



## China - 2021 Forecast Highlights

### IP Traffic

- In China, IP traffic will grow 3-fold from 2016 to 2021, a compound annual growth rate of 26%.
- In China, IP traffic will reach 54.6 Exabytes per month in 2021, up from 17.1 Exabytes per month in 2016.
- China's IP networks will carry 1.8 Exabytes per day in 2021, up from 561 Petabytes per day in 2016.
- In China, IP traffic will reach an annual run rate of 655.5 Exabytes in 2021, up from an annual run rate of 204.7 Exabytes in 2016.
- In China, IP traffic will reach 39 Gigabytes per capita in 2021, up from 12 Gigabytes per capita in 2016.
- In China, average IP traffic will reach 166 Tbps in 2021, and busy hour traffic will reach 946 Tbps.
- In 2021, the gigabyte equivalent of all movies ever made will cross China's IP networks every 6 minutes.

### Internet Traffic

- In China, Internet traffic will grow 3.7-fold from 2016 to 2021, a compound annual growth rate of 30%.
- In China, busy hour Internet traffic will grow 5.1-fold from 2016 to 2021, a compound annual growth rate of 39%.
- In China, Internet traffic will reach 42.4 Exabytes per month in 2021, up from 11.3 Exabytes per month in 2016.
- China's Internet traffic will be 1.4 Exabytes per day in 2021, up from 370 Petabytes per day in 2016.
- China's Internet traffic in 2021 will be equivalent to 127 billion DVDs per year, 11 billion DVDs per month, or 15 million DVDs per hour.
- In 2021, the gigabyte equivalent of all movies ever made will cross the Internet every 8 minutes.

- Chinese Internet traffic in 2021 will be equivalent to 464x the volume of the entire Chinese Internet in 2005.
- In China, Internet traffic will reach 30 Gigabytes per capita in 2021, up from 8 Gigabytes per capita in 2016.
- In China, average Internet traffic will increase 3.7-fold by 2021 and will reach 129 Tbps.
- In China, busy hour Internet traffic will increase 5.1-fold by 2021 and will reach 734 Tbps.

### Wired Wi-Fi and Mobile Growth

- China's Fixed/Wi-Fi was 30% of total IP traffic in 2016, and will be 41% of total IP traffic in 2021.
- China's Fixed/Wired was 64% of total IP traffic in 2016, and will be 42% of total IP traffic in 2021.
- China's Mobile was 6% of total IP traffic in 2016, and will be 17% of total IP traffic in 2021.
- China's Fixed/Wi-Fi was 43.0% of total Internet traffic in 2016, and will be 52.4% of total Internet traffic in 2021.
- China's Fixed/Wired was 48% of total Internet traffic in 2016, and will be 26% of total Internet traffic in 2021.
- China's Mobile was 8.8% of total Internet traffic in 2016, and will be 21.9% of total Internet traffic in 2021.
- In China, mobile data traffic will grow 9-fold from 2016 to 2021, a compound annual growth rate of 56%.
- In China, mobile data traffic will reach 9.3 Exabytes per month in 2021, up from 1.0 Exabytes per month in 2016.
- Chinese mobile data traffic will grow 2 times faster than Chinese fixed IP traffic from 2016 to 2021.
- China's Mobile was 6% of total IP traffic in 2016, and will be 17% of total IP traffic in 2021.
- In China, mobile data traffic in 2021 will be equivalent to 79x the volume of the entire Chinese Internet in 2005.

### IP Video

- In China, IP video traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 29%.
- In China, IP video traffic will reach 48.1 Exabytes per month in 2021, up from 13.6 Exabytes per month in 2016.
- In China, IP video will be 88% of all IP traffic in 2021, up from 80% in 2016.
- In China, Ultra HD will be 21.7% of IP Video traffic in 2021, up from 2.2% in 2016 (104.2% CAGR).
- In China, HD will be 59.8% of IP Video traffic in 2021, up from 47.4% in 2016 (34.7% CAGR).
- In China, SD will be 18.5% of IP Video traffic in 2021, compared to 50.4% in 2016 (5.3% CAGR).
- In China, consumer IP video traffic will be 91% of consumer IP traffic in 2021, up from 86% in 2016.
- In China, business IP video traffic will be 75% of business IP traffic in 2021, up from 55% in 2016.

### Internet Video

- In China, Internet video traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 34%.
- In China, Internet video traffic will reach 36.2 Exabytes per month in 2021, up from 8.3 Exabytes per month in 2016.
- In China, total Internet video traffic (business and consumer, combined) will be 85% of all Internet traffic in 2021, up from 73% in 2016.

- In China, Ultra HD will be 19.9% of Internet video traffic in 2021, up from 2.5% in 2016 (103.6% CAGR).
- In China, HD will be 59.3% of Internet video traffic in 2021, up from 35.5% in 2016 (48.8% CAGR).
- In China, SD will be 20.8% of Internet video traffic in 2021, compared to 62.0% in 2016 (7.9% CAGR).
- In China, consumer Internet video traffic will be 88% of consumer Internet traffic in 2021, up from 78% in 2016.
- In China, business Internet video traffic will be 75% of business Internet traffic in 2021, up from 57% in 2016.
- In China, Internet-Video-to-TV traffic will be 22% of fixed consumer Internet video traffic in 2021, up from 24% in 2016.
- In China, Internet-Video-to-TV traffic will increase 3-fold between 2016 and 2021 (28.2% CAGR).
- In China, 315 billion minutes (598,557 years) of video content will cross the Internet each month in 2021. That's 119,711 minutes of video streamed or downloaded every second.
- In China, 64% of all Internet video traffic will cross content delivery networks in 2021, up from 47% in 2016.
- In China, 78.6% of all Internet video traffic will be long-form video (including live) in 2021, up from 85.0% in 2016.

