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DIGITAL DIVIDE: MIND GAP BETWEEN DIFFERENT COMMUNITIES IN THE DEVELOPING NATIONS ESPECIALLY THE CONTEXT OF NEPAL

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***Abstract:*—In the recent trends and technologies, a remarkable number of IT / Software service companies have noted emerging in developing nations. However, there is a gap between the learning process, course curriculum and demands of professional market. There seems to be a big gap between IT industry and IT educational institutions. Even if we consider the policy, the regulatory framework is highly under execution but the very less attention has been seen paid upon the digitally literate community vs. digitally unlitirate community, Tech vs non tech and so on. The main concern seems to be the gap existing between people from different socio-economic backgrounds with regard to their opportunity and ability. And the constraint to satisfy this is to access & use of IT enabled services, or Software as a Service or Internet is commonly. This paper deals with the research of the potential barrier in the information society in concentration with the ICT continues to have a significant impact on the life of people and the global economy and also gives rise to a host of important issues.**

Keywords*: digital divide, ICT, digital gap, rural area, socio-economic constraints;*

1. INTRODUCTION

There are many challenges faced by governments, people, and business entrepreneurs all over the world. Governments, industries, non-government organizations and policy makers have made slight progress in increasing Internet connectivity and developing IT infrastructures. Those who support the technologies power as a medium individually suited to building open societies must study what can be done to make Internet access and use of ICT widely available and affordable to the most needy communities and individuals worldwide. The question is whether the Digital Divide should be defined as the community of people who have internet access or those who don't have. The question also arise regarding the divergence influenced from the constraints like IT infrastructure, education etc. The term was most often used to describe the rough availability of broadband Internet connections for economic opportunity in the online age. Beyond the availability of broadband, however, there was also a digital divide based on age, education and household income. In addition, there appeared to be a "lost opportunity" Digital Divide for career advancement and health care.

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In the context of Nepal, limited cities have high sources of Internet access. But some of the factors like perception of visiting the websites, searching techniques, gathering knowledge etc from the different citizens of different ages clearly indicated the mind gap in terms of Digital Divide. About 64.3% of Nepalese citizens did not use the Internet at all, according to a MIS report of January 2015 by Nepal Telecommunication Authority (NTA)[1]. These communities can be categorized in terms of their ages, poor speaking or fluency in English language, those having low education, and mostly the households who possess very less income. About half of those who did not use the Internet said that it was not important to them. People with disabilities also were sometimes victims of the Digital Divide.

So the main objectives of the research will focus on how to narrow down the gap of Digital Divide and to find out suitable approaches which will help towards bridging the Digital Divide. With this research, we can also focus on how to increase connectivity among people and communities.

A. Main Objective

To look for solution for bridging digital divide problem in Nepal

B. Sub-Objective

Our objective of the work projected in this paper is to examine at the molecular level. These constraints consists of parameters like geography, the daily income and the working environment, most of the organizations still don't have a latest windows operating systems. Other parameters found were the IT accessibility in urban and rural areas. There was a contrast in these two areas. Government has the least priority in the rural areas, the normal unlimited access of an individual approximately cost around $14 per month which is un affordable by a general citizens, of course the nature of job is the other part of the story. Thus, we aim to prove the mind gap in term of IT enables services, and use of Internet and availability of Internet prove empirically, using a statistical approach, the significance of the three dimensions in influencing the use of ICT in the mass population.

•To raise awareness campaigns for social and corporate as well as academic domain which help addressing the constraints due to which the gap is getting more and more in between users especially in developing countries;based on the geographical difference, income and workplace, etc.

•To propose recommendation for handling Inefficiency Usage of Infrastructure

•To analyze problem on IT Literacy

•To analyze problem on expensive price for internet transmission

The research resolves the following queries:

•What are the factors that will help to bridge the digital divide?

•What are the integrated relationship between income, education and geographical parameters and what are the proper strategies that will help in bridging the the digital divide?

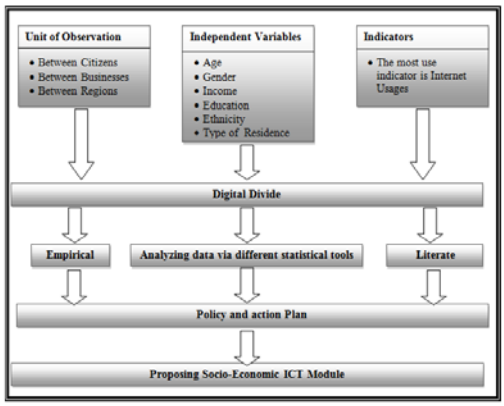
•As all are aware the mind gap between people out there in the metro cities and village in Nepal?

