BRIDGING DIGITAL DIVIDE IN INDIA: SOME FACTORS AND INITIATIVES

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Abstract

The term "digital divide" refers to the disparities between societies and nations. The phrase "digital divide" refers to the unequal and disproportionate pace of development in societies in having access to digital infrastructure and services (Paul 2002:13). This paper highlights both physical access to technology hardware and, more broadly, skills and resources which allow for the use of digital divide. Some barriers of Digital divide is discussed such as Low Literacy Rate, Education System and languages. Some projects and centres are also discussed in Bridging the Digital Divide. For example Gyandoot is an intranet in Dhar district connecting rural cybercafes catering to the everyday needs of the masses. This web site of GYANDOOT is an extension of Gyandoot intranet, for giving global access. Lastly conclusion is drawn with many efforts can be seen in Indian for bridging digital divide.

Keywords: Digital Divide, Literacy Rate, Gyandoot Project, Bhoomi Project and TDIL.

1. BRIDGING DIGITAL DIVIDE IN INDIA: SOME INITIATIVES

The ALA's definition is appropriate when the emphasis is on disparities between groups and individuals in one country. However, the term "digital divide" also to refers to the disparities between societies and nations. The phrase "digital divide" refers to the unequal and disproportionate pace of development in societies in having access to digital infrastructure and services (Paul 2002:13).

The term digital divide refers to the gap between those with regular, effective access to digital and information technology, and those without this access. It encompasses both physical access to technology hardware and, more broadly, skills and resources which allow for its use. Groups often discussed in the context of a digital divide include

socioeconomic (rich/poor), racial (white/minority), or geographical (urban/rural). The term global digital divide refers to differences in technology access between countries.

Essentially, this means the divide between those who have access to digital technology and those who do not. The divide takes into account wealth, ethnicity and the area of those in the divide

2. INDIAN SCENARIO

As far as India is concerned the following factors can be considered barrier to the digital divide:

2.1 Low Literacy Rate: As per Population Census of India 2011, the Literacy rate of India has shown improvement of almost 9.2 percent. It has gone up to 74.04% in 2011 from 65.38% in 2001, thus registering an increase of over 9 percent in the last 10 years. It consists of male literacy rate 82.14% and female literacy rate is 65.46%. Kerala with 93.91% literacy rate is the top state in India. Lakshadweep and Mizoram are at second and third position with 92.28% and 91.58% literacy rate respectively. Bihar with 63.08% literacy rate is the last in terms of literacy rate in India. (India Online 2016). Even though it seems that the literacy rate is going upwards but when it comes to urban and rural areas there is a difference in the literacy rate which in turn creates a hurdle for digital divide.

No.	State	Literacy Rate (2011 Census)	Male Literacy Rate (2011 Census)	Female Literacy Rate (2011 Census)
Indian States Ranking by Literacy Rate				
1	Andaman & Nicobar Islands	86.3%	90.1%	81.8%
2	Andhra Pradesh	67.7%	75.6%	59.7%
3	Arunachal Pradesh	67.0%	73.7%	59.6%
4	Assam	73.2%	78.8%	67.3%
5	Bihar	63.8%	73.5%	53.3%
6	Chandigarh	86.4%	90.5%	81.4%
7	Chattisgarh	71.0%	81.5%	60.6%
8	Dadra & Nagar Haveli	77.7%	86.5%	65.9%
9	Daman & Diu	87.1%	91.5%	79.6%
10	Delhi	86.3%	91.0%	80.9%
11	Goa	87.4%	92.8%	81.8%
12	Gujarat	79.3%	87.2%	70.7%
13	Haryana	76.6%	85.4%	66.8%
14	Himachal Pradesh	83.8%	90.8%	76.6%
15	Jammu and Kashmir	68.7%	78.3%	58.0%
16	Jharkhand	67.6%	78.5%	56.2%
17	Karnataka	75.6%	82.8%	68.1%
18	Kerala	93.9%	96.0%	92.0%
19	Lakshadweep	92.3%	96.1%	88.2%
20	Madhya Pradesh	70.6%	80.5%	60.%

21	Maharashtra	82.9%	89.8%	75.5%
22	Manipur	79.8%	86.5%	73.2%
23	Meghalaya	75.5%	77.2%	73.8%
24	Mizoram	91.6%	93.7%	89.4%
25	Nagaland	80.1%	83.3%	76.7%
26	Orissa	73.5%	82.4%	64.4%
27	Puducherry	86.5%	92.1%	81.2%
28	Punjab	76.7%	81.5%	73.3%
29	Rajasthan	67.1%	80.5%	52.7%
30	Sikkim	82.2%	87.3%	76.4%
31	Tamil Nadu	80.3%	86.8%	73.9%
32	Tripura	87.8%	92.2%	83.1%
33	Uttar Pradesh	69.7%	79.2%	59.3%
34	Uttarakhand	79.6%	88.3%	70.7%
35	West Bengal	77.1%	82.7%	71.2%

