ERICSSON

INDIA

ERICSSON MOBILITY REPORT APPENDIX

JUNE 2015

MARKET OVERVIEW

Key figures: India

	2014	2020	CAGR 2014–2020
Mobile subscriptions (million)	970	1,380	6%
Smartphone subscriptions (million)	130	750	35%
Data traffic per active smartphone (GB/month)	1	4.5	25%
Total mobile traffic (PB/month)	200	2,800	55%

There is major momentum for greater connectivity in India

India has experienced tremendous growth in wireless subscribers in recent years. Indians from different income, age, gender and educational backgrounds are adopting smartphones and mobile internet, thus contributing to the Networked Society. India's smartphone mobile broadband revolution began in key metropolitan areas, and these areas continue to be the strongholds for mobile broadband in the country.
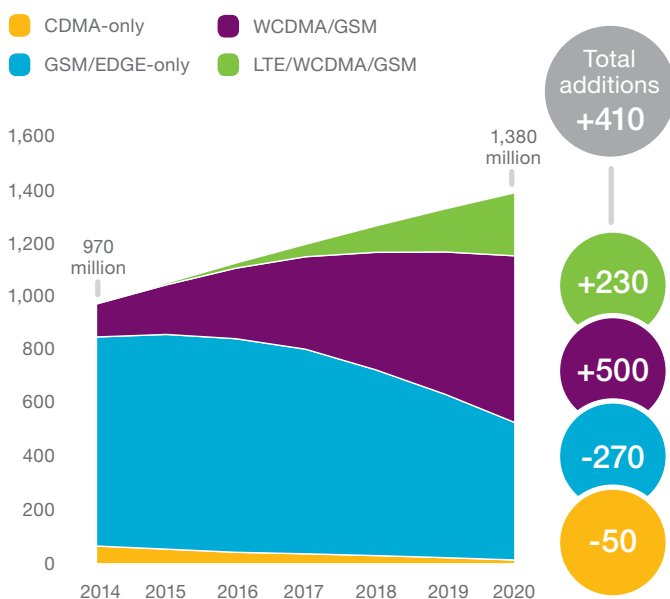
However, consumers in smaller cities and towns are also rapidly embracing smartphones and mobile internet, as a source of both information and entertainment. For many, mobile technology represents a more convenient and less expensive alternative to other personal technology devices, such as laptops and desktop computers.

The total number of mobile subscriptions in India is expected to increase to approximately 1.4 billion by 2020, resulting in a population penetration of 100 percent. This growth will primarily be driven by the increasing affordability of devices and services.
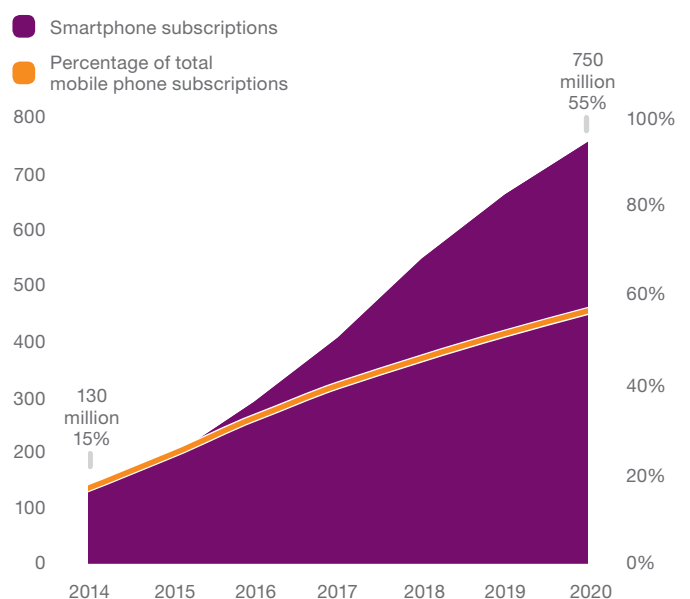
By the year 2020, we expect:
> GSM subscriptions to decline from 780 million in 2014 to around 510 million. The GSM subscription base is predicted to peak in 2015 and decline thereafter, as subscribers migrate to 3G services
> WCDMA/HSPA subscriptions to increase from over 120 million in 2014 to around 620 million, as the proportion of WCDMA/HSPA subscriptions in the total subscription base increases from 13 percent to 45 percent
> LTE subscriptions to reach more than 230 million, forming around 17 percent of the total subscription base

