



Bridging Digital Divide: Challenges in Uttarakhand

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Abstract -The present paper is mainly focused on Uttarakhand and tries to explore problem of digital divide. This paper presents few facts about digital divide based on Uttarakhand perspective. In the recent years, the concept of 'digital divide' has been widely researched, and has attracted much debate and assumption for its economic, social and political consequences. Digital divide can be defined as economic, social or cultural deprivation generated by missing ICT access and skills [1]. This paper reveals obstacles such as illiteracy, lack of skills, infrastructures, and investment in Uttarakhand to reduce the gap of digital divide.

Keywords: Digital Divide, ICT

1. INTRODUCTION

Inequality can be defined in several different categories. In mathematics two objects are unequal when one is greater or fewer than the other. In economics inequality is, simply put, the difference between rich and poor, those who possess many economic assets and those who do not. Social inequality is the difference in social status within populations. In society and in economics inequality can lead to large differences between people, groups of people, and even countries. People are sometimes classified as either 'haves' or 'have not's'[2]. In almost every country (or state), there are two groups of people. One who have the best access to computers and information sources, telephone services, Internet services, as well as a wealth of content and training relevant to their lives. The another group who, for social or economic reasons, do not have access to computers or even relatively valuable information sources, telephone and Internet services. The difference between these two groups of people is known as the Digital Divide.

Over the past fifteen years, technological advancements, global telecommunication and automation have greatly contributed to economic growth all over the world. However, not all regions, countries and people in the world have benefited equally from the opportunities that Information and Communication Technologies (ICT) offer. Especially rich industrialized countries and several countries in transition have been profited from the information age and attained high economic growth figures. The advantages of the information era have been lesser for developing countries, which often lack in favourable conditions for deployment of new technologies. The difference in access to ICT between the poor and the rich is referred to as the Digital Divide [3]. It can be defined as the difference between those with permanent and effective access to new information and telecommunication technologies and those with none [4][5]. It is increasingly recognized that the so-called Digital Divide is not just a matter of unavailability of information and communication technologies (ICTs), but also of the social, political, institutional and cultural contexts which shape people's lack of access to ICTs, or their inability to use them effectively [6]. Digital Divide can occur both at national level, among different social groups [7], and at international level, among different countries.

II. LITERATURE REVIEW

Keniston Kenneth (2002) mentions that Digital Divide was unknown until it was noted in 1996, in the United States, that there was a gap in the United States between those who had telephones, computers and internet connections and those who did not [8]. Compaine (1998) defined Digital Divide as —the perceived gap between those who have access to the latest information technologies and those who do not. Further he pointed out that, society needs time to see how some technologies move towards their natural markets and costs. Even though technology – adoption divide may exist, there is no need to act precipitously [9].

Rao (2005) categorised Digital Divide as global, regional and national [10]. Many articles are found in academic literature, covering the global and regional Digital Divide, in particular, describing the gap between more and less industrially developed nations (e.g. James, 2005; Wade, 2004; Warschauer, 2003; Lucas & Sylla, 2003; Norris, 2001)[11][12][13][14][15].

Kukreti, Bhisma (2009) in "Digital Divide in Uttarakhand" mentioned that the Internet accessibility is below 4% of total population in Uttarakhand. 70% of Uttarakhand population lives in rural area but the majority of people (living in rural Uttarakhand) don't have the facilities of most important medium of this era. Therefore, there are various emerging digital divide in Uttarakhand like age-gap, digital gaps among businessmen, ICT gaps among research centers, gaps of

Internet accessibilities among gram panchayat, block-headquarters and other government or non-government institutions and the opportunity gaps for gaining various services of Internet [16].

Vaisla, Kunwar Singh and Bisht, Manoj Kumar (2010) in —SWOT Analysis of e-Initiative in Uttarakhand concluded that the peoples are eager to learn IT in Uttarakhand but because of lower IT literacy they are unable to learn [17]. Vaisla, Kunwar Singh, et.al.(2011) highlighted through their study —Framework of e-Initiatives for Uttarakhand that the required policies, infrastructure and expected benefits of proposed system for effective implementation in the state. It also suggested that more focus is required on mobile-based applications such as m-commerce and m-governance. The SMS based alert systems could be viewed as an early initiative in this direction [18].

III. Some Possible Reasons For The Existence Of The Digital Divide

1. Generally, researches focused on socio-cultural and economic forces behind the Digital Divide [19].
2. People in different countries might have different demands for ICT [20]. Countries like Hong Kong or South Korea have many more mobile phone subscribers than Internet users. The increase of Internet users in Japan has been largely attributed to the introduction of i-mode, a technology that allows Internet connection from a mobile phone. On the other hand, in North America a combination of receiving-party-pays schemes for mobile phones, together with a monthly fee including unlimited number of local calls for fixed phones, boosted the demand for Internet connectivity at the expense of mobile phone growth [21]. The result was a penetration rate of 26% for mobile phones, while the rates in Japan and the Scandinavian countries were 37% and 50%, respectively [22].
3. Poverty, poor access to education and lack of public investment capital are commonly believed to be the main causes for the Digital Divide [23].
4. There is a diverse and wide range of technologies which can be considered as ICTs – not just computers and the internet. Similarly, there is a diverse and wide range of activities for which ICTs can be used if individuals so choose – from learning and employment to leisure and entertainment [24].

