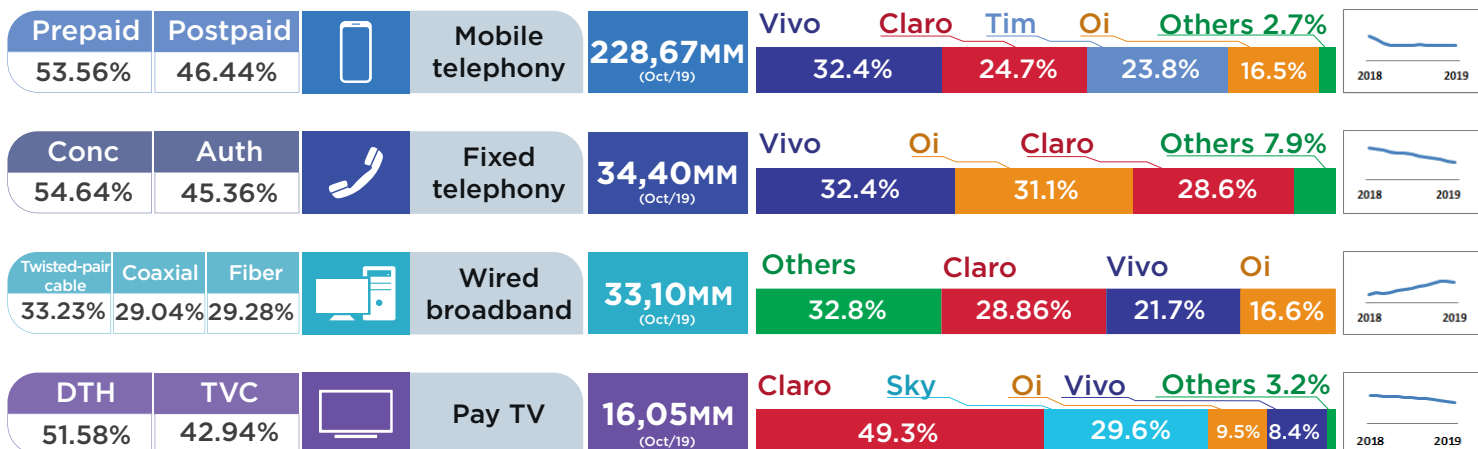


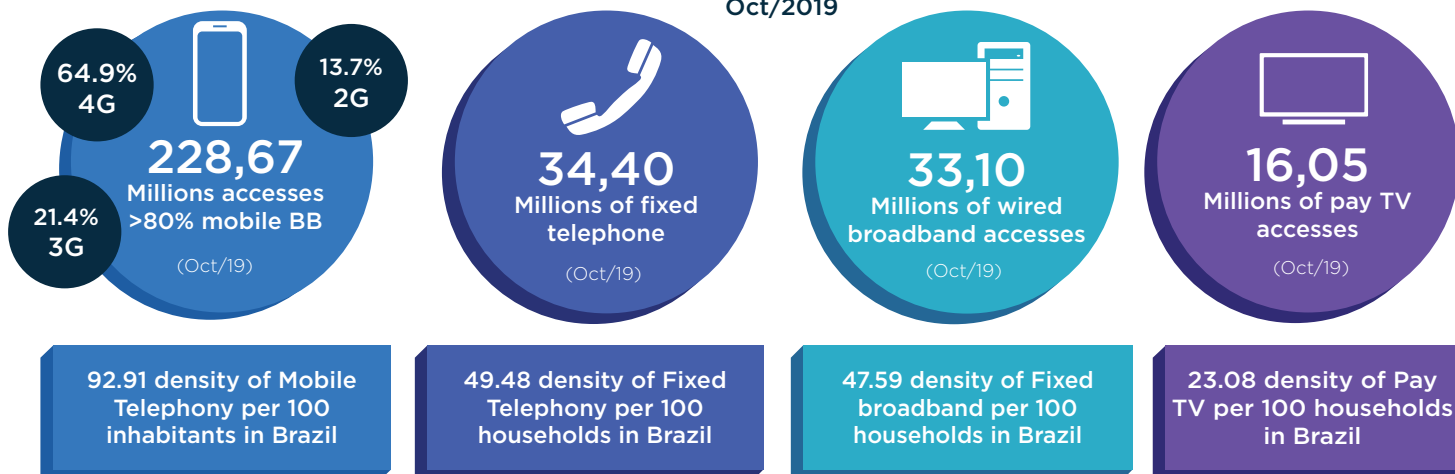


OVERVIEW OF TELECOMMUNICATION IN BRAZIL OCTOBER/2019

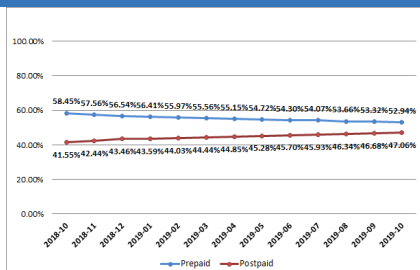


344.14 Millions

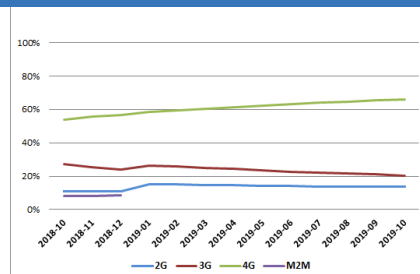
contract of telecom services in
Oct/2019