Mobile subscriptions, India (million)

- CDMA-only
- GSM/EDGE-only
- WCDMA/GSM
- LTE/WCDMA/GSM

Total additions +410

+230
+500
-270
-50

Smartphone subscriptions, India (million)

- Smartphone subscriptions
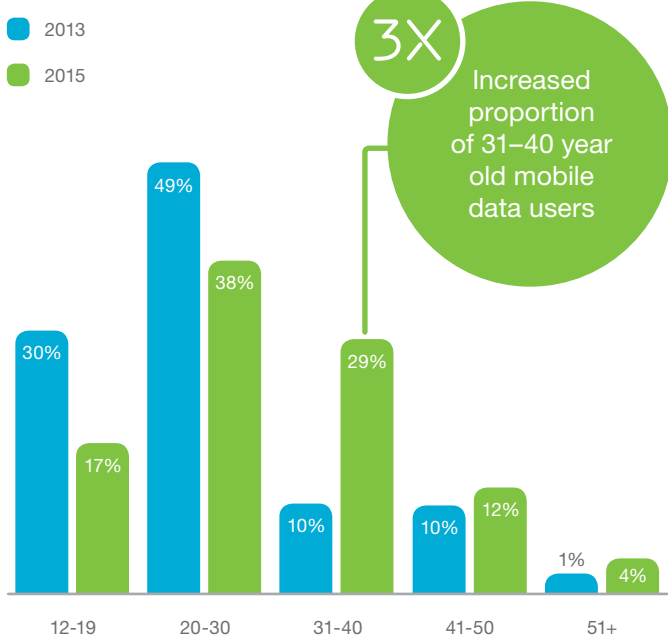- Percentage of total mobile phone subscriptions

Mobile data user demographics are evolving fast in India

Mobile broadband is bridging the digital divide between rural and urban populations. A growing proportion of people from less educated, lower income groups now download apps and stream video content from the internet using mobile devices. The older generation is also going digital. The proportion of people aged over 50 who use smartphones quadrupled between 2013 and 2015, albeit from a small base.
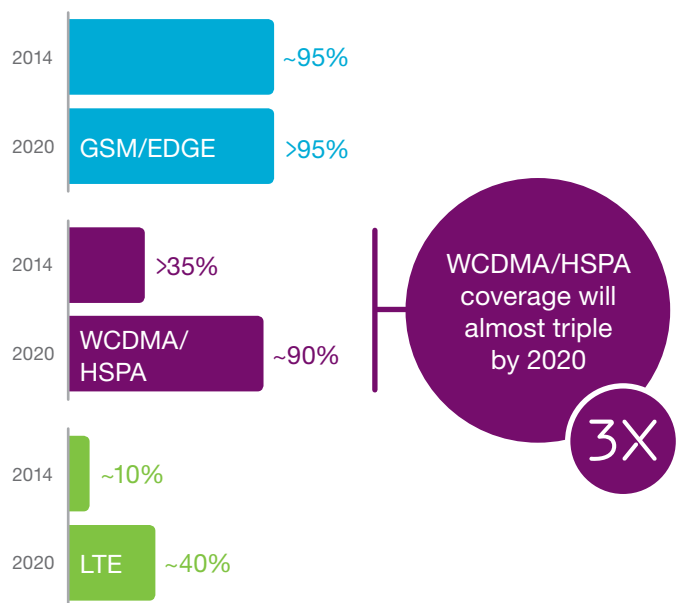
GSM/EDGE technology currently has the widest reach in India, with 95 percent population coverage. WCDMA/HSPA covered more than 35 percent of the Indian population at the end of 2014, and will increase to cover more than 95 percent by the end of 2020. Additionally, around 40 percent of the population will be covered by LTE networks, as shown in the right figure below.

Demographics: Proportion of people using mobile data services

- 2013
- 2015

3X Increased proportion of 31–40 year old mobile data users

Age group	2013	2015
12-19	30%	17%
20-30	49%	38%
31-40	10%	29%
41-50	10%	12%
51+	1%	4%

Source: Ericsson ConsumerLab (2013, 2015)

India population coverage by GSM/EDGE, WCDMA/HSPA and LTE technologies

GSM/EDGE
- 2014: ~95%
- 2020: >95%

WCDMA/HSPA
- 2014: >35%
- 2020: ~90%

WCDMA/HSPA coverage will almost triple by 2020 **3X**

LTE
- 2014: ~10%
- 2020: ~40%

Note: The figures refer to population coverage of each technology. The ability to utilize the technology is subject to factors, such as access to devices and subscriptions.

