



Telecom Regulatory Authority of India

Yearly Performance Indicators of Indian Telecom Sector (First Edition) 2016

New Delhi, India
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Snapshot

(Data As on 31 December, 2016)	
Telecom Subscribers (Wireless +Wireline)	
Total Subscribers	1,151.78 Million
% change over the previous year	11.13%
Urban Subscribers	683.14 Million
Rural Subscribers	468.64 Million
Market share of Private Operators	89.79%
Market share of PSU Operators	10.21%
Teledensity	89.90
Urban Teledensity	170.15
Rural Teledensity	53.27
Wireless Subscribers	
Total Wireless Subscribers	1,127.37 Million
% change over the previous year	11.52%
Urban Subscribers	662.60 Million
Rural Subscribers	464.78 Million
GSM Subscribers	1,112.30 Million
CDMA Subscribers	15.07 Million
Market share of Private Operators	91.09%
Market share of PSU Operators	8.91%
Teledensity	88.00
Urban Teledensity	165.04
Rural Teledensity	52.84
Wireline Subscribers	
Total Wireline Subscribers	24.40 Million
% change over the previous year	-4.37%
Urban Subscribers	20.55 Million
Rural Subscribers	3.86 Million
Market share of Private Operators	29.46%
Market share of PSU Operators	70.54%
Teledensity	1.90
Urban Teledensity	5.12
Rural Teledensity	0.44
No. of Village Public Telephones (VPT)	2,36,163
No. of Public Call Office (PCO)	6,18,084

Internet/Broadband Subscribers	
Total Internet Subscribers	391.50 Million
% change over previous quarter	18.04%
Narrowband subscribers	155.41 Million
Broadband subscribers	236.09 Million
Wired Internet Subscribers	21.51 Million
Wireless Internet Subscribers	370.00 Million
Urban Internet Subscribers	276.44 Million
Rural Internet Subscribers	115.06 Million
Total Internet Subscribers per 100 population	30.56
Urban Internet Subscribers per 100 population	68.86
Rural Internet Subscribers per 100 population	13.08
Telecom Financial Data for the Calendar Year-2016	
Gross Revenue (GR) during the year 2016	₹ 2,79,591 Crore
% change in GR over the previous year	7.29%
Adjusted Gross Revenue (AGR) during the year 2016	₹ 1,98,207 Crore
% change in AGR over the previous year	7.35%
Share of Public sector undertakings in Access AGR	9.77%
Monthly Average Revenue Per User (ARPU) for Access	₹ 125
Broadcasting & Cable Services	
Number of private satellite TV channels permitted by the Ministry of I&B for uplinking only/ downlinking / uplinking	899
Number of Pay TV Channels	287
Number of private FM Radio Stations (excluding All India	273
Number of Pay Subscribers Registered with Private DTH	97.05 Million
Number of Pay Subscribers Active with Private DTH	62.65 Million
Number of Community Radio Stations licenced (GOPA	255
Number of Operational Community Radio Stations	201
Number of pay DTH Operators	6
Revenue & Usage Parameters (for the Calendar Year 2016)	
Monthly ARPU GSM Full Mobility Service	₹ 119
Monthly ARPU CDMA Full Mobility Service	₹ 114
Minutes of Usage (MOU) per subscriber per month - GSM Full Mobility Service	370 Minutes
Minutes of Usage (MOU) per subscriber per month - CDMA Full Mobility Service	250 Minutes
Average Revenue for data per subscribers per month for GSM Service (including LTE)	₹ 27.50
Average Revenue for data per subscribers per month for CDMA Service	₹ 60.09

Introduction

This Report presents the Key Parameters and growth trends for the Telecom Services in India for the year 2016. It provides a broad perspective on the Telecom Services to serve as a reference document for various stakeholders, research agencies and analysts. Chapter-1 depicts the growth pattern, in terms of Subscriber base and Tele-density of Wireline, Wireless, Internet and Value Added Services (VAS). Chapter-2 covers the key revenue and usage parameters. Chapter-3 gives the financial and accounting data. The information relating to Cable TV, DTH & Radio Broadcast services is provided in Chapter-4.

2. The Report has been prepared based on the information furnished by the Service Providers. It is also available on TRAI's website (www.trai.gov.in). Any suggestion pertaining to this report may please be addressed to Advisor (F&EA), TRAI on Tel. +91-11-23230752, Fax. +91-11-23236650 and e-mail: advfea1@traigov.in.

Chapter 1 :

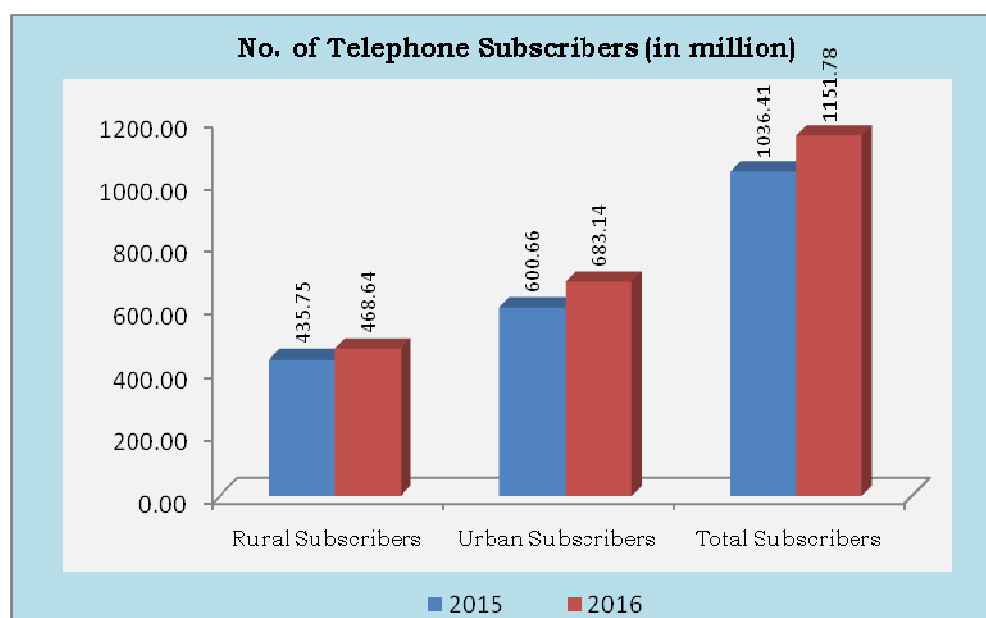
Subscription Data

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- In this report, Tele-density is based on the population projections from census data published by the Office of Registrar General & Census Commissioner of India.
 - The Report has been prepared based on the information furnished by the Service Providers.

Section A : Access Service

1. The number of telephone subscribers in India increased from 1,036.41 million at the end of Dec-15 to 1,151.78 million at the end of Dec-16, registering a yearly growth rate of 11.13%. The overall Teledensity in India increased from 81.83 at the end of Dec-15 to 89.90 at the end of Dec-16 at the growth rate of 9.86%.

Chart 1.1: Trends of Telephone Subscriptions in India



2. Telephone subscription in Urban Areas increased from 600.66 million at the end of Dec-15 to 683.14 million at the end of Dec-16 at the yearly growth rate of 13.37%.
3. Urban Teledensity increased from 152.45 at the end of Dec-15 to 170.15 at the end of Dec-16 with yearly growth rate of 11.61%.
4. Rural telephone subscription increased from 435.75 million at the end of Dec-15 to 468.64 million at the end of Dec-16 at the yearly growth rate of 7.55%.

- Rural Teledensity increased from 49.94 at the end of Dec-15 to 53.27 at the end of Dec-16 with yearly growth rate of 6.67%.

Chart 1.2: Trends of Tele-density in India

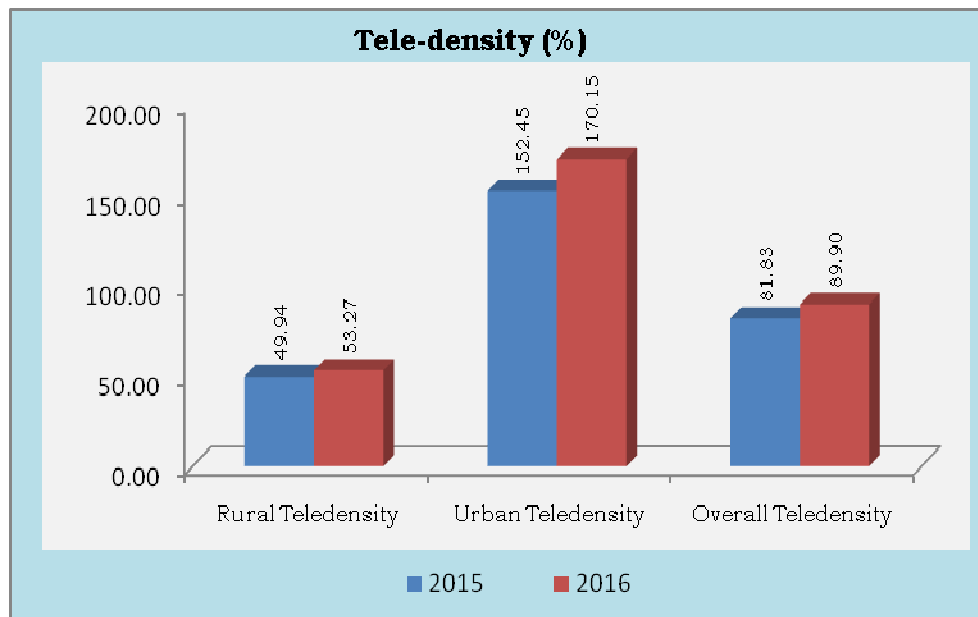
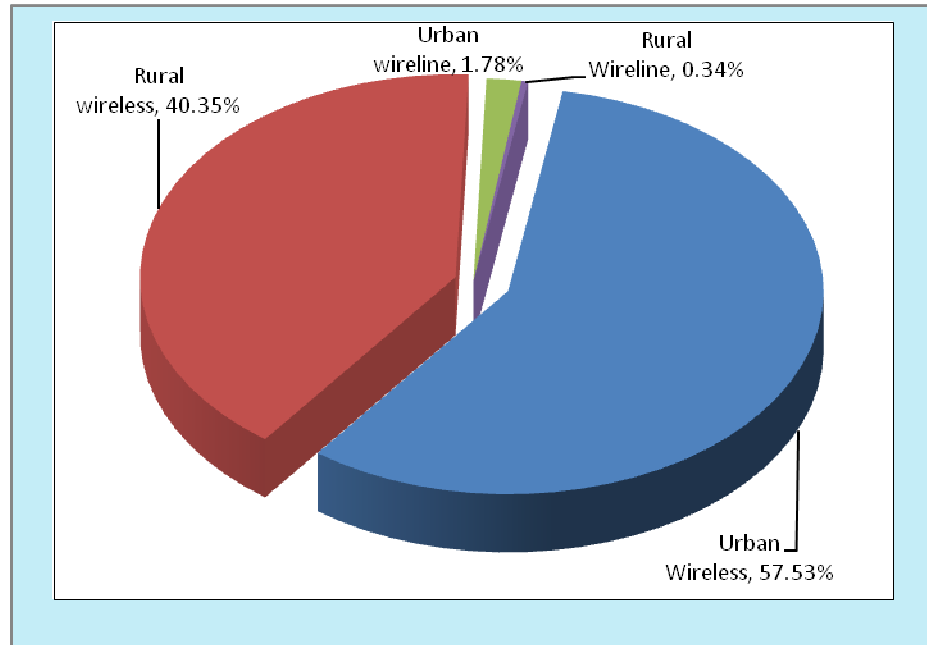


Table 1.1: Subscriber Base & Teledensity - Rural & Urban

Year ending	Subscriber Base (million)		Teledensity	
	Rural	Urban	Rural	Urban
2015	435.75	600.66	49.94	152.45
2016	468.64	683.14	53.27	170.15

- Out of the total telephone subscription, the shares of Rural and urban telephone subscription are 40.69% and 59.31% respectively at the end of Dec-16. The following chart depicts the rural-urban market share of telephone subscribers.

Chart 1.3: Composition of Telephone Subscribers



7. Out of 1,151.78 million of total telephone subscriber, the number of Wireless Telephone subscribers is 1,127.37 million and the number of Wireline Telephone subscribers is 24.40 million. The following chart depicts the market share of Wireless and Wireline subscribers in India.

Chart 1.4: Composition of Market Share – Wireless & Wireline Subscribers

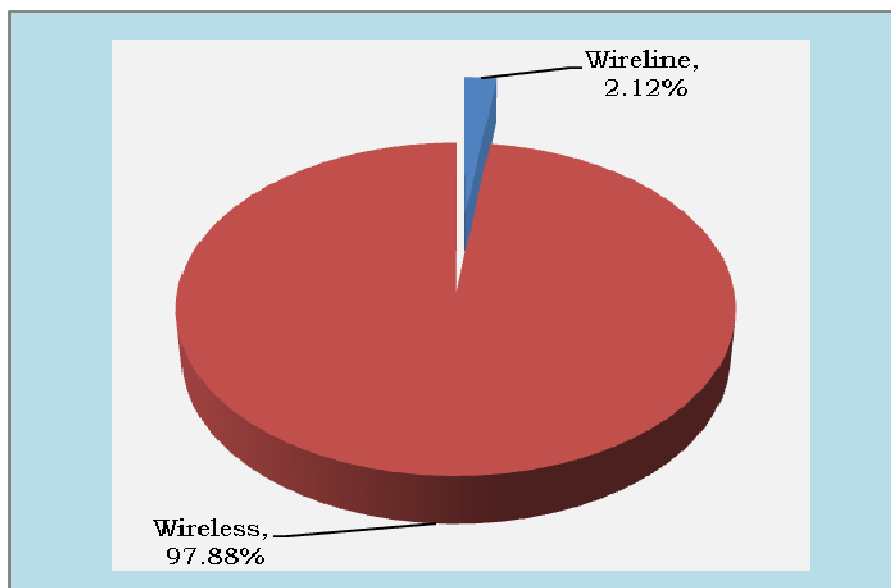


Table 1.2: Service Area wise Access (Wireless+Wireline) Subscriber base

Service Area	Subscribers (million)			
	Dec-15	Dec-16	Net Additions	Rate of Growth (%)
Andhra Pradesh	76.35	83.29	6.93	9.08
Assam	17.85	21.07	3.22	18.02
Bihar	72.09	82.57	10.48	14.54
Delhi	51.03	54.09	3.07	6.01
Gujarat	61.91	69.73	7.82	12.63
Haryana	23.14	24.29	1.15	4.97
Himachal Pradesh	8.81	10.05	1.24	14.13
Jammu & Kashmir	9.77	11.41	1.63	16.72
Karnataka	63.72	69.35	5.63	8.83
Kerala	35.89	40.02	4.13	11.51
Madhya Pradesh	65.24	67.51	2.27	3.48
Maharashtra	83.35	92.64	9.30	11.15
Mumbai	34.60	37.66	3.06	8.84
North East	10.79	12.41	1.62	15.02
Orissa	27.86	33.08	5.22	18.73
Punjab	32.12	37.40	5.29	16.46
Rajasthan	59.81	65.63	5.82	9.73
T.N. (incl. Chennai)	83.25	89.07	5.82	7.00
U.P.(E)	89.12	102.10	12.98	14.57
U.P.(W)	55.75	63.61	7.86	14.10
Kolkata	25.35	29.01	3.66	14.43
West Bengal	48.60	55.77	7.17	14.75
All India	1,036.41	1,151.78	115.37	11.13

8. During the year 2016, Orissa service area has recorded the highest growth rate of 18.73% followed by Assam service area (18.02%). Madhya Pradesh service areas showed minimum growth rate of 3.48% in subscriber base during the year 2016.

Table 1.3: Service Area wise Rural-Urban Subscribers

Service Area	Subscribers (million) as on 31 st Dec-16			
	Total	Rural	Urban	% of Rural Subscribers
Andhra Pradesh	83.29	34.62	48.67	41.57
Assam	21.07	12.82	8.25	60.85
Bihar	82.57	46.16	36.41	55.91
Delhi	54.09	-	54.09	-
Gujarat	69.73	25.79	43.94	36.99
Haryana	24.29	10.88	13.41	44.78
Himachal Pradesh	10.05	6.27	3.78	62.40
Jammu & Kashmir	11.41	5.53	5.87	48.51
Karnataka	69.35	21.09	48.26	30.41
Kerala	40.02	17.30	22.73	43.21
Madhya Pradesh	67.51	31.08	36.43	46.04
Maharashtra	92.64	41.03	51.61	44.29
Mumbai	37.66	-	37.66	-
North East	12.41	6.17	6.25	49.66
Orissa	33.08	18.56	14.52	56.11
Punjab	37.40	12.75	24.65	34.09
Rajasthan	65.63	32.53	33.10	49.56
T.N. (incl. Chennai)	89.07	24.77	64.30	27.81
U.P.(E)	102.10	50.70	51.40	49.66
U.P.(W)	63.61	27.93	35.68	43.90
Kolkata	29.01	-	29.01	-
West Bengal	55.77	37.28	18.49	66.85
All India	1,151.78	468.64	683.14	40.69

Table 1.4 : Service Area wise Tele-density

Service Area/ States	As on 31 st December, 2015			As on 31 st December, 2016		
	Rural Teledensity	Urban Teledensity	Total Teledensity	Rural Teledensity	Urban Teledensity	Total Teledensity
Andhra Pradesh	50.94	178.38	86.53	54.04	195.73	93.66
Assam	40.96	129.29	55.13	46.76	154.78	64.34
Bihar	35.05	161.67	52.51	38.58	189.64	59.46
Delhi	289.10	239.00	240.87	-	-	248.19
Gujarat	64.93	142.97	97.58	69.44	162.42	108.63
Haryana	62.98	122.46	84.42	61.66	131.98	87.36
Himachal Pradesh	92.33	366.14	124.34	99.64	447.34	140.79
J&K	57.27	134.72	78.83	61.40	167.25	91.08
Karnataka	53.27	179.75	102.32	55.14	196.39	110.39
Kerala	61.49	215.33	100.47	64.45	250.13	111.41
Madhya Pradesh	39.94	124.28	63.03	40.89	126.02	64.35
Maharashtra (incl. Mumbai)*	63.39	132.55	96.83	66.59	146.81	105.69
North East	51.88	154.01	77.54	58.69	175.31	88.24
Orissa	46.54	154.78	65.68	52.87	189.98	77.38
Punjab	70.50	147.42	104.15	73.42	178.54	119.97
Rajasthan	57.04	161.05	82.17	58.18	185.35	88.97
Tamil Nadu (incl. Chennai)	83.22	140.31	117.26	88.07	148.60	124.76
Uttar Pradesh (incl. UPE & UPW)	40.67	140.54	63.50	44.07	163.53	71.53
West Bengal (incl. Kolkata)*	52.04	143.02	78.16	57.72	165.93	88.85
All India	49.94	152.45	81.83	53.27	170.15	89.90

* Population data/projections are available state-wise only.

Notes:-

1. Tele-density figures are derived from the subscriber data provided by the operators and the population projections, for Urban and Rural areas, of the country, published by the Office of the Registrar General & Census Commissioner, India.
2. Delhi Service area, apart from the State of Delhi, includes wireless subscribers of the areas served by the local exchanges of Ghaziabad & Noida (in UP) and Gurgaon & Faridabad (in Haryana).
3. Data/information for Andhra Pradesh includes Telengana, Madhya Pradesh includes Chhatishgarh, Bihar includes Jharkhand, Maharashtra includes Goa, Uttar Pradesh includes Uttarakhand, West Bengal includes Sikkim and North-East includes Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland & Tripura states.

9. Himachal Pradesh service area has the highest Rural Tele-density of 99.64 followed by Tamil Nadu service area (88.07) at the end of Dec-16. Bihar service area continues to have the lowest Rural Tele-density of 38.58 in the same period.

Table 1.5 : Service Provider-wise growth in Subscriber base

Service Provider	Subscriber base (in million)			Rate of Growth (%)	Market Share as on Dec-15 (%)	Market Share as on Dec-16 (%)
	Dec-15	Dec-16	Yearly Net Addition/decline			
Bharti	246.89	269.68	22.80	9.23	23.82	23.41
Vodafone	193.69	204.82	11.13	5.74	18.69	17.78
IDEA	171.91	190.52	18.61	10.82	16.59	16.54
Reliance Com.	102.05	87.72	-14.33	-14.05	9.85	7.62
Tata	62.43	54.71	-7.72	-12.37	6.02	4.75
Aircel	85.63	90.88	5.24	6.12	8.26	7.89
Quadrant	3.30	3.26	-0.04	-1.09	0.32	0.28
Sistema	8.06	5.94	-2.13	-26.40	0.78	0.52
Telenor	50.70	54.47	3.77	7.43	4.89	4.73
Videocon*	6.96	-	-6.96	-100.00	0.67	-
Reliance Jio*	-	72.16	72.16	-	-	6.26
BSNL	97.64	110.53	12.88	13.20	9.42	9.60
MTNL	7.13	7.10	-0.03	-0.40	0.69	0.62
Total	1,036.41	1,151.78	115.37	11.13	100	100

*Note: M/s Videocon has closed its wireless service in the month of May, 2016 and M/s Reliance Jio Infocom Ltd has commenced its wireless service commercially during the month of September, 2016.

Table 1.6 : Service provider-wise Market Share of rural subscribers in their total subscribers – as on 31st Dec-16

Service Provider	No. of Total Subscribers (in millions)	No. of Rural Subscribers (in millions)	Percentage of Rural subscribers	Market share of Rural subscribers (%)
Bharti	269.68	130.57	48.42	27.86
Vodafone	204.82	109.94	53.68	23.46
IDEA	190.52	104.35	54.77	22.27
BSNL	110.53	35.37	32.00	7.55
Aircel	90.88	31.68	34.86	6.76
Reliance Com.	87.72	20.59	23.47	4.39
Reliance Jio	72.16	4.12	5.72	0.88
Tata	54.71	14.00	25.59	2.99
Telenor	54.47	16.55	30.39	3.53
MTNL	7.10	0.05	0.68	0.01
Sistema	5.94	1.28	21.55	0.27
Quadrant	3.26	0.13	3.84	0.03
Total	1,151.78	468.64	40.69	100

10. IDEA is the service provider with highest proportion of rural subscribers (54.77%), followed by Vodafone (53.68%) to their total subscribers at the end of Dec-16.

Section B : Wireless Service

Table 1.7: List of Cellular Mobile (GSM, CDMA & LTE) Service Providers currently providing service [As on 31st December, 2016]

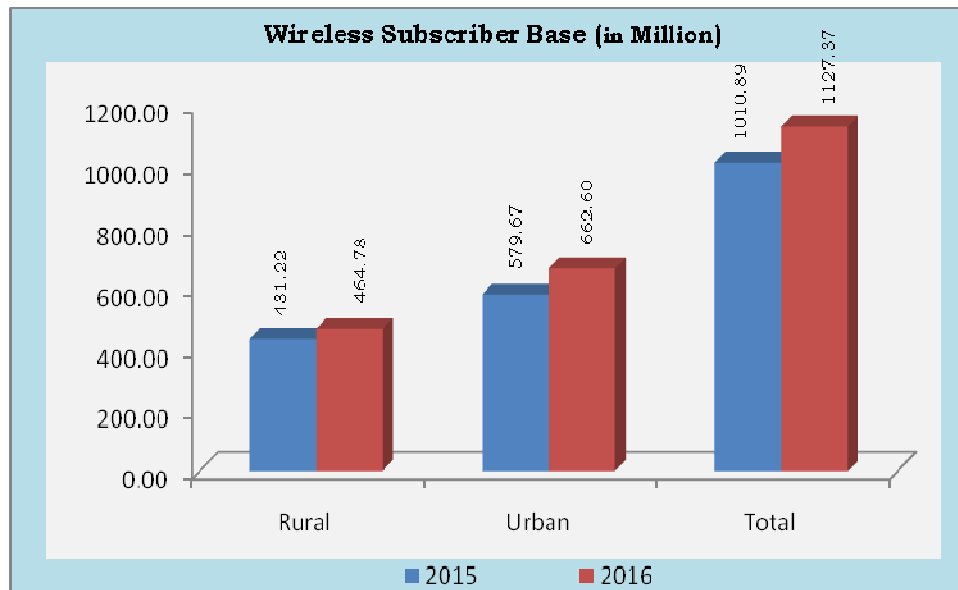
Sl.No.	Service Provider	Area of Operation
1	Bharti Airtel	All India
2	Aircel Group	All India
3	Reliance Communications	All India (except Assam & NE)
4	Reliance Telecom Ltd	Kolkata, MP, WB, HP, Bihar, Orissa, Assam & NE
5	Vodafone (India) Ltd	All India
6	Tata Teleservices	All India except Assam, NE & J&K
7	IDEA Cellular Ltd	All India
8	Sistema Shyam Telelink	Delhi, Kolkata, Gujarat, Karnataka, Tamil Nadu (incl. Chennai), Kerala, UP(W), Rajasthan & W.B.
9	BSNL	All India (except Delhi & Mumbai)
10	MTNL	Delhi & Mumbai
11	Quadrant	Punjab
12	Telenor Communications (India) Pvt. Ltd.	MH, Gujarat, AP, UP(W), UP(E), Bihar
13	Reliance Jio Infocom Ltd	All India

11. Complete list of licensed Cellular (GSM & CDMA) Service providers as on 31st December, 2016 is at Annexure -1.1.

12. Total Wireless (GSM+CDMA) subscriber base increased from 1,010.89 million at the end of Dec-15 to 1,127.37 million at the end of Dec-16, thereby showing a yearly growth rate of 11.52%. During the year, 2016, net addition of 116.48 million wireless subscribers was recorded.

13. The Rural Wireless subscribers increased from 431.22 million at the end of Dec-15 to 464.78 million at the end of Dec-16 with yearly growth rate of 7.78%
14. The urban wireless subscribers increased from 579.67 million at the end of Dec-15 to 662.60 million at the end of Dec-16 with yearly growth rate of 14.31%.

Chart 1.5: Trend of Wireless Subscriber Base



15. Wireless Teledensity increased from 79.82 at the end of Dec-15 to 88.00 at the end of Dec-16. Rural wireless Teledensity increased from 49.43 to 52.44 and Urban wireless Teledensity increased from 147.12 to 165.04 during the same period.

Table 1.8: Wireless Subscriber Base & Teledensity - Rural & Urban

Year ending	Subscriber Base (million)		Tele-density	
	Rural	Urban	Rural	Urban
Dec-15	431.22	579.67	49.43	147.12
Dec-16	464.78	662.60	52.84	165.04

16. The share of rural and urban wireless subscription is 41.23% and 58.77% in total wireless subscription at the end of Dec-16.

Chart 1.6: Composition of Wireless Market Share – Rural & Urban Subscribers

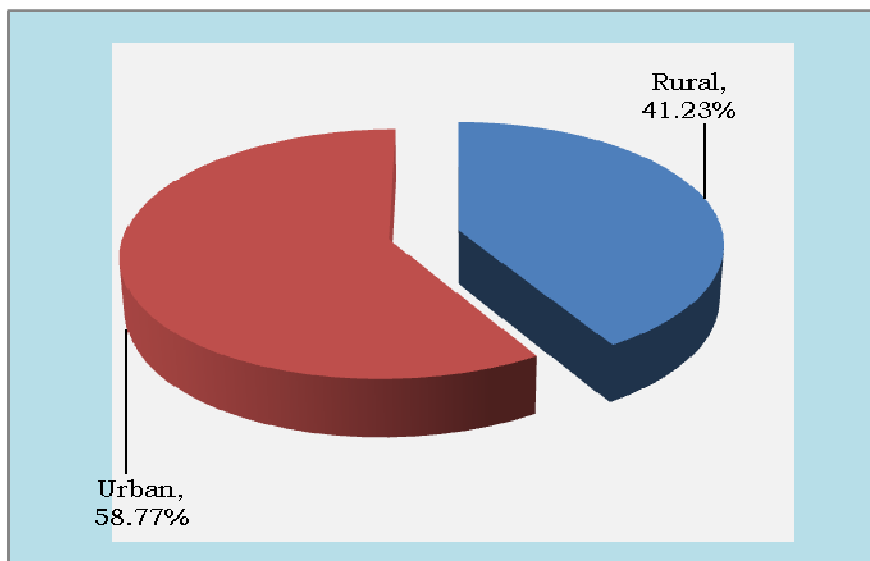


Table 1.9: Growth in Wireless Subscriber base

Service Provider	Subscriber Base (millions)			Rate of Growth (%)	Market Share Dec-15 (%)	Market Share Dec-16 (%)
	Dec-15	Dec-16	Net Additions			
Bharti	243.29	265.85	22.56	9.27	24.07	23.58
Vodafone	193.60	204.69	11.09	5.73	19.15	18.16
IDEA	171.91	190.52	18.61	10.82	17.01	16.90
BSNL	82.51	96.79	14.28	17.31	8.16	8.59
Aircel	85.63	90.88	5.24	6.12	8.47	8.06
Reliance Com.	100.89	86.54	-14.35	-14.22	9.98	7.68
Reliance Jio	-	72.16	72.16	-	-	6.40
Telenor	50.70	54.47	3.77	7.43	5.02	4.83
Tata	60.73	52.98	-7.75	-12.76	6.01	4.70
Sistema	8.01	5.88	-2.13	-26.59	0.79	0.52
MTNL	3.61	3.63	0.01	0.32	0.36	0.32
Quadrant	3.05	3.00	-0.05	-1.57	0.30	0.27
Videocon	6.96	-	-6.96	-100.0	0.69	-
Total	1,010.89	1,127.37	116.48	11.52	100	100

17. Bharti remains the leading service provider with 265.85 million wireless subscribers at the end of Dec-16, followed by Vodafone (204.69 million).