Prepaid x Postpaid

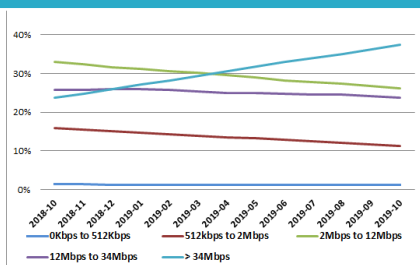


Technological Evolution of
Mobile Telephony*

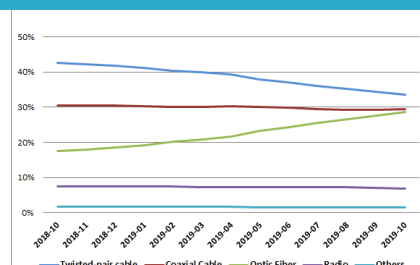


* From 2019 onwards M2M is no longer part of the technology dimension.

Broadband Internet Transfer
Rate Evolution



Technological Evolution of
Broadband Internet



MOBILE TELEPHONY, PER GROUP AND TECHNOLOGY

Group	Accesses	4G	3G	2G	Market Share	Complaints Index
Claro	56,452,319	36,097,641	18,926,085	1,428,593	24.69%	0.42
Oi	37,666,691	22,016,237	7,985,382	7,665,072	16.47%	0.47
Tim	54,442,511	37,980,614	9,090,000	7,371,897	2.81%	0.73
Vivo	73,986,811	47,422,807	12,318,325	14,245,679	32.36%	0.42
Others	6,122,636	4,891,986	609,433	621,217	2.68%	Not applicable
Total	228,670,968	148,409,285	48,929,225	31,332,458	100%	
Percentage	100%	64.90%	21.40%	13.70%		

ON SERVICE ACCESSES, FIXED TELEPHONY

Group	Accesses	Market Share	Complaints Index
Vivo	11,122,255	32.32%	1.60
Oi	10,654,488	30.96%	1.94
Claro	9,903,693	28.78%	0.54
Others	2,732,332	7.94%	Not applicable
Total	34,412,768	100%	

ACCESSES PER TYPE OF GRANTS, FIXED TELEPHONY

Type	Accesses	Percentage
As a public service concession	18,803,433	54.64%
As a private service	15,609,335	45.36%
Total	34,412,768	100%

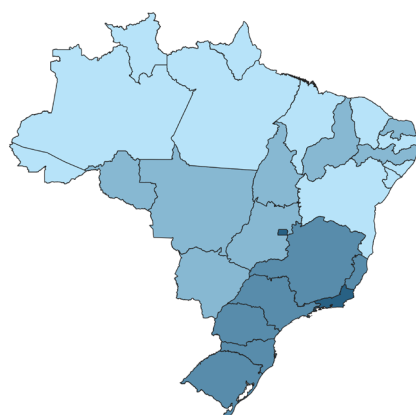
WIRED BROADBAND, PER GROUP AND TECHNOLOGY

Group	Accesses	Twisted-pair cable	Coaxial cable	Fiber	Radio	Others	Market Share	Complaints Index
Oi	5,514,101	4,634,559	0	847,313	18,552	13,677	16.66%	2.06
Vivo	7,174,255	4,669,539	0	2,504,716	0	0	21.68%	2.06
Claro	9,552,736	77,315	9,224,562	226,452	14,898	9,509	28.86%	1.15
Others	10,856,882	1,618,552	388,246	5,795,749	2,259,650	478,873	32.80%	Not applicable
Total	33,097,974	10,999,965	9,612,808	9,690,042	2,293,100	502,059	100%	
Percentage	100%	33.23%	29.28%	29.04%	6.93%	1.51%		

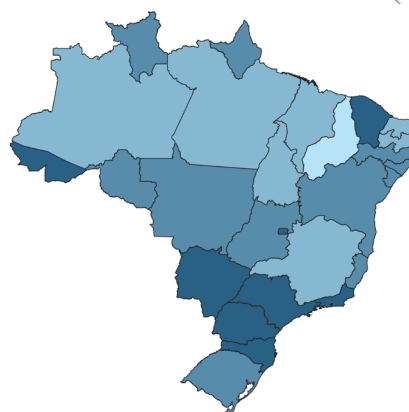
PAY TV, PER GROUP AND TECHNOLOGY

Group	DTH	FTTH	MMDS	TVA	TVC	Accesses	Market Share	Complaints Index
Claro	1,289,833	0	0	0	6,617,430	7,907,263	49.27%	1.62
Oi	1,479,257	48,394	0	0	0	1,527,651	9.52%	1.75
SKY	4,747,781	0	0	0	0	4,747,781	29.58%	2.35
Vivo	667,076	689,485	0	0	34	1,356,595	8.45%	2.23
Outsiders	94,221	142,214	264	64	274,211	510,974	3.18%	Not applicable
Total	8,278,168	880,093	264	64	6,891,675	16,050,264	100%	
Percentage	51.58%	5.48%	0%	0%	42.94%	100%		

Base Stations (BS) per inhabitants



Transport Network - Fiber presence



Cities with Optic Fiber (%)