CONSUMER TRENDS

Social media, web browsing and chat account for a third of smartphone app traffic[1]

On average, Indian smartphone users spend over 3 hours a day on their smartphones and 25 percent of them check their phones over 100 times a day. Around one third of the time spent on smartphones is used for apps, primarily chat, social media, and gaming. There has been an increase of over 20 percent in the overall time spent on smartphones and around a 65 percent increase in app usage since 2012, when Ericsson ConsumerLab measured these parameters.[2] Mobile broadband users now send 40 out of every 100 messages through instant messaging apps rather than SMS due to lower cost, ease of use, ease of content sharing, and a better overall user experience.[3]

Mobile video consumption also continues to grow in India. The emerging trend of viewing videos on mobile devices has led to consumers spending more time on their smartphones than watching TV. Indian smartphone users now spend 191 minutes per day on smartphones compared with 128 minutes in front of TVs. 65 percent of mobile broadband smartphone users in India prefer video streaming to downloading videos on handsets. However, 44 percent of mobile broadband users say long loading times often prevent them from watching mobile videos. As a result, users' perception of the quality of experience delivered by the service provider is affected. As consumers watch more mobile video, the tolerance for delays will decrease.

Affordability is critical to mobile broadband growth in India

Falling smartphone prices have led to low-end manufacturers gaining significant market share in recent years. The current minimum price of high-end smartphones is about U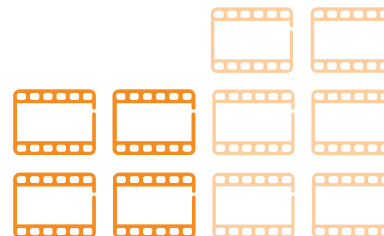SD 165. Low-end smartphones cost about USD 35. These prices are expected to fall by 40–50 percent over the next 3 years for high-end smartphones. This will increase the affordability of these devices even further, which in turn will drive the overall affordability of mobile broadband.

As consumers watch more content, their tolerance for delays will decrease

The appetite exists

65% of mobile broadband users prefer to stream rather than download videos on smartphones
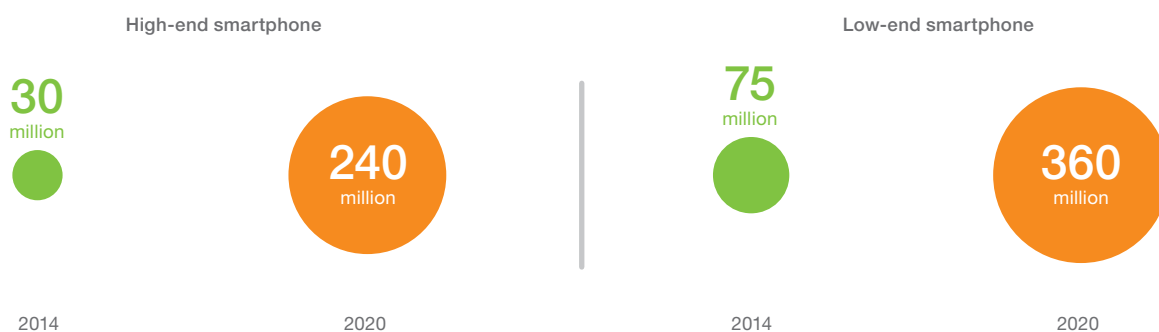
But so do issues

4 out of 10 videos played have issues with buffering and stalling

Source: Ericsson ConsumerLab, Performance shapes smartphone behavior, India (2014)
Base: Mobile broadband smartphone users

Smartphone installed base, India

High-end smartphone		Low-end smartphone	
30 million	240 million	75 million	360 million
2014	2020	2014	2020

