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SMARTPHONE USAGE TO BRING INNOVATIVE INCLUSIVE GROWTH AND SUSTAINABLE DEVELOPMENT IN INDIA

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ABSTRACT:

Cashless economy is not a new phenomenon in developed economy. From decades the journey of India faced barter system, Coins and Currency, Plastic money and adoption of a new digital era of virtual currency. Indian government has been facilitating this trend with a number of schemes and retro-measures. To weed out black money and corruption from public life, Government has been leveraging digital transaction ecosystem. Digital India consists of three core components of creation of digital infrastructure, delivery of services digitally and digital literacy.Digital India is not only transforming India but also helping to achieve the United Nations Sustainable Development Goals Agenda 2030. India's internet penetration stands at 365 with 3-5 million users getting added every month and thus the total number of internet users can be conjectured to reach 730 million by 2020. Under BharatNet, India has already achieved the laying of 1,77,144 kms of fibre connecting 78,220 villages against a target of 2.5 village panchayats, up from 59 villages in 2014 May.

The National Digital Literacy Mission (NDLM) also called Digital Saksharta Abhiyan (DISHA) initiated with the vision to make at least one person in every family digitally literate with digital literacy skills by 2020 and provide digital literacy to 6 crore rural households, including Anganwadi and ASHA workers and authorized ration dealers across the country. Now, over 82% Indians can access telecommunication services in the country. The present paper studies about the usage of smartphone in the era of bringing innovative inclusive growth and sustainable development in India.

KEYWORDS: *Cashless, Digital Infrastructure, Digital Literacy, Inclusive Growth and Sustainable Development.*

INTRODUCTION :

Digital India is an umbrella programme that encompasses providing Internet access to all by creating infrastructure, delivering government services on the Web and mobile phone, promoting digital literacy and increasing electronic manufacturing capability.

In the 2014-15 Union budget, the government committed Rs.500 crore for building infrastructure, as per the National Rural Internet and Technology Mission, with an additional Rs.100 crore for improving e-governance with the aim to increase tele-density in rural areas.

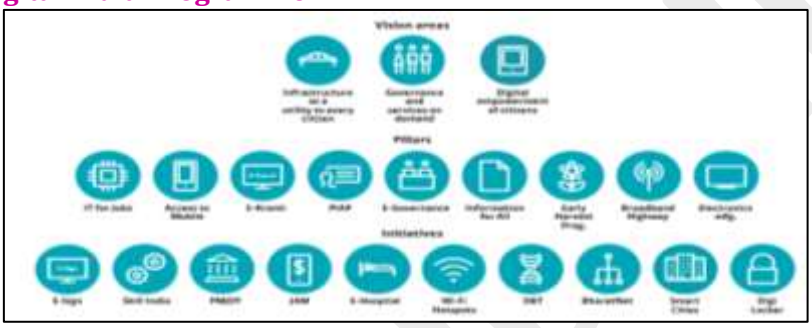
The content as well as service providers have emerged as

important stakeholders for the growth of mobile Internet.

"Meaningful and compelling content can be an important driver for enabling adoption of mobile Internet. Traditional services like voice, SMS are gradually being replaced by mobile data services," said the report. "Indian mobile content usage is dominated by email, social networking, chat, games and news. While these categories gained popularity because they fulfil multiple needs of consumers, the positive social and economic impact of the Internet is probably manifold," said the report.

The report said mobile phones were being touted as one of the greatest mediums of change—like giving people without a bank account access to financial services and providing health services in rural areas. "The mobile data services would help to tackle key issues plaguing education, health, finance, agriculture and governance in India," it said. On the consumer side, increase in smartphone penetration and increasing demand for Internet-based services such as chat, social media, video and music through the mobile medium will accelerate growth in mobile Internet usage.

Overview of the Digital India Programme



This statistic shows the smartphone penetration rate in India from 2014 to 2019 as share of mobile phone users. It was predicted that by 2017, 33.4 percent of mobile phone users in India would use a smartphone.

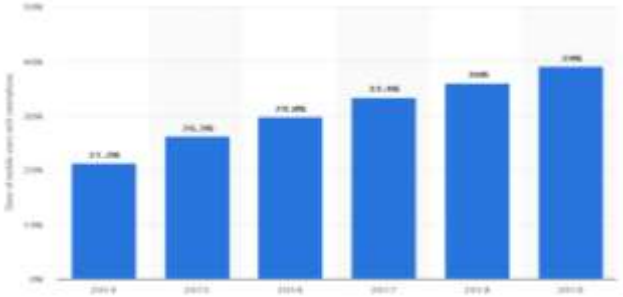
India's smartphone penetration

The smartphone industry in India is a growing market with around 36 percent of all Indian mobile users expected to own a smartphone by 2018. The global smartphone penetration forecast shows that around 50 percent of mobile users worldwide are projected to own a smart device by 2018. In comparison, 59 percent of Chinese mobile users and 87 percent of U.S. mobile users are forecast to use a smartphone by 2018.

