Information Note to the Press





#### TELECOM REGULATORY AUTHORITY OF INDIA

New Delhi, 20<sup>th</sup> February, 2019 (www.trai.gov.in)

### Highlights of Telecom Subscription Data as on 31st December, 2018

Particulars	Wireless	Wireline	Total (Wireless+ Wireline)
Total Telephone Subscribers (Million)	1176.00	21.87	1197.87
Net Addition in December, 2018 (Million)	4.24	-0.09	4.15
Monthly Growth Rate	0.36%	-0.42%	0.35%
Urban Telephone Subscribers (Million)	647.52	18.76	666.28
Net Addition in December, 2018 (Million)	1.81	-0.08	1.74
Monthly Growth Rate	0.28%	-0.41%	0.26%
Rural Telephone Subscribers (Million)	528.48	3.11	531.59
Net Addition in December, 2018 (Million)	2.43	-0.02	2.41
Monthly Growth Rate	0.46%	-0.52%	0.46%
Overall Tele-density*(%)	89.78%	1.67%	91.45%
Urban Tele-density*(%)	155.48%	4.50%	159.98%
Rural Tele-density*(%)	59.15%	0.35%	59.50%
Share of Urban Subscribers	55.06%	85.78%	55.62%
Share of Rural Subscribers	44.94%	14.22%	44.38%
Broadband Subscribers (Million)	500.38	18.17	518.55

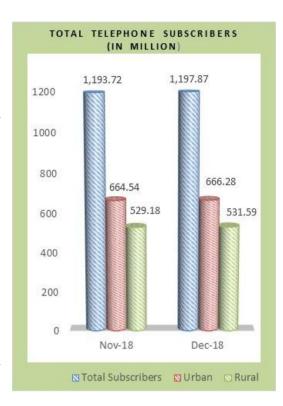
- ❖ In the month of December, 2018, 4.76 million subscribers submitted their requests for Mobile Number Portability (MNP). With this, the cumulative MNP requests increased from 407.22 million at the end of Nov-18 to 411.98 million at the end of Dec-18, since implementation of MNP.
- ❖ Number of active wireless subscribers (on the date of peak VLR<sup>#</sup>) in December, 2018 was 1,026.37 million.

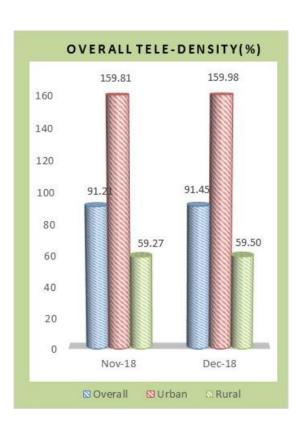
#### Note:

- Information in this Press Release is based on the data provided by the Service Providers
- \* Based on the population projections from Census data published by the Office of Registrar General & Census Commissioner of India.
- # VLR is acronym of Visitor Location Register. The dates of peak VLR for various TSPs are different in different service areas.

## I. Total Telephone Subscribers

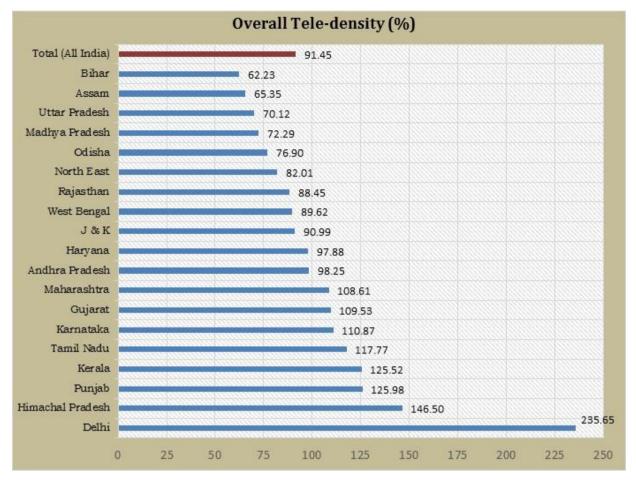
• The number of telephone subscribers in India increased from 1,193.72 million at the end of Nov-18 to 1,197.87 million at the end of Dec-18, thereby showing a monthly growth rate of 0.35%. The urban subscription increased from 664.54 million at the end of Nov-18 to 666.28 million at the end of Dec-18, and the rural subscription increased from 529.18 million to 531.59 million during the same period. The monthly growth rates of urban and rural subscription were 0.26% and 0.46% respectively during the month of Dec-18.





• The overall Tele-density in India increased from 91.21 at the end of Nov-18 to 91.45 at the end of Dec-18. The Urban Tele-density increased from 159.81 at the end of Nov-18 to 159.98 at the end of Dec-18, and Rural Tele-density increased from 59.27 at the end of Nov-18 to 59.50 at the end of Dec-18. The share of urban and rural subscribers in total number of telephone subscribers at the end of Dec-18 was 55.62% and 44.38% respectively.





