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BRIDGING THE DIGITAL DIVIDE: EQUITABLE ACCESS TO TECHNOLOGY AND DIGITAL GOVERNANCE

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ABSTRACT

As the world becomes more interconnected, the importance of equitable access to technology and effective digital governance cannot be overlooked. In the modern digital age, technology access is fundamental to social, economic, educational, and governmental progress, and it is crucial for promoting inclusive and sustainable development. This research paper delves into the equal access to tech intermingles with digital governance. In-depth discussion on 'equal access to technology' from the individual level to state and nation, with various thoughts and ideas of prominent scholars, personalities and their work relating to this and a few major impediments on this path. In the 'digital governance' part, the discussion is on concurrent government services and activities on the digitalization system and the role of digital governance in bridging the digital divide and ensuring equal access to technology. It also scrutinizes the e-governance in India, the status and initiatives of the Indian government and its states regarding the same along with factual data. This paper explores the multifaceted dimension of digital governance, it's applicability in various sectors and the innovative approaches regarding the same. Apart from all of the above, this paper concludes with the practice and challenges to digital governance followed by some distinctive views. It provides a thorough analysis of 'equal access to technology' at individual, state, and national levels, incorporating insights from notable scholars and their contributions to the field, as well as identifying significant obstacles.

Keywords- digital divide, digitalization, e-governance, equal access

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PROLOGUE:

Digital governance must tackle the disparities ingrained in our information societies, ensuring that technology serves everyone and doesn't worsen existing inequalities (Saskia Sassen, sociologist and economist). In today's era of rapid technological advancement, while the internet is ubiquitous worldwide, many regions such as Kiribati (Oceania), Haiti (Caribbean), Cambodia (Asia), and Lesotho (Southern Africa) still suffer from limited access to technology. In these areas, the concept of 'E-Governance' is largely unknown. This issue isn't due to the people or their governments but rather stems from various factors like geographical challenges, economic conditions, and low digital literacy rates. However, there are solutions to these problems.

Digital governance or E-Governance involves governments utilizing digital methods to enhance work efficiency and public welfare. Experts in this field argue that the ultimate aim of digital governance is to promote justice within society by ensuring transparency and accountability. This allows citizens to understand government operations better. Crucially, establishing digital governance requires equal access to technology; without it, digital governmental functions cannot be realized. Tim Wu, a legal scholar, has championed the cause of net neutrality and equal access, stressing the need for an open and neutral internet to ensure everyone has equal access to digital resources.

1. EQUAL ACCESS TO TECHNOLOGY:

"The web is intended to be a resource for everyone, providing equal access to information and knowledge, regardless of any differences" (Tim Berners-Lee, Inventor of the World Wide Web). Following this principle, in the current digital age, the internet should be accessible to all. Technology has revolutionized humanity, making tasks easier and bringing everything to our fingertips. It is essential to ensure equal access to technology to improve quality of life and fostering development. However, is this feasible? If so, how can it be achieved? We must first address the challenges that hinder equal access to technology. Overcoming these barriers will help us reach our goal. Globally, there are developed, developing, and underdeveloped countries

and a one-size-fits-all solution will not work equally for all. Therefore, we need to implement inclusive policies and approaches to ensure equitable access.

Infrastructure development:

To provide access to anything, we must have the essential resources in place. Similarly, in ensuring equal access to technology, infrastructure development is crucial. Proper infrastructure leads to improvements in technology. Today, robust technological infrastructures can guarantee equal access to technology. For instance, providing broadband access in both urban and rural areas is key. By investing in necessary hardware, software, and networking infrastructure, we can close the digital divide. This includes hardware like servers, data centres, personal computers, devices, routers, and switches. Numerous software applications, operating systems, and virtual machines also play a role. For example, 'Zabbix' is a popular open-source infrastructure monitoring tool, along with 'Sematext Monitoring', 'Prometheus', and 'Datadog Infrastructure Monitoring'. In the networking domain, internet connectivity, VPNs, desktop virtualization, firewalls, and security routers are essential.

Digital Literacy:

Danah Boyd, a social scientist, has extensively explored digital literacy and access. Her research highlights the importance of understanding how various communities interact with technology and how access issues are intertwined with socio-economic factors. Boyd calls for a comprehensive understanding of digital engagement to address the complexities of digital inequalities. It's essential for people to be informed about technology, the digitalization process, the internet, and more, and to be educated about these areas simultaneously. Data from 2023 indicates that only 30% of adults over 50 are digitally literate, compared to 60% of those aged 18-29, underscoring the need for targeted efforts to enhance digital literacy among these demographics. The Indian government's scheme, "Pradhan Mantri Gramin Digital Saksharta Abhiyan" (PMGDISHA), has been a significant initiative in this area, enrolling approximately 57.8 million candidates, training 49 million, and certifying around 36.2 million.

Affordability:

Legal scholar Tim Wu has been a strong proponent of Net Neutrality and Equal Access. He contends that Internet Service Providers (ISPs) should treat all data equally and not discriminate or vary charges based on user, content, website, or platform.

