



## Broadband Coverage and Purpose of Utilization in Gujarat, India

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### ABSTRACT

The focus of this paper is to understand the coverage of various broadband internet service providers and also to assess the purpose of utilization of broadband internet services in Gujarat, India. Four cities namely, Ahmedabad, Surat, Vadodara and Rajkot of Gujarat State were selected randomly and total 415 broadband users, 362 individual and 53 institutional and company users were selected through stratified random sampling technique. The main research findings of the present study are: broadband users prefer public sector undertaking (PSU) internet service providers that are BSNL more than non-PSU internet service providers and they were using broadband internet services mainly for professional purpose.

### KEYWORDS

Internet Service Providers, Broadband

### INTRODUCTION

Broadband has become an important part of almost every aspect of the knowledge economy and is especially so in activities that rely on the provision of data and information, particularly in service sectors. Broadband is advantageous for socio-economic growth, employment generation, increase in living standards, e-commerce, reliable & faster communication etc. Broadband bridges distances, increase automation, and enhances user's participation in social and democratic life. Also, it enables to capture more business, reduce inventory cost, efficiently handle available resources and collect valuable data online. High-speed broadband internet service is now an important access option for internet users for both work and everyday usage. The governments of many countries have promoted the usage of broadband services as well as related technology in the belief that broadband will contribute to economic and social development by enhancing productivity and introducing new services in the long term (Lee et al., 2005). Broadband is a generic term to describe high-speed networking services, which is a set of digital communication technologies with the capacity to transmit significant amounts of data at a high rate, supporting the delivery of a range of digital services some or all of which can occur simultaneously. It is usually a symmetrical service, allowing fast in and out bound data capacity (Becta, 2003; OECD, 2003). Robert (2005) has defined broadband as any technology – currently, cable, telephone-based (DSL), wireless, or through electric power lines – that permits users to communicate at rates substantially faster than older generation “dial-up” services, and unlike dial-up services, is “always on.”

Broadband plays a critical role in an economy and contributes significantly to the development and social progress of a country (Telecom Regulatory Authority of India, 2014). Dwivedi et al.(2007) found that broadband, as an key enabling technology in the networked society, can help boost the economy of Pakistan at the national level as well as help to improve the lives of its citizens by facilitating delivery of education, health and telecommunications services at low cost and to a wider population.

Definition and types of broadband: The term broadband commonly refers to high-speed Internet access that is always on and faster than the traditional dial-up access. Broadband includes several high-speed transmission technologies such as Digital Subscriber Line (DSL), Cable Modem, Fiber, Wireless,

Satellite and Broadband over Powerlines (BPL) (<https://www.fcc.gov/general/types-broadband-connections>, 2014).

### OBJECTIVES OF STUDY

The study is undertaken with the objectives to understand the coverage of various broadband internet service providers and also to assess the purpose of utilization of broadband internet services in Gujarat, India.

### RESEARCH METHODOLOGY

Four cities namely, Ahmedabad, Surat, Vadodara and Rajkot districts of the state Gujarat were selected randomly for conducting the study. There are total 10 lacs broadband users in Gujarat. These users could be individual, institutional and company users.

A stratified sampling method was used for selection of sample size. Sample size was estimated using the assumption of 5 percent Margin of Error, 95 percent Confidence Level and 50 percent Response Distribution and using the formula  $n = (N * X) / ((N-1)E^2 + X)$ . The estimated sample size was 384.

Two segments of users of broadband services were stratified as individual and institutional and company users. Total 415 broadband users (384 + additional 31), 362 individual and 53 institutional and company users were selected randomly. Mostly the interviews were conducted with randomly selected individuals, institutional heads and concerned officer in the selected companies.

Tools for data collection: Two close-ended structured tools were designed to interview two segments of broadband service users, one for individual users and another for institutional and company users.

Analysis: The data analysis in this study was undertaken via Statistical Package for the Social Sciences (SPSS) version 12

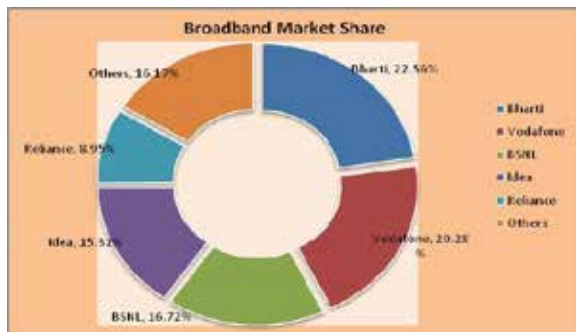
### RESULTS AND DISCUSSIONS

#### Broadband Internet Service Providers

In India, top five service providers constituted 83.8 percent market share of total broadband subscribers at the end of June, 2015. These service providers were Bharti Airtel (24.56 million), Vodafone (22.08 million), BSNL (18.20 million), Idea Cellular Ltd (16.67 million) and Reliance Communications Group (9.74 million) ([www.trai.gov.in](http://www.trai.gov.in), 2015).