Table 1.10: Service Area wise Wireless Subscriber base

Service Area	Subscriber base (in million)			
	Dec-15	Dec-16	Net Additions	Rate of change (%)
Andhra Pradesh	74.59	81.65	7.07	9.47
Assam	17.69	20.91	3.22	18.22
Bihar	71.76	82.26	10.50	14.63
Delhi	47.87	50.88	3.01	6.29
Gujarat	60.48	68.38	7.90	13.06
Haryana	22.76	23.94	1.18	5.17
Himachal Pradesh	8.63	9.90	1.27	14.71
Jammu & Kashmir	9.64	11.27	1.63	16.93
Karnataka	61.45	67.13	5.68	9.24
Kerala	33.48	37.91	4.42	13.21
Madhya Pradesh	64.20	66.48	2.28	3.55
Maharashtra	81.35	90.77	9.42	11.58
Mumbai	31.55	34.63	3.07	9.74
North East	10.67	12.29	1.62	15.23
Orissa	27.56	32.79	5.24	19.01
Punjab	31.04	36.38	5.34	17.20
Rajasthan	59.02	64.88	5.86	9.92
T.N. (incl. Chennai)	80.58	86.54	5.96	7.39
U.P.(E)	88.62	101.60	12.98	14.65
U.P.(W)	55.31	63.21	7.89	14.27
Kolkata	24.43	28.14	3.71	15.19
West Bengal	48.21	55.44	7.22	14.98
All India	1,010.89	1,127.37	116.48	11.52

18. Detailed table on service provider wise subscriber base in each service area is at Annexure-1.2.

Table 1.11: Service Area wise Wireless Rural-Urban Subscriber base

Service Area	Subscriber base (in million) – Dec-16			
	Total	Rural	Urban	% of Rural Subscribers
Andhra Pradesh	81.65	34.31	47.34	42.02
Assam	20.91	12.79	8.12	61.17
Bihar	82.26	46.08	36.18	56.02
Delhi	50.88	2.37	48.51	4.67
Gujarat	68.38	25.59	42.79	37.43
Haryana	23.94	10.81	13.14	45.13
Himachal Pradesh	9.90	6.18	3.72	62.40
Jammu & Kashmir	11.27	5.52	5.76	48.93
Karnataka	67.13	20.90	46.22	31.14
Kerala	37.91	15.99	21.92	42.17
Madhya Pradesh	66.48	30.96	35.52	46.57
Maharashtra	90.77	40.69	50.08	44.82
Mumbai	34.63	1.05	33.57	3.04
North East	12.29	6.14	6.15	49.95
Orissa	32.79	18.50	14.30	56.41
Punjab	36.38	12.50	23.88	34.35
Rajasthan	64.88	32.39	32.48	49.93
T.N. (incl. Chennai)	86.54	24.41	62.13	28.21
U.P.(E)	101.60	50.63	50.97	49.83
U.P.(W)	63.21	27.88	35.32	44.12
Kolkata	28.14	1.94	26.20	6.90
West Bengal	55.44	37.14	18.30	67.00
All India	1,127.37	464.78	662.60	41.23

Table 1.12 : Service Area wise Wireless Tele-density

Service Area	As on 31 st December, 2015			As on 31 st December, 2016		
	Rural Teledensity	Urban Teledensity	Total Teledensity	Rural Teledensity	Urban Teledensity	Total Teledensity
A.P.	50.33	172.79	84.52	53.56	190.40	91.82
Assam	40.85	126.72	54.63	46.66	152.36	63.86
Bihar	34.97	160.38	52.27	38.51	188.42	59.23
Delhi	-	-	225.97	-	-	233.47
Gujarat	64.29	138.47	95.32	68.91	158.17	106.53
Haryana	62.49	119.53	83.05	61.25	129.26	86.11
H.P.	90.47	358.86	121.85	98.13	440.60	138.66
J&K	57.07	131.43	77.77	61.21	163.92	90.01
Karnataka	52.67	171.29	98.67	54.65	188.11	106.85
Kerala	55.70	205.75	93.72	59.57	241.25	105.52
M.P.	39.76	121.06	62.02	40.73	122.86	63.36
Maharashtra (incl. Mumbai)*	62.76	124.66	92.68	66.05	139.21	101.71
North East	51.62	151.20	76.63	58.45	172.61	87.37
Orissa	46.33	151.66	64.96	52.69	187.05	76.71
Punjab	68.78	141.66	100.66	71.96	172.97	116.69
Rajasthan	56.77	157.42	81.09	57.95	181.87	87.95
Tamil Nadu (incl. Chennai)	81.74	135.00	113.50	86.79	143.57	121.21
Uttar Pradesh (incl. UPE&UPW)*	40.60	138.98	63.09	44.01	162.05	71.15
West Bengal (incl. Kolkata)*	51.79	138.84	76.79	57.51	162.10	87.60
All India	49.43	147.12	79.82	52.84	165.04	88.00

* Population data/projections are available state-wise only.

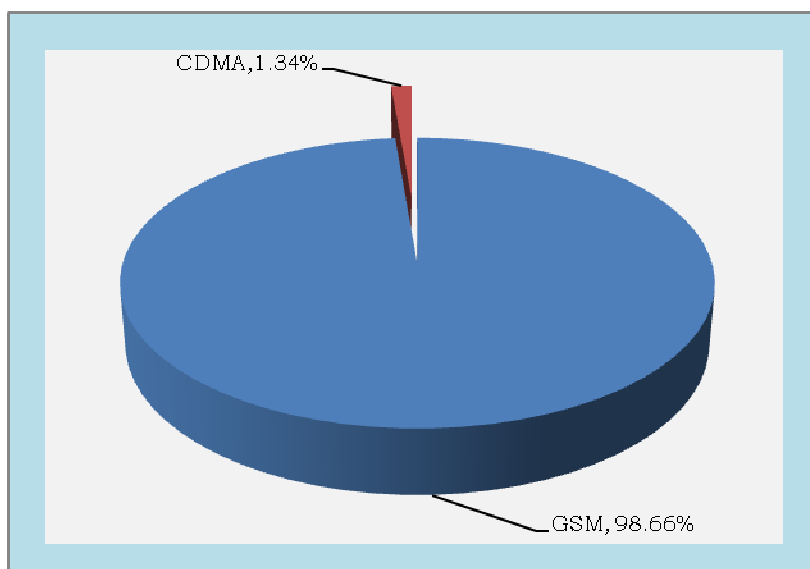
Notes:

1. Teledensity figures are derived from the subscriber data provided by the operators and the population projections, for Urban and Rural areas, of the country, published by the Office of the Registrar General & Census Commissioner, India.
2. Delhi service area, apart from the State of Delhi, includes the areas served by the local exchanges of Ghaziabad & Noida (in UP) and Gurgaon & Faridabad (in Haryana).
3. Data/information for Andhra Pradesh includes Telengana, Madhya Pradesh includes Chhatishgarh, Bihar includes Jharkhand, Maharashtra includes Goa, Uttar Pradesh includes Uttarakhand, West Bengal includes Sikkim and North-East includes Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland & Tripura states.

Table 1.13 : Rural Wireless Subscriber base and Market Share

Service Provider	Total number of wireless Subscribers (in millions)	Rural Subscribers (in millions)	% of Rural subscribers in total	Market Share of Rural Subscribers (%)
Bharti	265.85	130.57	49.12	28.09
Vodafone	204.69	109.94	53.71	23.66
IDEA	190.52	104.35	54.77	22.45
Reliance Com.	86.54	20.58	23.79	4.43
Tata	52.98	13.95	26.33	3.00
Aircel	90.88	31.68	34.86	6.82
Quadrant	3.00	0.07	2.25	0.01
Sistema	5.88	1.27	21.59	0.27
Telenor	54.47	16.55	30.39	3.56
BSNL	96.79	31.63	32.68	6.81
MTNL	3.63	0.05	1.34	0.01
Reliance Jio	72.16	4.12	5.72	0.89
Total	1,127.37	464.78	41.23	100

Chart 1.7: Composition of Wireless Subscription as on 31.12.2016: GSM vs CDMA



GSM (including LTE) Services

19. The GSM subscribers increased from 963.99 million at the end of Dec-15 to 1,112.30 million at the end of Dec-16, showing a yearly growth of 15.38%.

Table 1.14 : Group-wise Market Share (in terms of subscription)

Service Provider	Dec-15	Dec-16	Net Additions (in million)	Market Share (%) Dec-16
	No. of Subscribers (in millions)	No. of Subscribers (in millions)		
Bharti	243.29	265.85	22.56	23.90
Vodafone	193.60	204.69	11.09	18.40
Idea	171.91	190.52	18.61	17.13
Reliance Comm.	75.18	86.54	11.37	7.78
BSNL	81.30	95.97	14.67	8.63
Aircel	85.63	90.88	5.24	8.17
Tata	48.85	44.60	-4.25	4.01
Telenor	50.70	54.47	3.77	4.90
Reliance Jio	-	72.16	72.16	6.49
Videocon	6.96	-	-6.96	-
MTNL	3.53	3.63	0.10	0.33
Quadrant	3.04	3.00	-0.04	0.27
Total	963.99	1112.30	148.31	100

20. M/s Tata and Quadrant showed negative growth in their GSM subscribers. All other service providers showed positive growth during the year 2016. M/s Videocon closed its wireless telephone services during the month of May, 2016 and M/s Reliance Jio Infocomm Ltd has commenced its wireless services commercially during the month of September, 2016.

CDMA Services

21. The CDMA subscriber base declined from 46.90 million at the end of Dec-15 to 15.07 million at the end of Dec-16, thereby showing a decline rate of 67.86%.

Table 1.15 : Market Share (in terms of subscription)

Service Provider	Dec-15	Dec-16	Net Addition/ Decline (in million)	Market Share (%) Dec-16
	No. of Subscribers (in million)	No. of Subscribers (in million)		
Reliance Com.	25.71	0.00	-25.71	0.00
Tata	11.88	8.38	-3.50	55.59
Sistema	8.01	5.88	-2.13	39.00
BSNL	1.21	0.82	-0.39	5.41
MTNL	0.09	0.00	-0.09	0.00
Quadrant	0.003	0.00	-0.003	0.00
Total	46.90	15.07	-31.83	100

22. All CDMA service providers showed decline in their CDMA subscriber base during the year 2016. M/s Reliance, MTNL and Quadrant have closed their CDMA services.

Section C : Wireline Service

Table 1.16 : Service Providers providing Wireline Service

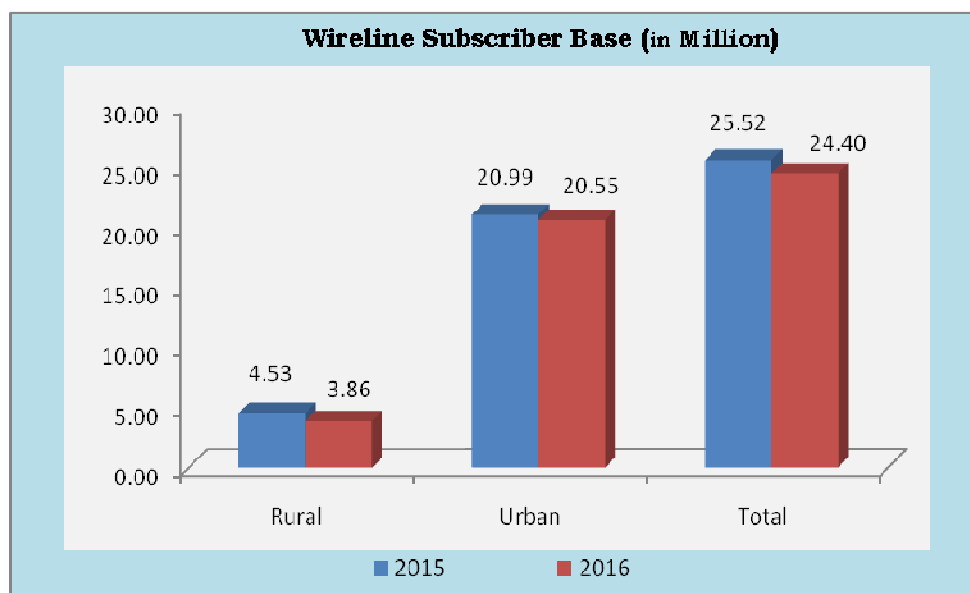
[As on 31st December, 2016]

Sl. No.	Name of the Service Provider	Area of Operation
1	BSNL	All India except Delhi & Mumbai
2	MTNL	Delhi & Mumbai
3	Bharti Airtel Ltd	Andhra Pradesh (including Telangana), Delhi, Gujarat, Haryana, Himachal Pradesh, Madhya Pradesh (including Chhatisgarh), Maharashtra, Mumbai, Punjab, Tamil Nadu (including Chennai), Karnataka, Kerala, Kolkata, Rajasthan, UP(East) and UP(West)
4	Tata Teleservices Ltd. & Tata Teleservices (Mah) Ltd.	All India except N.E., Assam and J&K
5	Quadrant Televentures Ltd. (HFCL)	Punjab
6	Sistema Shyam Telelink Ltd.	Rajasthan
7	Reliance Communications Ltd.	All India except J&K, Assam & North-East
8	Vodafone	All India except J&K

22. Total Wireline subscriber base declined from 25.52 million at the end of Dec-15 to 24.40 million at the end of Dec-16 with yearly declining rate of 4.37%.
23. Detailed table on service provider wise subscriber base in each service area is at Annexure-1.3

24. Rural wireline subscriber base has shown decline of 14.81%, from 4.53 Million at the end of Dec-15 to 3.86 Million at the end of Dec-16. During the same period, Urban wireline subscription also recorded decline of 2.11%, from 20.99 million to 20.55 million.

Chart 1.8: Wireline Subscriber Base



25. Overall Wireline Teledensity declined from 2.01 at the end of Dec-15 to 1.90 at the end of Dec-16. During the same period Urban wireline teledensity declined from 5.33 to 5.12 and Rural wireline teledensity declined from 0.52 to 0.44.

Table 1.17 : Wireline Subscriber Base & Teledensity - Rural & Urban

Quarter ending	Subscriber Base (in million)		Teledensity	
	Rural	Urban	Rural	Urban
Dec-15	4.53	20.99	0.52	5.33
Dec-16	3.86	20.55	0.44	5.12

Chart 1.9: Wireline Tele-density

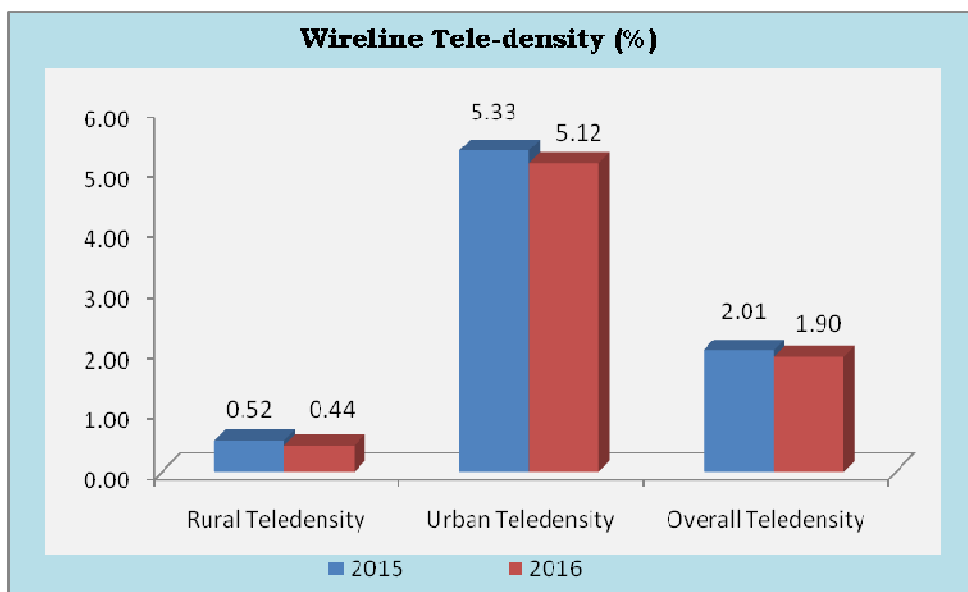


Table 1.18 : Service Provider wise growth in Wireline Subscriber base

Service Provider	Subscriber Base (million)			Rate of change (%)	Market share-Dec-15 (%)	Market share-Dec-16 (%)
	Dec-15	Dec-16	Net Addition			
BSNL	15.13	13.74	-1.40	-9.23	59.31	56.29
Bharti	3.60	3.83	0.23	6.47	14.10	15.69
MTNL	3.52	3.48	-0.04	-1.13	13.79	14.25
Tata	1.70	1.73	0.03	1.55	6.68	7.09
Reliance	1.16	1.18	0.02	0.93	4.56	4.82
Quadrant	0.25	0.26	0.01	4.86	0.98	1.07
Vodafone	0.09	0.13	0.04	42.22	0.37	0.54
Sistema	0.06	0.06	0.00	0.64	0.23	0.24
Total	25.52	24.40	-1.11	-4.37	100	100

26. M/s BSNL is the leading operator in wireline service with 13.74 million subscriber at the end of Dec-16 followed by Bharti with 3.83 million subscribers.

27. In total wireline subscriber base, PSUs hold 70.54% of market share at the end of Dec-16 as against 73.10% at the end of Dec-15. However, both PSUs, BSNL and MTNL showed decline in their wireline subscriber base during the year 2016.

Table 1.19 : Service Provider wise Subscriber base (Rural - Urban)

Service Provider	Subscriber Base (million) Dec-16			Share of Rural subscription (%)
	Rural	Urban	Total	
BSNL	3.74	10.00	13.74	27.22
Bharti	--	3.83	3.83	--
MTNL	--	3.48	3.48	--
Tata	0.05	1.68	1.73	2.92
Reliance	0.002	1.17	1.18	0.14
Quadrant	0.06	0.20	0.26	22.02
Vodafone	--	0.13	0.13	--
Sistema	0.01	0.05	0.06	17.62
Total	3.86	20.55	24.40	15.81

Chart 1.10: Composition of Wireline Subscriber base - Rural & Urban

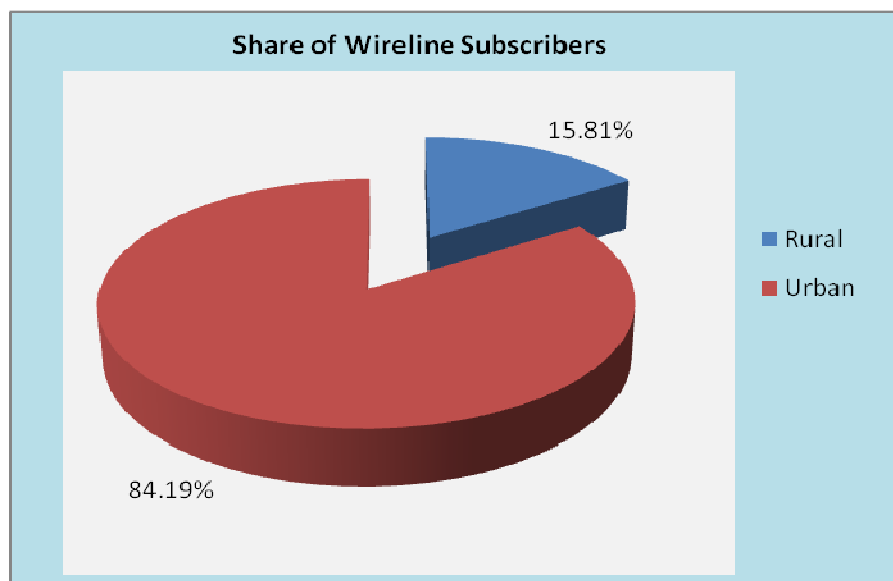


Table 1.20: Service Area wise Wireline Subscriber base & Net Additions (in million)

Service Area	Dec-15	Dec-16	Net Additions	Rate of Change (%)
Andhra Pradesh	1.77	1.63	-0.134	-7.56
Assam	0.16	0.16	-0.006	-3.38
Bihar	0.34	0.32	-0.018	-5.47
Delhi	3.16	3.21	0.053	1.68
Gujarat	1.43	1.35	-0.083	-5.77
Haryana	0.37	0.35	-0.026	-6.84
Himachal Pradesh	0.18	0.15	-0.025	-14.06
Jammu & Kashmir	0.13	0.13	0.003	1.92
Karnataka	2.27	2.22	-0.049	-2.16
Kerala	2.41	2.12	-0.294	-12.21
Madhya Pradesh	1.04	1.04	-0.007	-0.71
Maharashtra	2.00	1.88	-0.124	-6.22
Mumbai	3.05	3.03	-0.014	-0.47
North East	0.13	0.12	-0.004	-3.10
Orissa	0.31	0.29	-0.018	-5.98
Punjab	1.08	1.02	-0.053	-4.94
Rajasthan	0.79	0.75	-0.037	-4.66
T.N. (incl. Chennai)	2.67	2.54	-0.135	-5.04
U.P.(E)	0.50	0.50	-0.003	-0.65
U.P.(W)	0.43	0.40	-0.033	-7.49
Kolkata	0.92	0.86	-0.055	-5.97
West Bengal	0.39	0.33	-0.052	-13.56
All India	25.52	24.40	-1.114	-4.37

28. Delhi and J&K service areas showed positive growth in wireline subscriber base during year 2016. All other service areas showed decline rate during the same period.

**Table 1.21: Service Area wise Wireline Rural-Urban Subscriber Base
(in million)**

Service Area	Total Subscribers	Rural Subscribers	Urban Subscribers	% of Rural Subscribers
Andhra Pradesh	1.63	0.31	1.33	18.89
Assam	0.16	0.03	0.13	18.06
Bihar	0.32	0.08	0.23	26.39
Delhi	3.21	-	3.21	-
Gujarat	1.35	0.20	1.15	14.63
Haryana	0.35	0.07	0.28	20.75
Himachal Pradesh	0.15	0.10	0.06	62.56
Jammu & Kashmir	0.13	0.02	0.12	12.88
Karnataka	2.22	0.19	2.03	8.50
Kerala	2.12	1.31	0.81	61.88
Madhya Pradesh	1.04	0.12	0.91	11.76
Maharashtra	1.88	0.34	1.53	18.36
Mumbai	3.03	-	3.03	-
North East	0.12	0.03	0.10	20.86
Orissa	0.29	0.07	0.22	22.59
Punjab	1.02	0.25	0.77	24.85
Rajasthan	0.75	0.13	0.62	17.45
T.N. (incl. Chennai)	2.54	0.36	2.18	14.20
U.P.(E)	0.50	0.07	0.43	14.12
U.P.(W)	0.40	0.04	0.36	10.37
Kolkata	0.86	-	0.86	-
West Bengal	0.33	0.14	0.19	42.79
All India	24.40	3.86	20.55	15.81

29. In the above table, it can be seen that in Himachal Pradesh and Kerala service areas, more than 50% of their total wireline subscribers is belonging to rural areas.

Table 1.22: Service Area wise Wireline Teledensity

Service Area	As on 31 st December, 2015			As on 31 st December, 2016		
	Rural Teledensity	Urban Teledensity	Total Teledensity	Rural Teledensity	Urban Teledensity	Total Teledensity
Andhra Pradesh	0.61	5.59	2.00	0.48	5.33	1.84
Assam	0.11	2.56	0.50	0.10	2.42	0.48
Bihar	0.08	1.29	0.24	0.07	1.22	0.23
Delhi	-	-	14.90	-	-	14.73
Gujarat	0.64	4.50	2.25	0.53	4.25	2.10
Haryana	0.48	2.93	1.37	0.41	2.72	1.26
Himachal Pradesh	1.86	7.29	2.50	1.51	6.74	2.13
Jammu & Kashmir	0.20	3.29	1.06	0.19	3.33	1.07
Karnataka	0.60	8.46	3.65	0.49	8.28	3.54
Kerala	5.79	9.58	6.75	4.88	8.88	5.89
Madhya Pradesh	0.17	3.22	1.01	0.16	3.16	0.99
Maharashtra (incl. Mumbai)*	0.63	7.90	4.14	0.55	7.60	3.98
North East	0.26	2.81	0.90	0.24	2.70	0.87
Orissa	0.21	3.12	0.73	0.19	2.94	0.68
Punjab	1.72	5.77	3.49	1.46	5.57	3.28
Rajasthan	0.27	3.64	1.08	0.23	3.47	1.02
Tamil Nadu (incl. Chennai)	1.48	5.31	3.76	1.28	5.03	3.55
Uttar Pradesh (incl. UPE & UPW)	0.07	1.56	0.41	0.06	1.48	0.39
West Bengal (incl. Kolkata)*	0.25	4.18	1.38	0.21	3.84	1.25
All India	0.52	5.33	2.01	0.44	5.12	1.90

* Population data/projections are available state-wise only

- Note: 1. Teledensity figures are derived from the subscriber data provided by the operators and the population projections, for Urban and Rural areas, of the country, published by the Office of the Registrar General & Census Commissioner, India.
2. Data/information for Andhra Pradesh includes Telengana, Madhya Pradesh includes Chhathishgarh, Bihar includes Jharkhand, Maharashtra includes Goa, Uttar Pradesh includes Uttarakhand, West Bengal includes Sikkim and North-East includes Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland & Tripura states.

Public Call Offices (PCO)

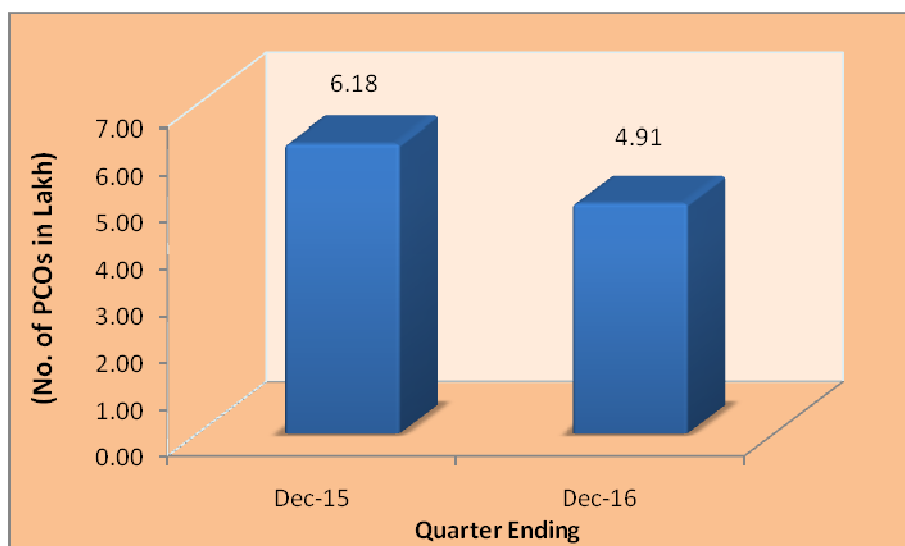
30. Total number of PCOs in the country declined from 6.18 lakh at the end of Dec-15 to 4.91 lakh at the end of Dec-16 with yearly declining rate of 20.53%. Detailed table of service provider wise PCOs is available at Annexure -1.4.

Table 1.23 : Rate of change & Market share of PCOs

Service Provider	Dec-15	Dec-16	Rate of change (%)	Market share (%) (Dec-16)
BSNL	3.797	2.955	-22.17	60.17
MTNL	1.351	1.293	-4.34	26.32
Bharti	0.183	0.153	-16.01	3.12
Quadrant	0.022	0.018	-20.61	0.36
Sistema	0.101	0.096	-4.61	1.95
Tata	0.378	0.253	-33.09	5.15
Reliance	0.349	0.144	-58.80	2.92
Total	6.181	4.912	-20.53	100

31. M/s BSNL is the market leader in term of number of PCOs with 60.17% of total number of PCOs at the end of Dec-16.

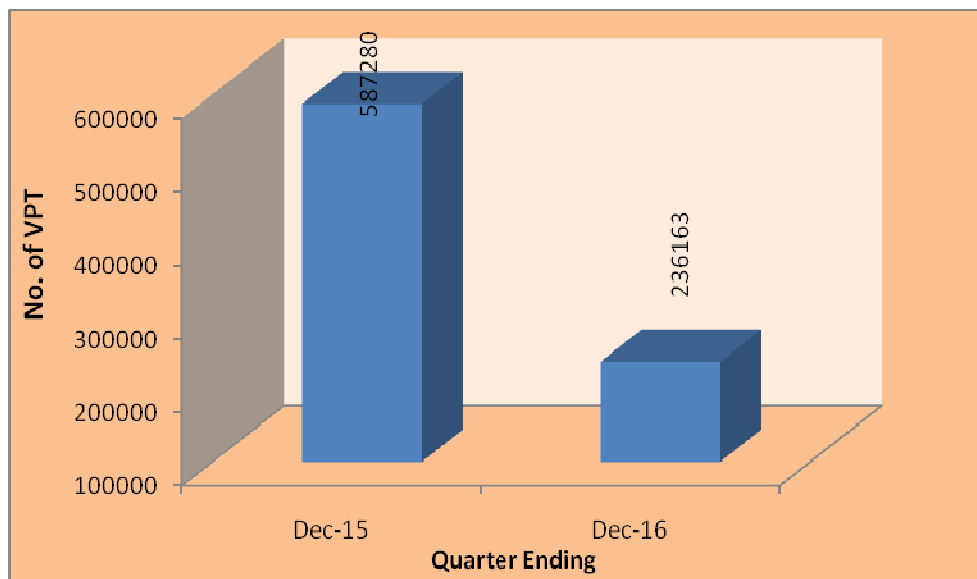
Chart 1.11: Trend of Number of PCOs in India



Village Public Telephones (VPTs)

32. There are 5,93,731 inhabited villages in India as per census 2001. At the end of Dec-16, 39.78% of the total inhabited villages in India have been connected by VPTs.
33. Number of VPTs declined from 5,87,280 at the end of Dec-15 to 2,36,163 at the end of Dec-16.

Chart 1.12: Trend of Number of VPTs in India



34. Only two service providers provide VPT service in India. They are BSNL (2,34,881) with 99.46% and Tata Teleservices (1,282) with 0.54% at the end of Dec-16. Detailed table of VPT is available at Annexure -1.5.

Section D: Internet Service

35. This section summarizes information submitted by 149 operators for the year ending 2016. **Part-I** consists of information of Internet service (both narrowband and broadband), **Part-II** consists of broadband service and **Part-III** covers narrowband service.

Part-I : Internet Service (broadband + narrowband)

36. As per reports received from operators, total number of internet subscribers increased from 331.66 million at the end of Dec-15 to 391.50 million at the end of Dec-16 with yearly growth rate of 18.04%.
37. Wired Internet subscribers increased from 19.98 million at the end of Dec-15 to 21.51 million at the end of Dec-16 with yearly growth of 7.65%, and Wireless Internet subscribers increased from 311.68 million at the end of Dec-15 to 370.00 million at the end of Dec-16 with yearly growth rate of 18.71%.
38. Number of Broadband subscribers increased from 136.53 million at the end of Dec-15 to 236.09 million at the end of Dec-16. The number of Narrowband subscribers declined from 195.13 million at the end of Dec-15 to 155.41 million at the end of Dec-16.