Community Engagement:

Involving communities in technology implementation decision-making processes is crucial. Understanding the specific needs and challenges of different communities helps tailor effective solutions. Common Services Centres (CSCs) provide government and business services digitally in rural areas through village-level entrepreneurs (VLEs). Currently, over 400 digital services are offered by CSCs. There are 531,000 functional CSCs nationwide, with 420,000 operating at the Gram Panchayat Level.

Partisanship:

Current data from 2023 reveals that only 29% of women in India are digitally literate compared to 59% of men. Feminist scholar Anita Gurumurthy explores the intersection of gender and technology, emphasizing the need for feminist perspectives in digital policies to address gender-based disparities in technology access and benefits. Her work shows how gender discrimination hinders equal access to technology, compounded by class and caste discrimination.

2. DIGITAL GOVERNANCE/E-GOVERNANCE:

The "E" in e-governance stands for "electronic." This concept emerged in the late 1990s with the rise of government websites. E-governance involves utilizing information and communication technologies (ICT) to optimize government processes and enhance both internal and external communications. It provides a robust strategy to improve overall governance. Additionally, it leverages ICT to deliver government information and services to citizens. The

four types of e-governance are Government-to-Citizen (G2C), Government-to-Business (G2B), Government-to-Employee (G2E), and Government-to-Government (G2G).

"Code is law, and the rules embedded in our digital systems have significant implications for equal access. Digital governance must ensure that these rules serve the interests of all individuals" (Lawrence Lessig, Law Professor and Internet Activist).

(i) Open Data and Transparency:

Promote openness in digital governance by ensuring that data and decision-making processes are accessible to the public. Make information on policies, regulations, and government activities easily available.

(ii) Cyber Security and Privacy:

Implement strong cybersecurity measures to safeguard citizens' data and privacy. Develop clear regulations on data protection and privacy to ensure individuals have control over their personal information. For example, India banned Chinese apps due to concerns over data theft and privacy issues.

(iii) E-Governance:

Create user-friendly digital platforms for government services, with a focus on accessibility and inclusivity. Offer multiple channels for accessing services to cater to various preferences and needs.

(iv) Capacity Building:

Enhance the skills of government officials to effectively implement and manage digital governance initiatives. Encourage continuous learning and adaptation to new technologies.

(v) Inclusive Policy Development:

Engage diverse stakeholders in the creation of digital policies and regulations to ensure they meet the needs of the entire population. Include perspectives from marginalized communities to avoid policies that might unintentionally increase existing inequalities.

3. E-GOVERNANCE IN INDIA:

In 2022, the **E-Government Development Index (EGDI)** composite score of India was **0.59**. in the same year, **India Ranked 105 out of 193 countries**.

E-Governance Initiative by India/ State Governments:

The Ministry of Electronics and Information Technology (MeitY), Government of India launched the **'Digital India'** programme with the vision to transform India into a digitally empowered society and knowledge-based economy by digital inclusion and digital access. And this programme is an umbrella programme that covers multiple projects of various Central Ministries/Departments and States/UTs.

Unified Mobile Application for New-age Governance (UMANG): It helps the common citizens to access government services through mobile. More than **1,570 government services** and over **22,000 bill payment services** are made available at UMANG.

Digital schemes like **MyGov**, **MeriPehechan**, **MyScheme** are citizen engagement platforms which are developed to facilitate participatory governance. And more than 2,48 crore users are actively using MyGov.

e-District Mission Mode Project (MMP): This project has been implemented at district and sub district levels of all States/UTs, this project deals with various e-services like certificate (Birth, Caste, Death etc.), Pensions (Old age, Disability etc.) apart from these things it also deals with Consumer Court, Revenue Court, Labour, Employment, Land Records, Commercial Tax, Agriculture and many more.

Diksha: It's a national level educational platform that helps students and teachers to participate, contribute, and leverage a common platform to achieve learning goals. As on 27th July 2022, **7,633 courses** are available and more than **15 crore** enrolments have been done.

State Governments:

Bhoomi Project (online delivery of land records): This project is a self-sustainable e governance project for the computerized delivery of **20 million** rural land records to **6.7 million farmers** through **177 governments owned kiosks** in the state of Karnataka.

Gyandoot: It's a G2C service delivery initiative in the **Dhar** district of **Madhya Pradesh** with the twin objective of providing relevant information to the rural population and acting as an interface between the district administration and the people.

In **Odisha** there are ample number e-Government services are there in various sectors, For e.g., **E-Abhijoga** (for Grievances Redress), **E-Shishu** (for Primary Education programme), **E-Municipality**, **E-Fir** and many more.

Project FRIENDS: It was launched in **Thiruvananthapuram**, **Kerala**. **FRIENDS** (Fast, Reliable, Instant, Efficient Network for the Disbursement of Services) is a single window facility providing citizens the means to pay taxes and other financial dues to the State Government.

Apart from all of these mentioned States, there are also numerous States and UTs in India who've implemented and initiated e-Governance programmes and schemes successfully.