In Nepal, there is lack of National standard in terms of policy framework, financial support and guidelines which guarantees that each and every citizen of Nepal MUST acquire accessibility of Nepal. One of the main reason behind is the lack of literacy. The inadequate educational infrastructure is the reason on the other side of the story. Though the zonal level in the country has been taking initiatives; through consortium, colloquium, seminars and short term training programs; to assist with capacity building and research in planning and management of education; but the results are absolute zero as the agenda are filed in paper and thrown to the central documenting systems, after which no one is bothered to revise it or implement it. Some of the departments of the Ministry of Information and Communications have taken responsibility for formulating, implementing and reviewing such outcomes in pertaining to information technology. But they have not yet focused on the "Key Responsibilities" like developing key human resource, providing financial assistance in the mode of interest free loans to purchase computers, or to provide a device for a target audience, providing

Standing On support and guidelines for those communities, etc. Nepal Telecommunication Authority has started creating positive vibes on imparting ICT skills as well as encouraging the implementation of ICT in the teaching learning process. Encompassing multilingual computing, free and open Software, education and training etc. is the something like dreams coming true. Proper responsibility should be framed in order to formulate and coordinate all the above cited activities. Standardization is still under the question mark?

Adult literacy rate in Nepal is relatively high as compared to Afghanistan and India. In Nepal it is 48% for females and 70% for males. This data ensures that there must be a framed universalization of elementary education.

i. Framework of Working Methodology



Fig,1: Framework of Working Methodology

i. Reliability Analysis with Cronbach's Alpha

Cronbach's Alpha (α) is one of the most widely used measures of internal consistency. It measure of internal consistency denotes how closely related a set of items are as a group. We obtain a 'high' value for the alpha it does not imply that the measure is uni-dimensional. The extent to which all questions contribute positively towards measuring the same concept is known as internal consistency. This is a key element for evaluating the quality of the overall score.

Mathematically Chronbach alpha can be defined as:

$$\alpha = \frac{\mathrm{k}}{\mathrm{k}-1}\left(1 - \frac{1}{S^2{}_T}\sum_{i=1}^{k} S^2{}_i\right)$$

Where, K is the total number of items,

S_i^2 is the variance associated with item I

S_T^2 is the variance associated with the total (or sum) of all k item scores.

Cronbach's alpha	**Internal Consistency**
$\alpha \geq 0.9$	Excellent (High-Stakes testing)
$0.7 \leq \alpha < 0.9$	Good (Low-Stakes testing)
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor

$\alpha < 0.5$	Unacceptable

Normally, the coefficient alpha (α) ranges in the value from 0 to 1 and may be used to describe the reliability of factors extracted from multi-point formatted questionnaires or scales

2. METHODOLOGY

Socio-economic Factors

In Nepal, there is lack of National standard in terms of policy framework, financial support and guidelines which guarantees that each and every citizen of Nepal MUST acquire accessibility of Nepal. One of the main reason behind is the lack of literacy. The inadequate educational infrastructure is the reason on the other side of the story. Though the zonal level in the country has been taking initiatives; through consortium, colloquium, seminars and short term training programs; to assist with capacity building and research in planning and management of education; but the results are absolute zero as the agenda are filed in paper and thrown to the central documenting systems, after which no one is bothered to revise it or implement it. Some of the departments of the Ministry of Information and Communications have taken responsibility for formulating, implementing and reviewing such outcomes in pertaining to information technology. But they have not yet focused on the "Key Responsibilities" like developing key human resource, providing financial assistance in the mode of interest free loans to purchase computers, or to provide a device for a target audience, providing Standing On support and guidelines for those communities, etc. Nepal Telecommunication Authority has started creating positive vibes on imparting ICT skills as well as encouraging the implementation of ICT in the teaching learning process. Encompassing multilingual computing, free and open Software, education and training etc. is the something like dreams coming true. Proper responsibility should be framed in order to formulate and coordinate all the above cited activities. Standardization is still under the question mark?

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Language	**Population %**	**Language**	**Population %**
Nepali	44.6	Bajjika	3
Maithili	11.7	Magar	3
Bhojpuri	6	Doteli	3
Tharu	5.8	Urdu	2.6
Tamang	5.1	Other	12
Newar	3.2		

Table 1 : Language use in Nepal

There are certain problems, like Nepali people due to the poverty are incapable to go for other language educating training programs. They are not even capable enough to pursue higher education just leaving school level education. And this as a result prevents them from the educated or literate people from using computers and the others. It is very disastrous to state that 2% to 10% of Nepalese speak English fluently, and statistics also demonstrate that there is a huge gap between those who

speak English and those who don't. Thus, the English language has become a strong parameter to enlarge the gap between understanding IT enabled services, devices and overall operating computer systems.

