



## Brazil - 2020 Forecast Highlights

### IP Traffic

- In Brazil, IP traffic will grow 3-fold from 2015 to 2020, a compound annual growth rate of 21%.
- In Brazil, IP traffic will reach 4.4 Exabytes per month in 2020, up from 1.7 Exabytes per month in 2015.
- Brazil's IP networks will carry 144 Petabytes per day in 2020, up from 56 Petabytes per day in 2015.
- In Brazil, IP traffic will reach an annual run rate of 52.6 Exabytes in 2020, up from an annual run rate of 20.6 Exabytes in 2015.
- In Brazil, IP traffic will reach 20 Gigabytes per capita in 2020, up from 8 Gigabytes per capita in 2015.
- In Brazil, average IP traffic will reach 13 Tbps in 2020, and busy hour traffic will reach 69 Tbps.
- In 2020, the gigabyte equivalent of all movies ever made will cross Brazil's IP networks every 1 hours.

### Internet Traffic

- In Brazil, Internet traffic will grow 2.5-fold from 2015 to 2020, a compound annual growth rate of 20%.
- In Brazil, busy hour Internet traffic will grow 3.9-fold from 2015 to 2020, a compound annual growth rate of 32%.
- In Brazil, Internet traffic will reach 3.7 Exabytes per month in 2020, up from 1.5 Exabytes per month in 2015.
- Brazil's Internet traffic will be 120 Petabytes per day in 2020, up from 50 Petabytes per day in 2015.
- Brazil's Internet traffic in 2020 will be equivalent to 11 billion DVDs per year, 915 million DVDs per month, or 1 million DVDs per hour.
- In 2020, the gigabyte equivalent of all movies ever made will cross the Internet every 2 hours.

- Brazilian Internet traffic in 2020 will be equivalent to 397x the volume of the entire Brazilian Internet in 2005.
- In Brazil, Internet traffic will reach 17 Gigabytes per capita in 2020, up from 7 Gigabytes per capita in 2015.
- In Brazil, average Internet traffic will increase 2.5-fold by 2020 and will reach 11 Tbps.
- In Brazil, busy hour Internet traffic will increase 3.9-fold by 2020 and will reach 58 Tbps.

### Wired Wi-Fi and Mobile Growth

- Brazil's Fixed/Wi-Fi was 53% of total IP traffic in 2015, and will be 51% of total IP traffic in 2020.
- Brazil's Fixed/Wired was 41% of total IP traffic in 2015, and will be 33% of total IP traffic in 2020.
- Brazil's Mobile was 7% of total IP traffic in 2015, and will be 17% of total IP traffic in 2020.
- Brazil's Fixed/Wi-Fi was 59.0% of total Internet traffic in 2015, and will be 60.0% of total Internet traffic in 2020.
- Brazil's Fixed/Wired was 33% of total Internet traffic in 2015, and will be 20% of total Internet traffic in 2020.
- Brazil's Mobile was 7.6% of total Internet traffic in 2015, and will be 19.9% of total Internet traffic in 2020.

### IP Video

- In Brazil, IP video traffic will grow 3-fold from 2015 to 2020, a compound annual growth rate of 26%.
- In Brazil, IP video traffic will reach 3.7 Exabytes per month in 2020, up from 1.2 Exabytes per month in 2015.
- In Brazil, IP video will be 85% of all IP traffic in 2020, up from 67% in 2015.
- In Brazil, Ultra HD will be 6.3% of IP Video traffic in 2020, up from 0.3% in 2015 (126.8% CAGR).
- In Brazil, HD will be 54.9% of IP Video traffic in 2020, up from 31.1% in 2015 (41.6% CAGR).
- In Brazil, SD will be 38.8% of IP Video traffic in 2020, compared to 68.6% in 2015 (12.8% CAGR).
- In Brazil, consumer IP video traffic will be 87% of consumer IP traffic in 2020, up from 74% in 2015.
- In Brazil, business IP video traffic will be 68% of business IP traffic in 2020, up from 45% in 2015.