4. DIGITAL GOVERNANCE IN VARIOUS SECTORS:

The digital approach of government not only limited to its government administrative offices, it has a wide range of applicability in various sectors like industries, trade, education and many more but this research paper discussed about the contribution of digital governance in the three major sectors:

(i) In The Field of Health:

MoHFW (Ministry of Health and Family Welfare) is therefore promoting eHealth or Digital Health i.e. use of information & communication technology in the direction of "reaching services to citizens".

A. EHR Standards: It include standards for disease classification, medicine and clinical terminology, Laboratory data exchange etc.

B. Metadata & Data Standards: The MDDS have more than 1000 data elements to be used in health care applications and are aligned with the global health IT standards

C. My Health Record: It provides a single online personal mdical record storage platform to citizens of India to enable them to manage their own medical records in a centralized way.

Apart from these there are also numerous digital systems are there in the field of health like **National Identification Number (NIN)**, **Hospital Information System (HIS)**, **Nation Digital health Blueprint (NDHB)**, **MeraAspatal (patient feedback system)** and many more.

(ii) In The Field of Education:

In the evolving era of digitalisation how can the education sector left out it's the route way for digital literacy and awareness for the same.

PM eVidya: It's a comprehensive program with the objective to unify digital and online education with the education programs for better reach and access to E-learning. It targeted almost 25 crore school students across the country.

SWAYAM Prabha TV: It includes 32 channels that focus on educational programs with the objective of 'One Class, One Channel'. It has tie up with Tata Sky and Airtel to air and telecast the educational programs.

Vidya Daan: The objective of this scheme is to seek donations adns contributions for the digital education resources for the school from educational institutions, private players, and individuals.

States like Odisha, Chandigarh, Telangana, Gujrat, Assam, Goa, and Kerala along with CBSE and NCERT are working efficiently on Vidya Daan to source content on Diksha.

E-Pathsala: This initiative is for students, teachers and as well as for parents. It can be accessed through a web portal or mobile app for the E-textbooks with 3500+ curriculum content in Sanskrit, Hindi, Urdu, and English. Its primary objective is dedicated to transforming and covering the level of education for all students in the remote extensions of the country by supporting the digitally and technically to attain education with just a single click over the digital tools.

(iii) In The Field of Defence:

(a) Artificial Intelligence Prowess: The Military College of Telecommunication Engineering has evolved into a hub for AI research and development. Innovations like the **Situational Awareness Module for Army (SAMA)** and advance pattern recognition software for satellite imagery analysis are notable highlights.

(b) Innovative Platforms and Digitization: Projects like SRIJAN for transactions, Raksha Bhoomi for digitizing land records, and MISO foe efficient inventory management exemplify the Army's commitment to digital innovation. These software solutions not only bring efficiency to functioning but also contribute to savings on exchequers.

(c) Project Shaurya Sankalan: It underscores the Army's dedication to preserving its rich military history through technologies means, ensuring legacy preservation in the digital age.

(d) Intellectual Property Rights and Innovation: The Army's pursuit of innovation is evident through its application for intellectual property rights for more than 22 projects shortlisted during ideas and innovation competition. An MoU has also been signed with IIT Delhi for further developing militarized forms of in-house innovations carried out by Indian Army Personnel.

5. INNOVATIVE APPROACHES FOR EQUAL ACCESS TO TECH AND DIGITAL GOVERNANCE:

In all domains and industries, challenges are inevitable. However, merely identifying these challenges isn't enough; it's crucial to seek out the most effective solutions. Both central and state governments have prioritized initiatives and effective implementation of digital governance, which is commendable. Yet, in the current context, traditional solutions may fall short. What's needed are innovative approaches that actively involve people and drive towards the desired outcomes.

(i) Public-private Partnership:

Partnering with private sector organizations to narrow the digital gap may entail actions such as subsidizing access to technology, offering discounted devices, and aiding in the development of infrastructure in areas lacking in services.

(ii) Digital Inclusion Policies:

Enforcing thorough policies that demand digital inclusivity, which might entail regulations compelling tech firms to prioritize accessibility in product development and guaranteeing the availability of digital services.

(iii) Digital Skill Vouchers:

Introducing initiatives offering vouchers or subsidies for digital skills training could enhance the affordability and accessibility of digital education, particularly for individuals lacking the financial resources to pursue such training independently.

(iv) Youth Engagement programmes:

Involving the youth in technology and digital governance via mentorship initiatives, coding camps, and innovation-driven projects can equip them with valuable digital skills, thereby fostering enduring benefits for a community's technological progress.

(v) Multilingual Technologies:

Making sure that digital platforms and content are accessible in various languages, especially in areas with diverse linguistic backgrounds, can improve accessibility for those who don't speak English and foster inclusivity.

EPILOGUE:

In the conclusion of the paper, it is noted that equal access to technology and digital governance is not commonly adopted as a government policy due to the current state of digitalization worldwide. Considering the rapid pace of digitalization and the increasing use of technology, ensuring equal access to tech has become a crucial inclusive policy for both the government and its citizens. Every major sector that can drive a country's development is now directly or indirectly linked to technology, making equitable access essential. However, there is also a dark side to technology that can cause significant harm, and it is important to recognize and address these challenges, not just celebrate the benefits of technology.

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