Source : India Online, 2016

2.2 Education System: One of the biggest challenges which face Indian education is the number of dropouts at the undergraduate level. Approximately 23 million children per year take up primary education but only about 15 million children per year take up secondary education. This figure gets drastically reduced at the undergraduate level to only about 2.3 million students per year (Yajnik 2005). In order to overcome the digital divide it is necessary that the information technology aspect should be introduced to the students right from their school level and the need for the same is been identified by the Indian government recently. The government has introduced the Information technology in the syllabus right from 1st standard so that the students can have an access to the technology and will come to know various strategies of searching the Internet.

2.3 Language: The 1991 Census had 10,400 raw returns and they were rationalized into 1576 mother tongues. They are further rationalized into 216 mother tongues, and grouped under 114 languages (Mallikarjun, B 2004). For Indians who speak no (or little) English, the barriers to the Information Age are almost inseparable. All widely-used operating systems require some knowledge of English or one of the 'Northern' languages. Thus, in practice, unless Indians know English, which most Indians do not, no matter how wealthy, brilliant, educated, prosperous or motivated they may be, computer use and Internet access are effectively out of question (Keniston 2002).

3. INITIATIVES IN BRIDGING THE DIGITAL DIVIDE

3.1 **Kisan Call centre:** The Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, Govt. of India launched Kisan Call Centers on January 21, 2004 across the country to deliver extension services to the farming community. The purpose of these call centers is to respond to issues raised by farmers, instantly, in the local language. There are call centers for every state which are expected to handle traffic from any part of the country. Queries related to agriculture and allied sectors are being addressed through

these call centers. Just by making a single call the farmer reaches an agriculture graduate or expert who would be able to respond to his queries and problems instantly. In case the respondent at the Level-I is not able to satisfy the farmer, the call can be taken on a conference to an expert at Level-II sitting in a specified place in the State in an institution for giving advice. In the event where the farmer is not fully satisfied, his problems would be recorded, solved at Level-III at the highest level at the Nodal centre and he will get further advice through post or by visit of extension workers. The services would be available round the clock. The functioning of the Levels I, II & III are mentioned in the forthcoming specific paras. While during the working hours there would be immediate response whereas beyond working hours and in holidays, the call would be recorded and the queries are answered by post. This is a wonderful effort made by the Ministry of Agriculture, Government of India to bridge the gap between the actual information resource and the user by using the phone.

3.2 **Life Line India:** BT approached One World – a charitable organization working to promote human rights and sustainable development across the globe – to explore ideas for a telephone based information service to enable farmers to record a question and, soon after, retrieve a recorded reply. BT engaged with Cisco to co-sponsor the initiative. Life Lines India was launched in November 2006. The solution comprises a Cisco Unified Messaging platform incorporating Interactive Voice Response functionality, integrated with a Customer Relationship Management application and information database provided by BT. Cisco and BT also jointly sponsor OneWorld who manage and operate the service.

Coverage currently extends to 700 villages and an average of 350 calls to the service is being received each day. A database of over 88,000 'frequently asked questions' has been created. Not only is this vital to help deliver a prompt service to farmers, it is key to enabling service scalability and sustainability. As a result, overall caller satisfaction with the service is very high at 96 per cent. Crop quality and efficiency has already improved and some farmers have seen profits increase by between 25 and 150 per cent. Plans are now being developed to extend the service coverage to a total of 3,000 villages by 2010 and explore the opportunity to use the platform for other applications such as 'LifeLines for Education'. Initially the LifeLines India service covered 85 villages, principally in the region of Bundelkhand to the south-east of Delhi. It is designed to provide the farming communities with access to expert advice on agriculture and animal husbandry problems. All the farmers need to do is dial the LifeLines India number from a community telephone. This could be a village phone shop (kiosk), or a mobile phone provided by local OneWorld sponsored associates (Ek Dunya fellows) who travel around the villages to help promote OneWorld services. Callers are greeted with the service name; "Soochna Se Samadaan" (Information is Solution) and prompted to record their query on an automated voicemail system. LifeLines India has proven the value of digital inclusion, educating the rural users to use technology to access advice and learning to improve the future for their families and the local community.