IV. Strategies For Bridging The Digital Divide

- (i) Putting in place the necessary national information infrastructure;
- (ii) Developing and nurturing the necessary human resource to operate the national information infrastructure;
- (iii) Providing adequate financial resources to implement both the infrastructural and human resource requirements [25]; and
- (iv) A basic understanding of the mechanisms of the implementation and the role of ICT in society is necessary to reduce this Digital Divide, bearing in mind the local circumstances, differences and cultural context [23].
- (v) Policy makers are here to match the affordances of ICTs with the everyday needs, interests and desires of individuals. In this sense the Digital Divide continues to demand a complex set of policy responses which go far beyond simply increasing levels of hardware provision and support, and then assuming the ‘gap’ to have been ‘bridged’ [24].
- (vi) Linking the Rural India with Urban India
- (vii) To promote distance education
- (viii) Proper implementation of E-Governance projects
- (ix) Drive for local/regional language support
- (x) Promotion of IT enabled services industry in the Rural India

V. Profile of The Study Area

Uttarakhand (earlier known as Uttaranchal), the 27th state of India, was formed on 9th November 2000. It lies in the Northern part of India amidst the magnification Himalayas and dense forests. Uttarakhand is traditionally divided into two parts, the western half known as Garhwal mandal and the eastern region going by the name of Kumaon mandal. The state comprises 13 districts. In fact the information and communication system had been a vital tool for life in a traditional way. Uttarakhand is fast emerging as an education hub in the country. It is among the leading states in computer education. Yet with the advent of science and technology, the ultramodern information and communication technology have entered and proved its usefulness. There is high need and demand by the local residents. Hence ICT has been evolved out as a tool for the development of region and upliftment of lifestyle as well.

VI. Methodology

The present study is a combination of descriptive as well as analytical and empirical study. All the 13 districts of Uttarakhand were covered for the study. The literate population having age group 14 years and above were included in the present study. Total sample collected for the study was 650 with equal distribution [50 in each district] of samples in all the districts. Primary data has been collected using stratified sampling method where the strata were chosen based on the purpose of the study. The primary data has been collected through questionnaire which was meant for the respondents from all the 13 districts of the state.

VII. Facts About Digital Divide Based on The Uttarakhand Perspective

- Almost 40 percent of the samples were found to be using the computer for more than 5 years but less than seven years.

- Access to internet was found to be 62 percent for those who at least access the internet once a week. 39 percent were found to access the internet everyday which seems to be low comparing the present global context.
- 67 percent of the respondents cannot use the internet at home which implies less accessibility by other family members also.
- 41 percent of the respondents use the internet for e-mail while only 20 percent can use it for chatting.
- 63 percent respondents were found to use the internet for surfing for educational purpose which is a positive course for improvement in education.
- 28 percent of the respondents felt that Digital Divide does exist while 20 percent felt that it exists to a large extent.
- 26 percent respondents felt that computer education can reduce the Digital Divide absolutely while 29 percent felt to a large extent.
- 67 percent users can use the word processor while 53 percent can prepare presentations.
- Only 17 percent of the respondents can construct a web page.
- 9 percent of the respondents were fully satisfied with the ICT infrastructure in the locality, 13 percent satisfied to a large extent, 32 percent satisfied to a moderate extent, 31 percent satisfied to some extent, 12 percent were not satisfied while 3 percent said that they cannot say whether they are satisfied with the ICT infrastructure in the locality.
- Regarding development of ICT in the locality, 9 percent said that they were fully satisfied, 13 percent satisfied to a large extent, 32 satisfied to a moderate extent, 31 satisfied to some extent, 12 percent not satisfied, 3 percent said that they cannot say.
- As far as government policy on ICT in Uttarakhand is concerned, 7 percent said that they are fully satisfied, 13 percent said that they are satisfied to a large extent, 31 said that they are satisfied to a moderate extent, 37 percent said that they are satisfied to some extent. 11 percent were not satisfied while 2 percent had no opinion.

VIII. Government's Policies For Bridging Digital Divide

Government of Uttarakhand proposes to harness the full power of Information and Communication Technology (ICT) for improving the quality of life of its citizens, to accelerate social and economic development, to ensure transparency in the Government decisions, to accelerate the IT adoption amongst various user segments – all leads to an ideal e-society model through efficient, Service oriented, cost-effective, information networked, eco-conscious, and with year-on-year growth approach. According to ICT Policy Government of Utaranchal (2006), the e-governance policy of the state shall use information as a tool for empowerment of its citizens. Various initiatives of the Department of Information Technology, Government of India, relating to State Wide Area Networks (SWAN), Broadband Policy, Common Service Centres (CSCs), State Data Centres (SDC), National eGovernance Action Plan (NeGAP), Policy framework for implementation of .IN Internet domain names will be implemented as per the directives of the Central Government. Additional infrastructure needed beyond the central support will be provided for by the State Government. The ICT infrastructure including the data centre, network (voice and data), desktop and help-desk operations will be governed by Infrastructure Management (IM). The IM will ensure 24 x 7 data / information availability to the back end departments and to service access providers. In the implementation of the various e-Governance Projects, Government will set up a Project Monitoring Unit, which will work closely with Independent Software Developers / Vendors / system integrators, Back end Departments of the Government, under the supervision of the Nodal Agency(ITDA) [26].

IX. Concluding Remarks

The challenge for policy makers is to identify effective mechanisms for reducing disparities and to develop strategies that will help overcome the Digital Divide. Socio-economic barriers such as geographic location, income, education, and most often the affordability of access characterize the Digital Divide. It is required that ICT programmes in the mountain state like Uttarakhand takes into account the growing convergence between technologies and services and the development of next generation networks. ICT companies have to come forward and Dehradun / Haridwar the plain districts can be made the model centres for ICT implementation throughout the state.

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