steps across different functional areas, as summarized below;

Increase availability of digital infrastructure at Rural and remote locations, improve digital literacy and create awareness on the benefits of digital services, provide incentives for greater participation from private players and start-ups by creating a data driven culture, reflect a risk management approaches to address digital security and privacy issues. Reinforcing institutional capacities to manage and monitor project implementation with fairness, and review legal and regulation framework to allow digital opportunities.

Governments often lack the financial and human resources capabilities to quickly and efficiently develop digital tools the can support people during a crisis situation. Therefore, building partnership with private technology companies, social entrepreneurs or other organization can represent an effective way for government to make use of existing technologies to meet the needs of people.

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