Table 1.24: Trend of Internet subscriber base

Segment	Mode of Access								Total Subscribers (in million)	
	Wired Subscribers (in million)		Wireless Subscribers (in million)							
			Fixed Wireless (Wi-Fi, Wi-Max, Radio & VSAT)		Mobile Wireless (Phone + Dongle)		Total Wireless			
	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16
Broadband	16.51	18.14	0.49	0.59	119.53	217.36	120.02	217.95	136.53	236.09
Narrowband	3.47	3.36	0.04	0.02	191.63	152.03	191.67	152.05	195.13	155.41
Total	19.98	21.51	0.53	0.61	311.16	369.39	311.69	370.00	331.66	391.50

39. The following charts present the composition of Internet Subscribers by mode of access and composition of Broadband & Narrowband subscription.

Chart 1.1: Composition of Internet subscription as on 31st Dec-16

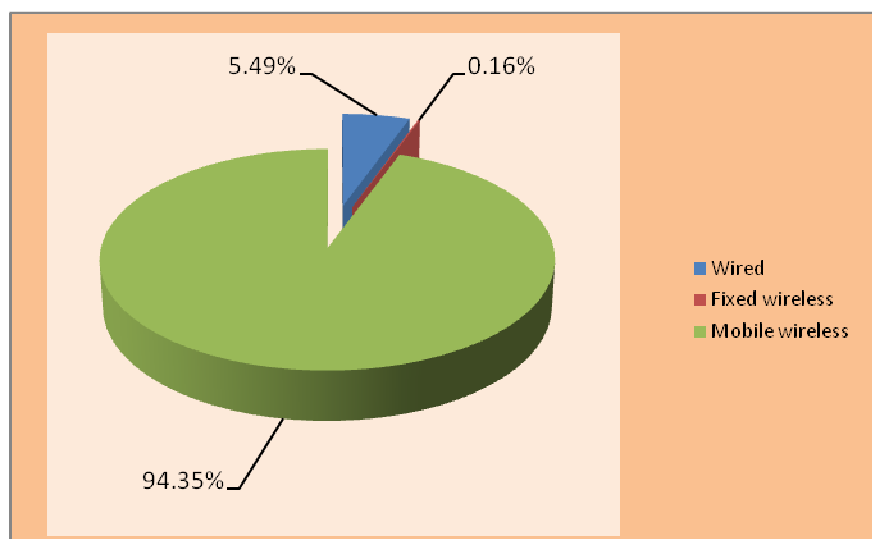
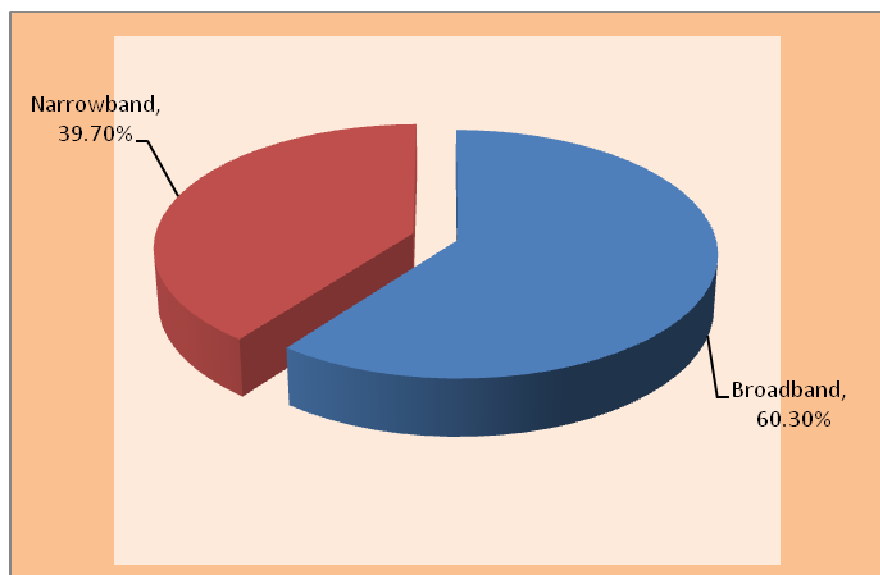


Chart 1.2 : Composition of Broadband & Narrowband subscription as on 31st Dec-16



40. The urban/rural break up of internet subscribers as on Dec-16 are as per the following table.

Table 1.25: Break up of Rural-Urban internet subscriber base

Telecom Service Area	Narrowband		Broadband		Total Internet	
	Rural	Urban	Rural	Urban	Rural	Urban
Andhra Pradesh	4.99	6.64	4.67	13.85	9.66	20.49
Assam	2.34	0.85	1.19	3.07	3.53	3.92
Bihar	6.99	5.77	2.63	7.40	9.61	13.17
Delhi	0.32	6.45	0.38	17.90	0.70	24.35
Gujarat	3.57	5.25	3.05	12.53	6.62	17.78
Haryana	1.42	1.61	1.78	3.77	3.20	5.39
Himachal Pradesh	0.91	0.63	0.75	1.13	1.67	1.76
Jammu & Kashmir	0.59	0.59	0.44	1.39	1.03	1.99
Karnataka	3.05	5.10	2.27	15.06	5.32	20.16
Kerala	2.08	2.61	3.78	7.68	5.86	10.29
Kolkata	0.16	3.46	0.33	7.08	0.48	10.53
Madhya Pradesh	4.98	5.14	2.06	11.31	7.03	16.46

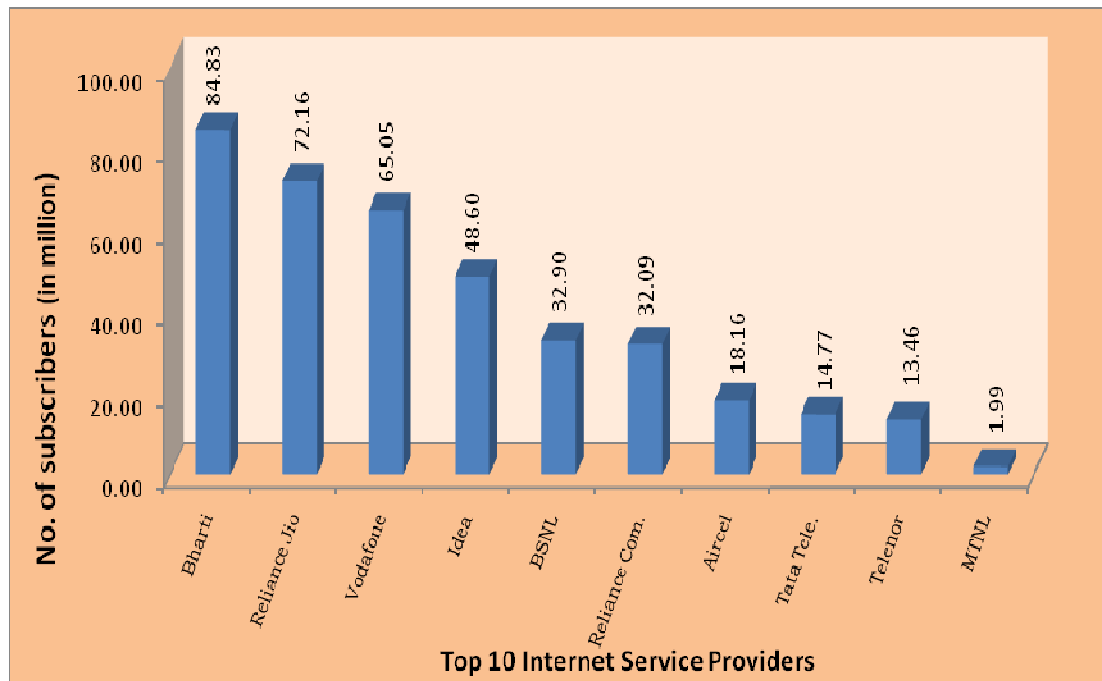
Telecom Service Area	Narrowband		Broadband		Total Internet	
	Rural	Urban	Rural	Urban	Rural	Urban
Maharashtra	5.48	7.07	4.77	15.29	10.25	22.35
Mumbai	0.16	5.13	0.17	13.04	0.33	18.17
North East	1.20	0.76	0.84	1.67	2.04	2.43
Orissa	2.67	1.73	0.78	4.37	3.45	6.10
Punjab	2.47	3.37	1.67	7.85	4.14	11.22
Rajasthan	4.77	4.86	2.30	7.61	7.07	12.47
Tamil Nadu	3.26	7.68	4.02	15.76	7.28	23.44
Uttar Pradesh(East)	8.26	5.90	3.32	8.25	11.59	14.15
Uttar Pradesh(West)	4.74	4.67	1.88	6.95	6.62	11.62
West Bengal	4.02	1.76	3.57	6.47	7.59	8.22
Total	68.40	87.01	46.65	189.44	115.06	276.44

Table 1.26: Internet Subscriber Base and Market Share of top 10 Service Providers – Dec-16

S.No	ISP	No. of Subscribers	Share (%)
1	Bharti Airtel Limited	84832577	21.67
2	Reliance Jio	72157644	18.43
3	Vodafone	65054343	16.62
4	Idea Cellular	48600920	12.41
5	BSNL	32897750	8.40
6	Reliance Communications	32086668	8.20
7	Aircel Ltd	18162631	4.64
8	Tata Teleservices	14772934	3.77
9	Telenor	13463218	3.44
10	MTNL	1993640	0.51
	Total of Top 10 ISPs	384022325	98.09
	Others	7479788	1.91
	Grand Total	391502113	100

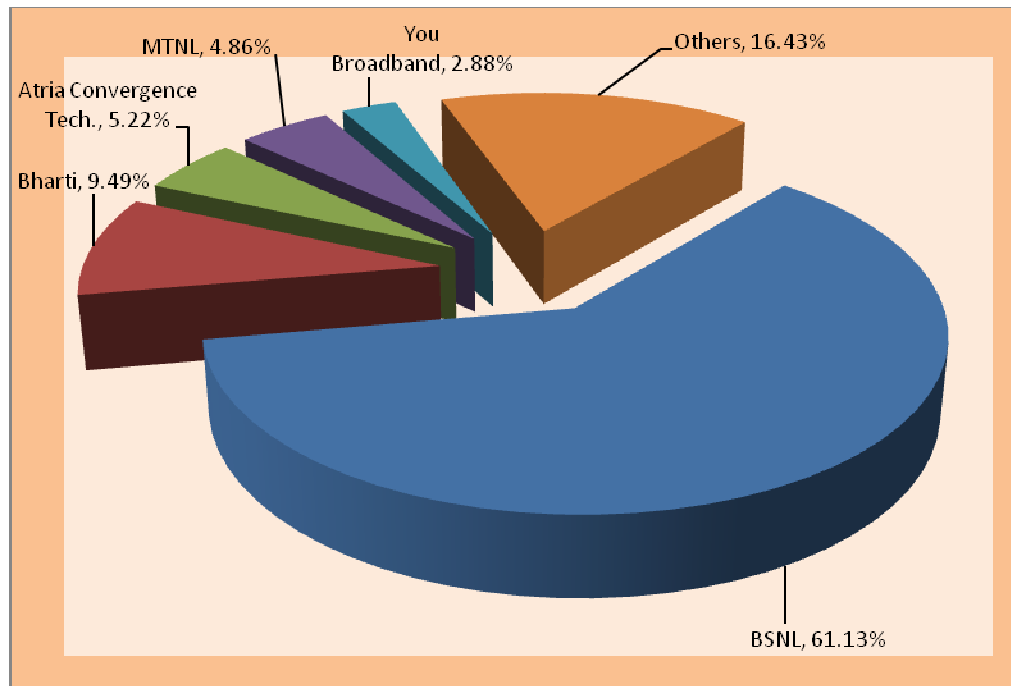
41. Bharti holds the top position with 21.67% of market share of internet subscribers followed by Reliance Jio Infocom Ltd. with 18.43%. Top 10 Service Providers together hold 98.09% of total internet subscriber base at the end of Dec-16. Detailed table of number of subscriber base of all the service providers is available at Annexure-1.6.
42. The following chart depicts the subscriber base of top ten ISPs as on 31st Dec-16.

Chart 1.15 : Subscriber base of top ten ISPs



43. In wired internet segment, BSNL holds 61.13% market share with 13.15 million subscribers, followed by Bharti with 2.04 million subscribers. Total number of wired internet subscriber is 21.51 million at the end of Dec-16.

Chart 1.16 : Composition of Wired Internet subscribers as on 31st Dec-16



44. In wireless internet segment, Bharti holds 22.38% market share with 82.79 million subscribers followed by Reliance Jio (72.16 million) internet subscribers at the end of Dec-16.

Chart 1.17 : Composition of Wireless Internet subscription

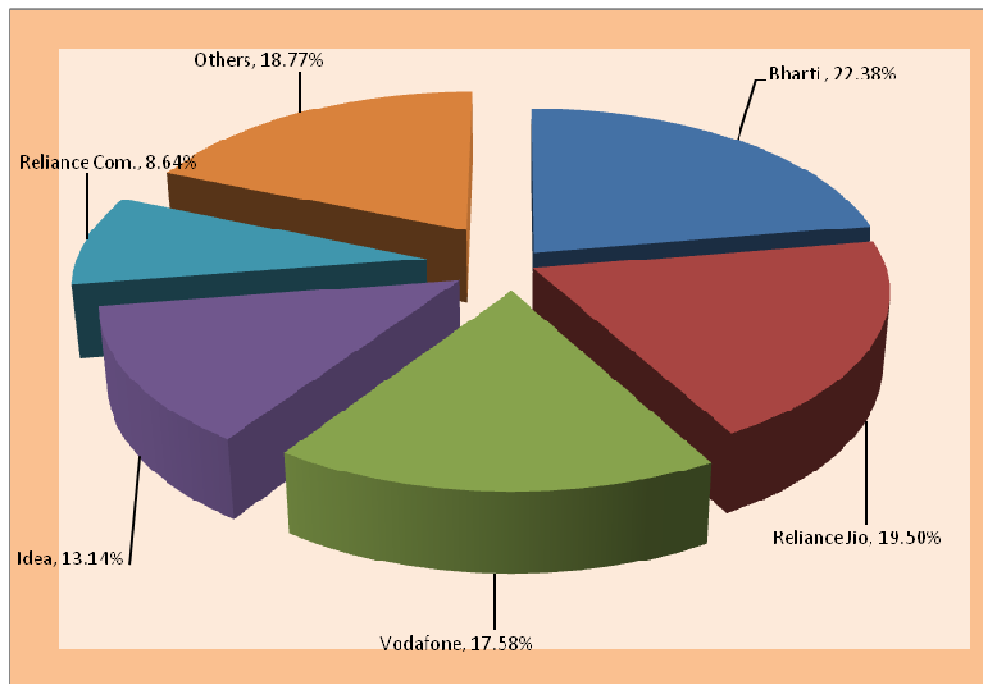


Chart 1.18 : Technology trend for Wireless Internet Access – Dec-16

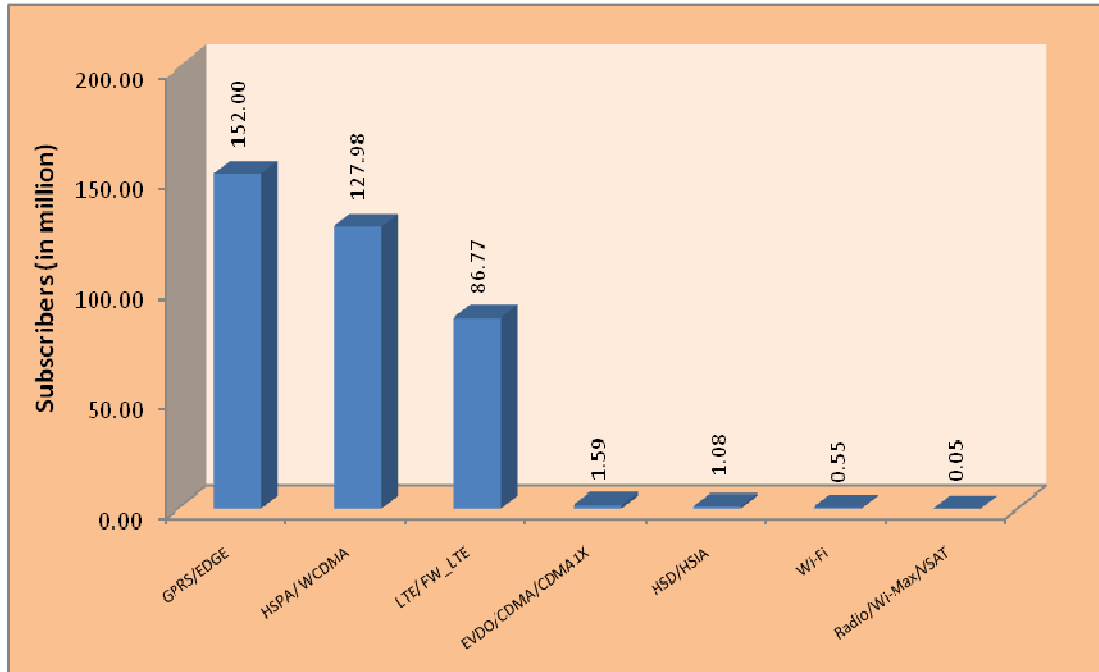
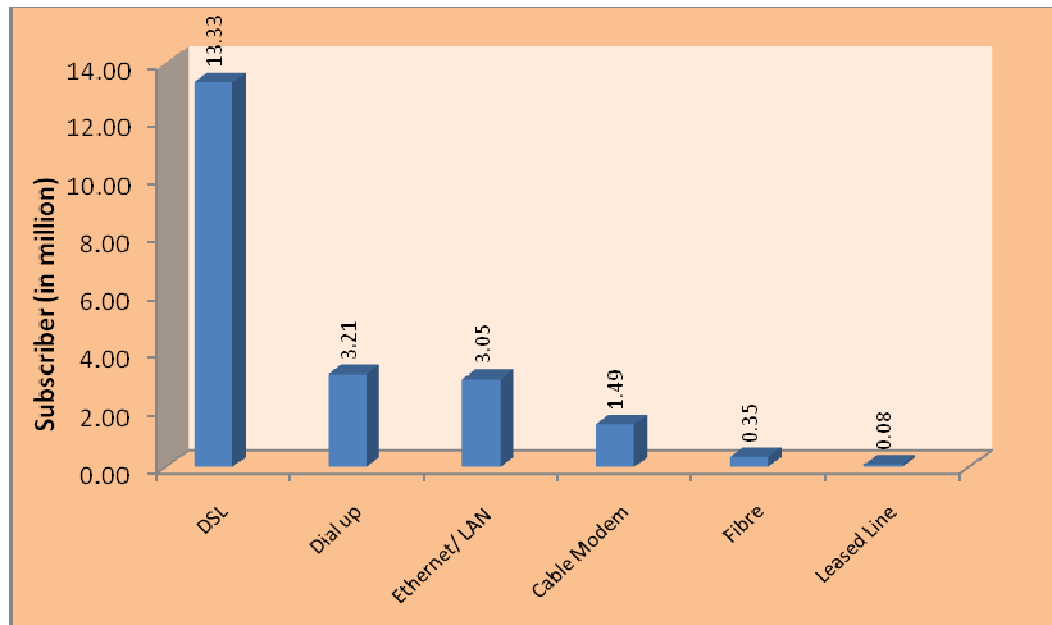


Chart 1.19 : Technology trend for Wired Internet Access – Dec-16



45. Top five service areas in terms of internet subscriptions (wired + wireless) are Maharashtra (32.60 million), Tamil Nadu including Chennai (30.72 million), Andhra Pradesh (30.15 million), U.P.(E) (25.74 million) and Karnataka (25.48 million).

Table 1.27 : Service Area wise number of Internet Subscribers per 100 population at the end of Dec-16

Service Area	Internet Subscribers (in million)			Internet subscribers per 100 population		
	Rural	Urban	Total	Rural	Urban	Total
Andhra Pradesh	9.66	20.49	30.15	15.09	82.41	33.91
Assam	3.53	3.92	7.45	12.88	73.55	22.75
Bihar	9.61	13.17	22.78	8.03	68.58	16.41
Delhi	-	-	25.04	88.79	115.87	114.90
Gujarat	6.62	17.78	24.40	17.83	65.72	38.01
Haryana	3.20	5.39	8.58	18.12	52.99	30.87
Himachal Pradesh	1.67	1.76	3.43	26.46	208.26	47.97
Jammu & Kashmir	1.03	1.99	3.02	11.42	56.59	24.08
Karnataka	5.32	20.16	25.48	13.91	82.03	40.55
Kerala	5.86	10.29	16.15	21.82	113.25	44.95
Madhya Pradesh	7.03	16.46	23.49	9.25	56.93	22.39
Maharashtra	10.25	22.35	32.60	16.74	67.43	41.45
Mumbai	0.33	18.17	18.50			
North East	2.04	2.43	4.47	19.43	68.28	31.80
Orissa	3.45	6.10	9.54	9.81	79.76	22.32
Punjab	4.14	11.22	15.36	23.83	81.26	49.26
Rajasthan	7.07	12.47	19.54	12.65	69.85	26.50
Tamil Nadu	7.28	23.44	30.72	25.89	54.17	43.03
UP (East)	11.59	14.15	25.74	10.20	48.38	18.98
UP (West)	6.62	11.62	18.23			
Kolkata	0.48	10.53	11.02	11.88	68.33	28.12
West Bengal	7.59	8.22	15.81			
Total	115.06	276.44	391.50	13.08	68.86	30.56

* Population data/projections are available state-wise only.

Notes:

- No. of total internet subscribers per 100 population is derived from the subscriber data provided by the operators and the population projections of the country, published by the Office of the Registrar General & Census Commissioner, India.
- Data/information for Andhra Pradesh includes Telengana, Madhya Pradesh includes Chhatisgarh, Bihar includes Jharkhand, Maharashtra includes Goa, Uttar Pradesh includes Uttarakhand, West Bengal includes Sikkim and North-East includes Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland & Tripura states.

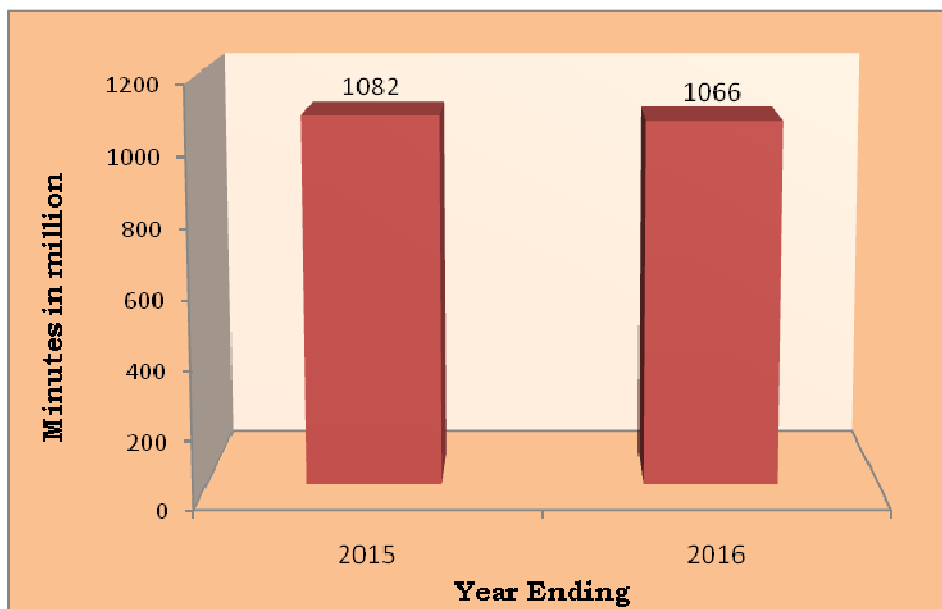
ISP Connectivity

46. The International Internet bandwidth owned by various service providers is reported to be 2,028 Gbps at the year ending Dec-16 as compared to 1,864 Gbps at the year ending Dec-15.

Internet Telephony

47. As per the reports received from 16 service providers, providing Internet Telephony services, the total outgoing minutes of usage (MoU) for internet telephony is 1,066 million during the year 2016 as compare to 1,082 million during the year 2015. List of Internet Telephony Service providers is available at Annexure-1.7.

Chart 1.20 : Trends in MOU for Internet Telephony

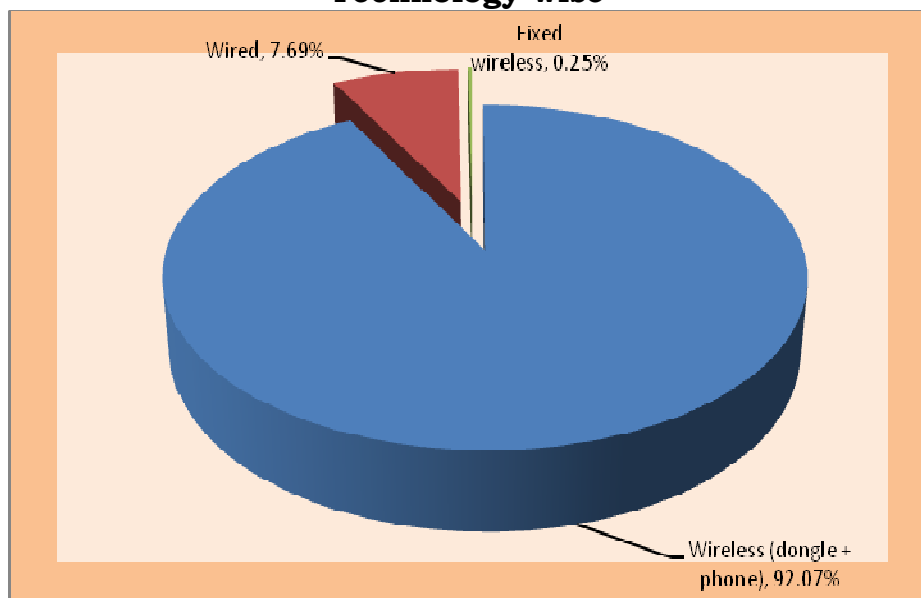


Part-II : Broadband Service (Download Speed \geq 512 Kbps)

48. The total number of broadband subscribers increased from 136.53 million at the end of Dec-15 to 236.09 million at the end of Dec-16. Out of which wired broadband subscribers are 18.14 million and wireless broadband subscribers are 217.95 million.

49. Top five broadband (wired+wireless) service providers in term of subscribers are Reliance Jio (72.16 million), Bharti (43.56 million), Vodafone (35.02 million), Idea (27.04 million) and BSNL (20.36 million).
50. In wired broadband segment, BSNL holds 54.85% market share with 9.95 million subscribers followed by Bharti with 2.04 million subscribers.
51. In wireless broadband segment, Reliance Jio holds 33.11% market share with 72.16 million subscribers followed by Bharti (19.05%) with 41.53 million subscribers.
52. Top five service areas in respect of broadband subscriptions are Maharashtra (20.05 million), Tamil Nadu including Chennai (19.78 million), Andhra Pradesh (18.52 million), Delhi (18.28 million) and Karnataka (17.33 million).

Chart 1.21 : Composition of Broadband subscription – Technology wise

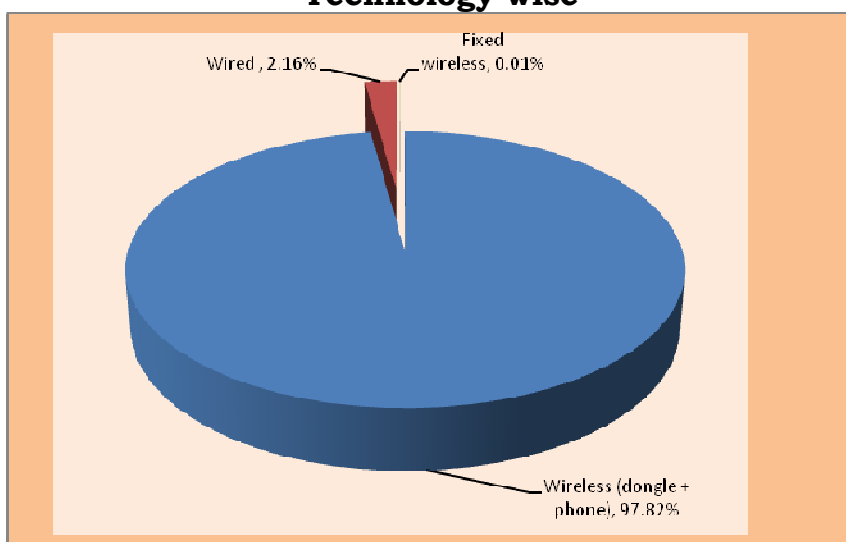


53. Mobile Device Users (dongle + phone) constitute 92.07% of total broadband subscribers at the end of Dec-16.

Part-III : Narrowband Service (Download Speed <512 Kbps)

54. Total number of narrowband subscribers declined from 195.13 million at the end of Dec-15 to 155.41 million at the end of Dec-16 with the yearly decline rate of 20.36%. Out of 155.41 million narrowband subscribers, Wired Narrowband subscribers are 3.36 million and Wireless Narrowband subscribers are 152.05 million.
55. The top five narrowband (wired + wireless) service providers in term of subscriber base are Bharti (41.26 million), Vodafone (30.03 million), Idea Cellular (21.56 million), Reliance Communications Group (15.88 million) and Telenor (13.39 million).
56. In wired narrowband segment, BSNL holds 95.05% market share with 3.20 million subscribers followed by Syscon Infoway Pvt Ltd (0.05 million).
57. In wireless narrowband segment, Bharti holds 27.14% market share with 41.26 million subscribers followed by Vodafone (30.03 million).

Chart 1.22 : Composition of Narrowband subscription – Technology wise



Section E : Other Value Added Services - PMRTS & VSAT

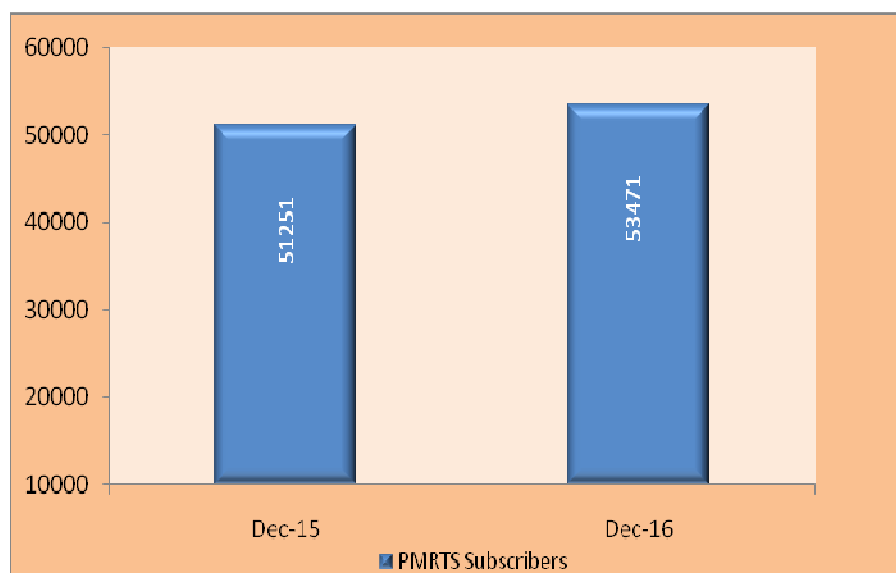
Public Mobile Radio Trunk Services (PMRTS)

58. The subscriber base of PMRTS increased from 51,251 at the end of Dec-15 to 53,471 at the end of Dec-16 with yearly growth rate of 4.33%.

