Global	Internet Users: % of Population	Devices and Connections per Capita
	40% (2015) → 52% (2020)	2.2 (2015) → 3.4 (2020)
	Average Speeds	**Average Traffic per Capita per Month**
	24.7 Mbps (2015) → 47.7 Mbps (2020)	9.9 GB (2015) → 25.1 GB (2020)

Global – 2020 Forecast Highlights

IP Traffic

- Globally, IP traffic will grow 3-fold from 2015 to 2020, a compound annual growth rate of 22%.

- Globally, IP traffic will reach 194.4 Exabytes per month in 2020, up from 72.5 Exabytes per month in 2015.

- Global IP networks will carry 6.4 Exabytes per day in 2020, up from 2.4 Exabytes per day in 2015.

- Globally, IP traffic will reach an annual run rate of 2.3 Zettabytes in 2020, up from an annual run rate of 870.3 Exabytes in 2015.

- Globally, IP traffic will reach 25 Gigabytes per capita in 2020, up from 10 Gigabytes per capita in 2015.

- Globally, average IP traffic will reach 592 Tbps in 2020, and busy hour traffic will reach 3.2 Pbps.

- In 2020, the gigabyte equivalent of all movies ever made will cross Global IP networks every 2 minutes.

Internet Traffic

- Globally, Internet traffic will grow 3.0-fold from 2015 to 2020, a compound annual growth rate of 25%.

- Globally, busy hour Internet traffic will grow 4.6-fold from 2015 to 2020, a compound annual growth rate of 36%.

- Globally, Internet traffic will reach 161.3 Exabytes per month in 2020, up from 53.2 Exabytes per month in 2015.

- Global Internet traffic will be 5.3 Exabytes per day in 2020, up from 1.7 Exabytes per day in 2015.

- Global Internet traffic in 2020 will be equivalent to 484 billion DVDs per year, 40 billion DVDs per month, or 55 million DVDs per hour.

- In 2020, the gigabyte equivalent of all movies ever made will cross the Internet every 2 minutes.

- Global Internet traffic in 2020 will be equivalent to 95x the volume of the entire Global Internet in 2005.

- Globally, Internet traffic will reach 21 Gigabytes per capita in 2020, up from 7 Gigabytes per capita in 2015.

- Globally, average Internet traffic will increase 3.0-fold by 2020 and will reach 491 Tbps.

- Globally, busy hour Internet traffic will increase 4.6-fold by 2020 and will reach 2.6 Pbps.

- Globally, the number of DDoS attacks will grow 2.6-fold from 2015 to 2020, a compound annual growth rate of 21%.

- Globally, the number of DDoS attacks will be 17.4 million per year in 2020, up from 6.6 million per year in 2015.

Wired Wi-Fi and Mobile Growth

- Global Fixed/Wi-Fi was 42% of total IP traffic in 2015, and will be 50% of total IP traffic in 2020.

- Global Fixed/Wired was 52% of total IP traffic in 2015, and will be 34% of total IP traffic in 2020.

- Global Mobile was 5% of total IP traffic in 2015, and will be 16% of total IP traffic in 2020.

- Global Fixed/Wi-Fi was 55.2% of total Internet traffic in 2015, and will be 59.1% of total Internet traffic in 2020.

- Global Fixed/Wired was 38% of total Internet traffic in 2015, and will be 22% of total Internet traffic in 2020.

- Global Mobile was 6.9% of total Internet traffic in 2015, and will be 18.9% of total Internet traffic in 2020.

IP Video

- Globally, IP video traffic will grow 3-fold from 2015 to 2020, a compound annual growth rate of 26%.

- Globally, IP video traffic will reach 158.9 Exabytes per month in 2020, up from 51.0 Exabytes per month in 2015.

- Globally, IP video will be 82% of all IP traffic in 2020, up from 70% in 2015.

- Globally, Ultra HD will be 16.4% of IP Video traffic in 2020, up from 2.0% in 2015 (90.6% CAGR).

- Globally, HD will be 63.1% of IP Video traffic in 2020, up from 51.2% in 2015 (30.9% CAGR).

- Globally, SD will be 20.6% of IP Video traffic in 2020, compared to 46.7% in 2015 (6.5% CAGR).

