

# **A STUDY ON MOBILE USAGE AND DATA PENETRATION IN INDIA USING PREDICTIVE ANALYTICS**

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**Abstract-** With the obsession growing for mobile devices and spreading across generations, these devices continue to be a critical part of consumers' in their day to day lives. The number of people using mobile devices and internet via mobile phones in urban and rural India has increased drastically increased. With the mobile industry in India drastically scaling over the recent years, there are more than half a billion mobile subscribers in the country. This has already made the Indian market the second largest in the world. Mobile is the dominant platform in India used for accessing the internet, making mobile technology a major role player in realizing the Digital India vision. With the growth on internet users on the rise in India, the percentage of online users that consume regional language is expected to increase with, with the rate currently being about 45%. This is expected to increase even further as the price of smart phones has decreased with time. Apart from the low-costing smart phones, low rate data plans and development of smart cities in rural areas is another reason for increase in growth of internet users in rural areas. Over the years the patterns of content consumption have changed. For now, television is considered as the primary screen while all other screens are considered to be secondary. The linear content needs to be enabled by TV, film and print companies on digital formats.

**Keywords-** Mobile Usage, Mobile Internet, Data Penetration, Digital India, Data Usage

## **I. INTRODUCTION**

Predictive analytics is an area of data mining where information is extracted from raw data and based on this information, it is used to predict behavioral patterns and also used to predict trends. Predictive analytics can be applied to any type of unknown whether it be in the past, present or future. The level of data analysis and the quality of assumptions made will determine the accuracy as well as the usability of the results.

As of mid-2015, there were 185 million smartphone connections in India and a further half a billion new connections will be added by the end of the decade. Local as well as international manufacturers are attracted towards the sheer scale of this market, with a number of international manufacturers wanting to shift the manufacturing of handset to India. The mobile market in India is unique from a global perspective, with 12 active mobile operators. The Indian mobile market is one of the most competitive markets in Asia Pacific.

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There is an increase in digital data consumption by Indian consumers, in line with the global trends and this trend is observed for all type of content on the internet including text, audio or video. The key to this trend is increase in internet penetration and rapid increase in the number of mobile devices and the convenience of consuming this content. Through mobile devices mobile internet can now be accessed anywhere and at any time [1-3]. Mobile internet traffic in India has surpassed the desktop internet traffic as most of the users are now accessing internet through mobile devices rather than desktop. There has been an increase in the rural population using mobile devices and mobile internet.

The rest of the paper is organized as follows. It includes Literature Survey in section II, Discussions and Results of Various surveys done on Mobile usage and online data consumption in India at present and in the future in section III and conclusion in section IV.

## II LITERATURE SURVEY

### A. Data Usage in India-

On 15 August 1995 the history of the Internet in India started with launch of services by VSNL and within six months they were able to add about ten thousand users. In India, the data usage is increased as per the statistics done on 2014. The maximum internet users prefer internet mobile usage. The surveys predict that there will be rise in the use of data mobile usage.

The statistics show that 80% of the users use for the online communication, 74% use for social networking such as Facebook, Twitter, LinkedIn, WhatsApp etc., 30% use for entertainment, 13% use for the online shopping, 11% use for the online ticketing. In India the survey can be done on two areas, like Urban and Rural India.

In the recent report from IAMAI it predicts that 71% of the estimated 371 million mobile data consumers in India belongs to the urban areas[4]. The future growth of mobile data usage in India is also dependent on the rural area. In the year 2015 the data usage doubled from 2014 in the rural area.

As per the information available from the Department of Telecommunications, the usage of internet in mobile is around 1.4 million TB in the year 2015-2016. It has been raised by more than then twice from 2013 to 2016, that is according to statistics it has been increased by 135% as a continuous mobile data usage. In the year 2013-14 the amount of mobile data usage was 5.87 lakh TB and it rapidly increased to 13.84 in the year 2015-16(Till February). In Figure 1 It represents the "Growth of internet users VS Mobile Internet".

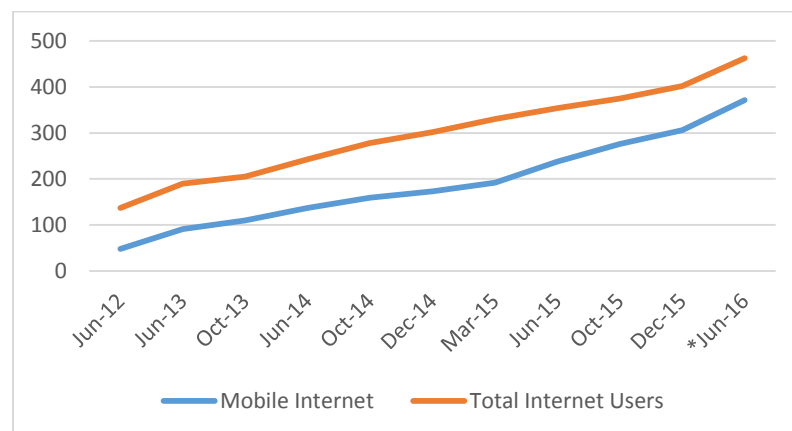


Figure 1: Growth of Internet Users VS Mobile Internet  
(Source:IAMAI, Feb 2016, Figures in million users, \*Estimated number)