Table 1.28 : PMRTS Subscriber base - Service Provider wise

Sr. No.	Name of the Service Provider	Subscriber Base as on 31.12.2015	Subscriber Base as on 31.12.2016	Net Addition in Subscribers	% Growth in subscribers during the year 2016
1	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	43216	45047	1831	4.24
4	Procall Ltd.	3063	2967	-96	-3.13
2	Inative Networks Pvt Ltd	1820	1820	0	0.00
3	Quick Call	1432	1496	64	4.47
5	Smartlink Pvt Ltd	925	1023	98	10.59
6	Bhilwara Telenet Services Pvt Ltd	414	571	157	37.92
7	Wiwonet Solutions Pvt Ltd	131	273	142	108.40
8	Airtalk Solutions & Services Pvt Ltd	250	274	24	9.60
	Total	51,251	53,471	2,220	4.33

Chart 1.23 : Trend of number of PMRTS subscribers



59. Detailed table on Service Area wise subscriber base of PMRTS is available at Annexure-1.8.

Very Small Aperture Terminal (VSAT)

60. The total number of VSAT subscribers increased from 2,65,184 at the end of Dec-15 to 2,78,231 at the end of Dec-16. Net addition during the quarter has been 13,047 at the yearly growth rate of 4.92%.

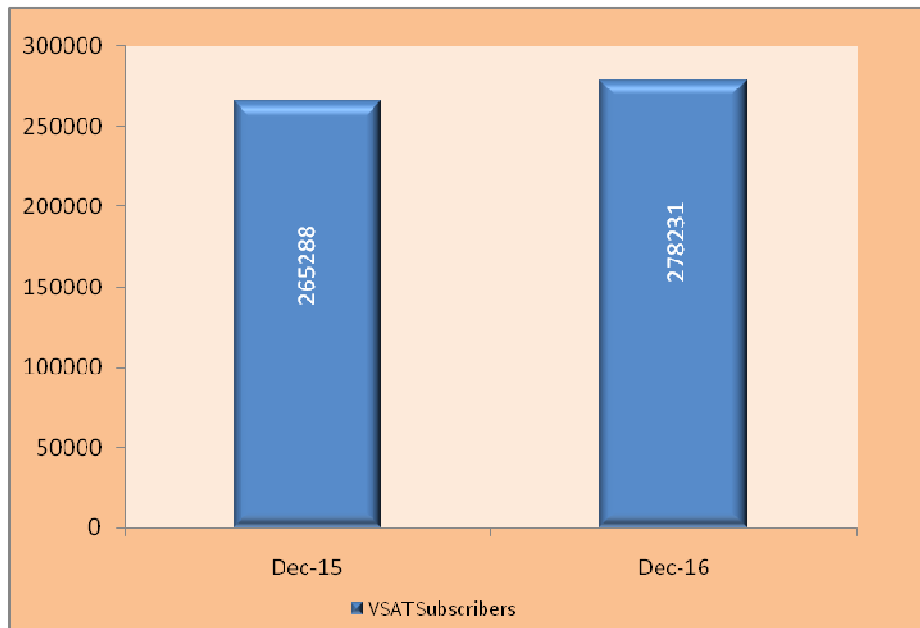
Table 1.29 : VSAT Service Providers currently providing service & their subscriber base

Sr. No	Name of Service Providers	Subscriber base at the Quarter ending		Net Addition during the year	%age Yearly Growth	Market Share (%) Dec-16
		Dec-15	Dec-16			
1	Hughes Communications Ltd.	104744	101125	-3619	-3.46	36.35
2	Bharti Airtel Limited,	59309	68314	9005	15.18	24.55
3	Tatanet Services	50233	55115	4882	9.72	19.81
4	HCL Comnet	26287	27790	1503	5.72	9.99
5	BSNL	19979	20412	433	2.17	7.34
6	National Informatics Centre Services Incorporated	2580	2863	283	10.97	1.03
7	Infotel Satcom	2052	2518	466	22.71	0.91
8	Planetcast Media Services Ltd	0	94	94	-	0.03
9	Essel Shyam	104	0	-104	-	-
	Total	2,65,184	2,78,231	13,047	4.92	100

61. Hughes Communication Limited continues to be the market leader with subscriber base of 1,01,125 followed by Bharti Airtel Ltd (68,314) at the end of Dec-16.

62. M/s Infotel Satcom has recorded maximum growth rate of 22.71% followed by M/s Bharti Airtel Ltd (15.18%). M/s Hughes Communications Ltd showed decline in number of VSAT subscribers during the year.

Chart 1.24 : Number of VSAT Subscribers & Rate of Growth (%)



Chapter 2 :

Revenue and Usage

-
- For all the parameters, Metros indicate data for Delhi, Mumbai & Kolkata. Data for Chennai service area has been included in Circle A, as part of TN.
 - ARPU arrived after adjusting interconnect usage charges and roaming settlement charges.
 - The data contained in the section A & B covers the licensees, who have been providing service during the entire period from 1st January, 2016 to 31st December, 2016 in the various service areas.

Section A: GSM Service

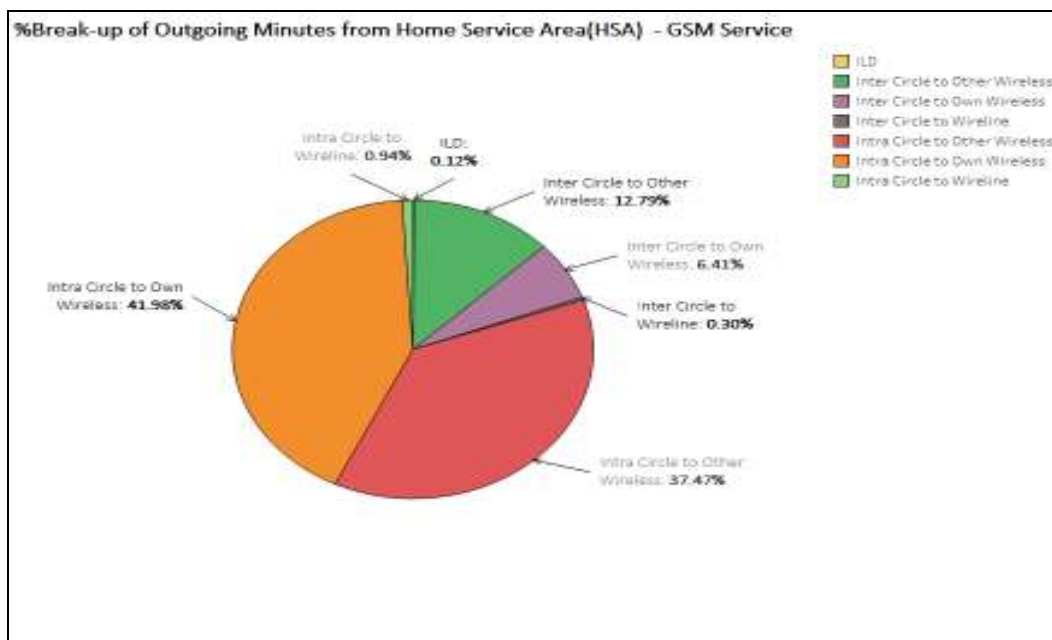
Table 2.1: Key Indicators - GSM Service

- The following table presents a comparison of Key Indicators of the year 2016, with the previous year 2015.

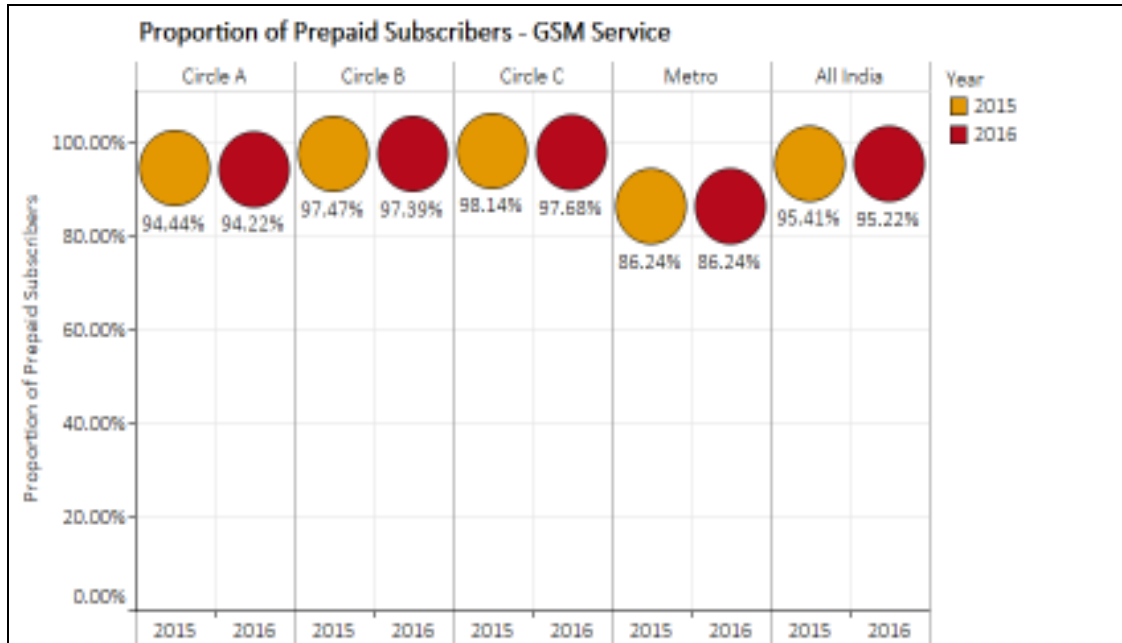
Key Indicators - GSM Service

Parameter	Year Ending 2015	Year Ending 2016	Change (%)
Subscriber Base (in Millions)	929.01	1010.61	8.78%
Share of Prepaid(%)	95.41%	95.22%	-0.20%
Incoming MOU per subscriber (per month)	195.89	192.51	-1.73%
Outgoing MOU per subscriber (per month)	184.29	177.88	-3.48%
No. of Outgoing SMS per subscriber (per month)	22.50	19.54	-13.16%
Average Revenue Per User (per month)	122.88	118.65	-3.45%

- The following chart depicts % break-up of outgoing minutes from Home Service Area:



- The following chart depicts prepaid subscribers as a % of total subscribers as on last day of the respective quarters for various categories of circles.



- All India market share of prepaid segment has been decreased from 95.41% at the end of December, 2015 to 95.22% at the end of December, 2016.

A. Revenue

- Average Revenue per User (ARPU) per month =

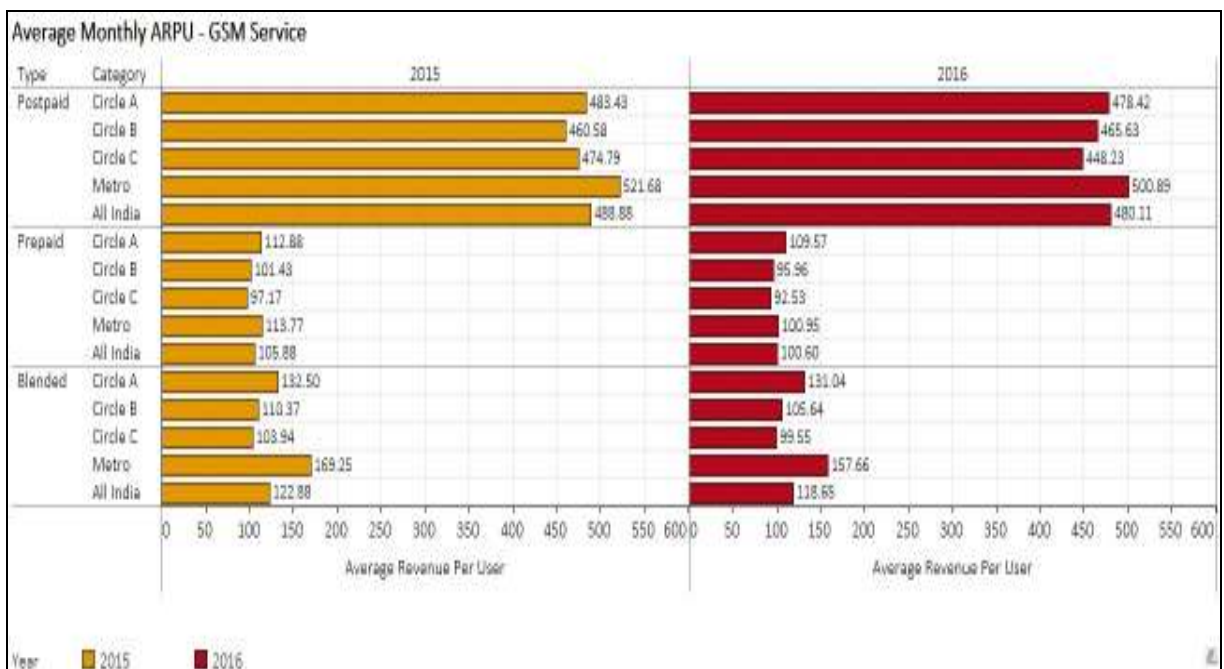
$$\frac{1}{3} \times \frac{\text{Qtly Revenue adjusted for interconnect usage charges and roaming settlement charges}}{\text{Average subscribers during the quarter}}$$

- The following table presents the ARPU per month for various categories of circles and various platforms for payment viz. post-paid and pre-paid.

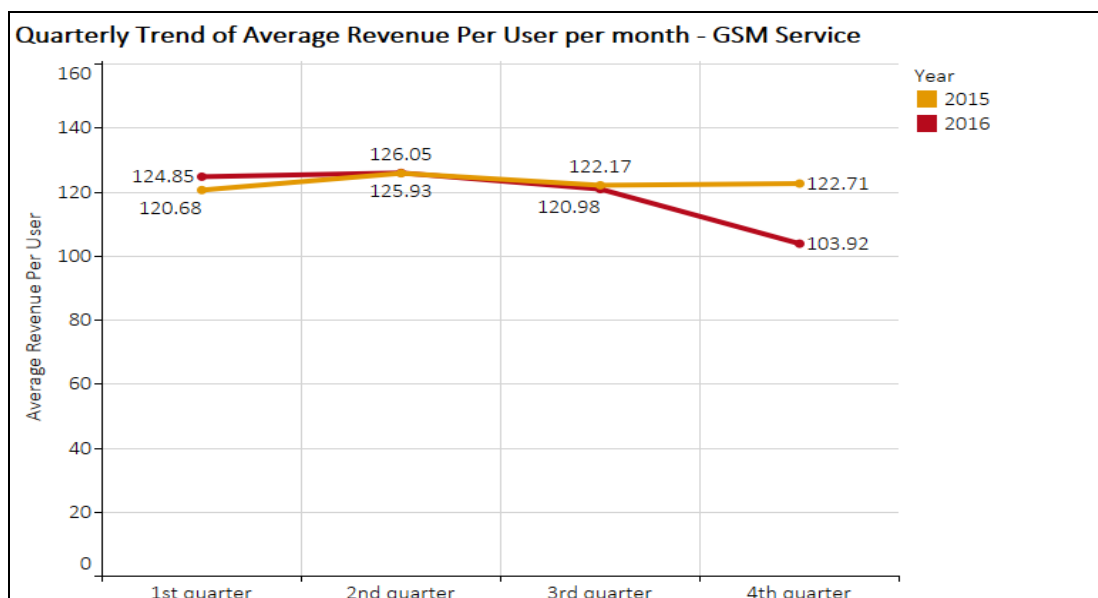
Average Monthly ARPU - GSM Service

Category	Postpaid		Prepaid		Blended	
	2015	2016	2015	2016	2015	2016
Circle A	483.43	478.42	112.88	109.57	132.50	131.04
Circle B	460.58	465.63	101.43	95.96	110.37	105.64
Circle C	474.79	448.23	97.17	92.53	103.94	99.55
Metro	521.68	500.89	113.77	100.95	169.25	157.66
All India	488.88	480.11	105.88	100.60	122.88	118.65

7. The following chart presents the ARPU per month for various categories of circles and various platforms for payment viz. post-paid and pre-paid.



8. The following chart presents the Quarterly trend for ARPU per month.

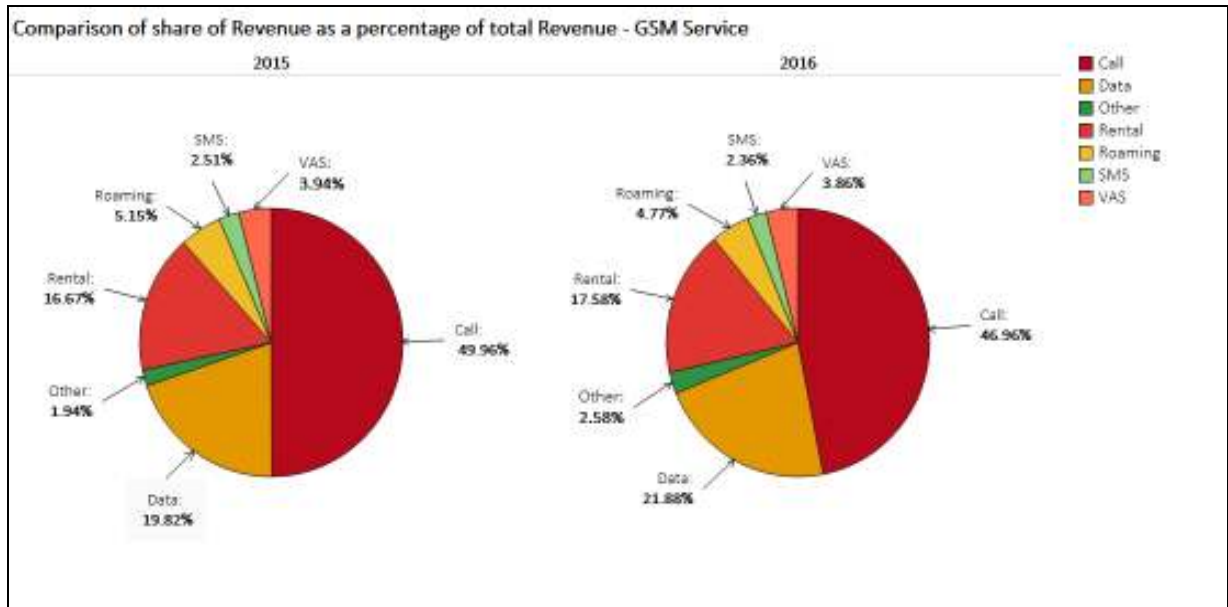


9. The All India Average Revenue per User (ARPU) per month has witnessed a decreased from Rs.123 during the year 2015 to Rs. 119 during the year 2016.

Composition of ARPU per month - GSM Service

Sl. No.	Item	Revenue (excl. service tax) per subscriber per month Year 2015	Revenue (excl. service tax) per subscriber per month Year 2016
1	Rental Revenue	21.68	22.09
2	Revenue from Calls	64.95	59.00
3	Revenue from SMS	3.27	2.97
4	Revenue from data usage	25.77	27.50
5	Revenue from VAS	5.13	4.86
6	Other Revenue	2.53	3.24
7	Revenue from Out roamers(outside HAS)	6.70	5.99
8	Total Revenue from subscribers (1+2+3+4+5+6+7)	130.03	125.65
9	Net inter-operator settlement charges receivable	-7.14	-7
10	Net Revenue (ARPU) (8+9)	122.89	118.65

10. The following chart presents the comparison of share of Revenue as a percentage of total Revenue.



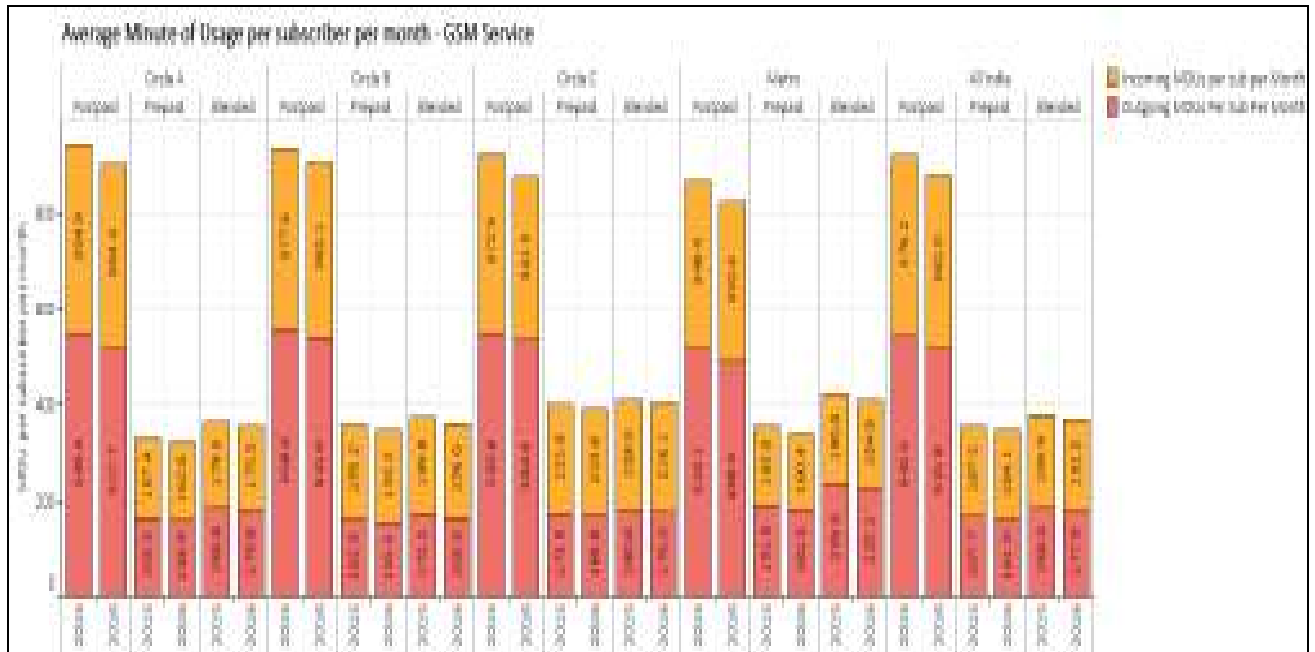
B. Usage Pattern

11. The following table presents the Minutes of Usage per subscriber per month for various categories of circles and various platforms for payment viz. post-paid and pre-paid.

Average Minute of usage per subscriber per month - GSM Service

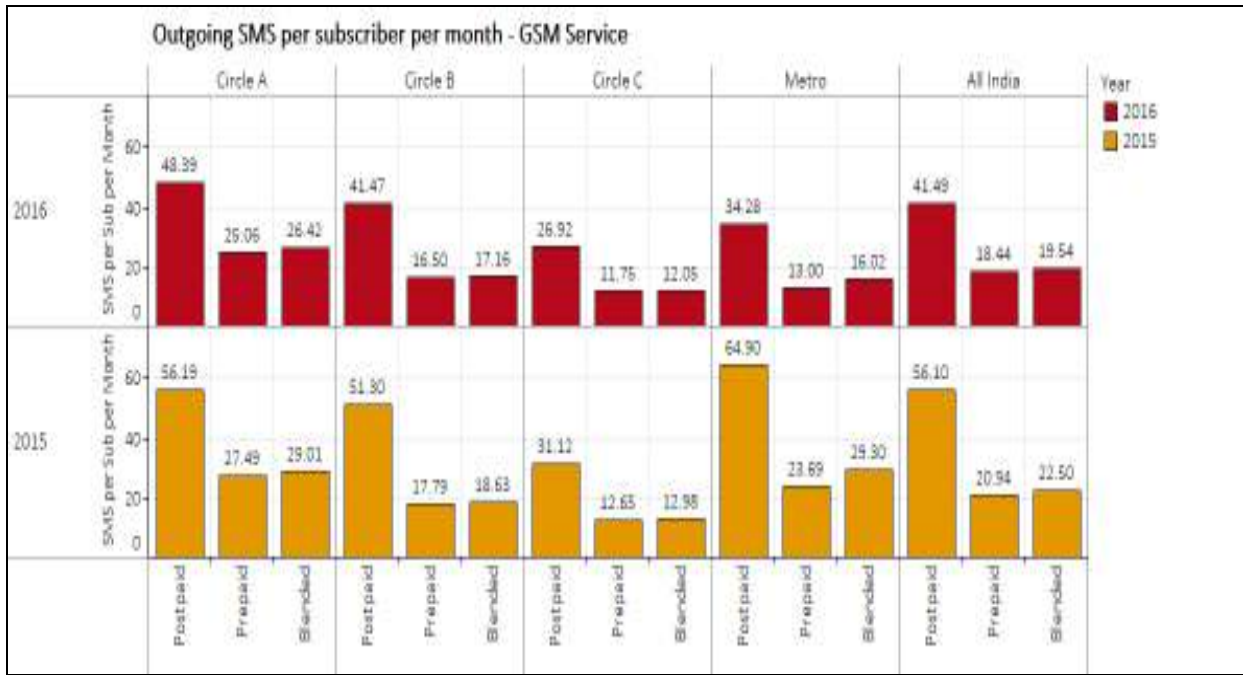
Category	Postpaid						Prepaid						Blended					
	Outgoing MOU		Incoming MOU		Total MOU		Outgoing MOU		Incoming MOU		Total MOU		Outgoing MOU		Incoming MOU		Total MOU	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Circle A	549.4	517.7	394.9	384.4	944.3	902.0	165.5	158.9	167.4	162.6	332.9	321.4	185.8	179.8	179.5	175.5	365.3	355.2
Circle B	558.6	541.6	377.6	362.1	936.2	903.7	162.3	155.5	195.2	192.2	357.5	347.7	172.2	165.6	199.8	196.6	371.9	362.3
Circle C	550.6	534.4	372.9	341.5	923.5	875.9	173.9	168.8	225.8	223.8	399.7	392.6	180.6	176.0	228.5	226.1	409.1	402.1
Metro	518.1	488.9	348.4	332.6	866.5	821.5	191.0	181.5	165.0	160.4	356.0	341.9	235.5	225.1	190.0	184.8	425.5	409.9
All India	542.5	515.8	376.2	362.0	918.7	877.8	167.7	161.0	187.5	184.1	355.2	345.1	184.3	177.9	195.9	192.5	380.2	370.4

12. The following chart presents category wise the Minutes of Usage per subscriber per month for various platforms for payment viz. post-paid and pre-paid and pre-paid.



Outgoing SMS per subscribers per month - GSM Service

Category	Outgoing SMS per Sub per Month					
	Postpaid		Prepaid		Blended	
	2015	2016	2015	2016	2015	2016
Circle A	56.19	48.39	27.49	25.06	29.01	26.42
Circle B	51.30	41.47	17.79	16.50	18.63	17.16
Circle C	31.12	26.92	12.65	11.75	12.98	12.05
Metro	64.90	34.28	23.69	13.00	29.30	16.02
All India	56.10	41.49	20.94	18.44	22.50	19.54



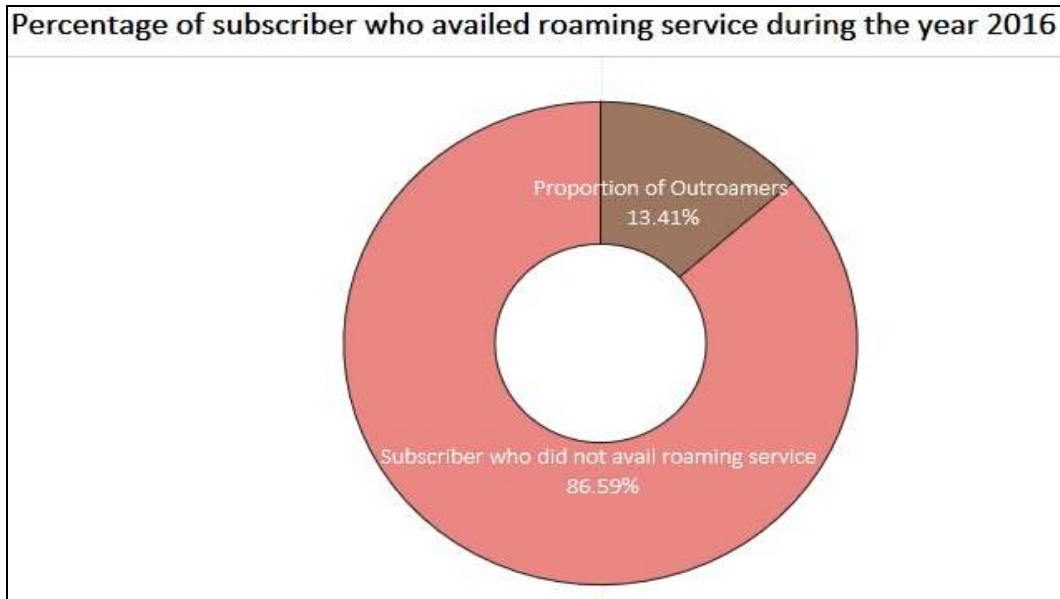
13. The total MOU (Blended) per subscriber per month has decreased by 2.58 %, from 380 in the year 2015 to 370 in the year 2016.

