

# CHANGING TRENDS OF TELECOM INDUSTRY IN INDIA- A STUDY

## Abstract

Telecom Industry in India is the second largest network connection in the World. Present Study aims at highlighting the total no. of Telephone connection in India as well as all the service areas of the States over the years 2016-17 to 2020-21. It has been seen that wireless connection shared dominant role over wireline over the years in India as well as all the States. Private telephone operators played dominant role over PSUs in India as well as all the States over the years. Total Tele-density in India as well as all the service areas of the states has been highlighted over the years 2016-17 to 2020-21. It has been found that Tele-density in India is gradually decreasing over the years. Tele-density in rural area is significantly increasing over the years. Regarding the service areas of States, it has been seen that in all the States, Tele-density is increasing and urban area shared most of Tele-density over rural area.

**Keywords:** Tele-density, Wireline, Wireless, Public Telephone Operator, Private Telephone Operator, Urban, Rural

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## I. INTRODUCTION

Telecom Industry is the lifeline of economic growth of India. Over the years no. of Telephone subscribers have been increased. 1G, 2G, 3G, 4G connections from 1980s till today with the launch of 5G change the scenario of India's Telecom sector. At present total no. of telephone subscribers are 117.281 crore. Government has an ambition to spread the telephone connection to every part of India specially to the remote village and sub-urban area. Present study focusses on the changing trends of Telecom Industry in India over the years of 2017-18 to 2021-22.

### Evolution of Telecom Industry in India



## II. OBJECTIVES OF THE STUDY

1. To highlight the total no. of Telephone connection in India and in all States over the years 2016-17 to 2020-21.
2. To highlight the Tele-density of Telephone connection in India and in all States over the years 2016-17 to 2020-21.

**Table 1: Total no. of Telephone connection in India over the years 2016-17 to 2020-21**

Item		2016-17	2017-18	2018-19	2019-20	2020-21
No. of Telephones (In million)	Overall	1194.99	1211.80	1183.41	1176.79	1200.88
	Wire line	24.40	22.81	21.70	19.13	20.24
	Wireless	1170.59	1188.91	1161.71	1157.66	1180.64
	Rural	501.81	529.01	522.91	521.25	537.11
	Urban	693.18	682.79	660.50	655.54	663.76
% growth of total telephones over previous year		12.80	1.40	-2.34	-0.55	2.04
% Share	Wireless	97.96	98.12	98.17	98.37	98.02
	Public	10.26	10.86	11.28	11.09	10.65
	Private	89.74	89.14	88.72	88.71	89.35

**Source:** Annual Report, Department of Telecommunications, Ministry of Communications, Govt. of India.

From the above table, it has been seen that total no. of telephone connections were increased from 2016-17 to 2017-18 but from 2018-19 till 2019-20 it got decrease and again increased in 2020-21. We have seen that out of the total telephone connection, % of wireless connection over wire line increased over the years 2016-17 to 2020-21. Private telephone operators captured over public over the years. Urban people used more telephones over rural people but it has been seen that in rural areas, people used telephones but share of rural telephone connection decreased over the years. People have a tendency to use less of landline and more of wireless telephones. Private telephone operators captured almost 90% of the total telephone connections. Public telephone operators only captured with an average of 10% of the total telephone industry.

**Table 2: Total No. of Telephones for the period 2016-17 to 2020-21**

Service Area Service Area	Wireline Phones					Wireless Phones																								
	Total					PSUs' operators		Private operators			Total					PSUs' operators		Private operators												
	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21										
GUJARAT	1356154	1223903	1064047	964000	1020566	1110425	1008158	836759	524113	436908	245729	215745	227288	439887	583658	71842692	70372673	67669966	67574581	68690269	4853500	5665443	6076716	6111937	5558866	66989192	64707230	61593250	61462644	63131403
BIHAR	314982	242468	167811	204957	388971	294437	228431	155193	134050	178936	20545	14037	12618	70907	210035	84614773	87565325	84753008	84649148	87041046	4055403	4812751	5140243	5930172	5453955	80559370	82752574	79612765	78718976	81587791
ASSAM	155445	121917	102227	122407	185824	153165	119097	98837	85726	102769	2280	2820	3390	36681	83055	21838804	21703793	23656788	23871990	24386765	1536256	2437570	2730679	2935442	3127340	20302548	19266223	20926109	20936548	21259425
ANDHRA PRADESH	1637790	1428825	1275020	1380429	1833671	1216162	1002188	809997	639750	683522	421628	426637	465023	740679	1150149	84942695	86829334	87226639	87474074	86233103	9922220	10120866	9927070	9676241	9182467	75020475	76708468	77299569	77797833	77050636