- Globally, consumer IP video traffic will be 85% of consumer IP traffic in 2020, up from 77% in 2015.

- Globally, business IP video traffic will be 64% of business IP traffic in 2020, up from 42% in 2015.

Internet Video

- Globally, Internet video traffic will grow 4-fold from 2015 to 2020, a compound annual growth rate of 31%.

- Globally, Internet video traffic will reach 127.8 Exabytes per month in 2020, up from 33.7 Exabytes per month in 2015.

- Globally, total Internet video traffic (business and consumer, combined) will be 79% of all Internet traffic in 2020, up from 63% in 2015.

- Globally, Ultra HD will be 15.7% of Internet video traffic in 2020, up from 2.3% in 2015 (92.0% CAGR).

- Globally, HD will be 66.5% of Internet video traffic in 2020, up from 50.4% in 2015 (38.0% CAGR).

- Globally, SD will be 17.8% of Internet video traffic in 2020, compared to 47.3% in 2015 (7.4% CAGR).

- Globally, consumer Internet video traffic will be 82% of consumer Internet traffic in 2020, up from 68% in 2015.

- Globally, business Internet video traffic will be 66% of business Internet traffic in 2020, up from 44% in 2015.

- Globally, Internet-Video-to-TV traffic will be 26% of fixed consumer Internet video traffic in 2020, up from 24% in 2015.

- Globally, Internet-Video-to-TV traffic will increase 4-fold between 2015 and 2020 (29.3% CAGR).

- Globally, 3 trillion minutes (5 million years) of video content will cross the Internet each month in 2020. That's 1.0 million minutes of video streamed or downloaded every second.

- Globally, 73% of all Internet video traffic will cross content delivery networks in 2020, up from 61% in 2015.

- Globally, 64% of all Internet traffic will cross content delivery networks in 2020, up from 45% in 2015.

- Globally, 3.9% of all Internet video traffic will be due to Video Surveillance in 2020, up from 1.5% in 2015.

- Globally, Internet Video Surveillance traffic will increase 10-fold between 2015 and 2020 (57.5% CAGR).

- Globally, 0.8% of all Internet video traffic will be due to Virtual Reality applications in 2020, up from 0.1% in 2015.

- Globally, Virtual Reality traffic will increase 61-fold between 2015 and 2020 (127.2% CAGR).

IP VOD

- Globally, Ultra HD will be 20.7% of IP VOD traffic in 2020, up from 1.6% in 2015 (86.3% CAGR).

- Globally, HD will be 53.0% of IP VOD traffic in 2020, up from 56.5% in 2015 (10.8% CAGR).

- Globally, SD will be 26.3% of IP VOD traffic in 2020, compared to 41.9% in 2015 (2.2% CAGR).

Gaming

- Globally, Internet gaming traffic will grow 7-fold from 2015 to 2020, a compound annual growth rate of 46%.

- Globally, Internet gaming traffic will reach 127.8 Exabytes per month in 2020, up from 33.7 Exabytes per month in 2015.

- Globally, Internet gaming traffic will be 4% of consumer Internet traffic in 2020, up from 2% in 2015.

Mobile

- Globally, mobile data traffic will grow 8-fold from 2015 to 2020, a compound annual growth rate of 53%.

- Globally, mobile data traffic will reach 30.6 Exabytes per month in 2020, up from 3.7 Exabytes per month in 2015.

- Global mobile data traffic will grow 3 times faster than Global fixed IP traffic from 2015 to 2020.

- Global Mobile was 5% of total IP traffic in 2015, and will be 16% of total IP traffic in 2020.

- Globally, mobile data traffic in 2020 will be equivalent to 15x the volume of the entire Global Internet in 2005.

Devices

- Globally, there will be 26.3 billion networked devices in 2020, up from 16.3 billion in 2015.

- Globally, there will be 3.4 networked devices per capita in 2020, up from 2.2 per capita in 2015.

- Globally, 44% of all networked devices will be mobile-connected in 2020.

- Globally, M2M modules will account for 46% (12.2 billion) of all networked devices in 2020, compared to 30% (4.9 billion) in 2015, (20% CAGR).