[1] Ericsson ConsumerLab, On device measurements, India (2014)
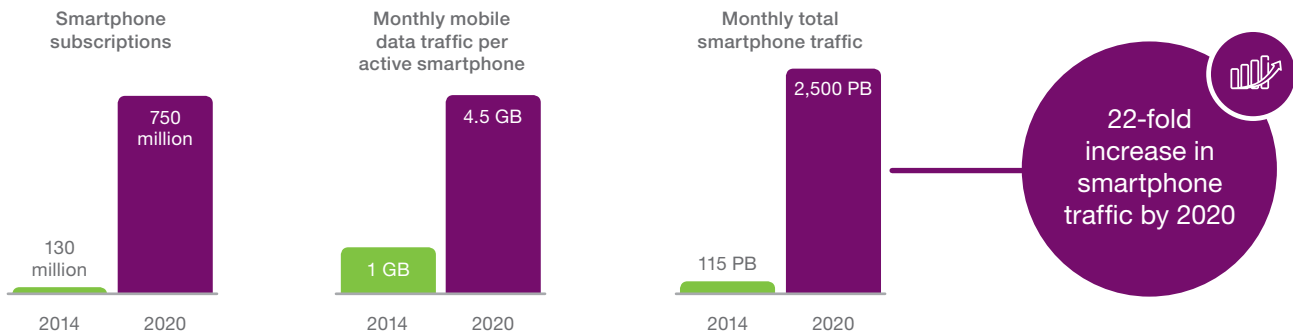[2] Ericsson ConsumerLab, Performance shapes smartphone behavior study, India (2014)
[3] Ericsson analysis

MOBILE TRAFFIC

Monthly mobile data consumption is expected to increase 18-fold by the year 2020 over current levels. Across all mobile technologies in India, monthly data usage per subscriber is still relatively low, primarily because of a sub-optimal 2G and 3G user experience. This is caused by the inability of 2G networks to support high-bandwidth services, insufficient 3G network coverage, and a lack of relevant local content.

Maintaining and improving the quality of the user experience is likely to be at the top of Indian operators' agendas over the coming years. A network with a mix of macro sites, micro sites and small cells will need to be established to manage coverage, capacity and network performance for the best user experience.

Mobile traffic, India

Smartphone subscriptions

- 130 million (2014)
- 750 million (2020)

Monthly mobile data traffic per active smartphone

- 1 GB (2014)
- 4.5 GB (2020)

Monthly total smartphone traffic

- 115 PB (2014)
- 2,500 PB (2020)
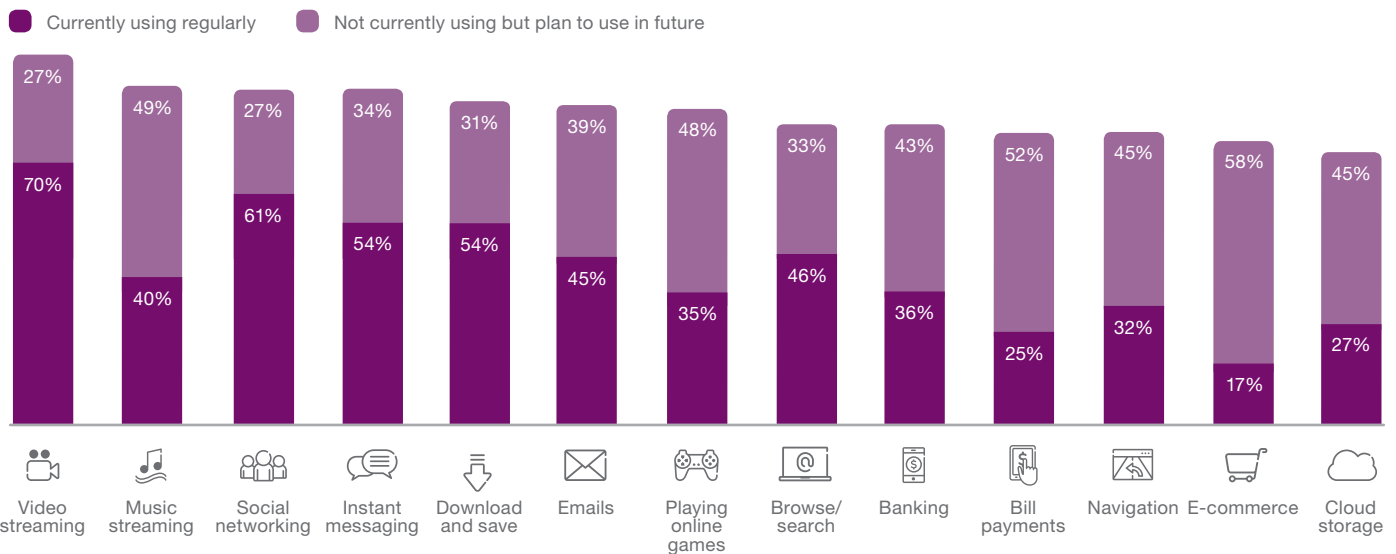
22-fold increase in smartphone traffic by 2020

A growing appetite for data services exists

Video streaming is the most used mobile data service, followed by social networking. 70 percent of mobile broadband smartphone users regularly stream videos on their smartphones, and 61 percent use social networks.

