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FACTORS CONTRIBUTES AND INITIATIVES IN BRIDGING THE DIGITAL DIVIDE

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ABSTRACT
The current era is the era of globalization, which has reduced the distances between people by transforming the entire world into a global village. Technology is a major factor and a powerful instrument of social change and advancement in today's globalized world. Technology is critical in generating new ideas and breaking down boundaries between people. The concept of the "digital gap" has been extensively investigated in the last decade, and it has sparked a wide range of public conjecture about its economic, social, and political implications. According to studies, the divide between those who have access to ICTs and those who do not fosters marginalization, jeopardizes social cohesion, and stifles economic growth. This article highlights the government of India's initiatives to improve access to digital information, as well as the essential role that several national programmes play in bridging the digital divide. Gender, physical handicap, physical access, age, content access, and a lack of ICT skills are all factors that contribute to the digital divide. The issue of bridging the information divide in underdeveloped countries can be addressed using digital libraries. An attempt is made to highlight some measures taken in India to bridge this gap by constructing digital libraries. The article also discusses some of the major difficulties and barriers to digitization, as well as the importance of strong determination, sound policies, and political backing in bridging the country's digital gap.

Keywords: Digital Divide, Access, Internet, ICTs, Infrastructure, digital information, digital gap

INTRODUCTION:
Today, around 40% of the world's population has access to the internet. It was less than one percent in 1995. Between 1999 and 2013, the number of internet users grew tenfold. The first billion was reached in 2005, the second billion in 2010, and the third billion in 2014. However, a considerable fraction of the global population, particularly in poor nations, lacks basic internet connectivity, resulting in the digital divide. The digital gap has produced a Haves and Have Nots situation. Those who have access to the internet and digital sources are deemed significantly superior to those who have not. India is one of the countries with a significant digital gap. Despite being ranked third in the world in terms of internet users after the United States and China, India continues to suffer from the Digital Divide. Only 243,198,922 people out of a total population of one billion have internet access, accounting for 19.19 percent and 8.33 percent of the world's population, respectively. Inadequate budget, a lack of basic computer and Internet skills, and a lack of English-language competence are all factors that limit access to and use of digital information resources. Technology is a significant driver of change. It's a dynamic subject that's always generating fresh ideas and progress. The need of a knowledgeable and confident workforce in the use of information and communication technology (ICT) has long been recognised. Technology has also become a vital role in society as a whole, with an ever-increasing usage of internet communication to do daily tasks like checking train schedules, buying for groceries, filing tax returns, and paying car taxes. It has infiltrated every aspect of our daily lives. The distribution of information across the population is increasingly linked to stratification in a society where knowledge-intensive activities are becoming an increasingly essential component of the economy. The widespread use of the Internet has prompted many to speculate on the new medium's possible consequences on society as a whole. Activists have lauded the technology's potential benefits, claiming that it will reduce inequality by lowering information barriers, allowing people from all walks of life to improve their human capital, expand their social