KERALA	KARNATAKA	JK	HIMACHAL PRADESH	HARYANA
2111703	2244432	134283	149347	345736
1908546	2173522	106247	118696	282679
1777687	2092887	122540	102858	250328
1314199	2174466	153165	89961	231304
1301020	2491995	261993	114626	318850
1999633	1229813	134283	142809	282293
1808479	1043592	106247	113704	220778
1677609	933093	122540	99302	187134
1168981	792957	95714	81131	141593
1069835	870560	105788	88334	182355
112070	1014619	0	6538	63443
100067	1129930	0	4992	61901
100078	1159794	0	3556	63194
145218	1381509	57451	8830	89711
231185	1621435	156205	26292	136495
39163429	69141496	11907044	10431261	25046565
43487931	68541848	11454542	10452687	27537022
43661839	67679334	9830181	10452687	27915084
44496541	67342979	11686661	10975782	27489195
44341235	66611282	11752683	10461197	27860123
9106689	7027402	1477005	2167585	3715975
10838850	7100130	1216613	2747851	4895554
10928286	7320502	1269058	2940044	4985316
10958555	7257169	1262324	3004030	5061105
10675401	6953582	1313912	2710918	4962800
30056740	62114094	10430039	8263676	21330590
32645121	61448018	10237929	7704836	22641468
32733553	60358832	8561123	7817052	22929768
33537986	60085810	10424337	7971752	22428090
33665924	59657700	10438771	7750279	22897323

PUNJAB	ODISHA	NORTH-EAST	MAHARASHTRA	MADHYA PRADESH
1006783	292156	120982	1879865	1023788
800282	240180	107165	1497466	927255
701626	211088	94304	1372108	835329
687059	203292	97749	1336200	682903
797070	299019	148699	1363597	941463
586185	279674	120802	1419352	714319
415876	227956	106895	1135855	656829
337178	195006	94064	935736	572546
250991	157117	74363	849237	278813
258750	193146	81557	749978	291409
420598	12482	180	460513	309469
384406	12224	270	361611	270426
364448	16082	240	436372	262783
436068	46175	23386	486963	404090
538320	105873	67142	613619	650054
35965443	34291643	12567426	93901121	69579554
39310071	33095265	11870513	94405344	76672024
39230991	33220532	12125079	92898783	74601862
39029272	33352612	12135666	92931149	76745068
38188112	33427104	12075363	94330535	79415899
4541692	5028558	1668616	6504338	5202784
5269546	5545728	1721794	6819600	6053950
5679305	5905152	1465344	7128441	6302009
5834048	6372565	1366299	6900110	6338735
5307331	6246307	1350345	6954366	5967668
31423751	29263085	10898810	87396783	64376770
34040425	27549537	10148179	8758744	70618074
33551686	27315380	10659735	85770342	68299853
33195224	26980047	10769367	86031039	7040633
32880781	27180797	10725018	87736169	73448231

WEST BENGAL	UTTAR PRADESH	TAMILNADU	RAJASTHAN
325905	891034	2547792	738474
249683	764619	2233666	555812
175136	654067	2035013	482152
238220	675390	1942951	466324
346007	1100583	2271600	645661
319963	2117300	1737302	599739
245381	1287598	1463431	458062
170869	580103	1281102	385204
200681	338416	991348	276685
229424	392967	1036242	301005
5942	155616	810490	138783
4302	131335	770235	97750
4267	123964	753911	96948
37539	336954	951603	189639
116583	707616	1235358	344656
58252043	152461358	89255920	67360220
58435589	166071201	82569330	66082103
55518767	159121798	81980717	65442074
54782961	117147555	80393617	65088980
57534536	122456850	81437095	64889528
1908182	14798037	9231908	5566135
1552139	17807467	11850637	5668470
2021069	17518289	12252922	6115055
2373244	8251894	11203679	6360921
2661598	16771930	9932629	6178117
56343861	141818097	80024012	61794085
56883450	148263734	70718693	60413663
53497698	141603509	69727795	59327019
52409717	142970674	69194938	58728059
54872938	149955890	71504466	58711411

**Source:** Annual Reports, Department of Telecommunications, Ministry of Communications, Govt. of India.

Total No. of Telephones both wireline and wireless provided by PSUs operators and private operators of all the States for the period 2016-17 to 2020-21 has been shown. It has been seen that among the States, South Indian States specially Tamilnadu, Karnataka have most wireline Telephones. PSUs operators shared most for wireline Telephone connections over private Telephone operators in almost all the States over the period 2016-17 to 2020-21. In case of wireless Telephone connections, Maharashtra has most wireless Telephone connection over the years and it has been seen that most of the wireless Telephone connections have been shared by the private Telephone operators. The main reason for the private players to come forefront in Telephone Industry is the good service provided with the schemes given time to time. South Indian States like Andhra Pradesh, Karnataka, Tamilnadu, Kerala have most the private operators for wireless Telephone connections over the years 2016-17 to 2020-21. It has also been seen that in all the states people have more wireless Telephone connections over the wireline. North Eastern States have a tendency to use more private operators for wireless Telephone connections over the years. Whereas, Eastern States like Odisha has a tendency to use less of private operators for wireless Telephone connections over the years.