14. The following table presents the percentage break-up of outgoing minutes of usage from home service area to various categories of termination networks

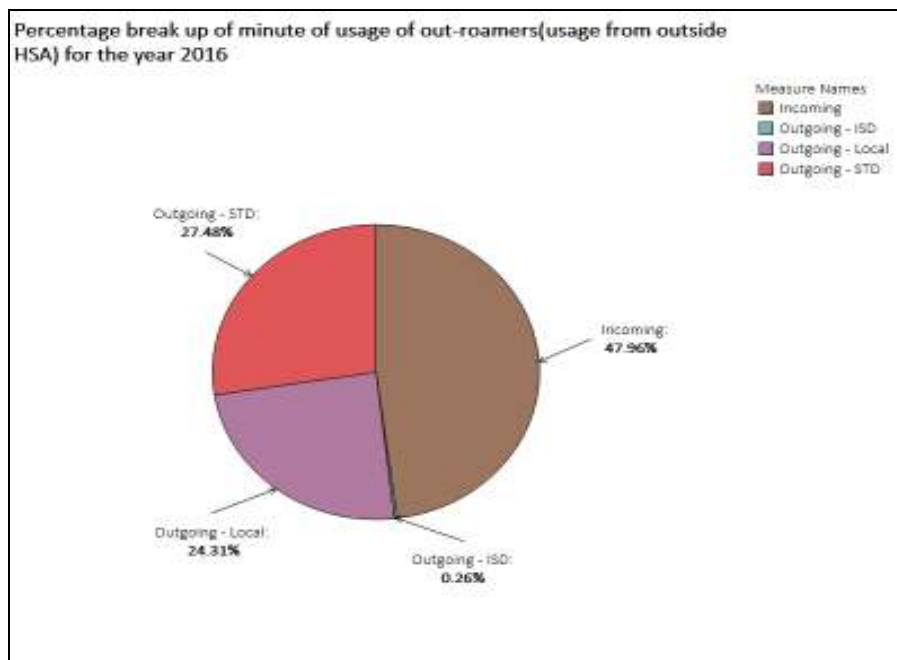
%Break-up of Outgoing Minutes from Home Service Area(HSA) - GSM Service

Category	Intra Circle to Wireline		Intra Circle to Own Wireless		Intra Circle to Other Wireless		Inter Circle to Other Wireless		Inter Circle to Own Wireless		Inter Circle to Wireline		ILD	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Circle A	1.23%	1.15%	39.31%	38.59%	42.27%	42.06%	12.02%	12.76%	4.77%	5.04%	0.28%	0.27%	0.12%	0.13%
Circle B	0.77%	0.71%	46.73%	46.97%	36.59%	36.20%	10.27%	10.29%	5.21%	5.46%	0.34%	0.29%	0.09%	0.08%
Circle C	0.52%	0.39%	51.55%	51.71%	33.19%	32.68%	9.62%	9.44%	4.76%	5.49%	0.32%	0.20%	0.05%	0.08%
Metro	1.83%	1.77%	24.20%	23.43%	34.00%	33.76%	27.12%	25.31%	11.94%	14.88%	0.63%	0.59%	0.28%	0.26%
All India	1.02%	0.94%	42.16%	41.98%	37.83%	37.47%	12.76%	12.79%	5.77%	6.41%	0.35%	0.30%	0.12%	0.12%

15. The chart given below presents minutes of Usage by Outroamers as a percentage of Total Minutes of Usage during the year 2016.



16. The chart given below presents the share of outroamers (who had availed roaming services) as a percentage of total subscribers during the year 2016



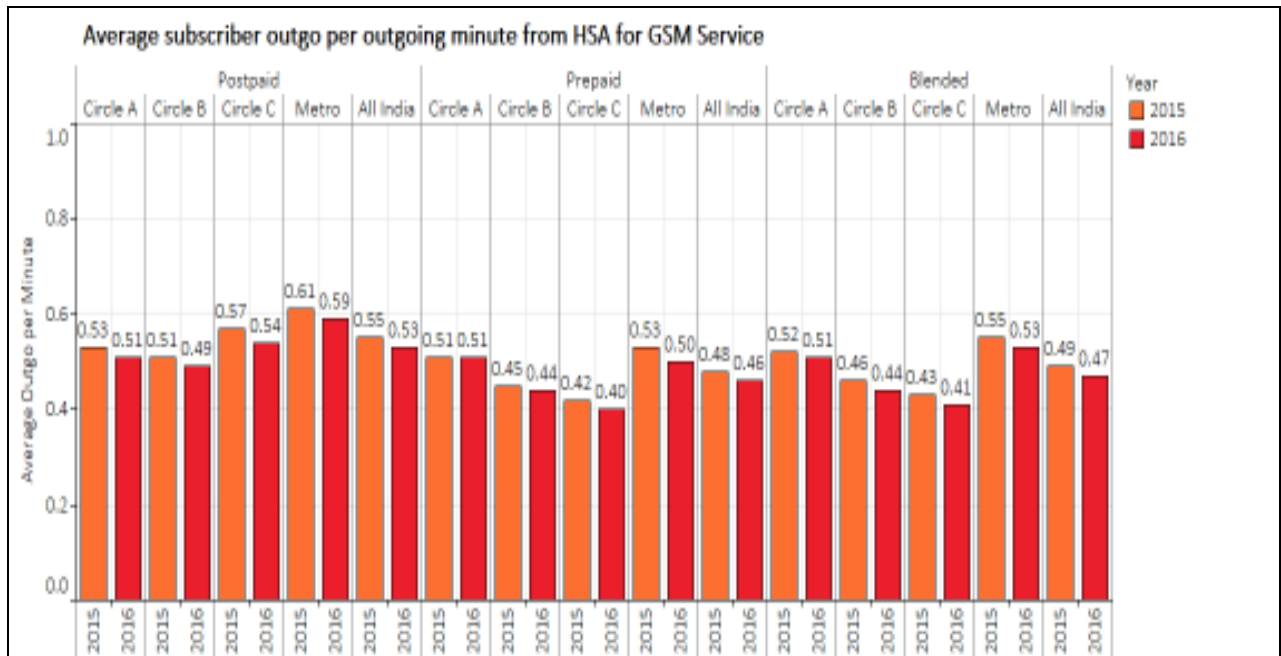
C. Average Subscriber Outgo per outgoing minute for usage from Home Service Area (HSA)

17. The tariff plans are of bundled nature and the trade-off is generally between monthly fixed charges and variable (call) charges. Therefore, average subscriber outgo per outgoing minute for usage from Home Service Area (HSA) as defined below would be a realistic indicator of average tariff levels.

18. Average Subscriber Outgo per Outgoing Minute for usage from HSA
 =
$$\frac{\text{Rental revenue} + \text{Revenue from outgoing calls from HSA}}{\text{No. of outgoing minutes from HSA}}$$

19. The table below provides the Average Outgo per Outgoing Minute for usage from HSA.

Average subscriber outgo per outgoing minute from HSA for GSM Service						
Category	Postpaid		Prepaid		Blended	
	2015	2016	2015	2016	2015	2016
Circle A	0.53	0.51	0.51	0.51	0.52	0.51
Circle B	0.51	0.49	0.45	0.44	0.46	0.44
Circle C	0.57	0.54	0.42	0.40	0.43	0.41
Metro	0.61	0.59	0.53	0.50	0.55	0.53
All India	0.55	0.53	0.48	0.46	0.49	0.47



Trends of Key Parameters - GSM Service for the year 2015 and 2016

	2015	2016
1. Average Revenue Per User (per month)	122.88	118.65
2. Average Revenue from Data usage per subscriber (per month)	25.77	27.50
3. MOU per subscriber (per month)	380.18	370.39
4. Outgoing MOU per subscriber (per month)	184.29	177.88
5. No. of outgoing SMS per subscriber (per month)	22.50	19.54
6. Average subscriber Outgo per outgoing minute from HSA	0.49	0.47

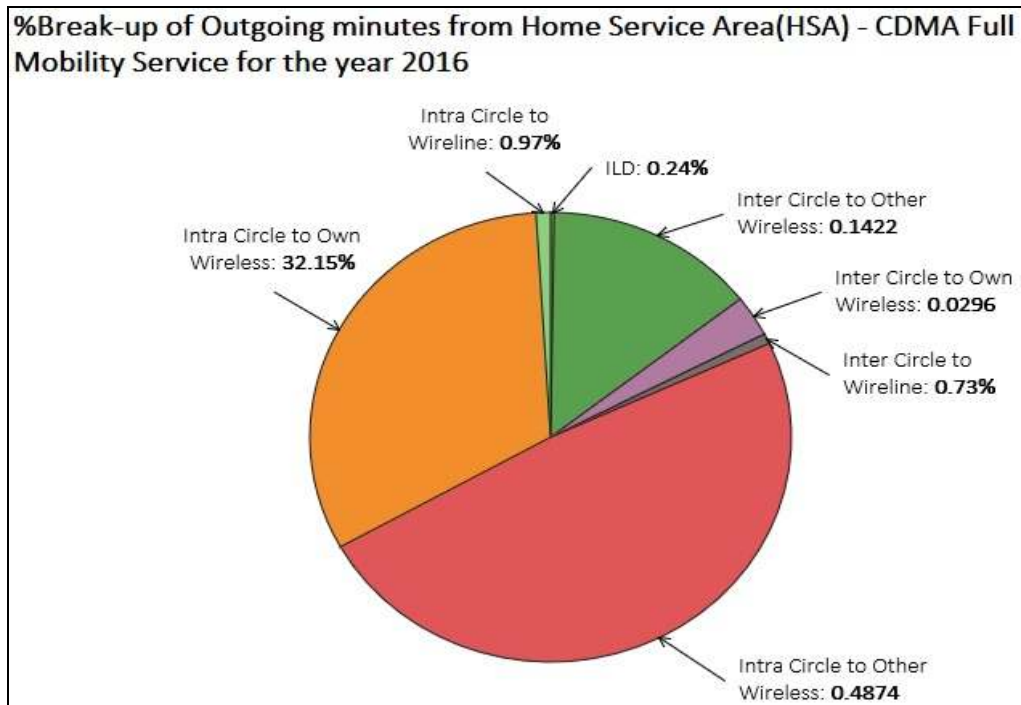
Section B: CDMA - Full Mobility Service

20. The following table presents a comparison of Key Indicators of the year 2016, with the previous year 2015.

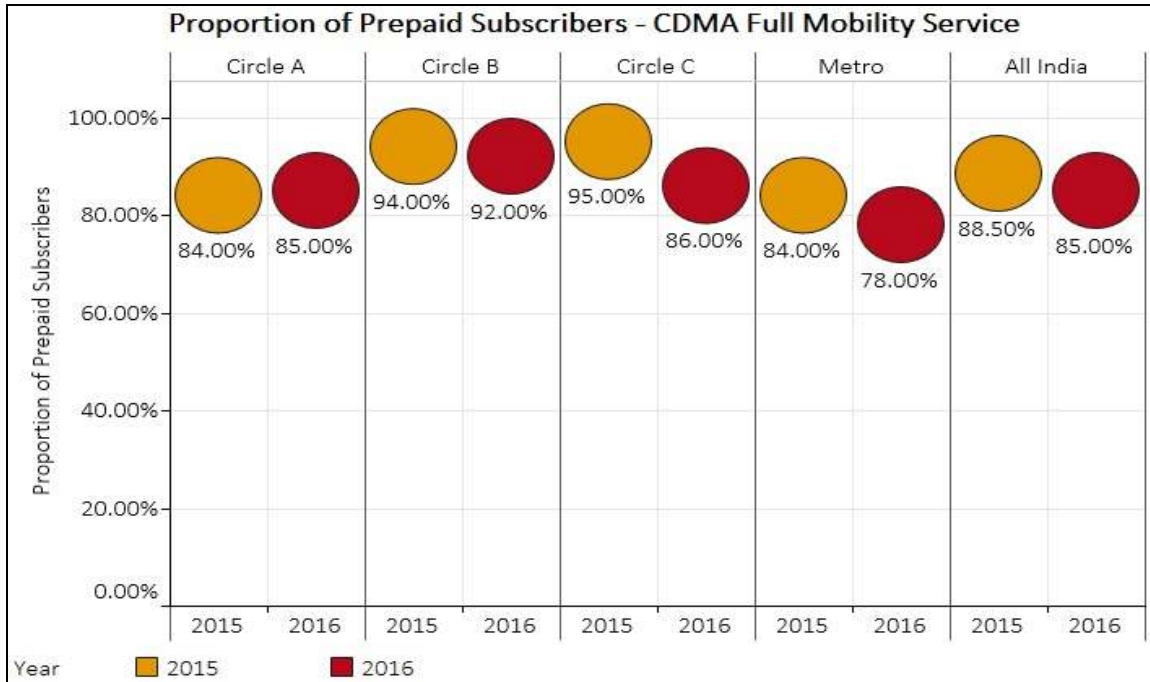
Key Indicators - CDMA Full Mobility Service

Parameters	Year Ending 2015	Year Ending 2016	Change (%)
Subscriber Base (in Millions)	40.47	24.04	-40.60%
Share of Prepaid (%)	88.58%	87.86%	-0.81%
Incoming MOUs per subscriber (per month)	114.93	109.98	-4.31%
Outgoing MOUs per subscriber (per month)	144.35	139.81	-3.15%
Outgoing SMS per subscriber (per month)	9.38	6.11	-34.86%
Average Revenue Per Usager (per month)	106.25	114.04	7.33%

21. The following chart depicts % break-up of outgoing minutes from Home Service Area:



22. The following chart depicts prepaid subscribers as a % of total subscribers as on last day of the respective quarters for various categories of circles.



23. All India market share of prepaid segment has been decreased from 88.50% at the end of December, 2015 to 85.00% at the end of December, 2016.

A. Revenue

24. Average Revenue per User (ARPU) per month =

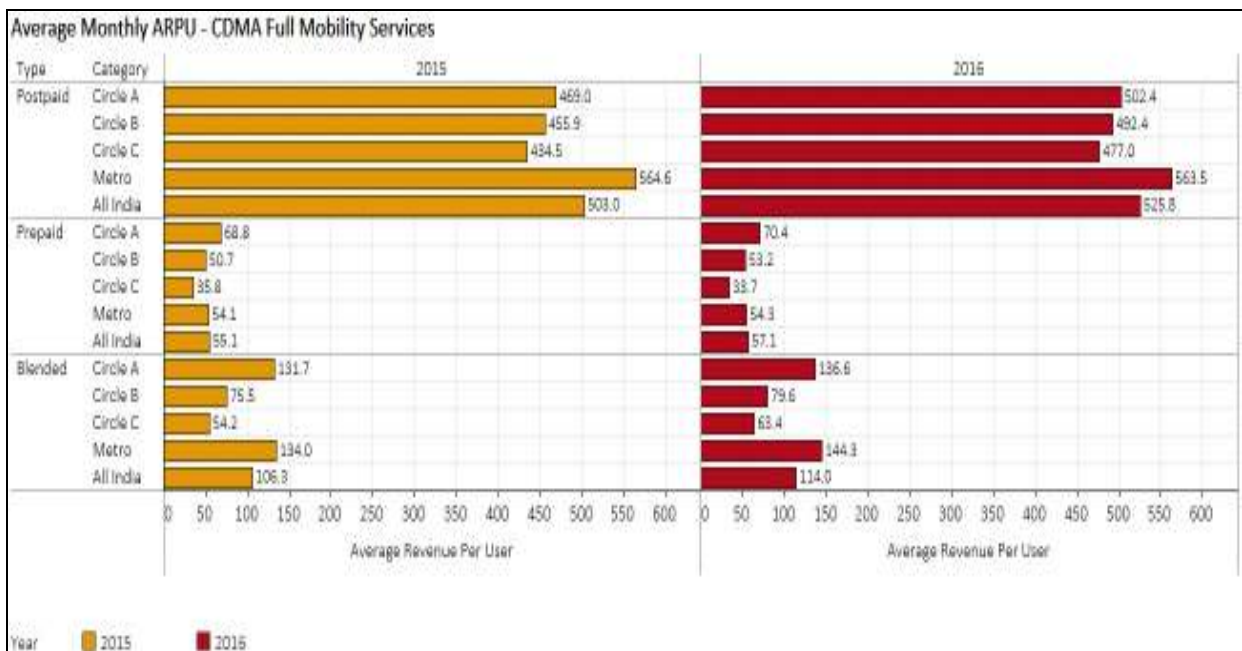
$$\frac{1}{3} \times \frac{\text{Qtly Revenue adjusted for interconnect usage charges and roaming settlement charges}}{\text{Average subscribers during the quarter}}$$

25. The following table presents the ARPU per month for various categories of circles and various platforms for payment viz. post-paid and pre-paid.

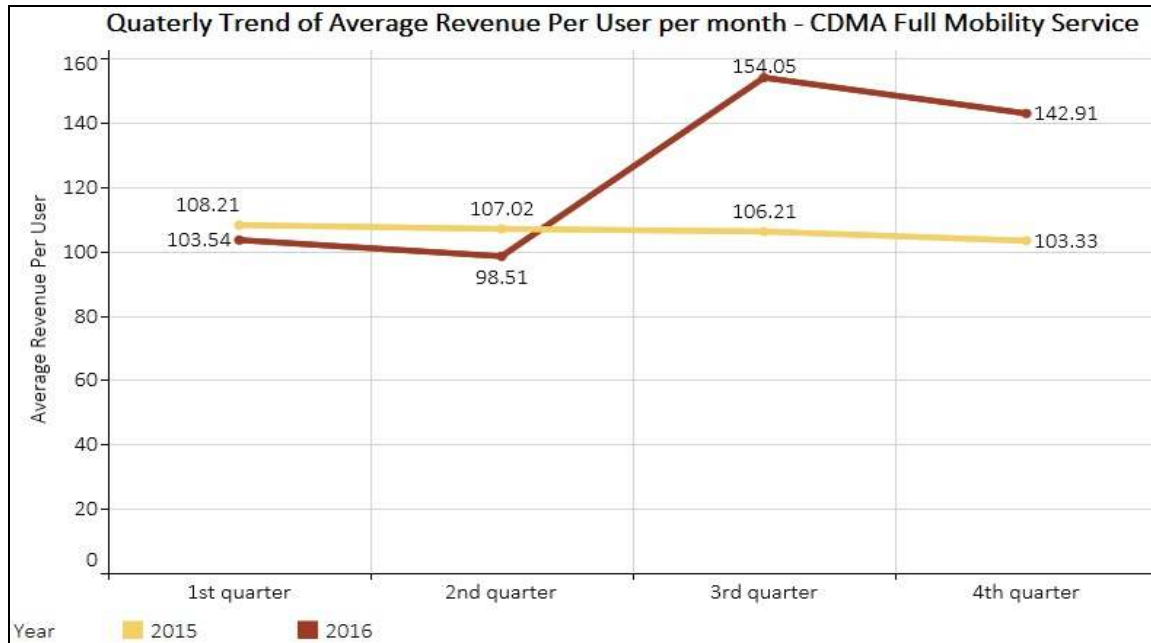
Average Monthly ARPU - CDMA Full Mobility Services

Category	Postpaid		Prepaid		Blended	
	2015	2016	2015	2016	2015	2016
Circle A	469.0	502.4	68.8	70.4	131.7	136.6
Circle B	455.9	492.4	50.7	53.2	75.5	79.6
Circle C	434.5	477.0	35.8	33.7	54.2	63.4
Metro	564.6	563.5	54.1	54.3	134.0	144.3
All India	503.0	525.8	55.1	57.1	106.3	114.0

26. The following chart presents the ARPU per month for various categories of circles and various platforms for payment viz. post-paid and pre-paid.



27. The following chart presents the Quarterly trend for ARPU per month.

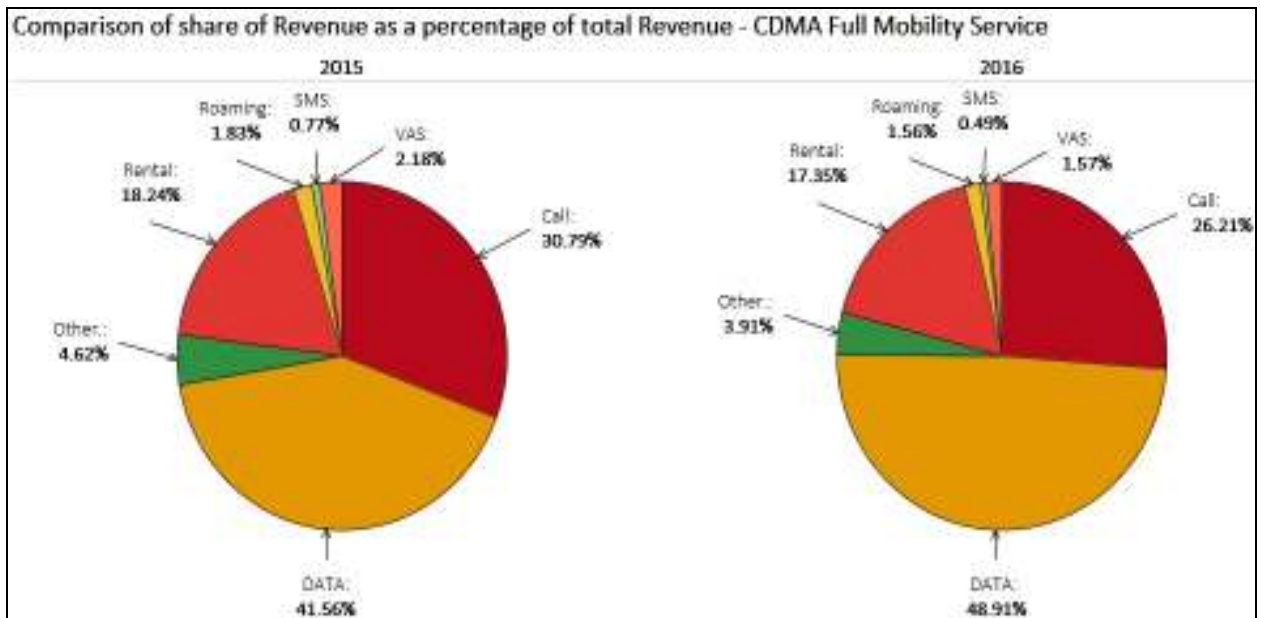


28. The All India Average Revenue per User (ARPU) per month has witnessed an increased from Rs.106 during the year 2015 to Rs. 114 during the year 2016.

Composition of ARPU per month - CDMA Full Mobility Service

Sl. No.	Item	Revenue (excl. service tax) per subscriber per month Year 2015	Revenue (excl. service tax) per subscriber per month
1	Rental Revenue	21.62	21.31
2	Revenue from Calls	36.49	32.20
3	Revenue from SMS	0.91	0.60
4	Revenue from data usage	49.25	60.09
5	Revenue from VAS	2.58	1.93
6	Other Revenue	5.48	4.80
7	Revenue from Out roamers(outside HAS)	2.17	1.92
8	Total Revenue from subscribers (1+2+3+4+5+6+7)	118.50	122.85
9	Net inter-operator settlement charges receivable	-12.24	-8.81
10	Net Revenue (ARPU) (8+9)	106.26	114.04

29. The following chart presents the comparison of share of Revenue as a percentage of total Revenue.



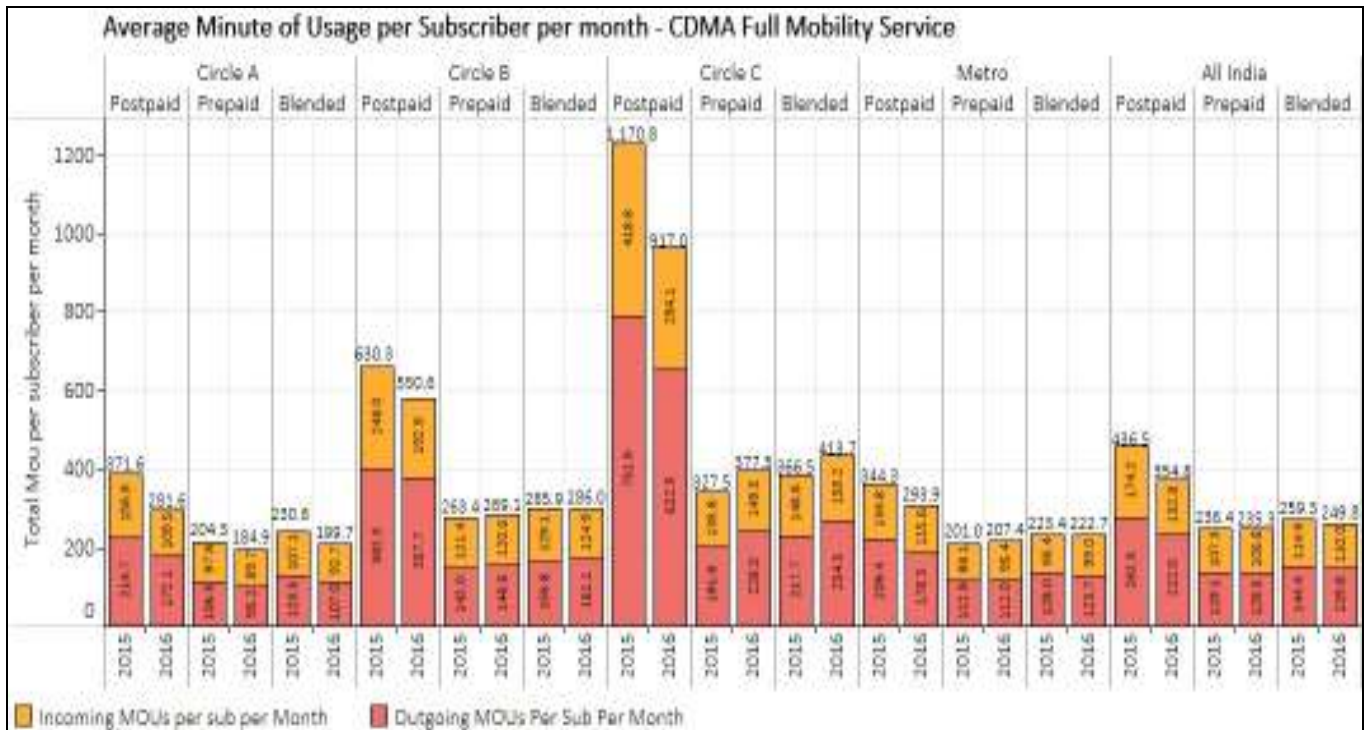
B. Usage Pattern

30. The following table presents the Minutes of Usage per subscriber per month for various categories of circles and various platforms for payment viz. post-paid and pre-paid.

Average Minute of Usage per subscriber per month - CDMA Full Mobility Service

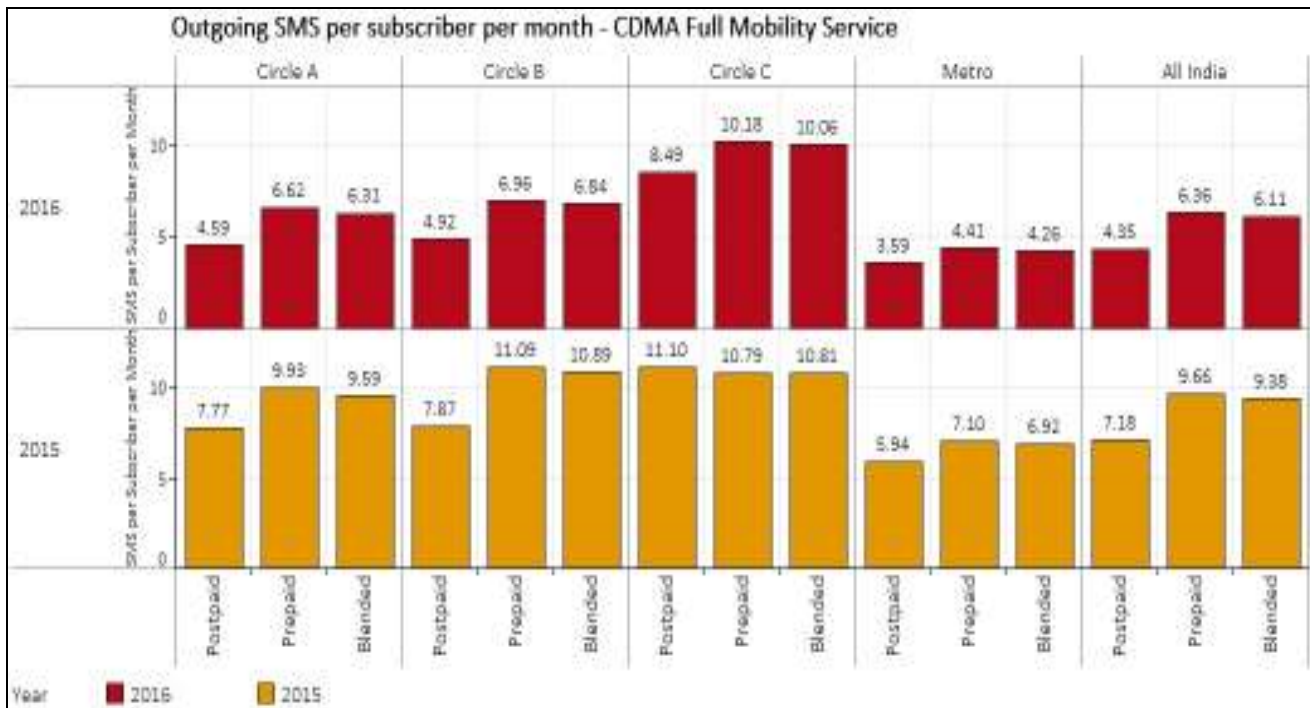
Category	Postpaid						Prepaid						Blended					
	Outgoing MOU		Incoming MOU		Total MOU		Outgoing MOU		Incoming MOU		Total MOU		Outgoing MOU		Incoming MOU		Total MOU	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Circle A	214.72	172.11	156.85	109.46	371.57	281.57	106.52	95.17	97.82	89.68	204.34	184.85	123.53	106.96	107.10	92.71	230.63	199.67
Circle B	382.30	357.71	248.03	192.91	630.33	550.63	142.01	148.55	121.37	120.59	263.39	269.14	156.75	161.10	129.13	124.93	285.88	286.03
Circle C	751.92	622.94	438.83	294.07	1170.75	917.01	191.79	227.97	135.75	149.51	327.54	377.48	217.68	254.47	148.83	159.21	366.51	413.68
Metro	209.43	178.28	134.83	115.59	344.26	293.87	112.92	111.99	88.09	95.42	201.01	207.41	128.01	123.70	95.40	96.98	223.41	222.68
All India	262.32	222.03	174.17	132.77	436.49	354.80	129.14	128.45	107.29	106.83	236.43	235.28	144.35	139.81	114.93	109.98	259.25	249.79

31. The following chart presents category wise the Minutes of Usage per subscriber per month for various platforms for payment viz. post-paid and pre-paid and pre-paid.