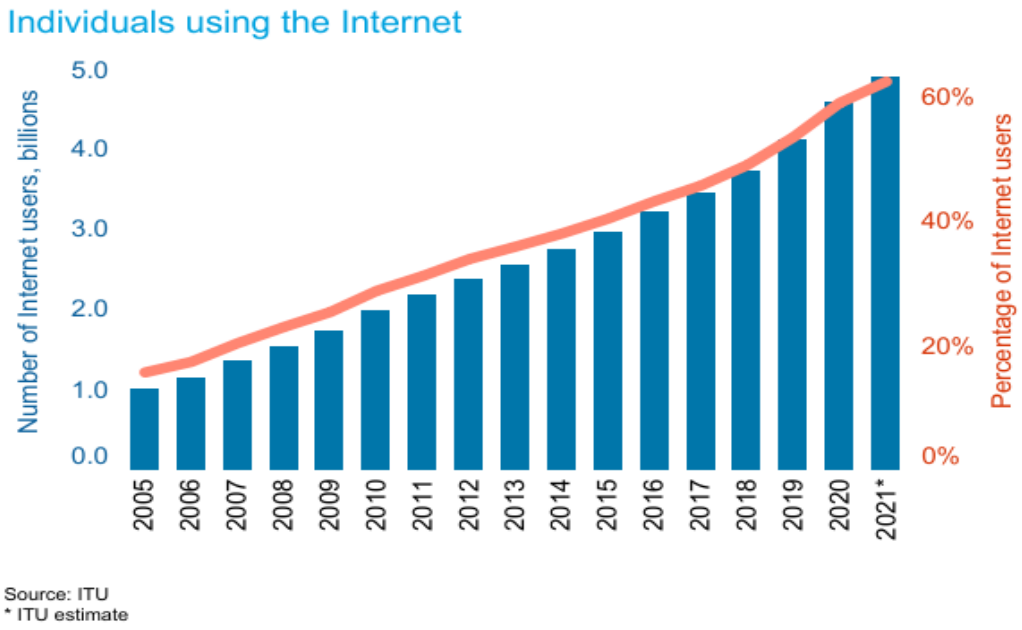
networks, search for and find jobs, have better access to health information, and otherwise improve their opportunities and life chances. Others, on the other hand, warn that the Internet's uneven distribution across the population will exacerbate disparities by strengthening the prospects of those who are already well-off while limiting others who are less well-off opportunities for progress. In this new IT environment, there are four digital divides that are emerging. These four digital divides are inextricably linked to one another. The first is an internal conflict between the wealthy and the poor who have access to the internet. Although the baselines differ, this disparity exists in both the North and the South. The second cultural divide is mostly between English and other languages, or more broadly, between Anglo-Saxon culture and other world civilizations. The third gap is compounded by differences in information technology access between affluent and poor countries. Finally, there is the emergence of the 'digerati,' an affluent elite characterised by skills appropriate to information-based industries and technologies, growing affluence and influence unrelated to traditional sources of elite status, and obsessive focus on cutting-edge technologies, disregard for convention and authority, and indifference to traditional hierarchical values, particularly among young people. There are a number of important characteristics that influence ICT access. The most important factors are income, education, age, and whether you live in a city or a rural area. Greater access is most closely linked to higher income and education levels. It's also 177 positively linked to living in a city. Even today, internet connectivity is mostly a city phenomenon that requires significant improvement in order to be more effective in developing nations such as India, where over half of the population still lives in countryside defined by poverty and illiteracy. There is concern that the internet will exacerbate India's existing inequities. ICTs offer interactive communication that is unaffected by location, volume, medium, or time, and they also minimise the cost of coordination, communication, and information processing (Fletcher et al, 2000) (Dean, 2002; Gordon, 2000). In the global south, ICTs hold a lot of promise for development and poverty reduction. Poor people have benefited from increased income, better health care, improved education and training, and access to job opportunities (Kuhn and Skuterud, 2000; Sumanjeet, 2008; Hecker, 2001; Motohashi, 2001); engagement with government services; contacts with family and friends; enterprise development opportunities; increased agricultural productivity (Poole, 2001; Hooker et al 2001), and so on (Kuhn and Skuterud, 2000; Sumanjeet, 2008; Hecker (Sumanjeet, 2009).

With ICTs, the issue of transparency is easier to address, potentially saving money while also increasing stakeholder confidence in the development process and system (Jesus, 2003). ICTs have revolutionized the way people do business. The internet and the business innovations that it has enabled, such as e-commerce, have opened up massive new commercial opportunities and changed the whole corporate world into a global village.

ITU estimates that approximately 4.9 billion people – or 63 per cent of the world’s population – are using the Internet in 2021. This represents an increase of 17 per cent since 2019, with 782 million people estimated to have come online during that period. However, this leaves 2.9 billion people still offline. The ITU's Digital Knowledge Hub Department, which is part of the Telecommunication Development Bureau, houses the ICT Data and Analytics Division (BDT). One of the Division's main responsibilities is to gather, verify, and harmonise telecommunication/ICT statistics for over 200 economies throughout the world. ITU obtains two major sets of telecommunication/ICT data directly from countries:

- Data on the fixed-telephone network, mobile-cellular services, Internet/broadband, traffic, income, and investment; and prices of ICT services were acquired from national telecommunication/ICT ministries and regulatory authorities.

- National statistical offices (NSOs) gathered household ICT data, which included information on household access to ICTs and individual use of ICTs.



Above image showing Individuals using the Internet

METHODOLOGY ADOPTED FOR THE PURPOSE OF STUDY

Keeping in view of the availability of the resources and feasibility of the present research paper, the author conducted his research studies on the basis of secondary sources of data. Secondary data was gathered from a variety of sources, including books, journals, and research articles. The study's methodology also incorporates the ideas and writings of numerous authors from the academic, research, and corporate sectors. As a result, the author made use of all available resources and conducted extensive study for the current research article. The purpose of this article is to assess India's attempts to close the digital divide. It outlines a number of ongoing projects and programmes that have been undertaken by the government, non-governmental groups, and private businesses, as well as some of the obstacles that the country has faced in overcoming these obstacles. The purpose of this study is to illustrate the observations rather than to draw any firm conclusions.