### **III. TO HIGHLIGHT THE TELE-DENSITY OF TELEPHONE CONNECTION IN INDIA AND IN ALL STATES OVER THE YEARS 2016-17 TO 2020-21**

Tele-density means the No. of Telephones per 100 population. It is an important indicator of Telecom penetration.

**Table 3: Tele-density of Telephone connection in India over the years 2016-17 to 2020-21**

<b>Item</b>		<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2020-21</b>
Tele-density (Telephones per 100 persons)	Overall	93.01	93.27	90.10	88.66	88.15
	Rural	56.98	59.25	57.50	57.87	60.17
	Urban	171.52	166.64	159.66	153.68	141.29

**Source:** Annual Reports, Department of Technology, Ministry of Communications, Govt. of India

Overall Tele-density in India increased at the initial years from 2016-17 to 2017-18. But it decreased over the years from 2018-19 to 2020-21. Average Tele-density in India over the five years was 90.638. On the other hand, it has been seen that in rural areas, Tele-density increased over the years 2016-17 to 2020-21 with an average of 58.354. In urban areas, Tele-density was more than rural areas. In urban areas, it has been significantly observed that Tele-density decreased over the years. It shows that Govt. of India has a mission to spread Telephone connections to the remote areas of rural area. The average Tele-density in urban area was 158.558 which is a significant for urban areas.



**Table 4: Tele-density of Telephone connection in all States over the years 2016-17 to 2020-21**

Service Area	Tele-density										Telephones																			
	overall					Urban					Rural					Overall					Urban					Rural				
	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21
GUJARAT	113.71	109.21	103.77	97.05	97.39	165.93	148.18	45.45	121.31	121.47	75.55	74.78	70.16	74.59	74.60	73198846	71596156	68734013	68538581	69710835	45099941	43532707	42275591	41187675	42274856	28098905	28060369	26458422	27350906	27435979
BIHAR	60.99	61.92	59.27	52.71	53.54	186.98	159.17	40.76	114.67	117.72	46.25	45.10	43.10	41.47	41.80	84929755	87807793	84920819	84854105	87430717	36022612	32742858	31762208	28351626	29718221	48907143	55064935	53158611	56502179	57712496
ASSAM	66.97	65.29	70.35	68.66	69.62	152.63	165.82	176.53	167.16	169.89	50.25	45.09	48.66	50.88	51.35	21994249	21825710	23759015	23994397	24572589	8186981	9272825	10115449	8931356	9240509	13807268	12552885	13643566	15063041	15332080
ANDHRA PRADESH	97.18	97.88	97.48	98.31	97.00	192.02	182.21	182.87	124.91	121.97	60.35	65.02	64.13	80.76	80.07	86580485	88258159	88501659	88854503	88066774	47852971	46070866	46628329	44886770	44753352	38727514	42187473	41873330	43967733	43313422

KERALA	KARNATAKA	JK	HIMACHAL PRADESH	HARYANA
114.75	113.39	95.91	147.86	91.01
125.12	110.83	90.67	145.89	97.49
124.65	108.52	77.39	148.81	97.43
129.00	104.20	86.55	149.90	94.35
127.98	102.89	87.19	142.49	94.70
248.35	198.06	174.43	409.03	136.25
266.24	177.31	166.14	332.97	139.51
267.61	163.99	154.16	401.85	46.45
98.16	146.20	153.07	474.25	129.70
97.24	143.88	154.45	460.64	128.71
69.53	58.81	65.23	112.65	64.81
77.55	66.96	60.65	120.13	66.72
76.57	71.40	46.54	113.48	71.52
202.73	72.09	58.11	112.84	70.01
209.80	70.93	58.06	106.04	70.72
41275132	79385128	12041327	10580608	25392301
45392917	70721670	11560789	10571383	27819701
45439526	69772221	9952721	10859954	28165412
45810740	69517445	11839826	11065743	27720499
45642345	69103277	12014676	10575823	28178973
22587028	48876459	6152118	3476746	13942323
24350231	44981081	6027681	2920115	15926011
24550754	42270617	5682314	3592552	15345010
24576923	42262175	6271418	3590107	15537823
25209605	42336475	6431182	3514705	15839745
18688104	22509469	5889209	7103862	11449978
21042286	25740589	5533108	7651268	11893690
20888772	27501604	4270407	7267402	12820402
21233117	27255270	5568408	7475636	12182676
20432740	26766802	5583494	7061118	12339238