Outgoing SMS per subscriber per month - CDMA Full Mobility Service

Category	Outgoing SMS per Subscriber per Month					
	Postpaid		Prepaid		Blended	
	2015	2016	2015	2016	2015	2016
Circle A	7.77	4.59	9.93	6.62	9.59	6.31
Circle B	7.87	4.92	11.09	6.96	10.89	6.84
Circle C	11.10	8.49	10.79	10.18	10.81	10.06
Metro	5.94	3.59	7.10	4.41	6.92	4.26
All India	7.18	4.35	9.66	6.36	9.38	6.11



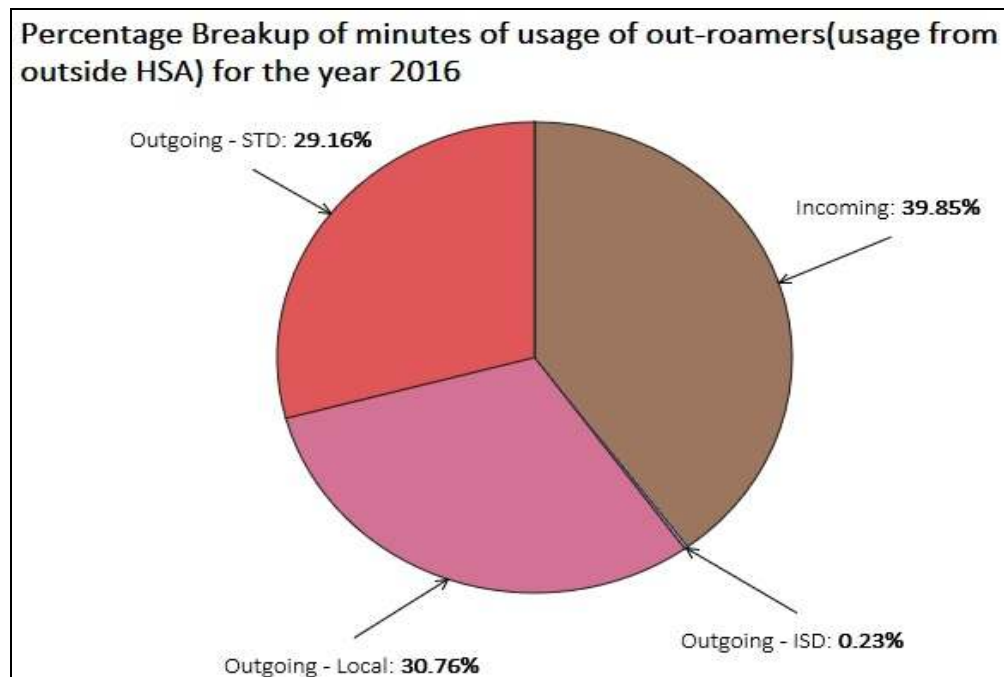
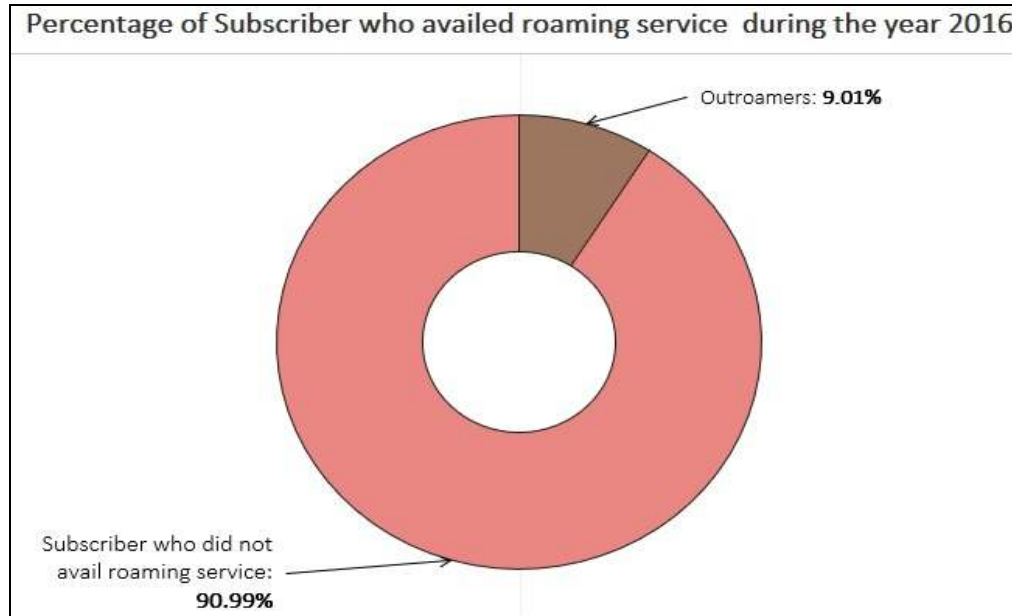
32. The total MOU (Blended) per subscriber per month has decreased by 3.66 %, from 259.28 in the year 2015 to 249.79 in the year 2016.

33. The following table presents the percentage break-up of outgoing minutes of usage from home service area to various categories of termination networks.

%Break-up of Outgoing minutes from Home Service Area(HSA) - CDMA Full Mobility Service

Category	Intra Circle to Wireline		Intra Circle to Own Wireless		Intra Circle to Other Wireless		Inter Circle to Wireline		Inter Circle to Own Wireless		Inter Circle to Other Wireless		ILD	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Circle A	1.85%	1.59%	30.14%	32.11%	53.30%	53.76%	0.78%	0.81%	2.42%	1.78%	11.04%	9.35%	0.66%	0.60%
Circle B	0.68%	0.53%	38.40%	36.02%	46.78%	52.40%	0.62%	0.54%	3.18%	1.99%	10.26%	8.42%	0.12%	0.09%
Circle C	0.78%	0.35%	30.03%	26.95%	48.33%	48.85%	1.18%	1.10%	3.13%	2.86%	16.52%	19.86%	0.05%	0.04%
Metro	1.65%	1.39%	27.28%	27.90%	37.07%	38.33%	0.73%	0.83%	4.96%	5.61%	28.05%	25.68%	0.35%	0.25%
All India	1.22%	0.97%	32.54%	32.15%	46.10%	48.74%	0.76%	0.73%	3.44%	2.96%	15.73%	14.22%	0.30%	0.24%

34. The chart given below presents the share of outroamers (who had availed roaming services) as a percentage of total subscribers during the year 2016



C. Average Subscriber Outgo per outgoing minute for usage from Home Service Area (HSA)

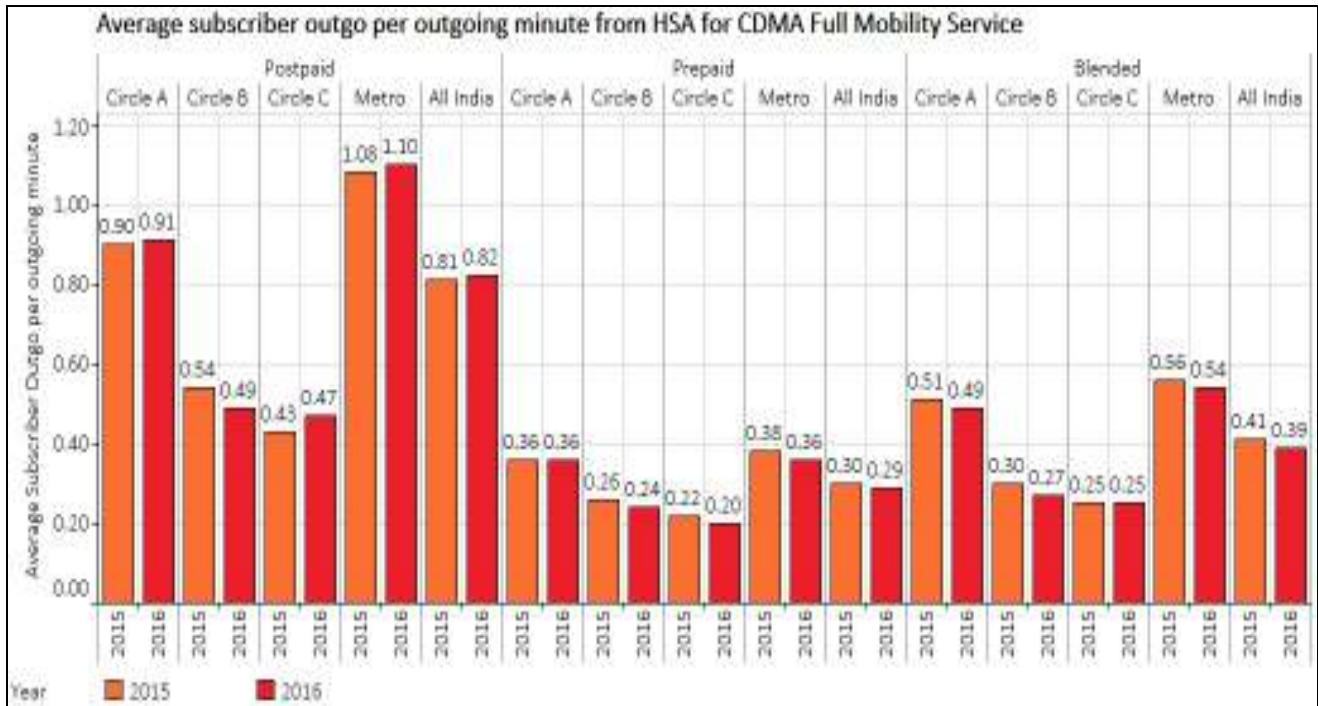
35. The tariff plans are of bundled nature and the trade-off is generally between monthly fixed charges and variable (call) charges. Therefore, average subscriber outgo per outgoing minute for usage from Home Service Area (HSA) as defined below would be a realistic indicator of average tariff levels.

36. Average Subscriber Outgo per Outgoing Minute for usage from HSA
 = $\frac{\text{Rental revenue} + \text{Revenue from outgoing calls from HSA}}{\text{No. of outgoing minutes from HSA}}$

37. The table below provides the Average Outgo per Outgoing Minute for usage from HSA.

Average subscriber outgo per outgoing minute from HSA for CDMA Full Mobility Service

Category	Postpaid		Prepaid		Blended	
	2015	2016	2015	2016	2015	2016
Circle A	0.90	0.91	0.36	0.36	0.51	0.49
Circle B	0.54	0.49	0.26	0.24	0.30	0.27
Circle C	0.43	0.47	0.22	0.20	0.25	0.25
Metro	1.08	1.10	0.38	0.36	0.56	0.54
All India	0.81	0.82	0.30	0.29	0.41	0.39



Trends of Key Parameters - CDMA Full Mobility Service for the year 2015 and 2016

	2015	2016
1. Average Revenue Per User (per month)	106.25	114.04
2. Average Revenue from data usage per subscriber (per month)	49.25	60.09
3. MOU per subscriber (per month)	259.28	249.79
4. Outgoing MOU per subscriber (per month)	144.35	139.81
5. No. of outgoing SMS per subscriber (per month)	9.38	6.11
6. Average subscriber Outgo per outgoing minute from HSA	0.41	0.39

Chapter 3 :
Financial Data of
Telecom Service
Sector

Table 3.1: Gross Revenue (GR), Adjusted Gross Revenue (AGR), License Fee (LF) & Spectrum Charges

Particulars	(₹ in Crore)		
	Year 2015	Year 2016	Change (%)
Gross Revenue (GR)	260601	279591	7.29%
Adjusted Gross Revenue (AGR)	184636	198207	7.35%
License Fee	14791	15975	8.00%
Spectrum Usage Charges	7445	7574	1.73%
Pass Through Charges (GR-AGR)	75965	81384	7.13%

3.1 Gross Revenue (GR) increased by 7.29% in 2016 over 2015 and Adjusted Gross Revenue (AGR) by 7.35% during the year.

3.2 Pass through charges increased by 7.13% in 2016 over the year 2015.

3.3 Pass-through charges as a percentage of Gross Revenue are 29.11% in 2016 as against 29.15% in the previous year.

Chart 3.1 Comparison of Gross Revenue and Adjusted Gross Revenue

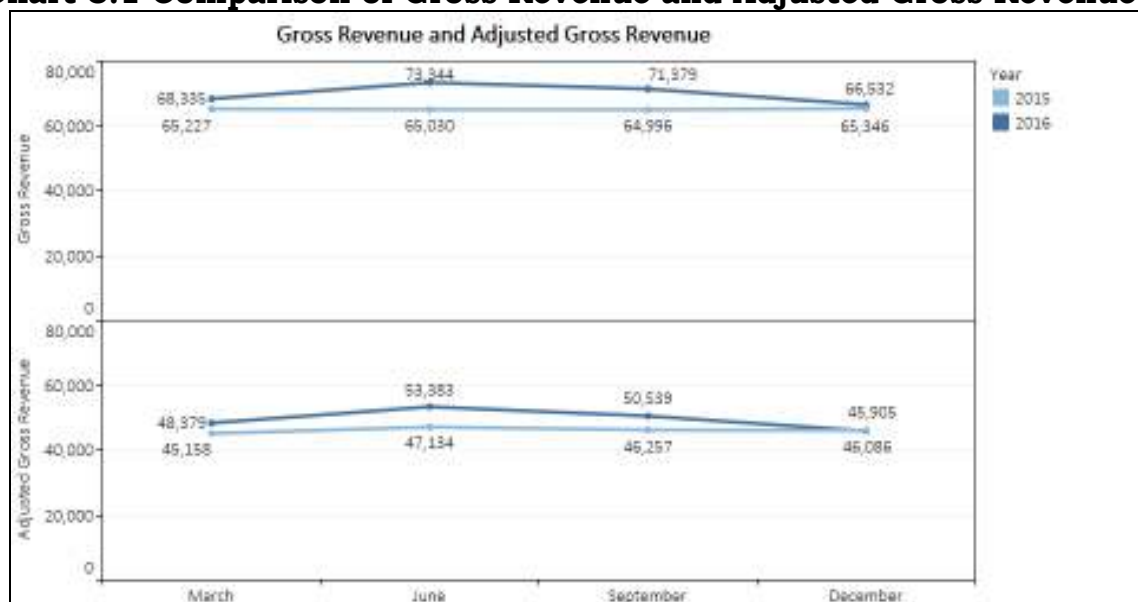


Table 3.2: Service-wise Gross Revenue, Adjusted Gross Revenue, License Fee and Spectrum Charges

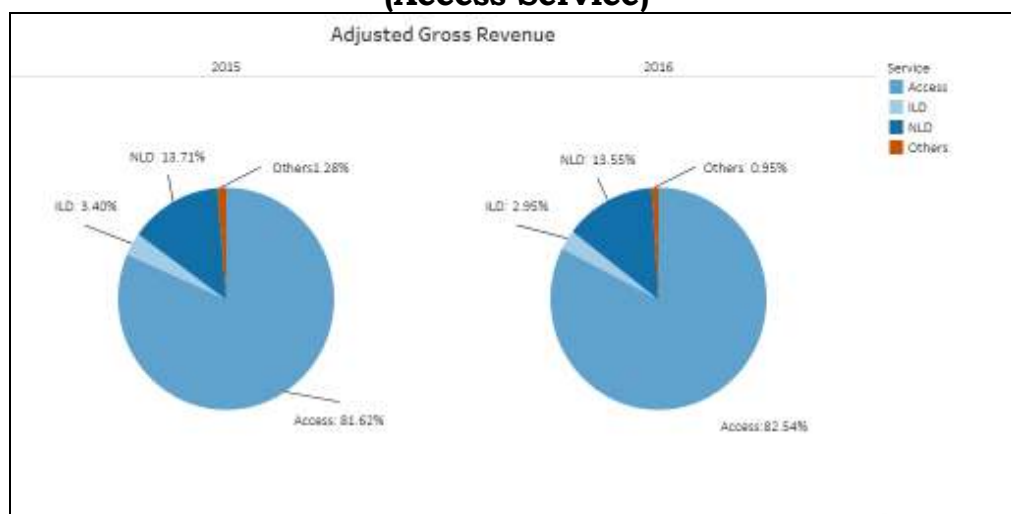
(₹ in Crore)

Service	Gross Revenue		Adjusted Gross Revenue		License Fee		Spectrum Charges		Pass Through Charges	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Access	1,98,129	2,12,077	1,50,692	1,63,605	12,056	13,205	7,431	7,485	47,436	48,473
NLD	33,188	34,123	25,315	26,854	2,042	2,149	-	24	7,873	7,269
ILD	15,995	16,369	6,272	5,856	505	469	-	-	9,724	10,513
Others (V-SAT, MNP,ISP)	13,288	17,022	2,356	1,892	188	152	14	65	10,931	15,129
Total	2,60,601	2,79,591	1,84,636	1,98,207	14,791	15,975	7,445	7,574	75,965	81,384

Table 3.3: Yearly Growth Percentage of Service-wise Gross Revenue, Adjusted Gross Revenue, License Fee and Spectrum Charges

Service	Gross Revenue	Adjusted Gross Revenue	License Fee	Spectrum Charges	Pass Through Charges
Access	7.04%	8.57%	9.53%	0.73%	2.18%
NLD	2.82%	6.08%	5.27%	-	-7.67%
ILD	2.33%	-6.63%	-7.15%	-	8.11%
Others (V-SAT, MNP,ISP)	28.10%	-19.68%	-19.50%	364.56%	38.40%
Overall	7.29%	7.35%	8.00%	1.73%	7.13%

Chart 3.2: Service wise composition of Adjusted Gross Revenue (Access Service)



3.4 Access services contributed 82.54% of the total Adjusted Gross Revenue of telecom services. In Access services, Gross Revenue (GR), Adjusted Gross Revenue (AGR), License Fee and Spectrum Usage Charges (SUC) increased by 7.04%, 8.57%, 9.53% and 0.73% respectively in 2016 over 2015. Pass Through Charges increased by 2.18% during the same period.

Table 3.4: Access Service – Service Provider wise Adjusted Gross Revenue (₹ in Crore)

Service Provider	Year 2015	Year 2016	Change (%)
Bharti	45040	48880	8.52%
Vodafone	32704	34680	6.04%
Idea	27429	29436	7.32%
BSNL	13211	13110	-0.77%
Aircel	7914	11164	41.06%
Tata	10087	9957	-1.29%
Reliance	6882	4734	-31.21%
Videocon	216	4712	2084.54%
Uninor	3260	3137	-3.75%
MTNL	2629	2867	9.05%
Sistema Shyam	1246	1091	-12.46%
Quadrant	61	140	128.48%
Reliance Jio	14	-303	-2231.78%
Grand Total (Access)	150692	163605	8.57%

Chart 3.3: Comparison of Adjusted Gross Revenue

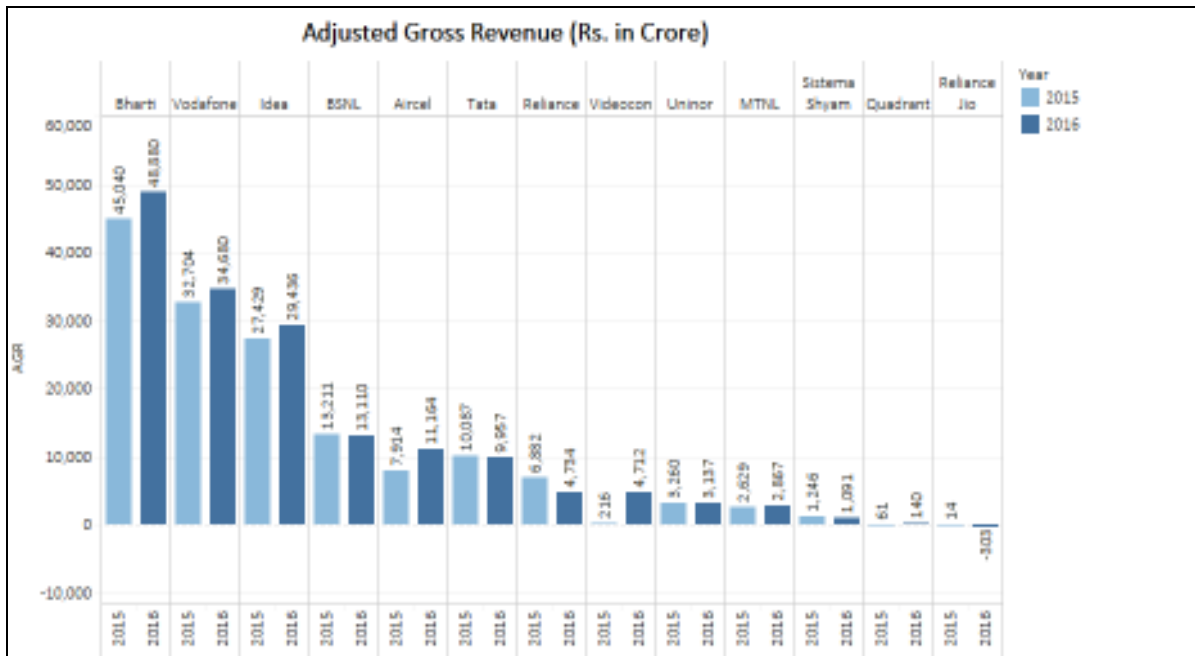
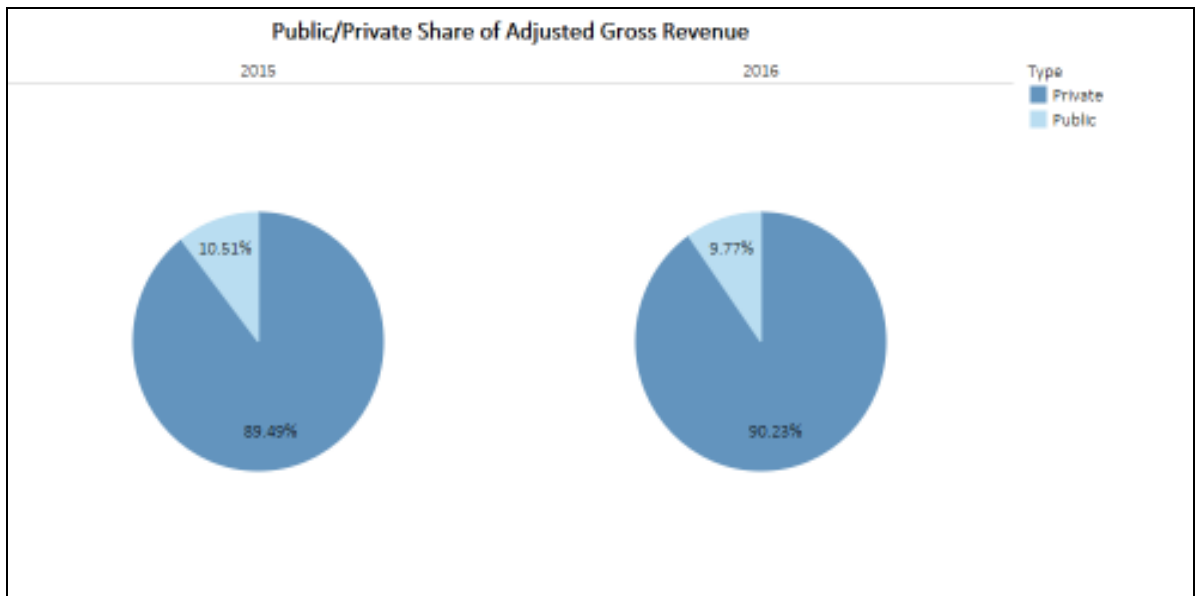


Chart 3.4: Sector wise Comparison of Public/Private sector of Adjusted Gross Revenue (Access Service)



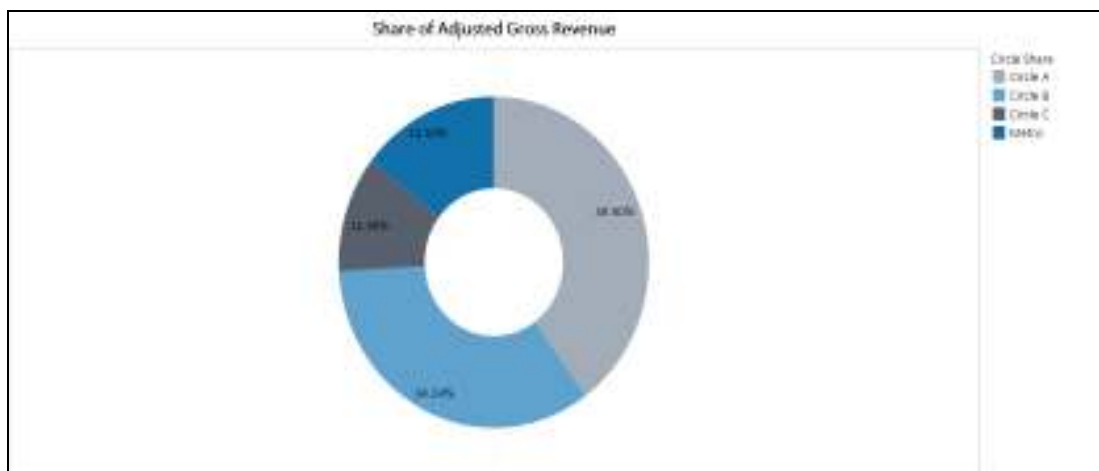
3.6 Public Sector Undertakings' share in the Access AGR of telecom services is 9.77% for 2016 as compared to 10.51% in the previous year.

Table 3.5: Category-wise Adjusted Gross Revenue (AGR) of Access Service

(₹ in Crore)

Category	Adjusted Gross Revenue		% Change
	2015	2016	
Metro	23,685	23,724	0.16%
Circle A	57,977	65,282	12.60%
Circle B	51,486	56,017	8.80%
Circle C	17,544	18,582	5.92%
Total	1,50,692	1,63,605	8.57%

Chart 3.5: Percentage Share of Adjusted Gross Revenue for the year 2016



- Notes: 1. Source: Figures are un-audited and as submitted by the Operators.
 2. The figures have been regrouped wherever considered necessary for analysis purpose.
 3. The Spectrum usage charges (mostly) are now reported on “Payment for the current Quarter” basis. However, some operators are reporting on payment basis or on estimate basis on projected AGR for next quarter.
 4. Metro area includes Delhi, Mumbai and Kolkata only. Chennai is clubbed with Tamilnadu.
 5. Where ‘2015’ stands for year starting from 1st January 2015 to 31st December 2015 and ‘2016’ stands for year starting from 1st January 2016 to 31st December 2016

Chapter 4 :

Performance of Cable TV, DTH and Radio Broadcasting Services

Table 4.1: Key Parameters - Broadcasting & Cable Services

S.No	Parameter	As on 31.12.2015	As on 31.12.2016
1	Number of Private satellite TV channels permitted by the Ministry of I&B for uplinking only/ downlinking / uplinking	847	899
2	Number of Pay TV Channels	262	287
3	Private FM Radio stations in operation	243	273
4	Private DTH Operators	6	6
5	Number of Registered DTH Subscribers	84.80 Million	97.05 Million
6	Number of Active DTH Subscribers	55.98 Million	62.65 Million
7	Licensees of community radio stations	237	255
8	Operational community radio stations	190	201

4.1 A total of 899 private satellite TV channels have been permitted by the Ministry of Information and Broadcasting (MIB) for uplinking only/ downlinking / uplinking, as on 31st December, 2016.

4.2 As on 31st December, 2016, there were 287 pay channels as reported by broadcasters as compared to 262 pay channels reported in the previous year. The list of 287 Pay TV Channels is placed at Annexure-4.1.

A. Cable TV Sector

4.3 Digitization, with addressability, of cable TV sector is under progress, in a phased manner. It is envisaged to be executed in four phases. The time line of the plan was subsequently revised and the revised time-table and schedule is as below: -

Table 4.2 : Migration Schedule - Digital Addressable Cable TV Systems

Phase	Areas	Sunset date for analog Cable TV
Phase -I	Four Metros of Delhi, Mumbai, Kolkata, Chennai	31.10.2012
Phase -II	Cities with population more than one million (38 cities)	31.03.2013
Phase -III	All Urban areas (Municipal Corporation/ Municipalities)	31.01.2017
Phase -IV	Rest of India	31.03.2017

4.4 As reported by MSOs providing Cable TV services through Digital Addressable System (DAS), details about number of reported channels being carried by the MSOs in areas served by Digital addressable system are as under:-

Areas served by Digital Addressable Systems (DAS)

Particulars	MSO	Number
Maximum number of TV channels (FTA+Pay+Local) carried	M/s Fastway Transmission Pvt Limited and Hathway Sukhamrit Cable & Datacom Pvt Ltd	433
Minimum of TV channels (FTA+Pay+Local) carried	M/s Ortel Communications Limited	205
Maximum number of FTA channels carried	M/s Indian Cable Net Company Ltd	180
Maximum number of Pay channels carried	M/s GTPL Kolkata Cable & Broadband Pariseva Limited	236
Maximum number of Local channels carried	M/s Fastway Transmission Pvt Limited and Hathway Sukhamrit Cable & Datacom Pvt Ltd	89

B. Direct-to-Home (DTH) Sector

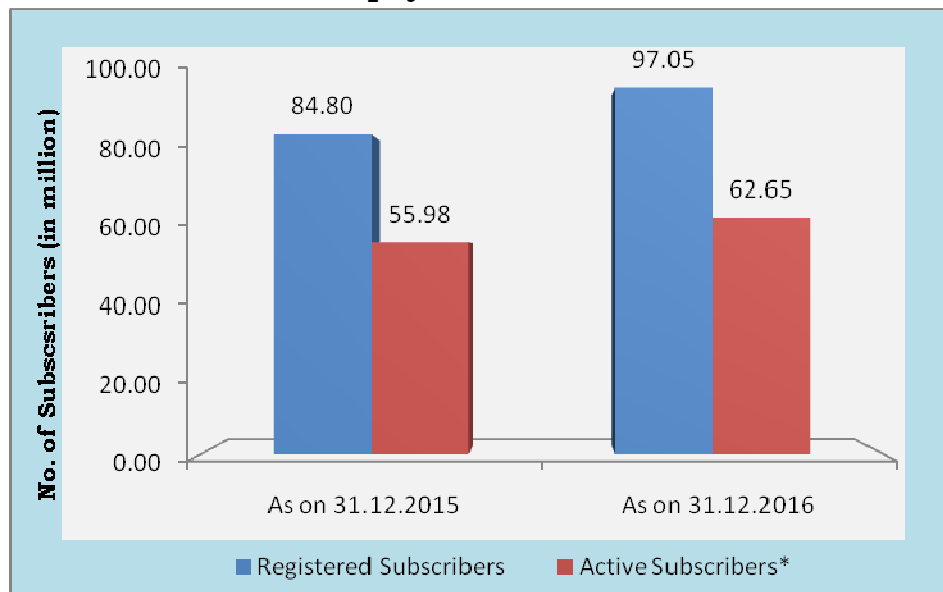
4.5 As reported by Pay Direct to Home (DTH) operator, details about number of reported channels being carried by the DTH operators on their platforms are as under:-

Particulars	DTH Operator	Number
Maximum number of TV channels (FTA+Pay) carried	M/s Tata Sky Ltd	558
Minimum of TV channels (FTA+Pay) carried	M/s Sun Direct Pvt Ltd	227
Maximum number of FTA channels carried	M/s Tata Sky Ltd	261
Maximum number of Pay channels carried	M/s Tata Sky Ltd	297

4.6 Since its introduction in the year 2003, Indian DTH service has displayed a phenomenal growth. DTH has attained a registered pay subscriber base of around **97.05** million (including **62.65** million active subscribers).