FACTORS THAT CONTRIBUTE TO THE DIGITAL DIVIDE:

The digital gap is exacerbated by a number of variables. Some of the elements that contribute to this divide are listed below:

Gender: Females are said to have less Internet access than males in several countries and organisations. Males have limited access to the Internet at a lower rate (38%) than females (41 percent). This difference can be due in part to the assumption that IT is a technical subject best left to men, with many women avoiding it as a result (Mutula 2002; Singh 2004)

Physical disability: Due to advancements in technology, such as Jaws, one of several screen readers, visually challenged and blind people can fully utilise a computer. Voice synthesisers that can read text on a screen are known as screen readers. However, because the screen reader is unable to interpret graphically based web pages, the Internet remains unavailable to blind and visually impaired users (Cullen 2001).

Physical access: The primary obstacles in this area are a lack of telecommunication infrastructure with sufficient dependable bandwidth for Internet connections, as well as cost, the capacity to

purchase or rent equipment without financial hardship. As a result, there is a shortage of technology access (Hardware and software).

Lack of ICT skills and support: Many people in disadvantaged groups are unable to use ICTs due to a lack of computing and technological abilities, as well as, more crucially, reading skills. This is a major barrier that prevents certain people from using internet technology (Salinas 2003).
Attitudinal factors: This stems from cultural and behavioural views about technology, such as the belief that computers are for "nerdy" people, men, and the young, and are difficult to use, or that computers are associated with a middle-class "white" culture. A culturally related attitude aspect can also be present. Many cultures that place a high importance on oral culture, personal communication, and strong family and kinship networks will not prioritise the use of computers for communication (Cullen 2001). Only 12 million of the 127 million mobile users have used Mobile Internet, despite the fact that 27 percent of mobile phones are Internet ready (127 million out of 471 million total customers). When it comes to active users, this figure drops to 2 million, or 17% of the total (IAMAI 2009). Checking emails and looking for information are the two most common reasons for using a mobile phone to access the internet. 2.8 percent of urban Indian mobile phone users checked their emails on the Internet, while 2.5 percent utilised the Internet to look up information.

Age: According to Singh (2001) as stated in Singh (2004), 45 percent of those aged 15 to 24 use the internet on a daily basis. The internet was utilised once a month by older respondents, notably those aged 45 to 54 (27 percent). There is clearly a digital difference between age groups since younger people are more exposed to technology and willing to utilise it, but elderly people are resistive to change and avoid using it.

Racial segregation: The legacy of some countries' policies, such as apartheid in South Africa, has played a significant role in the digital divide. White individuals have more technological access than black people. In the United States of America, white people have greater access to technology than African Americans.

Relevant content: Some people avoid using internet technologies because the material is irrelevant and uninteresting to them. This may be true for specific groups like the elderly or women, but it is especially true for cultural or ethnic groups (Cullen 2001; Salinas 2003)

Indian Scenario:
In India, the following causes can be considered roadblocks to closing the digital divide:

Low Literacy Rate: According to the 2001 Population Census of India, India's literacy rate has improved to 65.38 percent. The male literacy rate is 75.96%, while the female literacy rate is 54.28 percent. Kerala is India's most literate state, with a literacy rate of 90.86 percent (India Online 2011). Even while the literacy rate appears to be increasing, there is a disparity in literacy rates between urban and rural areas, which poses a barrier to the digital divide.

Education System: The number of dropouts at the undergraduate level is one of the most pressing issues in Indian education. Approximately 23 million children enroll in primary school each year, but only roughly 15 million enroll in senior school. At the undergraduate level, this number drops dramatically to around 2.3 million students per year (Yajnik 2005). To close the digital divide, pupils must be taught about information technology beginning in elementary school, and the Indian government has just recognized the necessity for this. The government has included information

technology in the curriculum beginning in first grade so that pupils can gain access to technology and learn different ways for browsing the Internet.