### IP VOD

- In China, Ultra HD will be 29.3% of IP VOD traffic in 2021, up from 1.7% in 2016 (105.7% CAGR).
- In China, HD will be 65.8% of IP VOD traffic in 2021, up from 70.2% in 2016 (15.6% CAGR).
- In China, SD will be 4.9% of IP VOD traffic in 2021, compared to 28.0% in 2016 (-17.4% CAGR).

### Gaming

- In China, gaming traffic will grow 5-fold from 2016 to 2021, a compound annual growth rate of 36%.
- In China, gaming traffic will reach 731 Petabytes per month in 2021, up from 156 Petabytes per month in 2016.
- In China, gaming traffic will be 2% of consumer Internet traffic in 2021, up from 2% in 2016.

### Devices

- In China, there will be 5.5 billion networked devices in 2021, up from 3.5 billion in 2016.
- In China, there will be 3.9 networked devices per capita in 2021, up from 2.5 per capita in 2016.
- In China, 37% of all networked devices will be mobile-connected in 2021.
- In China, M2M modules will account for 55% (3.0 billion) of all networked devices in 2021, compared to 40% (1.4 billion) in 2016, (16.8% CAGR).
- In China, PCs will account for 4% (246.7 million) of all networked devices in 2021, compared to 8% (274.8 million) in 2016, (-2.1% CAGR).
- In China, Tablets will account for 2% (130.9 million) of all networked devices in 2021, compared to 3% (107.9 million) in 2016, (4% CAGR).
- In China, Smartphones will account for 21% (1.1 billion) of all networked devices in 2021, compared to 25% (893.7 million) in 2016, (5.1% CAGR).

- In China, Connected TVs will account for 16% (859.6 million) of all networked devices in 2021, compared to 15% (519.2 million) in 2016, (10.6% CAGR).
- In China, Non-Smartphones will account for 1.2% (64.4 million) of all networked devices in 2021, compared to 8% (297.7 million) in 2016, (-26.4% CAGR).
- In China, Other Portables will account for 1% (33.7 million) of all networked devices in 2021, compared to 1% (17.6 million) in 2016, (13.8% CAGR).
- In China, 4K TVs will account for 61% (207.5 million) of all flat panel TVs in 2021, compared to 20.9% (35.5 million) in 2016, (42.4% CAGR).
- China's IP traffic from non-PC devices was 56% of total IP traffic in 2016, and will be 78% of total IP traffic in 2021.
- In China, PCs accounted for 44% of IP traffic in 2016, and will be 22% of IP traffic in 2021.
- In China, TVs accounted for 37% of IP traffic in 2016, and will be 29% of IP traffic in 2021.
- In China, Smartphones accounted for 12% of IP traffic in 2016, and will be 39% of IP traffic in 2021.
- In China, Tablets accounted for 4% of IP traffic in 2016, and will be 5% of IP traffic in 2021.
- In China, M2M modules accounted for 2.2% of IP traffic in 2016, and will be 5.4% of IP traffic in 2021.
- In China, PCs accounted for 52% of consumer Internet traffic in 2016, and will be 19% of consumer Internet traffic in 2021.
- In China, TVs accounted for 16% of consumer Internet traffic in 2016, and will be 14% of consumer Internet traffic in 2021.
- In China, TVs accounted for 12% of total Internet traffic in 2016, and will be 12% of total Internet traffic in 2021.

### Speed Evolution

- In China, the average fixed broadband speed will grow 1.8-fold from 2016 to 2021, from 32.2 Mbps to 59.1 Mbps.
- In China, 99% of fixed broadband connections will be faster than 5 Mbps in 2021, up from 86% today.
- In China, 97% of fixed broadband connections will be faster than 10 Mbps in 2021, up from 75% today.
- In China, 74.1% of fixed broadband connections will be faster than 25 Mbps in 2021, up from 36.7% today.
- In China, 59.2% of fixed broadband connections will be faster than 50 Mbps in 2021, up from 25.5% today.
- In China, the average Wi-Fi speeds from mobile devices will grow 2.1-fold from 2016 to 2021, from 19.1 Mbps to 41 Mbps.
- In China, the average mobile connection speed will grow 2-fold from 2016 to 2021, reaching 34 Mbps in 2021.

### Traffic per User and Household

- In China, the average Internet user will generate 32.5 Gigabytes of Internet traffic per month in 2021, up 146% from 13.2 Gigabytes per month in 2016, a CAGR of 20%.
- In China, the average Internet household will generate 87.5 Gigabytes of Internet traffic per month in 2021, up 152% from 34.7 Gigabytes per month in 2016, a CAGR of 20%.
- In China, the average FTTx Internet household will generate 109.0 Gigabytes of Internet traffic per month in 2021, 77.1% more than other broadband households.

- In China, the average FTTx Internet household generated 40.0 Gigabytes of Internet traffic per month in 2016, 127.5% more than other broadband households.
- In China, there will be 33 million Internet households (11.3% of all Internet households) generating more than 250 Gigabytes per month in 2021.
- In China, there will be 8 million households (2.6% of all Internet households) generating more than 500 Gigabytes per month in 2021.
- In China, there will be 3 million households (0.9% of all Internet households) generating more than a terabyte per month in 2021.
- In China, the average mobile connection will generate 6,301 Megabytes of mobile data traffic per month in 2021, up from 751 Megabytes in 2016.

### Traffic Topology and Traffic Patterns

- In China, 59% of all Internet traffic will cross content delivery networks in 2021, up from 38% in 2016.
- In China, peak Internet traffic will grow at a compound annual growth rate of 39% from 2016 to 2021, compared to 30% for average Internet traffic.