3.3 **Bhoomi Project**: The Bhoomi Project of Karnataka state covers 6.7 million farmers and holds millions of records of land ownership. The project has earned the goodwill of many people and also international funding agencies. This project has reduced the delays involved in interacting with the bureaucratic hierarchy of the state revenue department.

Bhoomi centres are located all over the state. Any land record can be reviewed through a touch screen at these kiosks; the project can also be used as a databank for various projects of public and private sector organizations.

The project has won the 2002 Commonwealth Association of Public Administration and Management award for creating "self-content governance and opening up new frontiers." Both the UNDP and the World Bank have lauded Bhoomi for bold vision and implementation. With the success of the Bhoomi project other states of India, *viz*. Tamil Naidu, Maharastra and Madhya Pradesh have started evolving models based on Bhoomi in their respective states.

3.4 **Gyandoot Project:** Gyandoot is an intranet in Dhar district connecting rural cybercafes catering to the everyday needs of the masses. This web site of GYANDOOT is an extension of Gyandoot intranet, for giving global access. Gyandoot is the first ever project in India for a rural information network in the Dhar district of Madhya Pradesh which has the highest percentage of tribes and dense forest. Every village has a computer centre or "soochnalayas" at prominent market places or major roads. People can easily log in and complain or request information on crops, forest fields, water resources, etc. of the district. Twenty–one village Panchayats in the District have been connected with computers or information centres; several private sector information centres called "Soochnalays" have also been opened. One such popular centre is in "Manwar Agriculture Mandi," where the latest crop prices are made available to the farmers. The land records of a few tehsils of district Dhar are also available on these computers. Also, Internet connections have been provided to get global information by linking to the World Wide Web. The government of Madhya Pradesh is attempting to make Gyandoot Project a great success by extending it to other districts. The state is in the process of starting 7,800 IT kiosks with the help of the private sector. To train common people to be computer literate, 7,500 "Jan Shksha" public instruction centres have also been identified, and policy is being formulated to bring IT to the common people's need and benefit. Efforts are also being made by the government to involve public libraries in this project.

The projects like Gyanadoot at Dhar (MP), Wired Village at Warna (Maharastra), MS Swaminathan foundation's project at Veerampattinam (Pondichery), Collectorate of Thiruvarur (Tamil Nadu) reported in (Sothik Biswas 2001) have demonstrated how these innovative projects executed by the committed agencies have facilitated in bridging the digital divide. In fact, India has just three phone lines per 100 people and has around five PCs per 1,000 people. Rural infrastructure is grossly inadequate and power outages are long and frequent in rural areas. Still, ICT has gone grassroots and begun transforming lives of rural folk like Govardhan (Dhar) and Balaram (Pondichery) (Sothik Biswas 2001). They are participants in a few committed efforts at wiring up villages, disseminating information, simplifying procedures and eliminating middlemen. These kind of projects demonstrate that rural consumers can and will benefit from connectivity. The rural community will enjoy new access to agricultural inputs, new markets for their products and in a few years from now, will find new educational and employment opportunities through this human-mediated Internet access projects.

3.5 **TDIL:** The department of information technology initiated the TDIL (Technology Development for Indian Languages) with the aim of developing information processing

tools and techniques to facilitate human-machine interaction without language barrier; creating and accessing multilingual knowledge resources; and integrating them to develop innovative user products and services.

4. ROLE OF LIBRARIES & INFORMATION CENTERS

Libraries, with their computers wired for the Internet and available free for public use, plus the valuable human resource they offer--librarians to help visitors find their way-- bring technology into our communities in friendly and useful ways for workers who will not soon gain access to the Internet in their homes or on their jobs

Through their unions, working people can work together to make their communities better for everyone. With access to the Internet, working people can reach out to public officials, to nonprofit organizations, and to the public they serve, and work together to improve the quality of the public services and health care provided to the community. Libraries have what many working families need to carry out this vision of access leading to community action and improvement.

Access: Since libraries are wired for the Internet, working people who do not have a computer at home or at work can use their neighborhood library to go online, set up a free e-mail account, and gain access to their local union Web site or any other Web site that meets their needs. Libraries can open the way to the Web by providing working people with the same access to Internet resources that others have.

Training: Librarians and other library professionals can help working people get more comfortable and skilled with using computers and surfing the World Wide Web.

Resources for Families: Many working people who are not sure what the Internet has to offer them do believe that their children need to know how to use computers and the Web to do well in school. Workers accustomed to seeing the library as a place for their kids to study can use it as a resource for their families to learn about and use computers.

Education: Libraries that offer adult education programs such as English as a Second Language, literacy classes, and classes to prepare for the high school equivalency (GED) exam are an important resource that working people can use to get better jobs for themselves and their families.