PUNJAB	ODISHA	NORTH-EAST	MAHARASHTRA	MADHYA PRADESH
118.28	80.74	89.94	95.88	67.07
126.08	76.86	83.49	94.46	72.16
124.24	76.53	84.36	91.99	69.29
126.15	76.28	79.29	94.09	68.14
127.12	76.42	78.50	95.34	69.85
165.52	184.01	176.42	143.70	128.86
180.20	144.21	184.26	133.30	139.18
177.68	144.48	175.40	132.59	136.60
192.80	144.29	116.54	144.60	131.87
187.22	143.36	116.19	147.67	135.77
80.51	58.18	60.51	68.20	43.52
81.14	61.82	48.51	71.37	46.23
78.85	61.15	52.39	67.45	43.01
75.36	60.89	60.66	66.83	43.19
73.28	61.08	59.12	67.18	43.83
36972226	34583799	12688408	95780986	70603342
40110353	33335445	11977668	95902810	77599279
39932617	33431620	12219383	94270891	75437919
39716331	33555904	12233415	94267349	77427971
38985182	33726123	12224062	95694132	80357062
22985344	14129864	6319484	52638977	37433508
26005246	11418425	6810369	50464227	41754166
26229648	11647720	6603727	51177326	48717817
26253191	11715197	5996097	50773240	42162844
25886223	11796012	6143096	51859301	44208288
13986862	20453935	6368984	43142009	33169834
14105107	21917020	5167309	45438583	35845133
13702969	21783900	5615656	43093565	33679374
13463140	21840707	6237318	43494109	35265127
13098959	21930111	6080966	43834831	36149074

WEST BENGAL	UTTAR PRADESH	TAMILNADU	RAJASHTHAN
73.59	74.03	128.41	92.02
72.77	70.01	117.59	88.15
68.53	66.10	115.93	86.15
66.14	66.73	105.73	82.95
70.13	68.73	107.08	81.99
162.71	167.56	150.61	186.76
164.78	140.29	134.74	164.08
157.59	136.49	124.88	169.72
110.55	120.80	141.30	144.27
118.53	124.16	141.86	141.21
58.54	46.06	93.88	61.73
57.18	48.74	89.02	63.76
49.95	44.78	100.39	59.22
53.63	49.44	65.59	61.07
55.48	50.85	67.11	60.70
58577948	172126988	91803712	68098694
58685272	166835820	84802996	66637945
55693903	159775865	84015730	65924226
55021181	161169029	82341568	65555304
57880543	167828343	83708695	65535189
18718538	117807943	65527953	33481675
19268899	77676777	60718565	30157082
21010186	76828616	57423823	31645820
20990995	70687142	58349019	29980264
22729981	73937911	59298375	29839526
39859410	79050206	26276119	34617019
39416373	89159043	24084431	36480863
34683087	82947249	26591907	34278406
34030186	90481887	23992549	35575040
35150562	93890492	24410320	35695663

**Source:** Annual Reports, Department of Telecommunications, Ministry of Communications, Govt. of India.

Tele-density of all the service areas relating to all the States has been shown. From the above table it has been seen that Himachal Pradesh has highest Tele-density (147.86 to 142.49 over the period of 2016-17 to 2020-21) followed by Tamilnadu (128.41 to 107.08), Punjab (118.28 to 127.12), Kerala (114.75 to 127.98) and Gujarat (113.71 to 93.79). Whereas, Bihar has lowest Tele-density (60.99 to 53.54 over the period 2016-17 to 2020-21) followed by Assam (66.97 to 69.62), Madhya Pradesh (67.07 to 69.85), West Bengal (73.59 to 70.13) and Uttar Pradesh (74.03 to 68.73). Tele-density in urban area is more than rural area over the years 2016-17 to 2020-21 in the service areas of all the States. It has been significantly seen that in all the service areas of the States Telephone connection in rural areas has been increasing over the years.

#### **IV. CONCLUSION**

Telecom Industry in India is the second largest network connection in the world. In this article, we have seen that Telephone connection in rural area has been increasing over the years. It has also been noticed that private telephone operators shared maximum over PSUs telephone operators. No. of wireless connection is more than wireline over the years. So, People have a tendency to use smart phones over landlines. Regarding the service areas of all the States, it has been seen that private telephone operators played dominant role over PSUs regarding wireless and wireline connections. We have concluded that Tele-density in India has been gradually decreasing over the years and Tele-density in rural areas is significantly increasing over the years but in urban area, it is gradually decreasing. Tele-density in all the states has been increasing over the years and urban shared most over rural areas.

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