- Globally, PCs will account for 5% (1.4 billion) of all networked devices in 2020, compared to 9% (1.5 billion) in 2015, (-1.9% CAGR).

- Globally, Tablets will account for 3% (838.4 million) of all networked devices in 2020, compared to 3% (537.2 million) in 2015, (9.3% CAGR).

- Globally, Smartphones will account for 21% (5.6 billion) of all networked devices in 2020, compared to 19% (3.0 billion) in 2015, (13.1% CAGR).

- Globally, Connected TVs will account for 12% (3.1 billion) of all networked devices in 2020, compared to 11% (1.8 billion) in 2015, (11.6% CAGR).

- Globally, Non-Smartphones will account for 9.2% (2.4 billion) of all networked devices in 2020, compared to 24% (3.9 billion) in 2015, (-9.4% CAGR).

- Globally, Other Portables will account for 3% (785.0 million) of all networked devices in 2020, compared to 3% (560.8 million) in 2015, (7% CAGR).

- Globally, 4K TVs will account for 40% (543.7 million) of all flat panel TVs in 2020, compared to 7.7% (37.7 million) in 2015, (70.5% CAGR).

- Global IP traffic from non-PC devices was 47% of total IP traffic in 2015, and will be 71% of total IP traffic in 2020.

- Globally, PCs accounted for 53% of IP traffic in 2015, and will be 29% of IP traffic in 2020.

- Globally, TVs accounted for 30% of IP traffic in 2015, and will be 25% of IP traffic in 2020.

- Globally, Smartphones accounted for 8% of IP traffic in 2015, and will be 30% of IP traffic in 2020.

- Globally, Tablets accounted for 7% of IP traffic in 2015, and will be 13% of IP traffic in 2020.

- Globally, M2M modules accounted for 1.4% of IP traffic in 2015, and will be 3.2% of IP traffic in 2020.

- Globally, PCs accounted for 63% of consumer Internet traffic in 2015, and will be 29% of consumer Internet traffic in 2020.

- Globally, TVs accounted for 14% of consumer Internet traffic in 2015, and will be 15% of consumer Internet traffic in 2020.

- Globally, TVs accounted for 11% of total Internet traffic in 2015, and will be 12% of total Internet traffic in 2020.

Speed Evolution

- Globally, the average fixed broadband speed will grow 1.9-fold from 2015 to 2020, from 24.7 Mbps to 47.7 Mbps.

- Globally, 92% of fixed broadband connections will be faster than 5 Mbps in 2020, up from 70% today.

- Globally, 77% of fixed broadband connections will be faster than 10 Mbps in 2020, up from 53% today.

- Globally, 38.0% of fixed broadband connections will be faster than 25 Mbps in 2020, up from 30.3% today.

- Globally, 35.4% of fixed broadband connections will be faster than 50 Mbps in 2020, up from 18.6% today.

- Globally, the average Wi-Fi speeds from mobile devices will grow 2.0-fold from 2015 to 2020, from 12.5 Mbps to 24 Mbps.

- Globally, the average mobile connection speed will grow 3-fold from 2015 to 2020, reaching 7 Mbps in 2020.

Traffic per User and Household

- Globally, the average Internet user will generate 44.1 gigabytes of Internet traffic per month in 2020, up 134%from 18.9 gigabytes per month in 2015, a CAGR of 19%.

- Globally, the average Internet household will generate 117.8 gigabytes of Internet traffic per month in 2020, up 140%from 49.2 gigabytes per month in 2015, a CAGR of 19%.

- Globally, the average FTTx Internet household will generate 138.4 gigabytes of Internet traffic per month in 2020, 43.3% more than other broadband households.

- Globally, the average FTTx Internet household generated 67.6 gigabytes of Internet traffic per month in 2015, 58.4% more than other broadband households.

- Globally, there will be 123 million Internet households (14.1% of all Internet households) generating more than 250 gigabytes per month in 2020.

- Globally, there will be 50 million households (5.7% of all Internet households) generating more than 500 gigabytes per month in 2020.

- Globally, there will be 16 million households (1.9% of all Internet households) generating more than a terabyte per month in 2020.

- Globally, the average mobile connection will generate 3,326 megabytes of mobile data traffic per month in 2020, up from 495 megabytes in 2015.