*Research Done:*

- As per the recent research the popular form of entertainment is streaming music and watching videos and WhatsApp is the largely used mobile app in the smartphones.
- Another research made by the telecom gear maker Ericsson, by 2021 the consumption of data in India is expected to increase five times. And recently they published the report that India grew in terms of mobile subscribers with over 21 million net add in first quarter of this year.
- According to the report from CISCO, the mobile video traffic in India will grow at 83% CAGR between 2015 and 2020. And 50% of the increment in the mobile usage in India by 2017.
- The report from IAMAI highlights on the fact that 52% of the consumers from rural areas access the internet for the purpose of entertainment, 39% for the social media and 37% for communication. The total consumption of the mobile data consumers in the rural area would soon outpace the urban India.

*B. Mobile Usage in India:*

Mobile is not just a mode of communication, but used as a productivity tool. It has the capacity to be a connecting platform between the government and citizens as well. Currently, the mobile phones and smart phones generation see the low cost, improved and updated design and functionalities such as improvement in mobile browsing and email services, and up gradation of all the operating system.

As per the report by the telecom regulator of our country the mobile phone subscriber crossed the 1 billion consumers mark. India has exceeded 200 million smartphones users, due to the increasing penetration of economical smart phone devices in the country as reported by the US based research firm. There are about 900 million mobile phone users in India. The mobile network operator's statistics showed that 240 million consumers in India divided that 55 million users from urban areas and 185 million users are from the rural parts of the country. And a majority are contributed by the middle class. As per the research there will be hike in the number of smartphone users in India is estimated to reach 340.2 million.

In India, the mobile market is highly competitive with heavy competition creating difficulties for the vendors retaining their market shares [5-6]. The consumers are attracted to the high offers provided by the mobile network operators as a part of marketing strategy to sustain in the market.

### **III DISCUSSIONS AND RESULTS**

Based on a study conducted by GSMA Intelligence in 2015 the subscriber penetration of India, Asia Pacific and the subscriber penetration globally is 36%, 46% and 51% respectively. The connection penetration rate in India is 76%, 92% in Asia Pacific and 98% globally. In Figure 2 It represents the "Subscriber and connection penetration rates".

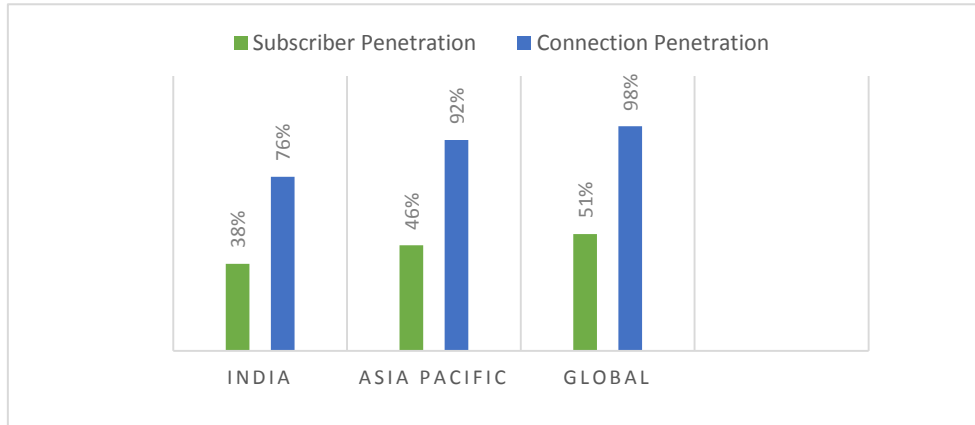


Figure 2.Subscriber and connection penetration rates, Q2 2015(Source-GSMA Intelligence)

Another study done by GSMA Intelligence on Unique subscriber growth in India, they predict that India will add about 250 million new subscribers by the year 2020, equivalent to nearly half of the forecast subscriber growth in Asia Pacific over the next five years. Thus India’s share of total subscribers will rise to by 30% by the end of this decade, while unique subscriber penetration will grow by 17 % points [7]. The following graph shows the unique subscriber growth in India.In Figure 3 It represents the “Unique Subscriber growth”.