Indian smartphone users are also seeing great potential in mobile broadband when it comes to facilitating the way they handle their money and personal finances. Not having to carry cash, and the convenience it provides, is making m-commerce services attractive to Indian smartphone users. Smartphones are expected to act as a catalyst for the uptake of m-commerce services, as depicted in the figure below. Services like navigation while traveling and cloud storage are also seeing an upswing in usage.

Percentage of users regularly using mobile data services, or planning to use in next six months

- Currently using regularly
- Not currently using but plan to use in future

| Service	Currently using regularly	Not currently using but plan to use in future
Video streaming	70%	27%
Music streaming	40%	49%
Social networking	61%	27%
Instant messaging	54%	34%
Download and save	54%	31%
Emails	45%	39%
Playing online games	35%	48%
Browse/search	46%	33%
Banking	36%	43%
Bill payments	25%	52%
Navigation	32%	45%
E-commerce	17%	58%
Cloud storage	27%	45%

Source: Ericsson ConsumerLab, Segmentation study, India (2015)
Base: 4,500 mobile broadband smartphone users
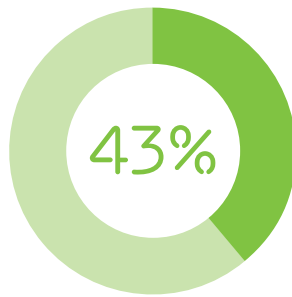
REAL PERFORMANCE

Mobile internet users expect the same browsing experience as they have on desktops. The figure below indicates that on average, 58 percent of Indian mobile broadband users expect mobile web pages to load in around 3 seconds, but 43 percent found that pages took more than 10 seconds to load. On-device measurements indicate that smartphone users don't have access to a mobile broadband network around 44 percent of the time.[4]
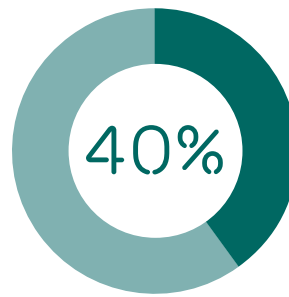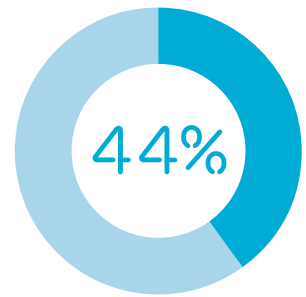
Performance impacts these perception drivers
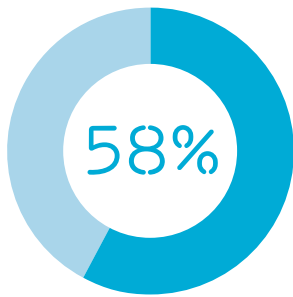
58%	**43%**	**40%**	**44%**
Expect load times to be around 3 seconds	Web pages took more than 10 seconds to load	Slow or failed web page experience	Do not have mobile broadband coverage

Source: Ericsson ConsumerLab, Performance shapes smartphone behavior, India (2014)
Base: Mobile broadband smartphone users

Different segments of mobile internet users have different needs

The importance attached to different attributes of mobile internet varies between different user segments. These attributes determine the user experience, and operators need to perform well in these areas in order to satisfy their customers.

