



India - 2021 Forecast Highlights

IP Traffic

- In India, IP traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 30%.
- In India, IP traffic will reach 6.5 Exabytes per month in 2021, up from 1.7 Exabytes per month in 2016.
- India's IP networks will carry 215 Petabytes per day in 2021, up from 57 Petabytes per day in 2016.
- In India, IP traffic will reach an annual run rate of 78.3 Exabytes in 2021, up from an annual run rate of 21.0 Exabytes in 2016.
- In India, IP traffic will reach 5 Gigabytes per capita in 2021, up from 1 Gigabytes per capita in 2016.
- In India, average IP traffic will reach 20 Tbps in 2021, and busy hour traffic will reach 101 Tbps.
- In 2021, the gigabyte equivalent of all movies ever made will cross India's IP networks every 54 minutes.

Internet Traffic

- In India, Internet traffic will grow 4.0-fold from 2016 to 2021, a compound annual growth rate of 32%.
- In India, busy hour Internet traffic will grow 6.3-fold from 2016 to 2021, a compound annual growth rate of 45%.
- In India, Internet traffic will reach 4.7 Exabytes per month in 2021, up from 1.2 Exabytes per month in 2016.
- India's Internet traffic will be 154 Petabytes per day in 2021, up from 40 Petabytes per day in 2016.
- India's Internet traffic in 2021 will be equivalent to 14 billion DVDs per year, 1 billion DVDs per month, or 2 million DVDs per hour.
- In 2021, the gigabyte equivalent of all movies ever made will cross the Internet every 1 hours.

- Indian Internet traffic in 2021 will be equivalent to 291x the volume of the entire Indian Internet in 2005.
- In India, Internet traffic will reach 3 Gigabytes per capita in 2021, up from 1 Gigabytes per capita in 2016.
- In India, average Internet traffic will increase 4.0-fold by 2021 and will reach 14 Tbps.
- In India, busy hour Internet traffic will increase 6.3-fold by 2021 and will reach 72 Tbps.

Wired Wi-Fi and Mobile Growth

- India's Fixed/Wi-Fi was 34% of total IP traffic in 2016, and will be 30% of total IP traffic in 2021.
- India's Fixed/Wired was 51% of total IP traffic in 2016, and will be 40% of total IP traffic in 2021.
- India's Mobile was 15% of total IP traffic in 2016, and will be 30% of total IP traffic in 2021.
- India's Fixed/Wi-Fi was 49.6% of total Internet traffic in 2016, and will be 41.3% of total Internet traffic in 2021.
- India's Fixed/Wired was 28% of total Internet traffic in 2016, and will be 17% of total Internet traffic in 2021.
- India's Mobile was 22.9% of total Internet traffic in 2016, and will be 42.0% of total Internet traffic in 2021.
- In India, mobile data traffic will grow 7-fold from 2016 to 2021, a compound annual growth rate of 49%.
- In India, mobile data traffic will reach 2.0 Exabytes per month in 2021, up from 266 Petabytes per month in 2016.
- Indian mobile data traffic will grow 2 times faster than Indian fixed IP traffic from 2016 to 2021.
- India's Mobile was 15% of total IP traffic in 2016, and will be 30% of total IP traffic in 2021.
- In India, mobile data traffic in 2021 will be equivalent to 88x the volume of the entire Indian Internet in 2005.

IP Video

- In India, IP video traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 35%.
- In India, IP video traffic will reach 5.4 Exabytes per month in 2021, up from 1.2 Exabytes per month in 2016.
- In India, IP video will be 83% of all IP traffic in 2021, up from 69% in 2016.
- In India, Ultra HD will be 7.9% of IP Video traffic in 2021, up from 0.4% in 2016 (148.2% CAGR).
- In India, HD will be 59.7% of IP Video traffic in 2021, up from 27.8% in 2016 (57.1% CAGR).
- In India, SD will be 32.4% of IP Video traffic in 2021, compared to 71.9% in 2016 (15.0% CAGR).
- In India, consumer IP video traffic will be 84% of consumer IP traffic in 2021, up from 74% in 2016.
- In India, business IP video traffic will be 72% of business IP traffic in 2021, up from 48% in 2016.

Internet Video

- In India, Internet video traffic will grow 5-fold from 2016 to 2021, a compound annual growth rate of 40%.
- In India, Internet video traffic will reach 3.6 Exabytes per month in 2021, up from 657 Petabytes per month in 2016.
- In India, total Internet video traffic (business and consumer, combined) will be 76% of all Internet traffic in 2021, up from 57% in 2016.
- In India, Ultra HD will be 10.0% of Internet video traffic in 2021, up from 0.7% in 2016 (140.9% CAGR).
- In India, HD will be 51.4% of Internet video traffic in 2021, up from 12.0% in 2016 (87.9% CAGR).
- In India, SD will be 38.6% of Internet video traffic in 2021, compared to 87.4% in 2016 (19.2% CAGR).

- In India, consumer Internet video traffic will be 77% of consumer Internet traffic in 2021, up from 58% in 2016.
- In India, business Internet video traffic will be 72% of business Internet traffic in 2021, up from 50% in 2016.
- In India, Internet-Video-to-TV traffic will be 23% of fixed consumer Internet video traffic in 2021, up from 15% in 2016.
- In India, Internet-Video-to-TV traffic will increase 6-fold between 2016 and 2021 (43.8% CAGR).
- In India, 84 billion minutes (159,201 years) of video content will cross the Internet each month in 2021. That's 31,840 minutes of video streamed or downloaded every second.
- In India, 50% of all Internet video traffic will cross content delivery networks in 2021, up from 31% in 2016.
- In India, 58.4% of all Internet video traffic will be long-form video (including live) in 2021, up from 59.4% in 2016.