### Internet Video

- In Brazil, Internet video traffic will grow 3-fold from 2015 to 2020, a compound annual growth rate of 26%.
- In Brazil, Internet video traffic will reach 3.0 Exabytes per month in 2020, up from 955 Petabytes per month in 2015.
- In Brazil, total Internet video traffic (business and consumer, combined) will be 82% of all Internet traffic in 2020, up from 65% in 2015.
- In Brazil, Ultra HD will be 6.0% of Internet video traffic in 2020, up from 0.4% in 2015 (119.6% CAGR).
- In Brazil, HD will be 56.7% of Internet video traffic in 2020, up from 31.7% in 2015 (41.3% CAGR).
- In Brazil, SD will be 37.3% of Internet video traffic in 2020, compared to 67.9% in 2015 (11.6% CAGR).
- In Brazil, consumer Internet video traffic will be 85% of consumer Internet traffic in 2020, up from 70% in 2015.
- In Brazil, business Internet video traffic will be 69% of business Internet traffic in 2020, up from 46% in 2015.
- In Brazil, Internet-Video-to-TV traffic will be 17% of fixed consumer Internet video traffic in 2020, up from 9% in 2015.

- In Brazil, Internet-Video-to-TV traffic will increase 5-fold between 2015 and 2020 (39.9% CAGR).
- In Brazil, 122 billion minutes (231,935 years) of video content will cross the Internet each month in 2020. That's 46,387 minutes of video streamed or downloaded every second.
- In Brazil, 44% of all Internet video traffic will cross content delivery networks in 2020, up from 29% in 2015.
- In Brazil, 39% of all Internet traffic will cross content delivery networks in 2020, up from 21% in 2015.

## IP VOD

- In Brazil, Ultra HD will be 8.0% of IP VOD traffic in 2020, up from 0.2% in 2015 (172.8% CAGR).
- In Brazil, HD will be 50.1% of IP VOD traffic in 2020, up from 32.1% in 2015 (43.2% CAGR).
- In Brazil, SD will be 41.9% of IP VOD traffic in 2020, compared to 67.7% in 2015 (19.0% CAGR).

## Gaming

- In Brazil, Internet gaming traffic will grow 6-fold from 2015 to 2020, a compound annual growth rate of 42%.
- In Brazil, Internet gaming traffic will reach 3.0 Exabytes per month in 2020, up from 955 Petabytes per month in 2015.
- In Brazil, Internet gaming traffic will be 5% of consumer Internet traffic in 2020, up from 2% in 2015.

## Mobile

- In Brazil, mobile data traffic will grow 7-fold from 2015 to 2020, a compound annual growth rate of 45%.
- In Brazil, mobile data traffic will reach 730 Petabytes per month in 2020, up from 112 Petabytes per month in 2015.
- Brazilian mobile data traffic will grow 3 times faster than Brazilian fixed IP traffic from 2015 to 2020.
- Brazil's Mobile was 7% of total IP traffic in 2015, and will be 17% of total IP traffic in 2020.
- In Brazil, mobile data traffic in 2020 will be equivalent to 66x the volume of the entire Brazilian Internet in 2005.

## Devices

- In Brazil, there will be 766.9 million networked devices in 2020, up from 519.8 million in 2015.
- In Brazil, there will be 3.6 networked devices per capita in 2020, up from 2.5 per capita in 2015.
- In Brazil, 51% of all networked devices will be mobile-connected in 2020.
- In Brazil, M2M modules will account for 34% (257.3 million) of all networked devices in 2020, compared to 21% (108.9 million) in 2015, (18.8% CAGR).
- In Brazil, PCs will account for 6% (44.2 million) of all networked devices in 2020, compared to 13% (67.0 million) in 2015, (-8% CAGR).
- In Brazil, Tablets will account for 2% (17.3 million) of all networked devices in 2020, compared to 2% (9.2 million) in 2015, (13.4% CAGR).
- In Brazil, Smartphones will account for 29% (221.1 million) of all networked devices in 2020, compared to 26% (133.6 million) in 2015, (10.6% CAGR).
- In Brazil, Connected TVs will account for 16% (118.9 million) of all networked devices in 2020, compared to 9% (44.7 million) in 2015, (21.6% CAGR).