The top figure on the next page illustrates how consumer behavior differs between consumer segments. Basic hygiene factors are those which, if not met, will lead to a lot of frustration and dissatisfaction among customers. Delighters are the services that customers do not necessarily expect, but providing them will significantly increase consumer satisfaction levels and loyalty, thereby acting as a differentiator for the operator. These attributes influence the Net Promoter Score (NPS), as shown in the figure. NPS measures how likely a consumer would be to recommend a company or brand. If not satisfied with an attribute that is very important to them, a consumer will not recommend the provider, regardless of how well they perform on other attributes of the mobile internet experience. However, if a consumer is satisfied with another attribute they consider important, they would reward the provider with a positive impact on NPS. While hygiene factors negatively impact NPS,

delighters have a positive impact. An attribute that is a delighter for some may be a hygiene factor for others. For example, quality of mobile internet connectivity is a hygiene factor for a technosumer.[5] This type of consumer would be dissatisfied with the operator if mobile internet connectivity is not up to the mark, irrespective of the services offered on other aspects. For homemakers, indoor coverage is an important attribute, and could potentially turn into a detractor if the mobile data experience is not satisfactory.

[4] Ericsson ConsumerLab, Performance shapes smartphone behavior study, India (2014)
[5] Technosumers are city dwellers that are generally not price conscious, have a high interest in technology and are early adopters

**Consumer segments value different attributes of the mobile internet experience differently**
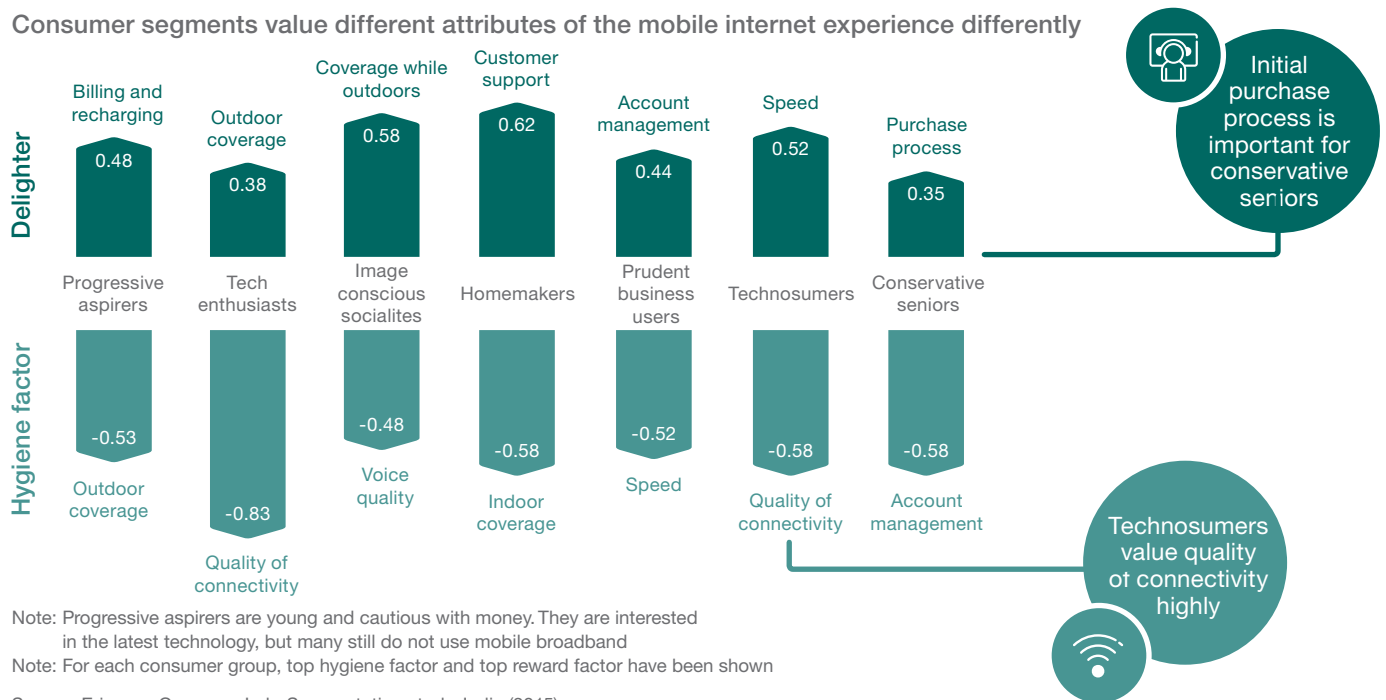
Note: Progressive aspirers are young and cautious with money. They are interested
in the latest technology, but many still do not use mobile broadband
Note: For each consumer group, top hygiene factor and top reward factor have been shown

Source: Ericsson ConsumerLab, Segmentation study, India (2015)
Base: 2,500 mobile broadband smartphone users

Location affects network performance

Users in small and mid-size Indian cities have more issues
outdoors and while commuting. In general, users in India
face issues related to app usage, inconsistent speed and
session failures while commuting and outdoors.