 Delhi service area has maximum tele-density of 235.65 at the end of Dec-18 and the Bihar service area has minimum tele-density of 62.23 during the same period.

#### Notes:

- 1. Population data/projections are available state wise only.
- 2. Tele-density figures are derived from the telephone subscriber data provided by the access service providers and the projections of population published by the Office of the Registrar General & Census Commissioner, India.
- 3. Telephone subscriber data for Delhi, includes, apart from the data for the State of Delhi, wireless subscriber data for the areas served by the local exchanges of Ghaziabad & Noida (in Uttar Pradesh) and Gurgaon & Faridabad (in Haryana).
- 4. Data/information for West Bengal includes Kolkata, Maharashtra includes Mumbai, Tamil Nadu includes Chennai and Uttar Pradesh includes UPE & UPW service area(s).
- 5. 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.

### II. Category-wise Growth in subscriber base

Circle Category-wise Net Additions in Telephone Subscribers in the month of December, 2018

Circle		s in the month mber, 2018	Telephone Subscriber base a on 31st December, 2018				
Category	Wireline segment			Wireless segment			
Circle A	-35,399	1,496,550	8,610,194	404,247,973			
Circle B	-26,454	1,747,256	5,462,420	479,370,729			
Circle C	-13,712	627,280	922,961	176,642,469			
Metro	-17,489	371,053	6,872,616	115,735,979			
All India	-93,054	4,242,139	21,868,191	1,175,997,150			

### Circle Category-wise monthly and yearly Growth Rates in Telephone Subscribers in the month of December, 2018

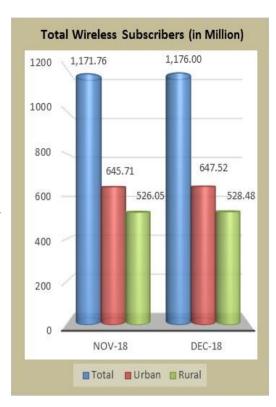
Circle	Monthly gro (Nov-18 t	wth rate (%) to Dec-18)		wth rate (%) to Dec-18)
Category	Wireline Segment	Wireless Segment	Wireline Segment	Wireless Segment
Circle A	-0.41	0.37	-6.55	0.43
Circle B	-0.48	0.37	-7.60	3.19
Circle C	-1.46	0.36	-11.55	-0.44
Metro	-0.25	0.32	-2.73	-5.86
All India	-0.42	0.36	-5.88	0.73

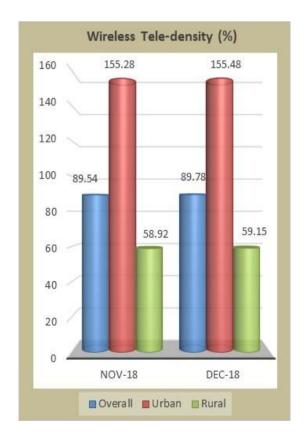
Note: Circle Category-Metro includes Delhi, Mumbai and Kolkata. Data for Chennai has been included in Circle Category-A, as part of TamilNadu.

- As can be seen in the above tables, in wireless segment, Circles of all
  categories showed positive monthly growth in their subscriber base in
  Dec-18. However on yearly basis, Circles in Category 'C' and Metro
  Circles showed negative growth in their subscriber base during the
  month of Dec-18.
- In Wireline segment, Circles of all Categories showed monthly and yearly (Y-o-Y basis) decline in their number of wireline subscribers during the month of Dec-18.

#### III. Wireless Subscribers

Total wireless subscribers (GSM, CDMA & LTE) increased from 1,171.76 million at the end of Nov-18 to 1,176.00 million at the end of Dec-18, thereby registering a monthly growth rate of 0.36%. The Wireless subscription in urban areas increased from 645.71 million at the end of Nov-18 to 647.52 million at the end of Dec-18, and wireless subscriptions in rural areas increased from 526.05 million to 528.48 million during the month. The monthly growth rates of urban and rural wireless subscription were 0.28% and 0.46% respectively.



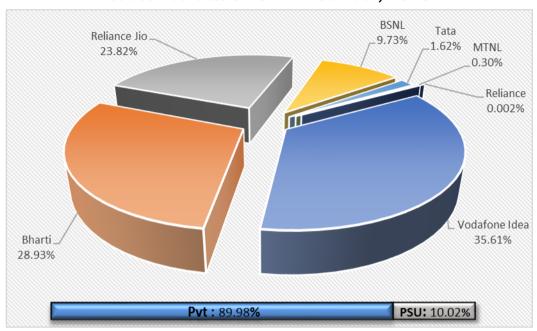


The Wireless Tele-density in India increased from 89.54 at the end of Nov-18 to 89.78 at the end of Dec-18. The Urban Wireless Tele-density increased from 155.28 at the end of Nov-18 to 155.48 at the end of Dec-18. and Rural Wireless Tele-density increased from 58.92 to 59.15 during the same period. The share of urban and rural wireless subscribers in total number of wireless subscribers was 55.06% and 44.94% respectively at the end of Dec-18. Detailed statistics of wireless subscriber base is available at Annexure-I.