All of these resources offer wonderful opportunities for unions and libraries to form partnerships for bridging the digital and information divide. Union leaders who are interested in having effective Web sites are potential partners with librarians who can help working people get online to use the Web, through access for those without computers, training, and encouragement to help them get over fears of using new technology.

Local union leaders who have been frustrated about how to reach workers who do not have access to e-mail and the Web at home or at work could spread information to workers on how to use their neighborhood library as a community technology center. The workers could go to the library, set up a free Web e-mail account, and use the local's Web

site to get information on action needed from their coworkers and community organizations When working people and their allies in the community are online, local unions can overcome many of the problems of spreading news: distributing leaflets that volunteers can use to spark conversation and to encourage involvement in efforts to improve delivery of public services; keeping lists of activists' addresses, phone numbers, and e-mail addresses up-to-date; and enabling workers to reach out to community groups who share their goals through those groups' Web sites and e-mail networks.

Working together, libraries and working people can fulfill the promise of using new technology for effective communications.

Academic Libraries: The National knowledge commission (2007) has made a recommendation that all academic intuitions must set up an Intuitional repository of research articles, reports, institutional publications and Electronic Theses and Dissertations (ETD). The libraries should go for an effective resource sharing network, although there are certain efforts taken at the regional level such as CALIBNET, MALIBNET, ADINET, Punenet etc. Also the libraries should continuously orient their users with modern information retrieval strategies. This will be more helpful to their users in having access to information, communication and technologies which can ultimately results in bridging digital divide.

Public Libraries: Many of the public libraries in India lack of proper infrastructure in terms of skilled manpower and technology. The government should take up necessary steps for providing proper infrastructure and needs to strengthen the libraries in modernization.

Digital Libraries project: The projects such as million books digital project, which aims to digitize the rare books in the country and make it available to the users freely i.e. keeping it as an open source is a step towards bridging digital divide. In order to bridge the digital divide in a larger way the government of India, in collaboration with the Centre for Advanced Computing (C–DAC) based in Pune, aims to bring about one million digital books to the doorsteps of common citizens. The Internet–enabled digital library will promote literacy. It will make use of a mobile van with satellite Internet connections. The van will be fitted with printers, scanners, cutters and binding machines for providing books in bound form to end users (Singh 2007).

Honey bee Stand for People to people networking in local languages and assurance to providers of knowledge that they would not be impoverished through sharing knowledge just as flowers do not complain when pollen is taken away by Honey bees. Honey Bee network brings together those creative and innovative farmers, artisans, mechanics, fishermen and women and laborers who have solved a problem through their own genius without any outside help whether from state, market, or even NGOs. Such self triggered and developed innovations whether technological or institutional are scouted, supported, sustained and scaled wherever possible with or without value addition, linkage with formal science and technology. Idea is to generate incentives and benefits for the innovators. The innovations could be developed by individuals or groups.

The Muktabodha Digital Library Project was begun in 1995 and the National Mission for Manuscript, both are working to digitize the manuscript. Their goals are to make available on the world-wide web important texts from the archives.

Digital library of India is an ambitious project of IISc and Ministry of communication and information technology, government of India. Presently more than 1,24,000 books in Indian languages are freely accessible on this digital library.

Vidyanidihi through its digital library and E-scholarship portal and the INFLLIBNET through its shodhganga are collecting all the thesis submitted to the Indian university and are trying to provide free access to the literature which is again a sincere efforts towards bridging the digital divide.

5. CONCLUSION

Many efforts can be seen in Indian for bridging digital divide. All these efforts are reflected from the various initiatives taken from the government, private sectors and also through the libraries. Many libraries and information centres apart from keeping separate terminals in the libraries for users are providing training to the users so that they can access information though Internet. Many libraries have developed digital and institutional repository to make the literature free accessible to the users.

On the other hand Government of India has taken several measures to improve the literacy rate in villages and towns of India. State Governments has been directed to ensure and improve literacy rate in districts and villages where people are very poor. There has been a good improvement in literacy rate of India in last 10 years but there is still a long way to go. Going by previous growth rate, India will be able to achieve its universal literate target not before 2060.

List of Steps taken by Government of India to improve Literacy Rate in India:

- Free education programs to poor people living in villages and towns.
- Setting up of new schools and colleges at district and state levels.
- Several committees have been formed to ensure proper utilization of funds allotted to improve literacy rate.
- Beti Bachao, Beti Padhao is the latest initiative taken by Government of India to save and educate the girl child in India.
- State literacy campaigns are launched at several times to conduct door to door survey to examine overall literacy scenario in the districts.

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