Quality and reliability issues like dropped calls, voice
clarity, inconsistent speed and loss of connection
are problems that users face when accessing mobile
data indoors.

Issues related to network performance
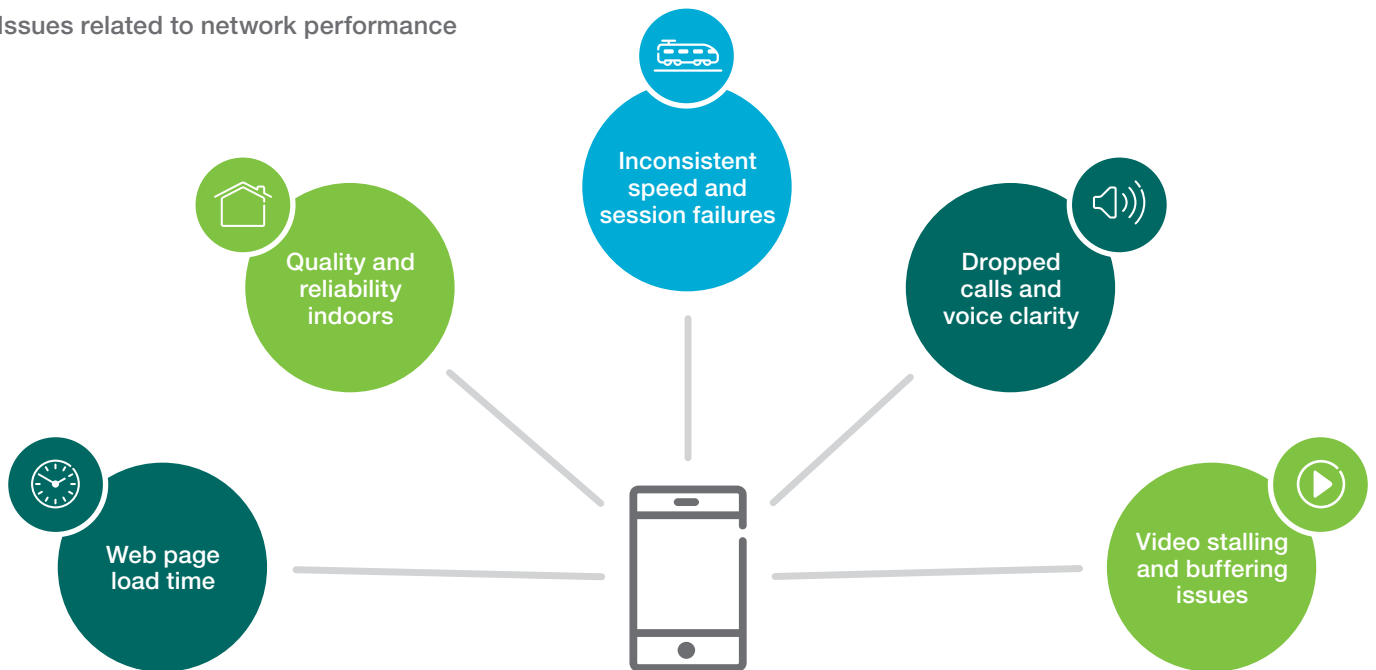
Source: Ericsson ConsumerLab, Segmentation study, India (2015)
Base: 1,150 mobile broadband users

Ericsson is the driving force behind the Networked Society – a world leader in communications technology and services. Our long-term relationships with every major telecom operator in the world allow people, business and society to fulfill their potential and create a more sustainable future.

Our services, software and infrastructure – especially in mobility, broadband and the cloud – are enabling the telecom industry and other sectors to do better business, increase efficiency, improve the user experience and capture new opportunities.

With approximately 115,000 professionals and customers in 180 countries, we combine global scale with technology and services leadership. We support networks that connect more than 2.5 billion subscribers. Forty percent of the world's mobile traffic is carried over Ericsson networks. And our investments in research and development ensure that our solutions – and our customers – stay in front.

Founded in 1876, Ericsson has its headquarters in Stockholm, Sweden. Net sales in 2014 were SEK 228.0 billion (USD 33.1 billion). Ericsson is listed on NASDAQ OMX stock exchange in Stockholm and the NASDAQ in New York.