• As on 31st December, 2018, the private access service providers held 89.98% market share of the wireless subscribers whereas BSNL and MTNL, the two PSU access service providers, had a market share of only 10.02%.

• The graphical representation of access service provider-wise market share and net additions in wireless subscriber base are given below:

Access Service Provider-wise Market Shares in term of Wireless Subscribers as on 31st December, 2018



Net Additions in Wireless Subscribers of Access Service Providers in the Month of December, 2018



**Note:** 1. On noticing that while reporting number of subscribers, some of the TSPs were deducting inactive subscribers. A Direction was issued on 18<sup>th</sup> August 2017 to TSPs to strictly adhere to the Department of Telecommunications' methodology for reporting their number of subscribers. However, some of the Telecom Service Providers are yet to comply with the Direction.

2. Virtual Network Operator (VNO) of BSNL has started reporting of its subscribers from the month of October, 2018 and the same has been included in the subscriber number of BSNL.

## IV. Active Wireless Subscribers (VLR Data)

- of Out the total wireless subscribers (1,176.00)million), 1,026.37 million wireless subscribers were active on the date of peak VLR in the month of Dec-18. The proportion of active wireless subscribers was approximately 87.28% of the total wireless subscriber base.
- detailed • The statistics on proportion of active wireless subscribers (also referred to as VLR subscribers) on the date of peak VLR in the month of Dec-18 is available at Annexure-II and the methodology used for reporting VLR subscribers is available at Annexure-IV.

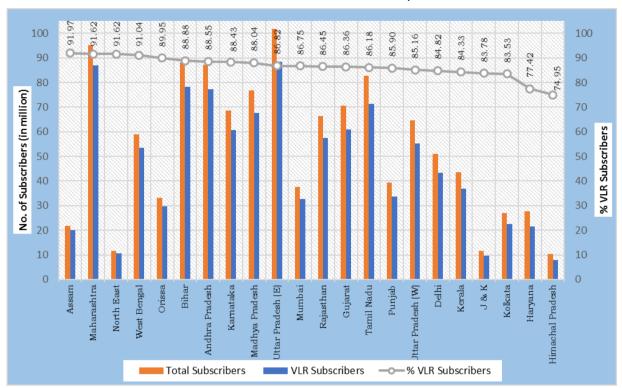
# Access Service Provider-wise Percentage of VLR Subscribers in the Month of December, 2018



- Bharti Airtel has the maximum proportion (98.68%) of its active wireless subscribers (VLR) as
- against its total wireless subscribers (HLR) on the date of peak VLR in the month of Dec-18.

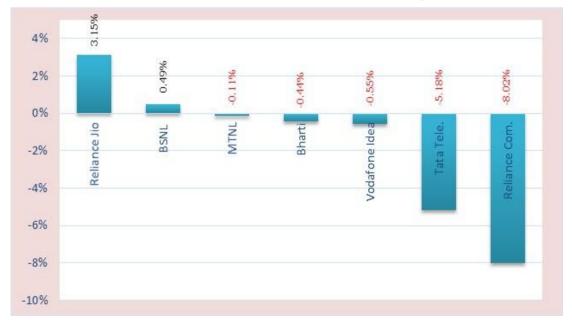
Note: M/s Vodafone and M/s Idea have been merged together and became a new company namely M/s Vodafone Idea Ltd.





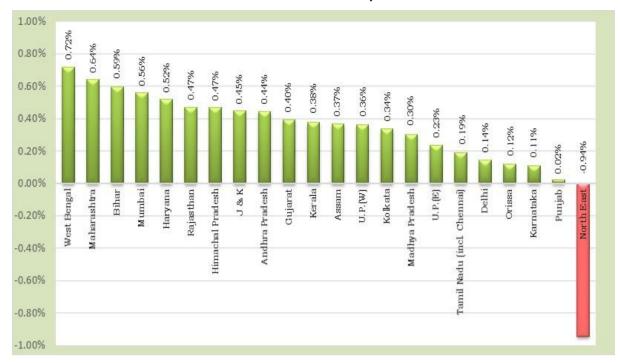
### V. Growth in Wireless Subscribers

# Access Service Provider-wise Monthly Growth Rate of Wireless Subscribers in the Month of December, 2018



Note: BSNL includes its Virtual Network Operator (VNO).