4.7 Yearly growth in the DTH sector in terms of the registered and net active subscriber base is depicted in the chart below.

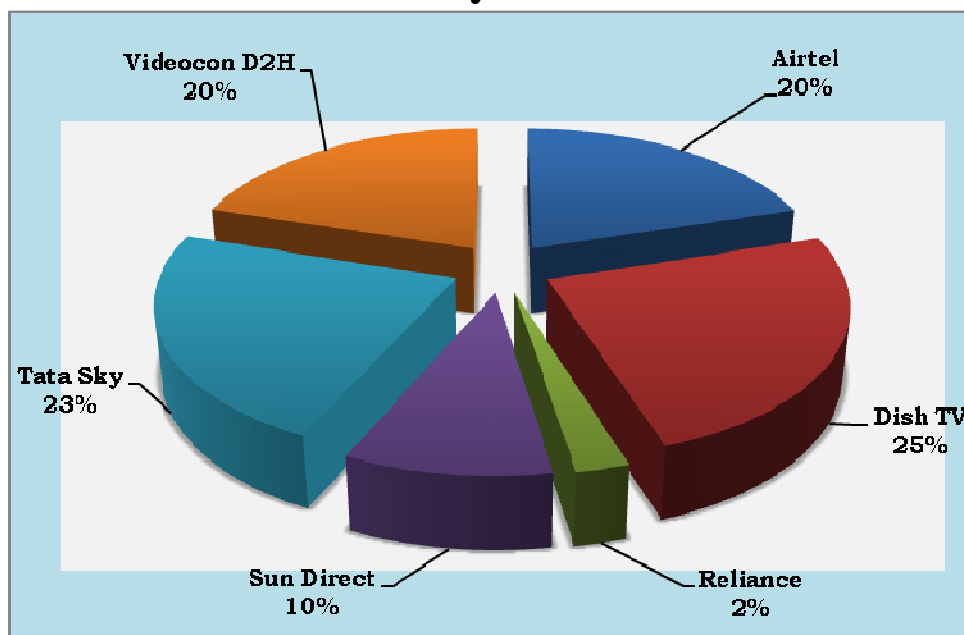
Chart 4.1: Trend of Registered and Net Active subscribers (in million) of pay DTH service



* The net active subscriber base includes number of temporarily suspended subscribers who have been inactive but for not more than 120 days.

4.8 As on 31st December, 2016, there are 6 pay DTH service providers. This is besides the viewership of the free DTH services of Doordarshan. The list of private DTH service providers is placed at Annexure 3.2.

Chart 4.2: Composition of market share in respect of Net Active subscriber base of Pay DTH Service Providers



C. FM Radio Services

4.9 Apart from the radio Stations operated by All India Radio, Prasar Bharati – a public broadcaster, there are 273 operational private FM radio stations and 84 existing cities with operational FM radio channels as on 31st December, 2016. A list of 84 existing cities with operational FM radio channels is placed at Annexure 3.3.

D. Community Radio

4.10 As on 31st December, 2016, out of the 255 licenses issued (GOPA signed) for setting up of Community Radio Stations (CRS), 201 stations are already operational. The yearly growth in the number of community radio stations is depicted in the chart below.

Chart 4.3 : Yearly Growth in number of Community Radio Stations (CRS)

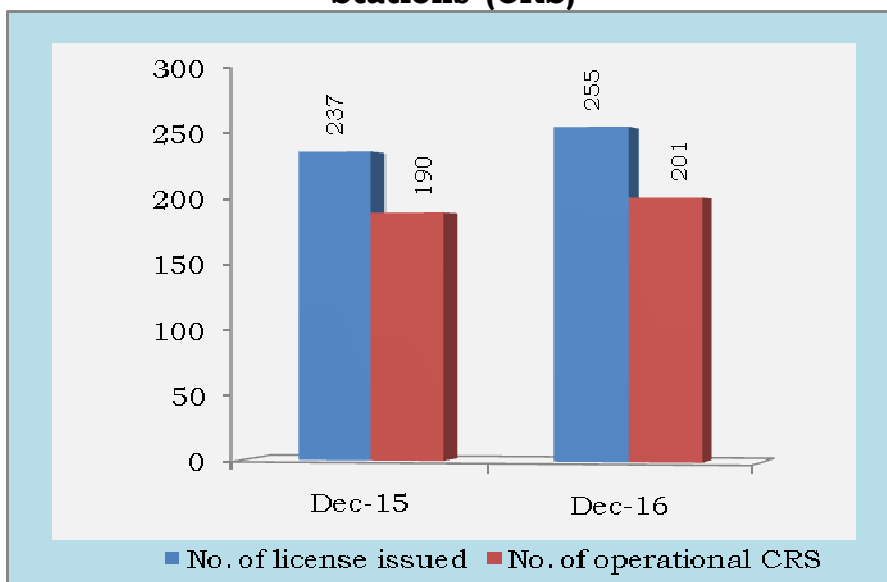


Table 4.3 : Number of application received/Letters of Intent issued/ Licenses issued in respect of Community Radio Stations

Sl. No.	Items	As on 31.12.2016
1	Total No. of Applications Received	1983
2	No. of Letters of Intent (LOIs) issued	545
3	No. of Applications rejected	1110
4	No. of Licenses issued (GOPA signed)	255
5	No. of Stations Operational	201

Source: Ministry of Information & Broadcasting (MIB)

Annexures

Annexure 1.1: Licensed Cellular (GSM & CDMA) Service Providers

Sl. No	Service Provider	Area for which licensed with No.	UASL/UL(AS)	CMTS
1	Bharti	All India (22)	All India	
2	Aircel Group	All India (22)	All India except AP & TN	AP & Tamil Nadu
3	Reliance Communications Ltd	All India (except Assam & NE) (20)	All	
4	Reliance Telecom Ltd	Kolkata, MP, WB, HP, Bihar, OR, Assam & NE (8)	All	
5	Vodafone	All India (22)	All	
6	Tata Teleservices	All India except Assam, NE & J&K (19)	All	
7	IDEA	All India (22)	All India except Delhi, HP & UP(E)	Delhi, HP & UP(E)
8	Sistema Shyam Telelink	Delhi, Kol, Guj, KTK, TN incl. Chennai, Kerala, UP-W, Raj, WB (9)	All	
9	BSNL	All India (except Delhi & Mumbai) 20		All
10	MTNL	Delhi, Mumbai (2)		All
11	Telenor Communication (India) Pvt Ltd	MH, Guj, AP, UP-W, UP-E, Bihar, Assam (7)	All	
12	Videocon Telecommunications Ltd.	Guj, Haryana, UP-W, UP-E, MP, Bihar (6)	All	
13	Reliance Jio Infocomm Ltd	All India (22)	All	
14	Quadrant	Punjab (1)	Punjab	
15	Vmobi Solution Pvt. Ltd.	Mumbai	All	
16	Andhra Pradesh State Fibre Net Ltd.	A.P.	All	

Source: DoT website.

Annexure 1.2: Wireless Subscriber Base

Service Area	Vodafone (GSM)		Bharti (GSM)		Idea (GSM)		Aircel (GSM)		Reliance (GSM)		Reliance (CDMA)	
	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16
Andhra Pradesh	7,162,882	7,030,425	23,227,059	25,112,612	15,298,893	17,448,973	2,814,331	2,544,880	3,632,123	3,681,215	1,811,716	-
Assam	3,448,664	3,920,440	5,683,518	6,281,027	1,063,049	1,293,198	4,853,001	5,663,035	1,361,181	1,358,951		-
Bihar	9,295,680	9,706,144	26,927,312	30,102,995	10,859,315	12,040,995	6,854,934	7,436,130	2,589,532	3,269,964	2,370,183	-
Delhi	10,049,752	10,516,019	11,222,985	11,366,485	6,211,520	6,368,028	6,104,002	6,731,212	5,422,773	5,815,374	3,053,784	-
Gujarat	19,219,078	19,750,344	8,272,527	8,754,131	11,990,608	12,850,449	17,063	17,063	4,115,866	5,925,364	1,092,810	-
Haryana	5,356,970	5,791,557	2,856,230	3,382,750	4,589,375	5,042,697	3,092	3,092	1,640,990	1,574,039	394,203	-
Himachal Pradesh	694,948	745,499	2,722,881	2,932,704	783,552	815,885	1,058,139	1,119,545	1,576,757	1,580,165	176,349	-
Jammu & Kashmir	1,048,029	980,533	3,348,374	3,505,002	602,415	623,267	2,539,460	2,867,502	849,787	949,459	44	-
Karnataka	7,680,807	7,911,034	20,840,739	22,001,544	8,620,705	9,630,391	3,031,064	3,365,649	4,405,061	5,218,438	1,317,163	-
Kerala	7,481,599	7,692,872	4,267,406	4,567,433	10,264,554	11,018,971	206,848	378,558	1,305,124	1,492,938	837,105	-
Madhya Pradesh	6,692,882	6,749,495	12,111,570	13,665,329	20,568,936	23,496,338	20,694	20,694	10,400,467	9,370,161	2,228,611	-
Maharashtra	18,058,780	18,894,289	12,687,714	13,998,508	23,036,628	25,488,200	2,487,523	2,773,255	3,625,847	4,393,692	1,740,151	-
Mumbai	8,612,645	8,983,030	5,564,834	6,164,308	4,254,544	4,428,983	2,839,599	2,970,326	3,697,075	4,707,876	1,949,100	-
North East	1,487,135	1,606,835	3,818,049	4,102,960	485,744	610,574	3,090,064	3,384,813	326,467	368,596		-
Orissa	3,879,819	4,352,964	9,703,785	10,981,096	1,607,740	2,042,172	4,445,162	4,664,702	1,490,790	2,121,470	293,488	-
Punjab	5,082,701	5,260,726	7,936,063	8,408,589	6,357,576	6,609,685	1,038,960	1,151,413	1,403,158	1,712,133	190,316	-
Rajasthan	11,707,557	12,082,927	18,897,726	20,423,230	7,752,344	8,074,084	6,461,780	6,663,523	5,849,444	5,965,928	1,015,620	-
Tamil Nadu (incl. Chennai)	15,235,488	16,348,225	16,829,940	18,317,695	5,934,165	6,422,898	21,315,077	21,705,386	4,766,932	5,354,554	1,803,655	-
UP(E)	18,254,718	19,716,657	19,988,762	22,524,622	10,377,719	11,778,588	6,689,790	7,158,862	6,410,249	8,380,772	2,414,613	-
UP(W)	11,193,594	11,851,566	7,966,851	8,696,883	13,873,955	15,679,475	569,880	844,454	4,479,724	5,466,988	1,198,327	-
Kolkata	5,262,820	5,589,894	4,452,322	4,909,018	2,123,788	2,541,949	4,042,132	4,314,664	3,442,689	4,318,179	1,010,902	-
West Bengal	16,693,537	19,205,455	13,962,757	15,653,684	5,255,483	6,212,076	5,149,654	5,096,795	2,384,056	3,518,673	816,199	-
Total	193,600,085	204,686,930	243,289,404	265,852,605	171,912,608	190,517,876	85,632,249	90,875,553	75,176,092	86,544,929	25,714,339	-

Annexure 1.2 (contd.)

Service Area	Tata (GSM)		Tata (CDMA)		BSNL (GSM)		BSNL (CDMA)		MTNL (GSM)		MTNL (CDMA)	
	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16
Andhra Pradesh	4,259,621	3,499,384	930,779	523,849	9,538,253	9,802,001	28,364	18,985				
Assam					1,216,010	1,351,522	66,145	66,212				
Bihar	1,282,975	1,086,671	467,486	390,504	2,662,009	4,024,249	143447	0				
Delhi			2,510,720	1,687,228		-		-	2,316,792	2,327,549	22,977	-
Gujarat	2,446,541	2,353,051	337,210	231,025	3,292,725	4,284,250	54,529	40,649				
Haryana	2,314,747	2,361,141	404,294	287,972	3,029,933	3,574,496	6,453	4,221				
Himachal Pradesh	37,808	30,562	40,997	22,429	1,524,774	1,979,552	17,033	10,586				
Jammu & Kashmir					1,226,547	1,444,470	26,273	26,635				
Karnataka	6,812,820	6,460,007	390,106	289,215	7,031,865	6,827,116	64,459	49,189				
Kerala	1,416,971	1,307,509	119,277	85,522	7,086,801	8,591,605	130,033	95,156				
Madhya Pradesh	4,291,091	4,089,549	415,350	326,513	3,943,000	4,668,613	93,568	76,951				
Maharashtra	4,344,006	4,110,077	1,997,526	1,570,967	5,367,905	6,398,885	66,840	46,264				
Mumbai	2,289,098	2,070,031	1,072,467	688,729		-		-	1,210,760	1,298,346	63,910	-
North East					1,299,354	1,485,828	161,512	162,028				
Orissa	2,124,406	1,890,510	133,190	91,893	3,837,071	4,773,897	40,324	34,039				
Punjab	2,094,542	2,123,294	530,611	360,240	3,337,315	4,468,872	21924	0				
Rajasthan	555,537	558,851	1,028,464	759,014	3,504,482	5,066,833	72,832	59,729				
Tamil Nadu (incl. Chennai)	4,987,388	3,960,154	211,429	140,193	8,671,072	8,847,625	50,188	38,337				
UP(E)	3,726,651	3,322,481	428,883	277,646	8,268,228	10,496,496	24,440	14,388				
UP(W)	2,994,179	2,724,418	470,718	352,016	3,864,746	5,325,719	59,880	-				
Kolkata	2,430,525	2,319,592	339,776	260,651	755,664	855,426	8,793	703				
West Bengal	439,560	331,063	50,107	33,835	1,843,012	1,705,061	69,837	71,292				
Total	48,848,466	44,598,345	11,879,390	8,379,441	81,300,766	95,972,516	1,206,874	815,364	3,527,552	3,625,895	86,887	-

Annexure 1.2 (contd.)

Service Area	Sistema (CDMA)		Quadrant (GSM)		Quadrant (CDMA)		Reliance Jio (LTE)		Telenor (GSM)		Videocon (GSM)		Total		Net Additions
	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	
Andhra Pradesh								6,356,061	5,882,383	5,634,582			74,586,404	81,652,967	7,066,563
Assam								979,779					17,691,568	20,914,164	3,222,596
Bihar								4,060,254	8,281,332	10,138,958	21,352		71,755,557	82,256,864	10,501,307
Delhi	953,352	699,544						5,370,396					47,868,657	50,881,835	3,013,178
Gujarat	212,206	155,976						5,593,057	8,130,404	8,424,971	1,299,648		60,481,215	68,380,330	7,899,115
Haryana								1,918,855			2,168,579		22,764,866	23,940,820	1,175,954
Himachal Pradesh								665,843					8,633,238	9,902,770	1,269,532
Jammu & Kashmir								875,883					9,640,929	11,272,751	1,631,822
Karnataka	1,256,837	853,274						4,521,864					61,451,626	67,127,721	5,676,095
Kerala	366,013	261,063						2,414,402					33,481,731	37,906,029	4,424,298
Madhya Pradesh								4,012,836			3,430,269		64,196,438	66,476,479	2,280,041
Maharashtra								4,994,893	7,933,145	8,098,638			81,346,065	90,767,668	9,421,603
Mumbai								3,314,694					31,554,032	34,626,323	3,072,291
North East								571,525					10,668,325	12,293,159	1,624,834
Orissa								1,841,478					27,555,775	32,794,221	5,238,446
Punjab			3,043,757	2,999,158	3,343	-		3284526					31,040,266	36,378,636	5,338,370
Rajasthan	2,172,906	1,625,425						3,595,620					59,018,692	64,875,164	5,856,472
Tamil Nadu (incl. Chennai)	773,356	555,764						4,846,319					80,578,690	86,537,150	5,958,460
UP(E)								4,212,075	12,017,737	13,718,269	15,417		88,617,207	101,600,856	12,983,649
UP(W)	159,495	112,436						3,697,898	8,457,395	8,454,081	22,913		55,311,657	63,205,934	7,894,277
Kolkata	562,909	430,489						2,603,998					24,432,320	28,144,563	3,712,243
West Bengal	1,549,740	1,183,642						2,425,388					48,213,942	55,436,964	7,223,022
Total	8,006,814	5,877,613	3,043,757	2,999,158	3,343	-	-	72,157,644	50,702,396	54,469,499	6,958,178	-	1,010,889,200	1,127,373,368	116,484,168

Annexure 1.3: Wireline Subscriber Base as on 31st December, 2016

Service Area	Bharti		Reliance		Quadrant		Sistema		Tata		MTNL		BSNL		Vodafone		Total		Net Additions
	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	Dec-15	Dec-16	
Andhra Pradesh	142,278	158,654	75,943	75,656	-	-	-	-	164,031	172,538	-	-	1,375,839	1,215,896	9,450	11,250	1,767,541	1,633,994	-133,547
Assam					-	-	-	-			-	-	161,219	155,325	1,710	2,100	162,929	157,425	-5,504
Bihar			6,778	6,436	-	-	-	-	13,156	12,761	-	-	315,300	297,401	1,020	1,260	336,254	317,858	-18,396
Delhi	1,212,538	1,263,413	174,883	173,965	-	-	-	-	133,904	136,059	1,613,063	1,608,461			22,140	27,750	3,156,528	3,209,648	53,120
Gujarat	68,759	76,086	75,050	73,016	-	-	-	-	86,623	88,015	-	-	1,196,386	1,103,146	3,180	7,200	1,429,998	1,347,463	-82,535
Haryana	18,917	22,779	4,427	4,043	-	-	-	-	38,654	36,942	-	-	312,553	285,213	30		374,581	348,977	-25,604
Himachal Pradesh			4,343	4,014	-	-	-	-	2,733	2,589	-	-	169,765	145,415	90	30	176,931	152,048	-24,883
Jammu & Kashmir					-	-	-	-			-	-	131,649	134,171			131,649	134,171	2,522
Karnataka	592,441	618,389	144,139	155,757	-	-	-	-	200,816	208,921	-	-	1,325,557	1,216,834	9,120	23,190	2,272,073	2,223,091	-48,982
Kerala	55,695	57,915	34,053	33,096	-	-	-	-	17,409	18,723	-	-	2,302,820	2,005,095	1,020	1,680	2,410,997	2,116,509	-294,488
Madhya Pradesh	252,550	272,988	20,459	19,755	-	-	-	-	20,784	16,098	-	-	749,297	726,773	390	420	1,043,480	1,036,034	-7,446
Maharashtra	73,542	77,520	82,154	82,090	-	-	-	-	280,412	282,870	-	-	1,553,843	1,420,475	10,860	13,501	2,000,811	1,876,456	-124,355
Mumbai	348,195	354,879	247,905	256,548	-	-	-	-	528,854	529,968	1,904,731	1,869,600			17,130	21,467	3,046,815	3,032,462	-14,353
North East					-	-	-	-			-	-	125,580	121,685	150	150	125,730	121,835	-3,895
Orissa			3,290	3,281	-	-	-	-	8,170	8,130	-	-	296,128	277,579	960	1,110	308,548	290,100	-18,448
Punjab	103,046	119,526	21,077	20,789	249,964	262,114	-	-	16,883	16,402	-	-	683,984	602,669	750	1,020	1,075,704	1,022,520	-53,184
Rajasthan	45,248	48,496	20,843	19,866	-	-	57,932	58,305	10,888	11,796	-	-	651,453	610,665	1,860	2,370	788,224	751,498	-36,726
Tamil Nadu (incl. Chennai)	487,532	551,834	134,365	133,968	-	-	-	-	102,329	109,238	-	-	1,938,374	1,730,644	7,980	10,350	2,670,580	2,536,034	-134,546
U.P.(E)	59,845	63,942	35,585	34,767	-	-	-	-	15,225	15,564	-	-	389,410	382,226	1,170	1,500	501,235	497,999	-3,236
U.P.(W)	21,028	23,115	7,227	7,127	-	-	-	-	10,000	9,958	-	-	395,975	360,830	450	1,080	434,680	402,110	-32,570
Kolkata	115,848	120,571	70,121	69,154	-	-	-	-	48,692	49,330	-	-	678,306	617,718	3,990	5,460	916,957	862,233	-54,724
West Bengal			1,902	2,048	-	-	-	-	3,801	3,827	-	-	380,507	327,936	30	60	386,240	333,871	-52,369
Total	3,597,462	3,830,107	1,164,544	1,175,376	249,964	262,114	57,932	58,305	1,703,364	1,729,729	3,517,794	3,478,061	15,133,945	13,737,696	93,480	132,948	25,518,485	24,404,336	-1,114,149

Annexure 1.4: Service Area and Operator wise details of PCOs

Name of the Circle/Service Area	Service Provider	Number of PCOs as on 31.12.2016
Andhra Pradesh (Excluding Telangana)	Bharat Sanchar Nigam Ltd.	20,958
	Bharti Group	181
	Reliance Group	5,595
	Tata Group	5,785
Andhra Pradesh (Including Telangana)	Bharat Sanchar Nigam Ltd.	20,958
	Bharti Group	181
	Reliance Group	5,595
	Tata Group	5,785
Assam	Bharat Sanchar Nigam Ltd.	7,188
Bihar (excluding Jharkhand)	Bharat Sanchar Nigam Ltd.	1,641
	Tata Group	1
Jharkhand	Bharat Sanchar Nigam Ltd.	4,429
Bihar (including Jharkhand)	Bharat Sanchar Nigam Ltd.	6,070
	Tata Group	1
Delhi	Bharti Group	513
	Mahanagar Telephone Nigam Ltd	53,473
	Reliance Group	90
	Tata Group	2,019
Gujarat	Bharat Sanchar Nigam Ltd.	22,393
	Bharti Group	14
	Reliance Group	523
	Tata Group	1,360
Haryana	Bharat Sanchar Nigam Ltd.	2,018
	Bharti Group	170
	Tata Group	41
Himachal Pradesh	Bharat Sanchar Nigam Ltd.	1,762
	Tata Group	8
Jammu & Kashmir	Bharat Sanchar Nigam Ltd.	2,307
Karnataka	Bharat Sanchar Nigam Ltd.	27,000
	Bharti Group	4,287
	Reliance Group	951
	Tata Group	983
Kerala	Bharat Sanchar Nigam Ltd.	20,199
	Bharti Group	512
	Reliance Group	36
	Tata Group	46

Annexure 1.4 (Contd.)

Name of the Circle/Service Area	Service Provider	Number of PCOs as on 31.12.2016
Kolkata	Bharat Sanchar Nigam Ltd.	5,238
	Bharti Group	26
	Reliance Group	151
	Tata Group	303
Madhya Pradesh (excluding Chhattisgarh)	Bharat Sanchar Nigam Ltd.	22,760
	Bharti Group	2,309
	Reliance Group	104
	Tata Group	650
Chhattisgarh	Bharat Sanchar Nigam Ltd.	1,625
Madhya Pradesh (including Chhattisgarh)	Bharat Sanchar Nigam Ltd.	24,385
	Bharti Group	2,309
	Reliance Group	104
	Tata Group	650
Maharashtra & Goa	Bharat Sanchar Nigam Ltd.	58,012
	Mahanagar Telephone Nigam Ltd	75,805
	Reliance Group	1,216
	Tata Group	8,858
Mumbai	Bharti Group	40
	Mahanagar Telephone Nigam Ltd	0
	Reliance Group	3,380
	Tata Group	4,325
Maharashtra (including Mumbai & Goa)	Bharat Sanchar Nigam Ltd.	58,012
	Bharti Group	40
	Mahanagar Telephone Nigam Ltd. / MTNL	75,805
	Reliance Group	4,596
	Tata Group	13,183
Arunachal Pradesh	Bharat Sanchar Nigam Ltd.	1,216
Nagaland	Bharat Sanchar Nigam Ltd.	3,166
Orissa	Bharat Sanchar Nigam Ltd.	2,311
	Tata Group	75

Annexure 1.4 (Contd.)

Name of the Circle/Service Area	Service Provider	Number of PCOs as on 31.12.2016
Punjab	Bharat Sanchar Nigam Ltd.	4,590
	Bharti Group	70
	Quadrant Televentures Ltd.	1,776
	Tata Group	169
Rajasthan	Bharat Sanchar Nigam Ltd.	8,796
	Bharti Group	210
	Reliance Group	115
	Sistema Shyam	9,601
	Tata Group	172
Tamilnadu (excluding chennai)	Bharat Sanchar Nigam Ltd.	44,282
	Bharti Group	6,809
	Reliance Group	2,200
	Tata Group	235
Chennai	Bharat Sanchar Nigam Ltd.	10,892
Tamil Nadu (including Chennai)	Bharat Sanchar Nigam Ltd.	55,174
	Bharti Group	6,809
	Reliance Group	2,200
	Tata Group	235
Uttar Pradesh- East	Bharat Sanchar Nigam Ltd.	12,726
	Bharti Group	111
	Tata Group	23
Uttarakhand	Bharat Sanchar Nigam Ltd.	1,471
Uttar Pradesh - West (excluding Uttarakhand)	Bharat Sanchar Nigam Ltd.	2,927
	Bharti Group	85
	Tata Group	179
Uttar Pradesh - West (including Uttarakhand)	Bharat Sanchar Nigam Ltd.	4,398
	Bharti Group	85
	Tata Group	179
West Bengal (excluding Andaman & Nicobar)	Bharat Sanchar Nigam Ltd.	5,481
	Tata Group	75
Andaman and Nicobar	Bharat Sanchar Nigam Ltd.	142
West Bengal (incl. Andaman & Nicobar)	Bharat Sanchar Nigam Ltd.	5,623
	Tata Group	75
Total		491,190

Annexure 1.5: Service Area & Operator wise details of Village Public Telephones

Name of Circle/Service Area	Service Provider	Number of VPTs as on 31.12.2016
Andhra Pradesh (Excl. Telangana)	Bharat Sanchar Nigam Ltd.	10,113
Andhra Pradesh (Incl. Telangana)	Bharat Sanchar Nigam Ltd.	10,113
Assam	Bharat Sanchar Nigam Ltd.	2,900
Bihar (excluding Jharkhand)	Bharat Sanchar Nigam Ltd.	7,008
Jharkhand	Bharat Sanchar Nigam Ltd.	530
Bihar (including Jharkhand)	Bharat Sanchar Nigam Ltd.	7,538
Gujarat	Bharat Sanchar Nigam Ltd.	11,628
Haryana	Bharat Sanchar Nigam Ltd.	1,543
Himachal Pradesh	Bharat Sanchar Nigam Ltd.	9,144
Jammu & Kashmir	Bharat Sanchar Nigam Ltd.	4,401
Karnataka	Bharat Sanchar Nigam Ltd.	8,573
Kerala	Bharat Sanchar Nigam Ltd.	490
Kolkata	Bharat Sanchar Nigam Ltd.	135
Madhya Pradesh (excluding Chhattisgarh)	Bharat Sanchar Nigam Ltd.	40,818
Chhattisgarh	Bharat Sanchar Nigam Ltd.	7,531
Madhya Pradesh (including Chhattisgarh)	Bharat Sanchar Nigam Ltd.	48,349
Maharashtra & Goa	Bharat Sanchar Nigam Ltd.	27,324
	Tata Group	1,282
Maharashtra (including Mumbai & Goa)	Bharat Sanchar Nigam Ltd.	27,324
	Tata Group	1,282
North East	Bharat Sanchar Nigam Ltd.	0
Orissa	Bharat Sanchar Nigam Ltd.	6,205
Punjab	Bharat Sanchar Nigam Ltd.	10,406
Rajasthan	Bharat Sanchar Nigam Ltd.	17,949
	Sistema Shyam	0
Tamilnadu (excl. chennai)	Bharat Sanchar Nigam Ltd.	12,599
Chennai	Bharat Sanchar Nigam Ltd.	217
Tamil Nadu (incl. Chennai)	Bharat Sanchar Nigam Ltd.	12,816
Uttar Pradesh- East	Bharat Sanchar Nigam Ltd.	1,574
Uttarakhand	Bharat Sanchar Nigam Ltd.	3,462
Uttar Pradesh - West (excl. Uttarakhand)	Bharat Sanchar Nigam Ltd.	4,748
Uttar Pradesh - West (incl. Uttarakhand)	Bharat Sanchar Nigam Ltd.	8,210
West Bengal (excl. Andaman & Nicobar)	Bharat Sanchar Nigam Ltd.	36,958
Andaman and Nicobar	Bharat Sanchar Nigam Ltd.	340
West Bengal (incl. Andaman & Nicobar)	Bharat Sanchar Nigam Ltd.	37,298
Total		236,163

Annexure 1.6 : Internet Service Provider(ISP) wise Internet Subscriber base

S.No.	Name of the Service Provider	Narrowband Subscribers	Broadband Subscribers	Total Subscribers
1.	Bharti Airtel Limited	41268702	43563875	84832577
2.	Reliance Jio Infocomm Ltd	0	72157644	72157644
3.	Vodafone India Ltd.	30034419	35019924	65054343
4.	Idea Cellular Ltd.	21557066	27043854	48600920
5.	Bharat Sanchar Nigam Ltd.	12534957	20362793	32897750
6.	Reliance Communications Ltd.	15896606	16190062	32086668
7.	Aircel Ltd.	12040270	6122361	18162631
8.	Tata (Tata Teleservices Ltd. & Tata Teleservices (Maharastra)) Ltd.	7712109	7060825	14772934
9.	Telenor Ltd.	13387332	75886	13463218
10.	Mahanagar Telephone Nigam Ltd.	471736	1521904	1993640
11.	Sistema Shyam	15508	1567591	1583099
12.	Atria Convergence Technologies Pvt. Ltd.	0	1121726	1121726
13.	You Broadband India Pvt. Ltd.	16527	606535	623062
14.	Hathway Cable & Datacom Pvt.Ltd.	15329	579696	595025
15.	Quadrant Televentures Ltd.	360679	231325	592004
16.	Tikona	3961	388941	392902
17.	Syscon Infoway Pvt Ltd	49259	194565	243824
18.	GTPL Broadband Pvt. Ltd.	293	224149	224442
19.	D-Vois Broadband Private Limited	0	209710	209710
20.	Asianet Satellite Communications Ltd.	0	192836	192836
21.	Alliance Broadband Services Pvt Ltd.	0	163454	163454
22.	Indinet Service Pvt Ltd	0	140109	140109
23.	DEN Networks Ltd	16	115147	115163
24.	RailTel Corporation of India Ltd.	0	98801	98801
25.	Excitel Broadband Private Limited	0	90211	90211
26.	Five Network Solution (India) Ltd.	0	79898	79898
27.	Ortel Communication Ltd.	0	72503	72503
28.	Honesty Net Solutions (I) Pvt Ltd	423	68822	69245
29.	Planet E-Shop Holdings India Ltd.	2045	55348	57393
30.	R.K. Infratel Limited	2	48734	48736
31.	Nextra Teleservices Pvt. Ltd.	0	45816	45816
32.	Meghbela Cable & Broadband Servies (P) Ltd	0	42256	42256

Annexure 1.6 (contd.)