As of 2015, 18.21 percent of India's overall population owned a smartphone, a figure that is set to rise to over 25 percent by 2017. Android was the most commonly installed operating system in India in December 2016, with the Google-backed company holding almost 77 percent of the country's smartphone OS market share.

This increase in smartphone penetration in India is mirrored by the fact that India's share of the global smartphone market is forecast to more than triple between 2013 and 2017 to reach over 10 percent. In the last quarter of 2016 alone, over 25 million units of smartphones were shipped in India, a figure that stood at just over 10 million in all of 2011.

A survey conducted in 2017 showed that 9 percent of mobile users in India listened to music on their phones and 49 percent visited a social network.



Source:**Statista Inc., the Statistics Portal, Estimated** use of smartphone in India from 2014 to 2019

MOBILE INTERNET USERS IN INDIA

India has the third largest Internet user base in the world out of which more than 50 per cent are mobile-only internet users. However, the Internet penetration in India at 19 per cent is quite low compared to other developed and developing economies.

In India, the number of people who own mobile phones is greater than the number who own personal computers. The Indian government is committed to setting up a robust digital infrastructure and to promote adoption of mobile Internet and related products and services.

In 2014-15, the Government budgeted INR 500 crore for building infrastructure as per the National Rural Internet and Technology Mission with an additional INR 100 crore budgeted for improving e-governance.

Though India has low Internet penetration at 19% compared with other developed and developing economies that have up to 90% penetration, the country has the third-largest Internet user base in the world, with more than 300 million users, of which more than 50% are mobile-only Internet users.

Country	Internet Penetration 2014
Australia	89.6%
USA	86.8%
Japan	86.0%
Brazil	53.4%
China	46.0%
India	19.2%

Source: Internet Live stats, eMarketer, KPMG in India Analysis

"This impressive growth would drive India to become one of the leading Internet markets in the world with more than 50% of Internet user base being mobile-only Internet users."The growth will be led by the government's Digital India initiative, collaboration among mobile Internet ecosystem stakeholders and innovative content and service offerings from mobile-based services players.

The next billion internet users are ditching computers for pocket-friendly phones. Globally, half of all internet users got online in February 2017 using mobile devices, and over 45% visited the web on desktops during the same time period. In countries like the UK and US, where more than eight in 10 have access to the internet, people got online using phones over a third of the time. In India, the split was leaning heavily toward mobile use: Indians accessed the internet through their mobiles nearly 80% of the time.

The Mukesh Ambani led venture lured over 100 million subscribers by offering one gigabyte (GB) a day of free 4G. It also ignited price wars that drove data prices in the country down by nearly 20%. Besides data, smartphones, too, have become more affordable amid competition.

Recently, Chinese brands have won over Indian audiences by manufacturing locally to drive down costs, creating smartphones with bigger screens and an improved user interface, spending heavily on marketing, setting up retail stores, and even adding local language support. At the end of last year, four out of the top five brands of smartphone shipments in the country—Vivo, Xiaomi, Lenovo, and Oppo—were Chinese.

India leads mobile internet usage among G20 nations

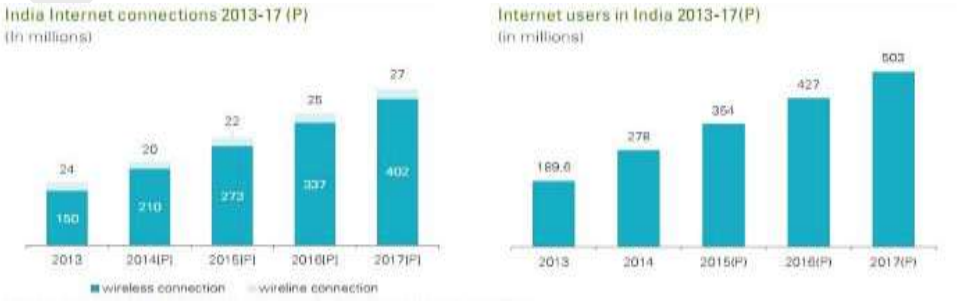
Source:Stat CounterGlobal Stats, India leads mobile internet usage among G20 nations

For those reluctant to switch to smartphones, 4G feature phones with long battery lives and simple, easy-to-use designs serve as the online connection. Close to 200 million 4G feature phones are projected to sell in India over the next five years, according to Counterpoint Research

Data shows that India has clearly leapfrogged the desktop generation. The country holds the title for mobile internet usage among G20 nations. Others like Indonesia and South Africa, where desktops are significantly more expensive than mobile phones and power issues are widespread, are close behind

From 200 million internet users in 2013 to over 500 million internet users by 2017 — including **314 million mobile internet users —** the growth story of mobile internet in India is on the upsurge.