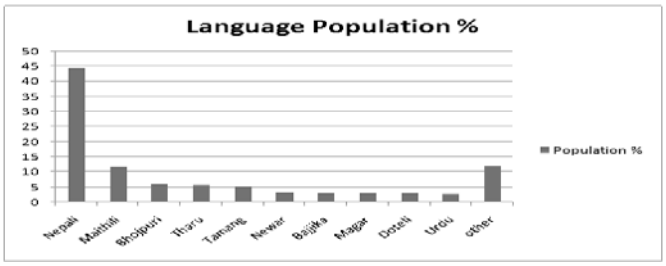


Fig.2: Language use in Nepal

Despite of the fact that the price of desktops have reduced drastically, the people don't have access to the Internet. The main reason behind this is the poort accessibility of Internet. The reason behind this is inadequate infrastructure, high cost, quality of Internet even if available being so poor. To bridge the digital divide NTA (Nepal Telecommunication Authority which is a regulating body of telecommunication of Nepal play vital role in increasing access in communication in rural area.

Table 2 : Ethnic groups in percentage

Ethnic groups	%	Ethnic groups	%
Chhettri	16.6	Gurung	2
Brahman	12.2	Damai/Dholii	1.8
Magar	7.1	Thakuri	1.6
Tharu	6.6	Limbu	1.5
Tamang	5.8	Sarki	1.4
Newar	5	Teli	1.4
Kami	4.8	Chamar/Harijan/Ram	1.3
Muslim	4.4	Koiri/Kushwaha	1.2
Yadav	4	Other	19
Rai	2.3		

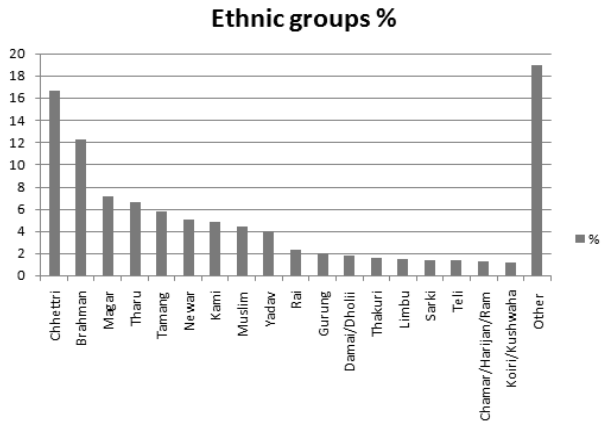


Fig. 3: Ethnic groups in percentage

Nepal as all aware is geographically disabled country. Most of the territory in Nepal is occupied hills and Mountains. This is one of the primes factor to be taken under serious consideration to establish a wide range of telecom infrastructure. Due to this, incapability has emerged for many telecom giants to distribute telephone lines throughout the country, thus debarring the individual citizen out there in rural areas to access even the territorial telephone lines (Land Lines). The issue of Nepal being one of the sensitive places for earthquakes and unexpected snow floods remain there. Thus these all wide ranges of economic, language, education, telecom infrastructure and geographical constraints have been major issues in dividing the various individuals, communities, villages and overall the entireNepal to be digitally divide in a wide range.

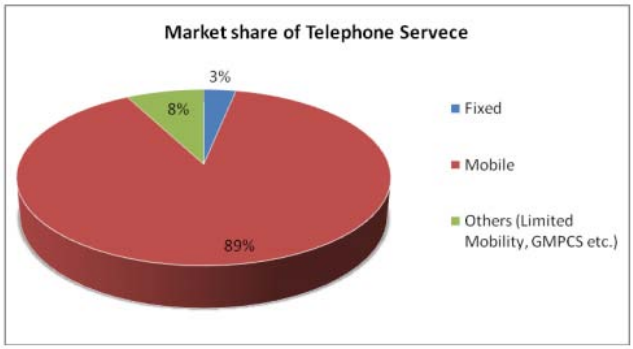
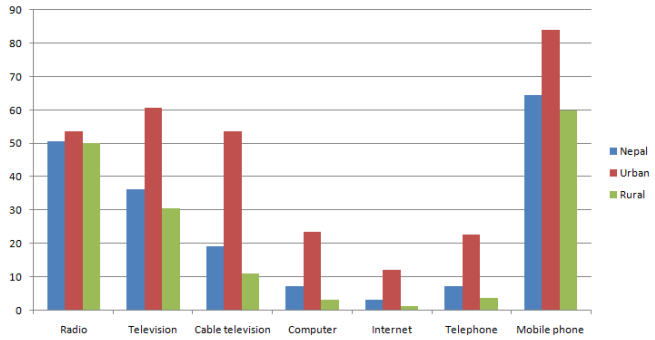