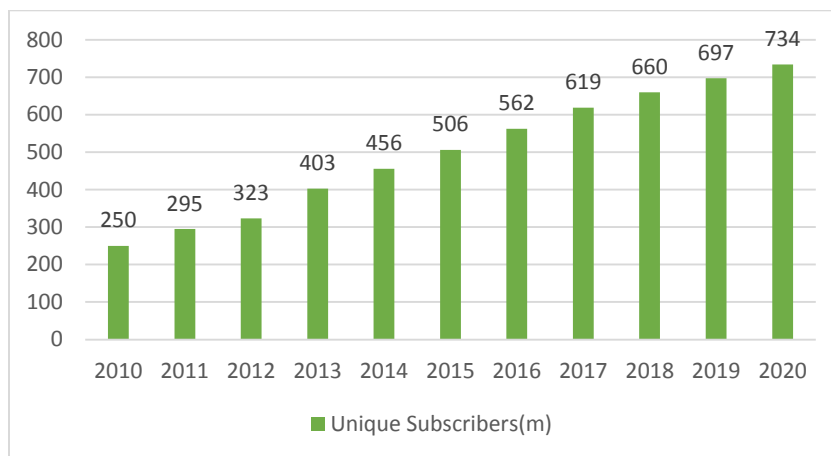


Figure 3.Unique Subscriber growth (Source-GSMA Intelligence)

Since the launch of 3G services in India in 2009, the population in India that has migrated towards 3G services that provides higher internet speed and this growth has been crucial. The rate

of 2G services is expected to be 39% in 2020 from 99% in 2010 and 3G connections are expected to increase to around 59% from just 1% in 2010. In Figure 3 It represents the “Unique Subscriber growth”.

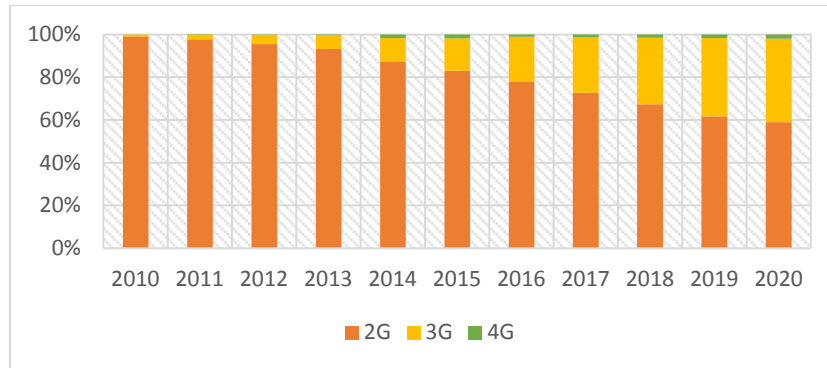


Figure 4. Technology mix: percentage of total connections(Source -GSMA Intelligence)

Smartphone adoption has been on the increase rapidly from 2% adoption rate in 2010, by the end of this decade in 2020, it is expected to reach 98% [8]. With the increase in smartphone connections in India there will be decrease in feature phone connections, from 57% to 43%. In Figure 4 It represents the “Smartphone adoption on the increase”.

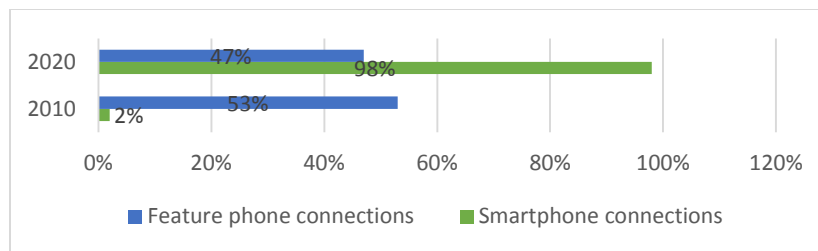


Figure 5. Smartphone adoption on the increase(Source: GSMA Intelligence)

According to study done by EY, India is expected to be one of the largest smartphone economies in the world as the smart phone penetration in India is predicted to grow to about 520 million by the end of this decade. Broadband penetration is expected to increase from 14% today to 40% by 2020. In Figure 5 It represents the “Group Escapism v/s Individual Escapism”.