- In Brazil, Non-Smartphones will account for 10.5% (80.6 million) of all networked devices in 2020, compared to 27% (141.9 million) in 2015, (-10.7% CAGR).
- In Brazil, Other Portables will account for 4% (27.5 million) of all networked devices in 2020, compared to 3% (14.5 million) in 2015, (13.6% CAGR).
- In Brazil, 4K TVs will account for 21% (14.3 million) of all flat panel TVs in 2020, compared to 3.0% (488,516) in 2015, (96.4% CAGR).
- Brazil's IP traffic from non-PC devices was 27% of total IP traffic in 2015, and will be 62% of total IP traffic in 2020.
- In Brazil, PCs accounted for 73% of IP traffic in 2015, and will be 38% of IP traffic in 2020.
- In Brazil, TVs accounted for 13% of IP traffic in 2015, and will be 22% of IP traffic in 2020.
- In Brazil, Smartphones accounted for 9% of IP traffic in 2015, and will be 31% of IP traffic in 2020.
- In Brazil, Tablets accounted for 3% of IP traffic in 2015, and will be 7% of IP traffic in 2020.
- In Brazil, M2M modules accounted for 0.9% of IP traffic in 2015, and will be 2.7% of IP traffic in 2020.
- In Brazil, PCs accounted for 77% of consumer Internet traffic in 2015, and will be 39% of consumer Internet traffic in 2020.
- In Brazil, TVs accounted for 5% of consumer Internet traffic in 2015, and will be 10% of consumer Internet traffic in 2020.
- In Brazil, TVs accounted for 4% of total Internet traffic in 2015, and will be 8% of total Internet traffic in 2020.

### Speed Evolution

- In Brazil, the average fixed broadband speed will grow 2.3-fold from 2015 to 2020, from 8.5 Mbps to 19.5 Mbps.
- In Brazil, 68% of fixed broadband connections will be faster than 5 Mbps in 2020, up from 46% today.
- In Brazil, 46% of fixed broadband connections will be faster than 10 Mbps in 2020, up from 30% today.
- In Brazil, 15.3% of fixed broadband connections will be faster than 25 Mbps in 2020, up from 10.5% today.
- In Brazil, 9.8% of fixed broadband connections will be faster than 50 Mbps in 2020, up from 5.0% today.
- In Brazil, the average Wi-Fi speeds from mobile devices will grow 1.8-fold from 2015 to 2020, from 6.7 Mbps to 12 Mbps.
- In Brazil, the average mobile connection speed will grow 4-fold from 2015 to 2020, reaching 4 Mbps in 2020.

### Traffic per User and Household

- In Brazil, the average Internet user will generate 32.5 gigabytes of Internet traffic per month in 2020, up 106% from 15.8 gigabytes per month in 2015, a CAGR of 16%.
- In Brazil, the average Internet household will generate 86.9 gigabytes of Internet traffic per month in 2020, up 109% from 41.6 gigabytes per month in 2015, a CAGR of 16%.
- In Brazil, the average FTTx Internet household will generate 181.8 gigabytes of Internet traffic per month in 2020, 129.6% more than other broadband households.
- In Brazil, the average FTTx Internet household generated 103.7 gigabytes of Internet traffic per month in 2015, 148.6% more than other broadband households.
- In Brazil, there will be 3 million Internet households (10.0% of all Internet households) generating more than 250 gigabytes per month in 2020.

- In Brazil, there will be 804,771 households (3.0% of all Internet households) generating more than 500 gigabytes per month in 2020.
- In Brazil, there will be 268,257 households (1.0% of all Internet households) generating more than a terabyte per month in 2020.
- In Brazil, the average mobile connection will generate 2,133 megabytes of mobile data traffic per month in 2020, up from 388 megabytes in 2015.