S.No.	Name of the Service Provider	Narrowband Subscribers	Broadband Subscribers	Total Subscribers
33.	SITI Broadband Services Pvt. Ltd.	0	39564	39564
34.	Home Systems Pvt. Ltd.	0	35408	35408
35.	Citycom Networks Pvt. Ltd.	0	33354	33354
36.	Limras Eronet Broadband Service Pvt Ltd	6604	25309	31913
37.	Wish Net Pvt. Ltd.	0	30892	30892
38.	Broadband Pacenet (I) Pvt. Ltd.	0	29572	29572
39.	Vasai Cable Pvt. Ltd.	0	25581	25581
40.	DNA Infotel Pvt Ltd	0	23339	23339
41.	Wan and Lan Internet Pvt. Ltd.	0	22622	22622
42.	Tata Communications Limited	892	21621	22513
43.	Chandra Net Pvt. Limited	34	21523	21557
44.	Rajesh Multi Channel Pvt. Ltd.	269	20151	20420
45.	Ishan Netsol Pvt Ltd	14423	2167	16590
46.	Apna Telelink Ltd.	0	14959	14959
47.	GBPS Networks Pvt. Ltd.	0	13654	13654
48.	World Phone Internet Services Pvt Ltd	1234	12268	13502
49.	Quest Consultancy Pvt. Ltd.	0	13497	13497
50.	North East Dataa Network Pvt Ltd.	0	13008	13008
51.	Southern Online Bio Technologies Ltd.	481	11938	12419
52.	Yashash Cable Network Pvt Ltd	0	12276	12276
53.	IKF Technologies Ltd	2085	9844	11929
54.	Geocity Network Solutions Pvt. Ltd.	0	11778	11778
55.	Kappa Internet Services Pvt Ltd.	0	11162	11162
56.	City Online Services Ltd	0	10937	10937
57.	Pioneerelabs	368	9964	10332
58.	SmartLink Broadband Services	0	9858	9858
59.	Swiftnet Broadband Pvt Ltd	0	8721	8721
60.	Blazenet Ltd.	4069	3874	7943
61.	Airgenie Communications Pvt. Ltd.	3834	3834	7668
62.	Netplus Broadband Services Pvt.Ltd	0	7499	7499
63.	Fusionnet Web Services Pvt. Ltd.	0	7056	7056
64.	CJM Consultancy Services Pvt. Ltd.	0	6279	6279
65.	Spacenet Internet Services Pvt Ltd	0	5836	5836

Annexure 1.6 (contd.)

S.No.	Name of the Service Provider	Narrowband Subscribers	Broadband Subscribers	Total Subscribers
66.	Intermedia Cable Communication Pvt Ltd	0	5765	5765
67.	Sikka Broadband(P) Ltd.	0	5296	5296
68.	Readylink Internet Services Pvt Ltd	411	4667	5078
69.	Kaizen Infonet Pvt Ltd	100	4940	5040
70.	Siliguri Internet & Cable TV Pvt.Ltd.	0	4986	4986
71.	Narmada Cyberzone Pvt Ltd	1858	3097	4955
72.	Nettlinx Ltd.	788	4028	4816
73.	United Telecoms Ltd.	189	4510	4699
74.	WE INTERNET LIMITED	0	4449	4449
75.	Digital Network associates Pvt. Ltd	89	4296	4385
76.	Rajesh Patel Net Services Pvt. Ltd.	280	3946	4226
77.	CJ Online Pvt. Ltd.	0	4007	4007
78.	Swiftmail Communications Ltd.	1217	2675	3892
79.	Shri Omkar Infocom Pvt. Ltd.	0	3605	3605
80.	HCL Comnet Systems & Services Ltd	3403	31	3434
81.	RI Networks Pvt Ltd	0	3098	3098
82.	Multinet (Udaipur) Pvt. Ltd.	0	3036	3036
83.	F/X Wireless Technology Services Pvt. Ltd.	0	2871	2871
84.	Speed Online.net Pvt. Ltd.	0	2487	2487
85.	Sphier Infotech Pvt. Ltd.	0	2480	2480
86.	Sify Technologies Ltd.	1175	1047	2222
87.	Star Broadband Services (I) Pvt Ltd	0	2169	2169
88.	S.S.Netcom Pvt Ltd	0	1920	1920
89.	Hughes Communications India Ltd.	578	1278	1856
90.	Capture Network Systems Pvt. Ltd.	278	1559	1837
91.	Touch Net India Pvt. Ltd.	35	1614	1649
92.	Harisree CableNet Pvt. Ltd.	0	1344	1344
93.	Aeroway Networks Pvt Ltd.	0	1202	1202
94.	Digital2Virtual ISP Pvt. Ltd.	0	1166	1166
95.	Symbois Creations Pvt. Ltd.	14	995	1009
96.	delDSL Internet Pvt Ltd	0	971	971
97.	STN Communication & Advertising Pvt Ltd.	154	750	904
98.	Data Infosys Ltd.	0	764	764

Annexure 1.6 (contd.)

S.No.	Name of the Service Provider	Narrowband Subscribers	Broadband Subscribers	Total Subscribers
99.	Rajdhani Telecom Pvt. Ltd.	80	652	732
100.	Elyzium Technologies Pvt. Ltd.	0	663	663
101.	Primenet Global Ltd.	0	636	636
102.	Datawave IT solutions Pvt. Ltd.	0	625	625
103.	NetMagic Solutions(P) Ltd.	0	610	610
104.	Conjoinix Technologies Pvt Ltd	0	609	609
105.	Correl IT Services Pvt. Ltd.	0	607	607
106.	Japra Tele Link Pvt. Ltd.	0	583	583
107.	Barani Data Solutions Private Ltd	324	252	576
108.	Rida Communication Pvt. Ltd.	0	443	443
109.	Gleam Worldwide Services Pvt. Ltd.	0	420	420
110.	Chetan Internet Services Pvt. Ltd.	0	414	414
111.	Tamana Winet Pvt. Ltd.	0	413	413
112.	Daksh Broadband Services Pvt Ltd	0	374	374
113.	Singh Internet Services Pvt. Ltd.	0	364	364
114.	Oasis Cable Pvt Ltd.	0	281	281
115.	Sab Infotech (Sab Industries)	0	281	281
116.	Power Grid Corporation of India Ltd.	0	265	265
117.	Gorakhpur Net Services Pvt. Ltd.	0	246	246
118.	Jetspot Networks Pvt. Ltd.	0	246	246
119.	Pulse Telesystems Pvt. Ltd.	0	236	236
120.	Oistel Telecom Pvt. Ltd.	0	233	233
121.	Sampark Infotainment Pvt Ltd	0	200	200
122.	Khetan Cable Network (P) Ltd	0	197	197
123.	Bhiwani Communications Pvt. Ltd.	104	84	188
124.	Cityzone Infonet Pvt. Ltd	0	182	182
125.	Microsense Pvt. Ltd.	0	182	182
126.	QBC Infotech Pvt. Ltd.	0	179	179
127.	ERNET India	111	57	168
128.	Shri Vinayagaa Internet Pvt Ltd	28	118	146
129.	Reticule Infotech Pvt. Ltd.	0	143	143
130.	Tata Sky Broadband Private Limited	0	133	133
131.	Trans Virtual Pvt. Ltd.	17	79	96
132.	VIVA Communications Pvt Ltd (Mylai Karpagambal Information Systems (P) Ltd)	0	94	94

Annexure 1.6 (contd.)

S.No.	Name of the Service Provider	Narrowband Subscribers	Broadband Subscribers	Total Subscribers
133.	Edge Telecommunications Pvt. Ltd.	0	78	78
134.	Sanyog Networks Pvt Ltd	0	76	76
135.	Telestra Telecommunications Pvt. Ltd.	0	58	58
136.	Dream Plus Multi Services Pvt. Ltd.	2	55	57
137.	AT&T Global Network Services India Private Limited	0	54	54
138.	West Bengal Electronics Industry Development Corp. Ltd.	0	51	51
139.	Verizon Communications India Pvt. Ltd.	0	48	48
140.	Adya Tech One Services Pvt Ltd	0	39	39
141.	Novanet India Ltd.	0	16	16
142.	Vcare Call Centres India Pvt. Ltd.	0	16	16
143.	Airmesh Communications Limited	0	15	15
144.	Financial Technologies Communications Ltd.	11	0	11
145.	Nelco Ltd.	0	8	8
146.	Tatanet Services Ltd	0	8	8
147.	Essel Shyam Communications Limited	7	0	7
148.	ABT Ltd.	3	2	5
149.	Orange Business Ser. India Network Pvt. Ltd.	0	5	5
Total		155412788	236089325	391502113
Total (in millions)		155.41	236.09	391.50

Note: Some wireless service providers exclude incidental data users from their subscriber base, based on minimum usage decided by them.

**Annexure 1.7: List of Service Providers which reported IP
Telephony Minutes for Q.E. Dec-16**

S. No.	Name of Service Providers which reported IP Telephony Minutes
1	Alliance Broadband Services Pvt. Ltd.
2	Asianet Satellite Communications Ltd.
3	Blazenet Ltd.
4	City Online Services Ltd.
5	Citycom Networks Pvt. Ltd.
6	Data Infosys Ltd.
7	delDSL Internet Pvt Ltd
8	Novanet Ltd.
9	Pipetel Communications Pvt. Ltd.
10	Pulse Telesystems Pvt. Ltd.
11	Sify Technologies Ltd.
12	Tata Communications Limited
13	Trikon Electronics Pvt. Ltd.
14	VIVA Communications Pvt. Ltd.
15	World Phone Internet Services Pvt. Ltd.
16	You Broadband & Cable India Pvt. Ltd.

Annexure 1.8: Service Area wise PMRTS subscriber Base

Sl. No.	Operative Area	Service Provider	Subscriber Base as on 31.12.2016
1	Delhi (Faridabad/ Gurgaon)	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	5825
		Procall(Delhi)	2655
		Procall (Faridabad)	
		Procall (Gurgaon)	
		Total	8480
2	Mumbai(Navi Mumbai)	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	8192
		Smartalk (Mumbai)	546
		Bhilwara Telenet(Mumbai)	571
		Airtalk Solutions & Services Pvt. Ltd	274
		Total	9583
3	Kolkata	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	2410
		Total	2410
4	TN(Chennai)	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	6897
		Quick Calls	269
		Total	7166
5	Karnataka (Bangalore)	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	7289
		Quick Calls	262
		Total	7551
6	Andhra Pradesh (Vishakhapatnam & Hyderabad)	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	4849
		Quick Calls (Hyderabad Urban)	965
		Total	5814
7	Madhya Pradesh (Indore)	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	1073
		Total	1073
8	Rajasthan (Jaipur)	Procall	312
		Arya Omnitalk Radio Trunking Services Pvt.Ltd.	479
		Total	791

Annexure- 1.8 (Contd.)

Sl. No.	Operative Area	Service Provider	Subscriber Base as on 31.12.2016
9	Gujrat (Ahmedabad/ Surat/Vadodara/ Bharuch/ Kutch/Amrela / Jamnagar)	Arya Omnitalk Radio Trunking Services Pvt.Ltd. (Ahmedaba/Surat/Vadodara/ Bharuch)	6076
		Inative Network Pvt. Ltd. (Ahmedaba/Surat/Vadodara/ Bharuch/ Kutch/Amrela / Jamnagar)	1820
		Total	7896
10	Maharashtra (Pune)	Arya Omnitalk Radio Trunking Services Pvt.Ltd.	1425
		Smartalk	477
		Total	1902
11	Kerala (Cochin City & Quilon)	Wiwonet Solutions Pvt. Ltd.	273
		Arya Omnitalk Radio Trunking Services Pvt.Ltd.	532
		Total	805
Grand Total			53,471

Annexure 4.1: List of Broadcasters and their Pay TV Channels as reported to TRAI

Sl. No.	Name of the broadcaster	Sl. No	Name of the channel	Declared as SD or HD
1	M/s 9X Media Private Limited	1	9XM	SD
2	M/s AETN 18 Media Pvt Limited	2	The History Channel	HD
		3	FY1 TV18	HD
3	M/s Asianet Communications Limited	4	Asianet	SD
		5	Asianet Plus	SD
		6	Asianet Movies	SD
		7	Suvarna Plus	SD
		8	Asianet HD	HD
		9	Star Suvarna (Earlier name "Suvarna")	SD
4	M/s B4U Television Network India Limited	10	B4U Movies	SD
5	M/s Bangla Entertainment Private Limited	11	AATH	SD
6	M/s BBC Global News India Private Limited	12	BBC World News	SD
7	M/s Bennett, Coleman & Company Limited	13	Zoom	SD
		14	Romedy Now	SD
		15	MN +(Earlier name "Movies Now +")	HD
		16	Magicbricks Now	SD
		17	ET NOW	SD
		18	Times Now	SD
		19	Romedy Now HD	HD
		20	Movies Now HD	HD
		21	Movies Now 2 HD	HD
		22	Movies Now 2	SD
		23	Times Now HD	HD
8	M/s Business Broadcast News Private Limited	24	Bloomberg TV India	SD
9	M/s Celebrities Management Pvt Limited	25	Travel XP HD (Earlier name "Travel XP")	HD
10	M/s Greycells18 Media Limited	26	Topper TV (#)	SD
11	M/s Discovery Communications India	27	Animal Planet	SD
		28	Discovery Channel	SD
		29	Discovery Channel - Tamil	SD
		30	Discovery Kids Channel	SD
		31	Discovery Science	SD
		32	Discovery Turbo	SD
		33	ID Investigation Discovery	SD
		34	Discovery HD World (earlier name "Discovery HD")	HD

Annexure 4.1(Contd.)

Sl. No.	Name of the broadcaster	Sl. No	Name of the channel	Declared as SD or HD
		35	Animal Planet HD World (earlier name "Discovery Home and Health")	HD
		36	TLC HD world (earlier name "Military Channel")	HD
		37	TLC	SD
12	M/s Da Vinci Media India Private Limited	38	Da Vinci Learning	HD
13	E-24 Glamour Limited	39	E 24	SD
14	M/s Eenadu Televisoin Private Limited	40	ETV Telugu	SD
		41	ETV Andhra Pradesh (earlier name "ETV-2")	SD
		42	ETV - Telangana (earlier name "ETV-3")	SD
		43	ETV Cinema	SD
		44	ETV Life	SD
		45	ETV Plus	SD
		46	ETV Abhiruchi	SD
47	ETV HD	HD		
15	M/s EPIC Television Networks Pvt Limited	48	EPIC TV (HD Distribution)	HD
16	M/s Genx Entertainment Limited	49	UTV Bindass	SD
		50	UTV Action	SD
17	M/s IBN Lokmat News Private Ltd	51	IBN Lokmat	SD
18	M/s Mavis Satcom Limited	52	J Movies	SD
		53	Jaya Max	SD
		54	Jaya Plus	SD
		55	Jaya TV HD	HD
19	M/s ABP News Network Pvt Limited	56	ABP Ananda	SD
		57	ABP Majha	SD
20	M/s Sony Pictures Networks Distribution India Private Limited	58	Animax	SD
		59	AXN	SD
		60	SET MAX	SD
		61	MIX	SD
		62	SAB	SD
		63	SONY ENTERTAINMENT CHANNEL (SET)	SD
		64	PIX	SD
		65	SIX	SD
		66	MAX 2 (Earlier name "MAX HD")	SD
		67	PAL (Earlier Name "SAB HD")	SD
		68	SET HD	HD
		69	SIX HD	HD

Annexure 4.1(Contd.)

Sl. No.	Name of the broadcaster	Sl. No	Name of the channel	Declared as SD or HD
		70	PIX HD	HD
		71	MAX HD	HD
		72	SONY ESPN HD	HD
		73	Le PLEX HD	HD
		74	SAB HD	HD
21	M/s NDTV Life style Limited	75	NDTV Good Times	SD
22	M/s Neo Sports Broadcast Pvt Limited	76	NEO Prime (Earlier name "Neo Cricket")	SD
		77	Neo Sports	SD
23	M/s New Delhi Television Limited	78	NDTV 24*7	SD
		79	Granada TV (HD)	HD
		80	Trace Sports HD	HD
		81	NDTV Profit	SD
24	M/s NGC Network (India) Pvt Limited	82	Fox Life	SD
		83	National Geographic Channel (NGC)	SD
		84	Fox Life HD	HD
		85	Nat Geo Wild	SD
		86	National Geographic HD	HD
		87	Nat Geo Music HD	HD
		88	Nat Geo Wild HD	HD
		89	Nat Geo People HD	HD
		90	Baby TV HD	HD
25	M/s Odisha Television Limited	91	Prarthana	SD
		92	Tarang	SD
		93	Tarang Music	SD
		94	Alankar	SD
26	M/s Panorama Television Private Limited	95	ETV Bihar Jharkhand	SD
		96	ETV MP Chattisgarh	SD
		97	ETV Rajasthan	SD
		98	ETV Uttar Pradesh Uttarachal	SD
		99	ETV Urdu	SD
		100	ETV News Kannada	SD
		101	ETV News Bangla	SD
		102	ETV Haryana / Himanchal Pradesh	SD
		103	ETV News Gujarati	SD
		104	ETV News Odia	SD
27	M/s Paul Entertainments Pvt Limited	105	9X Tashan (Earlier name "Purvaiya")	SD
28	M/s Raj Television Network Limited	106	Raj Musix Kannada	SD
		107	Raj Digital Plus	SD
		108	Raj Musix	SD
		109	Raj News	SD

Annexure 4.1(Contd.)

Sl. No.	Name of the broadcaster	Sl. No	Name of the channel	Declared as SD or HD
		110	Raj TV	SD
		111	Vissa TV	SD
29	M/s Sahara India Commercial Corporation Ltd	112	Sahara Filmy	SD
		113	Sahara One	SD
30	M/s Sarthak Entertainment Pvt Limited	114	Sarthak TV	SD
31	M/s Silverstar Communications Limited	115	Mega 24	SD
		116	Mega Musiq	SD
		117	Mega TV	SD
		118	Channel (V)	SD
		119	Star Sports 4	SD
		120	FX	SD
		121	Life Ok (earlier name "Star One")	SD
		122	Movies OK (earlier name "Gold Action")	SD
		123	Star Sports 3	SD
		124	Star Gold	SD
		125	Star Jalsha	SD
		126	Star Movies	SD
		127	Star Movies Action	SD
		128	Star Plus	SD
		129	Star Pravah	SD
		130	Star Sports 1	SD
		131	Star Sports 2	SD
		132	Star World	SD
32	M/s Star India Private Limited	133	Jalsha Movies (Earlier name "Star Bengali")	SD
		134	Star Sports HD 2	HD
		135	Star Sports HD 1	HD
		136	Life Ok HD	HD
		137	Star Gold HD	HD
		138	Star Movies HD	HD
		139	Star Plus HD	HD
		140	Star World Premiere HD	HD
		141	Star Sports HD 3	HD
		142	Star Sports HD 4	HD
		143	Star Movies Select HD	HD
		144	Star World HD	HD
		145	FX HD	HD
		146	MAA Gold	SD
		147	MAA Movies	SD
		148	MAA Music	SD
		149	MAA TV	SD

Annexure 4.1(Contd.)

Sl. No.	Name of the broadcaster	Sl. No	Name of the channel	Declared as SD or HD
		150	Star Pravah HD	HD
		151	Star Jalsha HD	HD
		152	Jalsha Movies HD	HD
		153	Star Sports Select HD 1	HD
		154	Star Sports Select HD 2	HD
		155	MAA HD	HD
		156	Star Gold Select HD	HD
33	M/s SUN TV Network Limited	157	Adithya TV	SD
		158	Chintu TV	SD
		159	Chutti TV	SD
		160	Gemini Comedy	SD
		161	Gemini Life	SD
		162	Gemini Movies	SD
		163	Gemini Music	SD
		164	Gemini News	SD
		165	Gemini TV	SD
		166	KTV	SD
		167	Kiran TV	SD
		168	Kushi TV	SD
		169	SUN Life	SD
		170	Sun Music	SD
		171	Sun News	SD
		172	Surya Music (Earlier name "Sun News English")	SD
		173	SUN TV	SD
		174	SUN TV RI	SD
		175	Surya TV	SD
		176	Udaya Comedy	SD
		177	Udaya Movies	SD
		178	Udaya Music	SD
		179	Udaya News	SD
180	Udaya TV	SD		
181	Kochu TV	SD		
182	Sun TV HD	HD		
183	KTV HD	HD		
184	Sun Music HD	HD		
185	Gemini TV HD	HD		
186	Sun Action (#)	SD		
187	Gemini Action (#)	SD		
188	Surya Action (#)	SD		
189	Suriyan TV (#)	SD		
34	M/s Taj Television India Private Limited	190	Ten 2 (earlier name 'Ten Action')	SD
		191	Ten 1 (earlier name 'Ten Sports')	SD

Annexure 4.1(Contd.)

Sl. No.	Name of the broadcaster	Sl. No	Name of the channel	Declared as SD or HD
		192	Ten 3	SD
		193	Ten Golf HD	HD
		194	Ten 1 HD (earlier name 'Ten HD')	HD
35	M/s Turmeric Vision Private Limited	195	Food Food TV	SD
36	M/s Turner International India Pvt Ltd	196	Cartoon Network	SD
		197	CNN International	SD
		198	HBO	SD
		199	POGO	SD
		200	Toonami (Earlier name "Boomerang")	SD
		201	WB	SD
37	M/s TV 18 Broadcast Limited	202	HBO HD (Earlier name "HBO Hits HD")	HD
		203	CNN News 18 (earlier name "CNN-IBN")	SD
		204	CNBC Bazaar	SD
		205	CNBC TV 18 Prime HD	HD
		206	CNBC Awaaz	SD
38	M/s TV Today Network Limited	207	CNBC TV 18	SD
		208	Aaj Tak	SD
		209	Delhi Aaj Tak	SD
		210	India Today (Earlier name "Headlines Today")	SD
39	M/s United Home Entertainment Pvt Limited	211	Aaj Tak Tez	SD
		212	Hungama TV	SD
40	M/s Disney Broadcasting (India) Limited	213	Disney Junior (Earlier name "UTV Comedy")	SD
		214	UTV Movies	SD
		215	Disney XD (Earlier name "UTV World Movies")	SD
		216	Bindass Play (Earlier name "UTV Stars")	SD
		217	The Disney Channel	SD
41	M/s Viacom 18 Media Private Limited	218	Colors	SD
		219	Comedy Central (HD Distribution)	HD
		220	MTV	SD
		221	NICK	SD
		222	Nick Jr / Teen Nick	SD
		223	SONIC	SD
		224	VH 1 (HD Distribution)	HD
		225	Colors Infinity HD	HD

Annexure 4.1(Contd.)

Sl. No.	Name of the broadcaster	Sl. No	Name of the channel	Declared as SD or HD
		226	Colors Infinity	SD
		227	Colors HD	HD
		228	NICKS HD+	HD
		229	MTV Indies (HD Distribution)	HD
		230	Rishtey Cineplex	SD
		231	MTV Beats (Earlier name "X Zone")	SD
		232	Colors Kannada HD	HD
		233	Colors Marathi HD	HD
		234	Colors Bangla HD	HD
		235	Colors Super	SD
		236	Colors Bangla (Earlier name "ETV Bangla")	SD
		237	Colors Gujarati (Earlier name "ETV Gujarati")	SD
		238	Colors Kannada (Earlier name "ETV Kannada")	SD
		239	Colors Marathi (Earlier name "ETV Marathi")	SD
		240	Colors Oriya (Earlier name "ETV Oriya")	SD
		241	MTV Beats HD	HD
42	M/s Vijay Television Pvt Limited	242	Vijay TV (except Tamil Nadu)	SD
		243	Vijay Super	SD
		244	Vijay HD	HD
43	M/s Zee Akaash News Private Limited	245	24 Ghanta	SD
44	M/s Zee Entertainment Enterprises Limited	246	Zee ETC Bollywood (Earlier name "Zee Bollywood")	SD
		247	Action Cinema	SD
		248	Zee Bangla Cinema	SD
		249	Zee Café HD	HD
		250	Zee Café	SD
		251	Zee Cinema	SD
		252	Classic Cinema	SD
		253	Zee Salaam	SD
		254	Zee Studio	SD
		255	Zee Talkies	SD
		256	Zee TV	SD
		257	Zing	SD
		258	Zindagi	SD
		259	& Picture	SD
		260	Zee Q	SD
		261	Zee Bangla	SD
		262	Zee Marathi	SD

Annexure 4.1(Contd.)

Sl. No.	Name of the broadcaster	Sl. No	Name of the channel	Declared as SD or HD
		263	Living Foodz (earlier name "Zee Khana Khazana")	SD
		264	Zee TV HD	HD
		265	Zee Cinema HD	HD
		266	Zee Studio HD	HD
		267	& TV	SD
		268	& TV HD	HD
		269	Zee Kannada	SD
		270	Zee Telugu	SD
		271	& Pictures HD	HD
		272	Zee Cinemalu	SD
		273	Zee Yuva	SD
		274	Zee Marathi HD	HD
		275	Living Zen	SD
		276	Zee Bangla HD	HD
		277	Zee Talkies HD	HD
		278	Zee 24 Taas	SD
		279	Zee Kalinga (Earlier name "Zee 24 Ghantalu)	SD
		280	Zee Business	SD
45	M/s Zee Media Corporation Limited	281	Zee Punjab Haryana Himachal (Earlier name "Zee Punjabi")	SD
		282	Zee Madhya Pradesh Chattisgarh	SD
		283	WION	SD
		284	Zee Rajasthan News (Earliner name "Zee Marudhara" and "Zee Rajasthan Plus")	SD
46	M/s Zoom Entertainment Network Limited	285	Movies Now	SD
47	M/s AXN Networks India Private Limited	286	SONY ESPN (Earlier name "SONY KIX")	SD
		287	AXN HD	HD

Annexure 4.2 : List of pay DTH Operators

- 1. M/s. Tata Sky Ltd.,**
3rd Floor, C-1, Wadia International Centre (Bombay Dyeing)
Pandurang Budhkar Marg, Worli,
Mumbai – 400 025
Tel: 022-6613 3000
Fax-022-6613 3030
Website : www.tatasky.com

- 2. M/s Dish TV India Ltd.**
FC-19, Sector-16A, Film City,
Noida-201301
Tel: 91-120-2467005 / 2467000
Fax: 91-120-4357082
Website : www.dishtv.in

- 3. SUN Direct TV(P) Ltd.**
Murasoli Maran Towers, 73, MRC Nagar,
Main Road, MRC Nagar, Chennai – 28
PH: 044-44676767, Fax No 044-40679191
Website : www.sundirect.in

- 4. Bharti Telemedia Ltd.**
Airtel Centre, Plot No 16,
Udyog Vihar Phase IV,
Gurgaon – 122 015
Ph: 0124-4222222
Fax : 0124-4248063
Website : www.airtel.in

- 5. Reliance Big TV Pvt. Ltd.**
3rd Floor, A-Wing,
Reliance Centre, Maharaja Ranjit Singh Marg,
New Delhi – 110 002
Ph: 011-30331012
Fax : 011-30331781
Website : www.rcom.co.in

- 6. M/s Videocon d2h Limited
(Formerly Bharat Business Channel Limited)**
Plot No.1D, Udyog Vihar Industrial Area,
Surajpur, Greater NOIDA,
Distt, Gautam Budh Nagar - 201 306
Ph: 0120-6141000
Fax : 0120-6141250
Website : www.vedeocond2h.com

Annexure 4.3: List of 84 existing cities with operational FM Radio Channels in India

S.No.	Name of City	Category	Number of operational channels
1	Agra	B	3
2	Ahmedabad	A	6
3	Ahmednagar	C	3
4	Aizwal	D	1
5	Ajmer	C	3
6	Akola	C	1
7	Aligarh	C	2
8	Allahabad	B	3
9	Amritsar	B	3
10	Asansol	B	2
11	Aurangabad	C	3
12	Bareilly	C	3
13	Bengaluru	A	8
14	Bhopal	B	4
15	Bhubaneshwar	C	3
16	Bikaner	C	1
17	Bilaspur	C	1
18	Chandigarh	C	3
19	Chennai	A+	8
20	Cochin	B	4
21	Coimbatore	B	4
22	Delhi	A+	9
23	Dhule	C	1
24	Gangtok	D	2
25	Gorakhpur	C	2
26	Gulbarga	C	1
27	Guwahati	C	4
28	Gwalior	C	4
29	Hissar	D	4
30	Hyderabad	A	6
31	Indore	B	4
32	Jabalpur	B	4

Annexure- 4.3 (Contd.)

S.No.	Name of City	Category	Number of operational channels
33	Jaipur	A	6
34	Jalandhar	C	4
35	Jalgaon	C	2
36	Jammu	C	1
37	Jamshedpur	B	3
38	Jhansi	C	1
39	Jodhpur	C	4
40	Kannur	C	4
41	Kanpur	A	5
42	Karnal	D	3
43	Kolhapur	C	2
44	Kolkata	A+	8
45	Kota	C	4
46	Kozhikode	C	2
47	Lucknow	A	5
48	Madurai	B	3
49	Mangalore	C	3
50	Mumbai	A+	9
51	Muzaffarpur	C	1
52	Mysore	C	2
53	Nagpur	A	4
54	Nanded	C	2
55	Nasik	C	2
56	Panaji	D	3
57	Patiala	C	4
58	Patna	B	1
59	Puducherry	C	3
60	Pune	A	5
61	Raipur	C	4
62	Rajahmundry	C	1
63	Rajkot	B	4
64	Ranchi	C	4
65	Rourkela	C	2
66	Sangli	C	3
67	Shillong	D	1

Annexure- 4.3 (Contd.)

S.No.	Name of City	Category	Number of operational channels
68	Shimla	D	3
69	Sholapur	C	2
70	Siliguri	C	3
71	Srinagar	C	1
72	Surat	A	5
73	Thiruvananthapuram	C	4
74	Thrissur	C	4
75	Tiruchy	C	2
76	Tirunelveli	C	2
77	Tirupati	C	2
78	Tuticorin	C	2
79	Udaipur	C	4
80	Vadodra	B	4
81	Varanasi	B	3
82	Vijayawada	B	2
83	Vishakapatnam	B	4
84	Warrangal	C	1
Total			273

Source:: As reported by Private FM Radio Service Providers to TRAI