Figure 4 Market share of telephone service

E. Geographical

A commitment to society is required.The issues of social unity should be indulged. They should realize that the social unity is more important than the individual interests. This will help their children to see that they are part of something larger than themselves: hence a sense of commitment to the social group will be invoked within them. Finally argument is going on in the education and teaching individuals about the specific skills necessary for their future occupations.



Fig,5: Facilities which play vital role in digital divide in urban and rural area of Nepal

3. RESULTS & DISCUSSIONS

Presentation of the Findings

i. If the direct access of IT enabled services can't be delivered to these communities, then awareness and importance of the use of other computer-based technologies should be created.

ii. Local needs, as per the local demand should be taken into consideration. Grameen Bank in Bangladesh is one of the important example.

iii. Local language and local content can be made available to be convertible using Unicode – especially for those who have access to these technologies but don't know English specially.

iv. It is clear that a widening gap between the rich and poor is directly proportional to mind gap because the development of technology is exponentially growing.

v. Access Rainbow model aims to provide basis for universal access to the new technologies and point to concrete steps that need to be considered for achieving this objective and aiming to bridge the digital divide.

CONCLUSIONS

After the thorough analysis of the above statistical treatment and considering the existing norms cited above, following can be concluded as a part of our research work.

i. Nepal is geographically disabled country. Hence the adequate infrastructure has proven to be a difficult task to build.
ii. The environment and nature of job in various organizations are another prominent factor for the difference.
iii. Existing mind gap between the urban and rural mass, with the urban population valuing access to, and use of, ICT more highly than the rural population.

It is an obvious fact that without access to IT enabled services, IT devices, languages; cultural conventional methodologies applied upon the social community, a nation cannot compete with those that have these resources and skills. This is the main focus seems to be given in bridging the mind gap between rural and urban areas. This is the biggest ever challenge for the administrative systems of Nepal as well as the people of Nepal. The statistical analysis of all the above treatments shows that each of them are dependent and concerned with each other and the way to bridge the digital divide is by resolving all of these factors. Proposed Strategic Model

A Strategic Model for Bridging Digital Divide in Developing Countries with reference to the survey on key factors of digital divides (Ref. Sec 4.5) will be proposed as following.

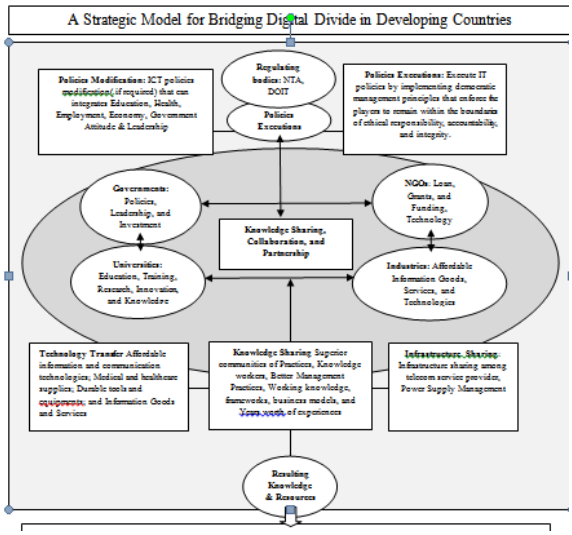


Fig.6: A Strategic Model for Bridging Digital Divide in Developing Countries

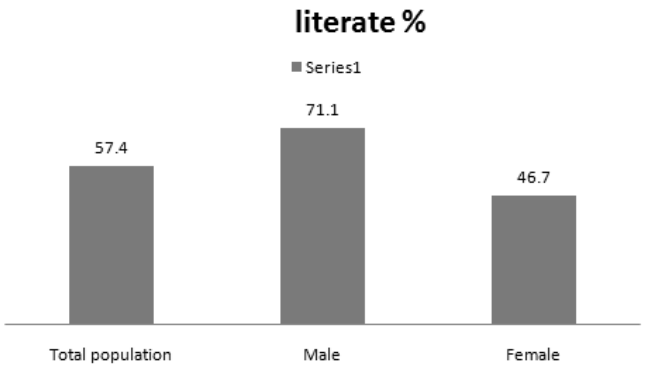


Fig. 7: A Strategic Chart

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