The graphical representation of the service provider-wise market share of broadband services is given below:

Service Provider-wise Market Share of Broadband (wired + wireless) Services as on 30.06.2015

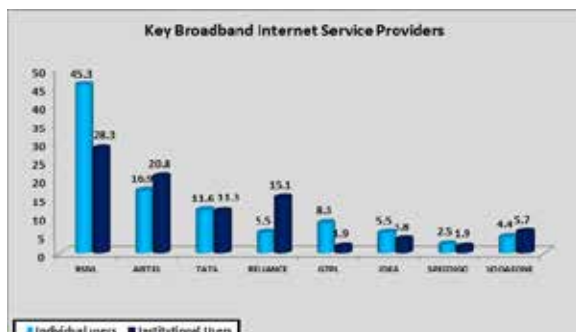


Source: www.trai.gov.in, 2015

The present study reveals that in Gujarat, the most preferred internet service providers among both the individual category as well as institutional and company category was Bharat Sanchar Nigam Limited (BSNL), though this preference was higher among the individual category (45.3 percent) as compared to the institutional and company category (28.3 percent). The other internet service providers among the individuals were mainly AIRTEL (16.9 percent), TATA (11.6 percent) and GTPL (8.3 percent) and that among the institutional and company sample category were AIRTEL (20.8 percent) RELIANCE (15.1 percent) and TATA (11.3 percent) (Table 1.1). The study indicates *that both individual and institutional and company broadband users prefer public sector undertaking (PSU) internet service providers that are is BSNL more than any non-PSU internet service providers.*

Table 1.1 Broadband Internet Service Providers

Internet service providers	Individual Users		Institutional and Company Users	
	Number	Percent	Number	Percent
BSNL	164	45.3	15	28.3
AIRTEL	61	16.9	11	20.8
TATA	42	11.6	6	11.3
RELIANCE	20	5.5	8	15.1
GTPL	30	8.3	1	1.9
IDEA	20	5.5	2	3.8
SPEEDIGO	9	2.5	1	1.9
VODAFONE	16	4.4	3	5.7
NKN	-	-	3	5.7
MTS	-	-	1	1.9
YOU Broadband	-	-	1	1.9
CISCO	-	-	1	1.9
Number of Broadband users interviewed	362	100.0	53	100.0



**Purpose of broadband internet use**

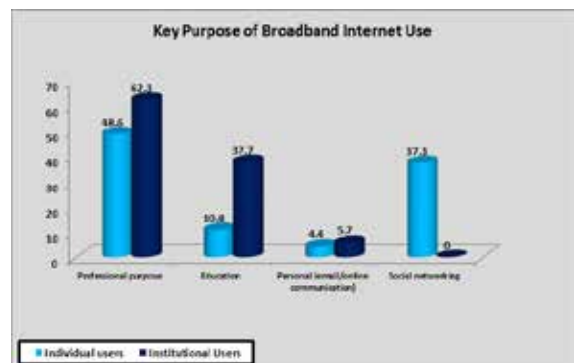
A study conducted by IMRB I-cube, June 2013 in 35 cities of urban India revealed that of all the active internet users sur-

veyed, nearly 90 percent of the respondent's prime use of Internet was Online Communication and under this e-mail communication (78 percent) was the main purpose of using internet. Social Networking was the rage with 75 percent of the users engaging in it actively and 69 percent found to use the internet for entertainment. The present study however, revealed that almost half of the individual broadband users (48.6 percent) reported to use broadband internet services for professional purpose. This shows that consumers in Gujarat see the benefits of broadband services in their personal professional life more. Also as expected, the institutional and company users also mainly use internet broadband services for professional purpose (62.3 percent). Social networking attracted 37.3 percent of the individual users. Using broadband internet service for educational purpose was mentioned by 10.8 percent of the individual users and 37.7 percent of the institutional and company users (Table 1.2).

Table 1.2 Purpose of broadband internet use

Purpose of broadband internet use*	Individual Users		Institutional and Company Users	
	Number	Percent	Number	Percent
Professional purpose	176	48.6	33	62.3
Education	39	10.8	20	37.7
Personal (email/online communication)	16	4.4	3	5.7
Social networking	135	37.3	-	-
Entertainment / Recreation	5	1.4	-	-
General	8	2.2	-	-
Home use	6	1.7	-	-
Games	3	0.8	-	-
Downloading	2	0.6	-	-
Surfing	3	0.8	1	1.9
Number of Broadband user interviewed	362	100.0	53	100.0

\* Percentages exceed to 100 due to multiple purpose of internet use



**CONCLUSION**

In spite of the overall rapid growth broadband diffusion, many countries in developing country are still in the early stage of broadband deployment and are assessing policy strategies to promote faster adoption. The current deployment of broadband is significantly more advanced in some countries than others. The government of India has taken many important initiatives to increase the broadband presence in the country and is dedicated to building world class smart infrastructure with the help of technology and using it for solving various perennial problems of the country. With a vision of Digital India, the government has allocated 5 billion to build high speed broadband highways connecting all gram panchayats, government departments, universities, R&D institutes, etc. It is heavily investing in National Knowledge Network (NKN) to

connect higher learning/ research institutions to a high-speed digital network (Aegis,2014).

It is very important to have a holistic view of both supply and demand sides to ensure the success of broadband services in Gujarat. Reaching the masses both in rural and urban areas in Gujarat though broadband internet connection will not only help people to improve their lives but will also help in overall development of the state. Efforts need to be made by both public sector undertaking (*PSU*) *internet service providers*, *BSNL as well as non-PSU internet service providers* for penetration of the services among the masses to even grass-roots level for contribution in the economic progress in the state of Gujarat.

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