Language: The raw returns from the 1991 Census were rationalized into 1576 mother tongues. They are further divided into 216 mother tongues, which are then categorized into 114 languages (Mallikarjun, B 2004). The hurdles to the Information Age are almost inseparable for Indians who speak no (or little) English. English or one of the 'Northern' languages is required for all frequently used operating systems. In actuality, unless Indians speak English, which the vast majority do not, computer use and Internet connection are effectively out of the question, regardless of how wealthy, clever, educated, prosperous, or motivated they may be (Keniston 2002).

INITIATIVES IN BRIDGING THE DIGITAL DIVIDE:

Kisan Call centre: On January 21, 2004, the Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, Government of India, opened Kisan Call Centers across the country to provide extension services to farmers. The goal of these call centres is to answer to farmer concerns quickly and in the local language. Every state has a call centre that is required to manage traffic from all across the country. These call centres handle questions relating to agriculture and associated industries. A farmer can reach an agriculture graduate or specialist by just a single phone call, and they will be able to react to his questions and difficulties immediately. If the Level-I respondent is unable to satisfy the farmer, the call can be transferred by conference to a Level-II expert sitting in a selected location in the State in an institution for guidance. If the farmer is not pleased, his problems will be noted, solved at the highest level at the Nodal centre at Level-III, and he will receive further advise via post or by extension workers' visits. The services would be provided 24 hours a day, seven days a week. In the following individual paras, the operation of Levels I, II, and III is discussed. During working hours, there will be a prompt response; however, outside of working hours and during holidays, the call will be recorded and the queries will be answered by mail. The Ministry of Agriculture, Government of India, has made a fantastic attempt to use the phone to bridge the gap between the actual information resource and the user.

Life Line India: One World, a humanitarian organisation dedicated to promoting human rights and sustainable development around the world, was approached by BT to explore ideas for a telephone-based information service that would allow farmers to ask a question and receive a recorded response quickly. The effort was co-sponsored by BT and Cisco. In November 2006, Life Lines India was launched. The system consists of a Cisco Unified Messaging platform with Interactive Voice Response feature, which is connected with a BT Customer Relationship Management application and database. One World, which manages and operates the service, is also sponsored by Cisco and BT.

Coverage currently extends to 700 towns, and the service receives 350 calls per day on average.
Over 88,000 'frequently asked questions' have been compiled into a database. This is critical not only for providing timely service to farmers, but also for enabling service scalability and sustainability. As a result, caller satisfaction with the service is quite high, at 96%. Crop quality and efficiency have already improved, and income for some farmers has increased by 25 to 150 percent. Plans are currently being planned to expand service coverage to 3,000 communities by 2010 and to investigate the possibility of using the platform for other applications such as 'LifeLines for Education.' The LifeLines India service initially included 85 villages, mostly in the Bundelkhand region to the south-east of Delhi. Its goal is to give farmers access to expert guidance on issues related to agriculture and animal husbandry. Farmers only need to ring the LifeLines India number from a communal phone to get help. A village phone shop (kiosk) or a mobile phone provided by local One World sponsored associates (Ek Dunya fellows) who travel around the villages to assist promotes OneWorld services

could be used. Callers are greeted with the service name "Soochna Se Samadaan" (Information is Solution) and asked to leave a voicemail with their query. LifeLines India has demonstrated the value of digital inclusion by teaching rural users how to use technology to get advice and education in order to better their families' and community's futures.

Bhoomi Project: Karnataka's Bhoomi Project covers 6.7 million farmers and holds millions of land ownership information. Many people, as well as international funding bodies, have praised the effort. This project has shortened the time it takes to interact with the state revenue department's bureaucratic hierarchy. Bhoomi centres can be found throughout the state. At these kiosks, any land record can be accessed on a touch screen, and the project can also be utilised as a databank for numerous public and private sector projects.
The initiative was recognised by the Commonwealth Association of Public Administration and Management in 2002 for "self-content governance and new frontiers." Bhoomi has received praise from the UNDP and the World Bank for his ambitious vision and implementation. Following the success of the Bhoomi project, other Indian states, including Tamil Nadu, Maharastra, and Madhya Pradesh, have begun developing Bhoomi-based models in their own states.