IP VOD

- In India, Ultra HD will be 3.8% of IP VOD traffic in 2021, up from 0.0% in 2016 (265.9% CAGR).
- In India, HD will be 78.3% of IP VOD traffic in 2021, up from 48.2% in 2016 (39.9% CAGR).
- In India, SD will be 17.9% of IP VOD traffic in 2021, compared to 51.8% in 2016 (2.6% CAGR).

Gaming

- In India, gaming traffic will grow 7-fold from 2016 to 2021, a compound annual growth rate of 49%.
- In India, gaming traffic will reach 121 Petabytes per month in 2021, up from 17 Petabytes per month in 2016.
- In India, gaming traffic will be 3% of consumer Internet traffic in 2021, up from 2% in 2016.

Devices

- In India, there will be 2.0 billion networked devices in 2021, up from 1.4 billion in 2016.
- In India, there will be 1.5 networked devices per capita in 2021, up from 1.1 per capita in 2016.
- In India, 67% of all networked devices will be mobile-connected in 2021.
- In India, M2M modules will account for 22% (444.5 million) of all networked devices in 2021, compared to 12% (170.3 million) in 2016, (21.1% CAGR).
- In India, PCs will account for 2% (43.2 million) of all networked devices in 2021, compared to 3% (43.6 million) in 2016, (-0.2% CAGR).
- In India, Tablets will account for 2% (42.0 million) of all networked devices in 2021, compared to 1% (16.0 million) in 2016, (21.3% CAGR).
- In India, Smartphones will account for 38% (780.6 million) of all networked devices in 2021, compared to 26% (359.2 million) in 2016, (16.8% CAGR).
- In India, Connected TVs will account for 12% (241.4 million) of all networked devices in 2021, compared to 8% (116.4 million) in 2016, (15.7% CAGR).
- In India, Non-Smartphones will account for 23.5% (481.6 million) of all networked devices in 2021, compared to 49% (682.0 million) in 2016, (-6.7% CAGR).
- In India, Other Portables will account for 1% (15.7 million) of all networked devices in 2021, compared to % (5.8 million) in 2016, (22.3% CAGR).
- In India, 4K TVs will account for 24% (13.8 million) of all flat panel TVs in 2021, compared to 3.5% (585,887) in 2016, (88.1% CAGR).

- India's IP traffic from non-PC devices was 58% of total IP traffic in 2016, and will be 79% of total IP traffic in 2021.
- In India, PCs accounted for 42% of IP traffic in 2016, and will be 21% of IP traffic in 2021.
- In India, TVs accounted for 34% of IP traffic in 2016, and will be 33% of IP traffic in 2021.
- In India, Smartphones accounted for 16% of IP traffic in 2016, and will be 35% of IP traffic in 2021.
- In India, Tablets accounted for 3% of IP traffic in 2016, and will be 5% of IP traffic in 2021.
- In India, M2M modules accounted for 2.7% of IP traffic in 2016, and will be 5.0% of IP traffic in 2021.
- In India, PCs accounted for 55% of consumer Internet traffic in 2016, and will be 25% of consumer Internet traffic in 2021.
- In India, TVs accounted for 6% of consumer Internet traffic in 2016, and will be 10% of consumer Internet traffic in 2021.
- In India, TVs accounted for 5% of total Internet traffic in 2016, and will be 8% of total Internet traffic in 2021.

Speed Evolution

- In India, the average fixed broadband speed will grow 2.8-fold from 2016 to 2021, from 6.6 Mbps to 18.2 Mbps.
- In India, 59% of fixed broadband connections will be faster than 5 Mbps in 2021, up from 34% today.
- In India, 48% of fixed broadband connections will be faster than 10 Mbps in 2021, up from 19% today.
- In India, 16.7% of fixed broadband connections will be faster than 25 Mbps in 2021, up from 6.2% today.
- In India, 3.2% of fixed broadband connections will be faster than 50 Mbps in 2021, up from 2.8% today.
- In India, the average Wi-Fi speeds from mobile devices will grow 3.0-fold from 2016 to 2021, from 4.4 Mbps to 13 Mbps.
- In India, the average mobile connection speed will grow 5-fold from 2016 to 2021, reaching 6 Mbps in 2021.

Traffic per User and Household

- In India, the average Internet user will generate 14.0 Gigabytes of Internet traffic per month in 2021, up 127% from 6.2 Gigabytes per month in 2016, a CAGR of 18%.
- In India, the average Internet household will generate 46.0 Gigabytes of Internet traffic per month in 2021, up 158% from 17.8 Gigabytes per month in 2016, a CAGR of 21%.
- In India, the average FTTx Internet household will generate 132.5 Gigabytes of Internet traffic per month in 2021, 163.4% more than other broadband households.
- In India, the average FTTx Internet household generated 73.9 Gigabytes of Internet traffic per month in 2016, 203.5% more than other broadband households.
- In India, there will be 2 million Internet households (4.0% of all Internet households) generating more than 250 Gigabytes per month in 2021.
- In India, there will be 397,870 households (1.0% of all Internet households) generating more than 500 Gigabytes per month in 2021.
- In India, there will be 397,870 households (1.0% of all Internet households) generating more than a terabyte per month in 2021.

- In India, the average mobile connection will generate 1,541 Megabytes of mobile data traffic per month in 2021, up from 265 Megabytes in 2016.

Traffic Topology and Traffic Patterns

- In India, 43% of all Internet traffic will cross content delivery networks in 2021, up from 20% in 2016.
- In India, peak Internet traffic will grow at a compound annual growth rate of 45% from 2016 to 2021, compared to 32% for average Internet traffic.