A report by Internet and Mobile Association of India (IAMAI) projected that India will reach 236 million mobile internet users by 2016, and 314 million by 2017. Earlier this year, Mary Meeker compared India's internet penetration of 2014 with China of 2008 and the US of 1996. Here are some of the highlights from 'India on the go – Mobile Internet Vision Report 2015'.



Source: IAMAI Internet in India 2014, Industry Discussions, KPMG-FICCI M&E Industry report 2014 and 2015

3G and 4G user base to increase

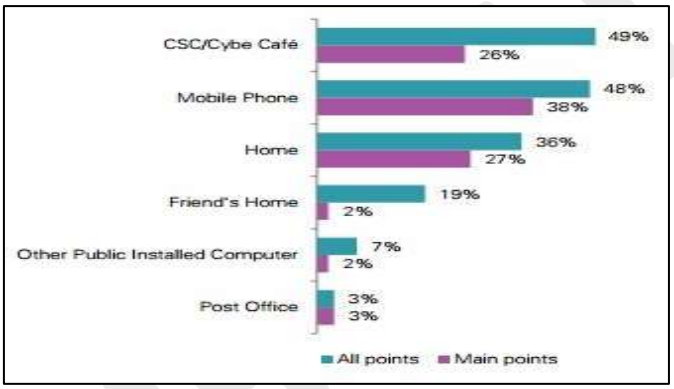
The 2G user base in India is projected to decline in the coming years as more and more customers are expected to migrate from 2G to 3G. The 3G user base in India is rapidly gaining market and is projected to grow at a CAGR of 61.3% from 2013-17. **There were approximately 82 million 3G subscribers in India by the end of 2014 and the number is projected to reach 284 million by end of year 2017.**

To increase user adoption, several Telecom operators reduced their 3G tariffs by 80-90 per cent in the second half of the year 2013 and brought 3G prices comparable to 2G prices. As of June 2015, internet users in India stood at over 350 million. 4G user base is also expected to grow at an annual growth rate of 344 per cent and a CAGR of 103 per cent from 2013 to 2018.

Rural growth through 2G

The report has found that the rural growth story in the coming years will likely be through 2G technologies. 3G and 4G may continue to be primarily an urban phenomenon for the next few years.

Rural India – Internet Access Point



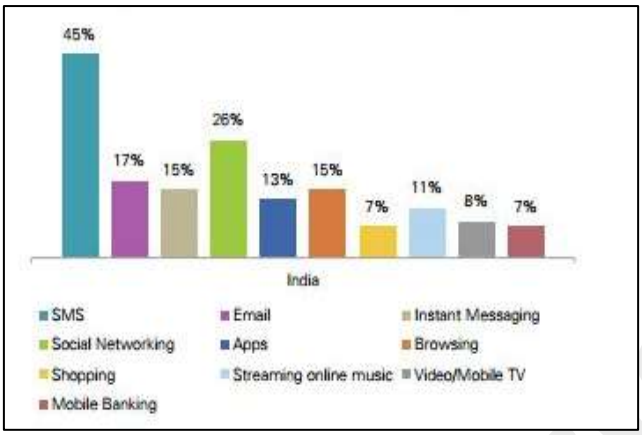
Source:IAMAI-IMRB Mobile Internet in India Report 2014

Increased internet enabled device penetration, decreasing handset prices and data plans tariffs are helping create a suitable environment for a rapid growth of mobile internet in India, with rural India set to take the lead. **As of June 2014, nearly 50% of the Active Internet Users(AIU) in rural areas accessed internet using mobile phones, community service centers (CSC) and cyber cafes. 38% of the AIU use mobile phone as the main access point.**

Usage patterns

India is making the transition from features phones to smartphones rapidly. This is accelerated by the availability of low-cost smartphones and data plans. **SMS, email, messaging and social networking apps are the most popular used apps, while video streaming and banking services are the least used apps.** Customer's apprehensions around security of payment platforms and data privacy need to be addressed.