Gyandoot Project: Gyandoot is a Dhar district intranet that connects rural cybercafés that cater to the requirements of the general public.
This GYANDOOT website is an extension of the Gyandoot intranet that provides global access. Gyandoot is India's first rural information network project, located in Madhya Pradesh's Dhar district, which has the greatest concentration of tribes and extensive forest. At large market locations or major roadways, every town has a computer centre, or "soochnalaya." People can quickly log in and lodge complaints or request information about the district's agriculture, forest fields, water resources, and so on. In the District, twenty–one village Panchayats have been connected to computers or information centres, and many private sector information centres known as "Soochnalays" have also been established. The "Manwar Agriculture Mandi," for example, is a popular location where farmers may get the most up-to-date crop prices. These computers also have land records for a few tehsils in the district of Dhar. In addition, by linking to the World Wide Web, Internet connections have been made available to obtain global information. By spreading the Gyandoot Project to additional districts, the Madhya Pradesh government hopes to make it a huge success. With the support of the business sector, the state is preparing to open 7,800 IT kiosks.7,500 "Jan Shiksha" public instruction centres have been identified to train ordinary people in computer literacy, and policy is being developed to bring IT to the needs and benefits of the common people. The government is also attempting to enlist public libraries in this endeavour.

Projects such as Gyanadoot in Dhar (MP), Wired Village in Warna (Maharastra), MS Swaminathan Foundation's project in Veerampattinam (Pondichery), Collectorate of Thiruvarur (Tamil Nadu) reported in (Sothik Biswas 2001) have shown how innovative projects implemented by committed agencies have aided in bridging the digital divide. India, in fact, has only three phone lines per 100 people and about five computers per 1,000 people. Rural infrastructure is woefully inadequate, and power outages in rural regions are long and frequent.
Still, ICT has begun to improve the lives of rural people in places like Govardhan (Dhar) and Balaram (Pondichery) (Sothik Biswas 2001). They're part of a few dedicated attempts to connect villages, disseminate information, simplify procedures, and cut out middlemen. Rural customers can and will benefit from connectivity, as evidenced by projects like these. Through these human-mediated Internet access programmes, the rural population will get new access to agricultural supplies, new markets for their products, and, in a few years, new educational and career prospects.

TDIL: The TDIL (Technology Development for Indian Languages) project was launched by the Department of Information Technology with the goal of developing information processing tools and techniques to facilitate human-machine interaction without a language barrier, as well as creating and accessing multilingual knowledge resources and integrating them to develop innovative user products and services.

SUGGESTIONS

- The digital gap is a result of unequal access to information and communication technology, and it affects developed as well as developing nations. India has tried to close the gap by launching a number of projects and programs for rural and distant areas, but much more work need to be done to integrate the populace into the information society. To close the digital divide, all that is necessary is for individuals to have a strong sense of determination, competent policymakers, and political support.
- In order to close the knowledge gap between those who have access to digital information and those who do not, libraries and information centers play a vital role in giving information to everyone. Public libraries' physical infrastructure must be improved, and they must be connected to neighborhood information hubs.
- The current imperative is to advance technology that is most suited to rural India's needs. For instance, increasing PC adoption is necessary to close the real-world digital divide. Simple: a mobile device cannot perform all tasks that a computer can. However, mobile devices are more affordable, more portable, and have longer battery lives, making them ideal for places without or with limited access to energy.
- It is simpler and less expensive to create the infrastructure required to link wireless devices to the Internet. Additionally, there is no need to overcome a learning curve, a literacy barrier, or technical support obstacles. There are no expensive or onerous apps to load, keep up with, or update. Mobile thus works best for rural residents. Therefore, it is important for both public and private actors to promote mobile use in India.

CONCLUSION

The biggest obstacle in rural Indian society is that people's attitudes toward information and communication technologies (ICTs) are highly passive as a result of their underestimation of their importance. It is necessary to promote a wider knowledge of "ICTs for everyone" if these "passive people" are to become active participants in national progress. To address the problems women around the world have accessing and using ICTs, creative and time-bound initiatives must be developed. For women to be able to utilize the Internet for earning a living and educating themselves, the information they use must be relevant and valuable. The most crucial prerequisite for closing the rural-urban digital gap in India is the development of the country's telecommunications infrastructure, and the government can play a significant role in doing so. It should be budgeted specifically for closing the digital divide between the regions. In India, there is a need to address linguistic problems brought on by the country's diverse people speaking a variety of languages. Nowadays, English is employed in many spheres of life. Promoting cultural diversity and preventing social marginalization among India's non-English speaking population are important. Government funding shortages and the recession in the global economy has led to a drop in ICT projects. The private sector will need to invest more and use more resources as a result. The digital divide can be reduced by effectively deploying ICT in the vital sectors of education, healthcare, and connection to address the needs of rural residents, as wireless and satellite linkages have made these technologies economical and accessible.

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