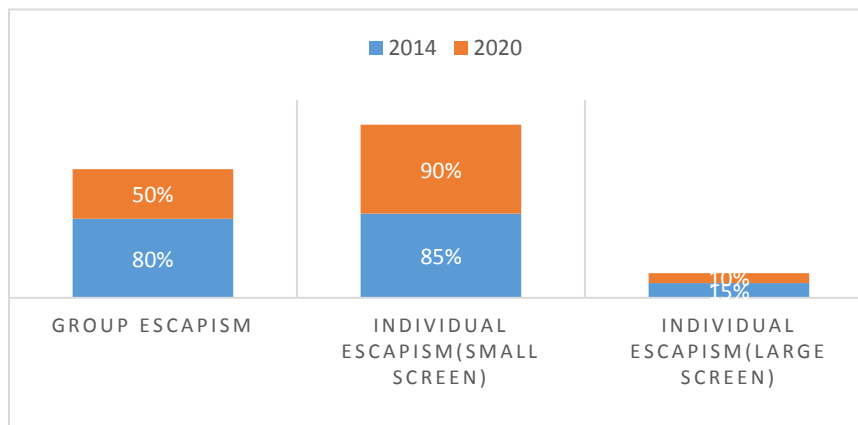


Figure 6.Group Escapism V/S Individual Escapism

In the study done by EY the year 2013 had about 351 million internet users across India, out of which 33% were users from rural areas. This rate of rural internet users is expected to increase to 50-55% by 2020 as shown in the graph below. In Figure 6 It represents the “Rural users as a percentage of total internet population”.

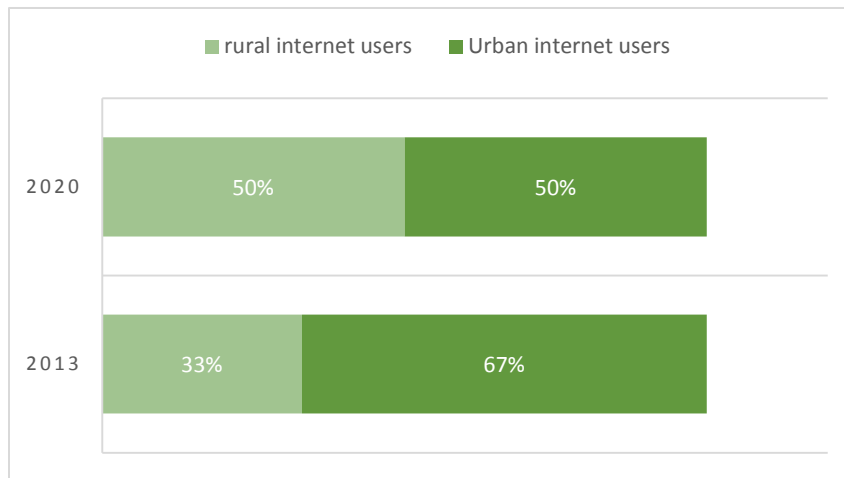


Figure 7.Rural users as a percentage of total internet population(Source-EY)

#### IV CONCLUSION

In conclusion, there is more media consumption through digital media as people now spend more time on online content consumption when compared to data consumption through traditional media. The reason for this rise is due to the improvement in the field of mobile technology, better internet connectivity and lowered costs of smart phones and data plans. There is a rise in demand for digital forms of entertainment including audio and video streaming. Audio and video are leaders in online traffic generation due to increase in internet penetration [9]. When compared globally, the youth population in India is the largest, who are more driven towards consuming data on digital platforms. Internet users in India is being driven by mobile internet users. As the earning population of India is constantly growing, there are more number of mobile and mobile internet users on the rise.

The leaders in digital media players adopt hybrid models where lot of free of cost content is provided. The preferred mode of consumption that is emerging in India is music streaming [10]. Subscription and ad monetization models and personalized offerings are being adopted by digital music players, digital video players, to maximize adoption. Thus the mobile and mobile internet industry in India is one of the largest growing industries in the world.

#### REFERENCES

- [1] Ernst & Young LLP[2016]: “Future of Digital Data Consumption in India”, EY Publications, India.
- [2] “Mobile economy of India“, GSMA Publications, “An overview of Indian mobile market”,2015.

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- [3] “Deloitte-Rise of on demand content”, Deloitte Publications, Hemant Joshi, “Deloitte’s point of view about the rise of on-demand content consumption through Digital platforms in India”, 2015.
  - [4] “Monetizing Mobile: Making data pay”, Mc Kinsey & Company, “David Arcelus, Miguel Fonseca, Joao Leonardo, Jose Miguel Novo, Pierre Pont”, “Revenue of data usage”, 2014.
  - [5] “Indian Media and Entertainment”, FCCI-KPMG, “Indian Media Industry report”, 2015.
  - [6] “Connected Farming in India”, Vodafone publications, “Report on how mobile can support farmers’ livelihoods”, 2015.
  - [7] “What is the impact of Mobile telephony on economic growth”, “Deloitte, GSMA publications, CISCO”, Report on mobile data usage,3G penetration, Economic growth, November 2012.
  - [8] ” TMT India Predictions 2016”, Deloitte, HemantJoshi, “Technology, Media & Telecommunications India Predictions”, 2016.
  - [9] “EY-Global telecommunications study: navigating the road to 2020”, EY Publications, “Purpose is to monitor and evaluate the evolving views of business leaders across the global telecommunications industry”, 2015.
  - [10] ” Global Mobile Consumer Survey- US Edition The rise of the always-connected consumer”, Deloitte, “Survey on mobile consumption globally”, 2015.