Activities performed on smartphones (India)



Source: Nielsen mobile consumer report, a global snapshot 2013

Many handset manufacturers are making their contribution towards mobile internet growth by manufacturing affordable handsets supporting vernacular content. The median price of handsets has dropped significantly making internet enabled devices affordable for the masses.

Several domestic handset manufacturers are contributing to the increasing trend of smartphone usage by selling high end phones at lower price points. The report found that smartphones seem to deliver a better user experience and have the potential to accelerate the adoption of mobile internet. India has become the third largest smartphone market in the world.

Challenges Faced in Adoption of Digital Technologies

The barriers to adopt technologies in the economically weaker sections of society include:

- **Cost and affordability**: According to Asian Development Bank, approximately 22% of the population in India lives below the poverty. Thus, affordability of internet enabled devices along with data services becomes a challenge for a large section of the society.
- **Limited high speed mobile data connectivity**: Most telecom operators so far have not invested significantly in development of high speed access networks in rural areas.
- **Low awareness of benefits of technology**: Amongst the lower strata of society, the awareness of the benefits of adopting technology is lowas is the awareness of government schemes and initiatives. Similarly, MSMEs also have low awareness of government and stakeholder schemes that could lead to numerous benefits.
- **Low rate of digital literacy**: A key hindrance to adoption of technology is the low rate of digital literacy in India. Several initiatives undertaken by the government and other organisations are expected to improve the digital literacy rate in the coming years which will in turn result in an increase in adoption of technology and digital services.
- **Limited digital content in regional languages**: While there has been an increase in localized content and applications, content still remains limited in several local and regional languages. Most applications that exist have been driven by the government. Private sector involvement remains limited to proof of concepts (PoCs) in limited test environments.
- **Security and privacy**:An individual users worry about their private and financial data being accessible or stolen, business users worry about storing sensitive data, such as invoices, bills and client documents, on technology platforms without adequate protection.

Key improvements

Digital literacy needs to be adopted for digital service. To improve the digital literacy these are the following measures:

1. **Increasing accessibility and scale of training platforms**: Mobile platforms and internet enabled programs should be used to improve the accessibility of training programmes.
2. **Provide credible and industry acceptable certifications**: Credibility and recognition of certifications provided by various initiatives is key to successful development of digital literacy. Further, industry players should be compelled to recognize the credibility of certificates issued.
3. **Partnership amongst various stakeholders**: The various stakeholders (different government programs, ministries, institutions, industries etc.) involved in imparting digital literacy need to work in coordination to obtain the most effective implementation. This will require transparency of information, workflow management and timely updates on the progress of various factions.
4. **Defining the role of the private sector**: A framework needs to be defined for participation of the private sector in skill development programs which defines the role of the private sector, expectations in terms of investments, content and job guarantees.
5. **Enhanced synergy between Skill India and Digital India**: Skill India is aimed at providing skilled resources across the country. An integrated approach between Digital India and Skill India should be constructed to design programmes and impart training.
6. **Introduction of digital skill programs at an institutional level**: Skill training and digital literacy should be introduced as part of institutional trainings in schools, colleges and universities across India. Curriculum and interactive programmes should be mandated to ensure adequate digital skills of all graduates.

CONCLUSION

The Digital India program is now in the second year of its existence and several of the flagship projects under the program have now moved from the planning phase to the execution phase. Several applications and services that have been developed have seen significant adoption. The cloud storage service, DigiLocker, is now being used by four million users. The MyGov application which provides a platform for citizens to interact with the government is used by over one million users to interact with the government.

With ~350 million users, India now represents the second largest internet user base in the world. The Digital India program is likely to benefit citizens over the next few years by generating employment opportunities, increasing speed and quality of service delivery and enhancing social and financial conclusion. Businesses will benefit by realizing higher productivity, an improved ease of doing business and a boost in innovation and investments. The adoption of next generation technologies under

While the usage of smartphones and the internet has increased, digital literacy and awareness is still low and is an area that requires enhanced focus. The government has initiated several programs like the National Digital Literacy Mission (NDLM) and Skill India program to increase IT awareness and literacy. To further strengthen the development of infrastructure, services, capacity building and enhance their impact.

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Abbreviations

1. **FICCI** - Federation of Indian Chambers of Commerce & Industry
2. **IAMAI -** Internet and Mobile Association of India
3. **KPMG -** Peat Marwick International (PMI) and Klynveld Main Goerdeler (KMG)
4. **IMRB -** Indian Market Research Bureau
5. **ICT -** information and communication technologies
6. **M&E -** Monitoring and Evaluation
7. **TRAI -** Telecom Regulatory Authority of India
8. **ITU -** International Telecommunication Union
9. **ASHA** -Accredited Social Health Activist