## Service Area-wise Monthly Growth Rate of Wireless Subscribers in the Month of December, 2018



During the month of December,
 2018, all service areas except
 North-East, showed positive
 monthly growth in their wireless
 subscribers during the month of

Dec-18. North East service area showed monthly decline of 0.94% in its wireless subscriber during the month of Dec-18.

## VI. Mobile Number Portability (MNP)

- Intra-service area Mobile number portability (MNP) was implemented first in Haryana service area w.e.f. 25.11.2010 and in the rest of the country w.e.f. 20.01.2011. Inter-Service Area MNP has been implemented in the country w.e.f. 03.07.2015. Now, the wireless telephone subscribers can retain their mobile numbers when they relocate from one service area to another.
- During the month of Dec-18, a total of 4.76 million requests were received for MNP. Out of total 4.76 million requests, 2.51 million requests received from Zone-I and 2.25 million requests received from Zone-II. The cumulative MNP requests increased from 407.22 million at the end of Nov-18 to 411.98 million at the end of Dec-18, since the implementation of MNP.

• In MNP Zone-I (Northern and Western India), the highest number of requests till date have been received in Rajasthan (about 33.24 million) followed by Maharashtra (about 29.38 million) service area. In MNP Zone-II

(Southern and Eastern India), the highest number of requests till date have been received in Karnataka (about 38.84 million) followed by Tamilnadu (about 35.13 million).

Service Area Wise MNP Status										
Zon	e -1	Zone - 2								
Service Area	Reque	of Porting ests (in ion)	Service Area	Number of Porting Requests (in Million)						
	Nov-18	Dec-18		Nov-18	Dec-18					
Delhi	20.95	21.18	Andhra Pradesh	34.68	35.06					
Gujarat	26.53	26.96	Assam	3.26	3.29					
Haryana	14.76	14.93	Bihar	15.73	16.01					
Himachal Pradesh	1.96	1.99	Karnataka	38.56	38.84					
Jammu & Kashmir	0.97	0.98	Kerala	9.82	9.92					
Maharashtra	28.92	29.38	Kolkata	9.94	10.03					
Mumbai	21.28	21.45	Madhya Pradesh	26.64	26.94					
Punjab	15.49	15.69	North East	1.29	1.29					
Rajasthan	32.98	33.24	Orissa	8.01	8.15					
U.P.(East)	22.20	22.51	Tamil Nadu	34.69	35.13					
U.P.(West)	17.83	18.07	West Bengal	20.72	20.92					
Total	203.87	206.38	Total	203.35	205.60					
Total (Zone-1 + Zon	e-2)			407.22	411.98					
Net Addition (Decem	ber, 2018)			•	4.76					

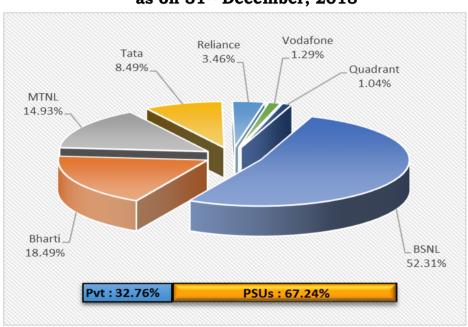
### VII. Wireline Subscribers

• Wireline subscribers further declined from 21.96 million at the end of Nov-18 to 21.87 million at the end of Dec-18. Net decline in the wireline subscriber base was

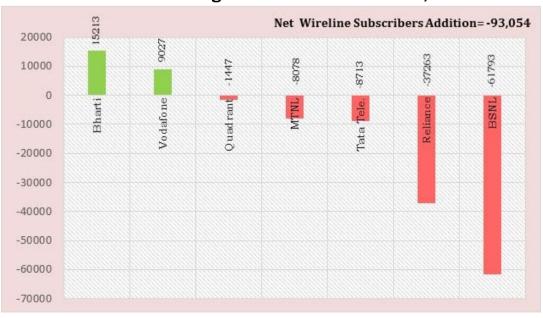
0.09 million with a monthly decline rate of 0.42%. The share of urban and rural subscribers in total wireline subscribers were 85.78% and 14.22% respectively at the end of Dec-18.

- The Overall Wireline Teledensity(%) declined from 1.68 at the end of Nov-18 to 1.67 at the end of Dec-18. Urban and Rural Wireline Tele-density were 4.50 and 0.35 respectively during the same period.
- BSNL and MTNL, the two PSU access service providers, held 67.24% of the wireline market share. Detailed statistics of wireline subscriber base are available at **Annexure-III**.

Access Service Provider-wise Market Shares of Wireline Subscribers as on 31st December, 2018



Access Service Provider-wise Net Additions/declines in Wireline Subscribers during the Month of December, 2018



## VIII. Broadband (≥ 512 Kbps download)

• As per the reports received from 308 operators in the month of December, 2018 as compared to 306 operators in previous month, the number of broadband subscribers increased from 511.90 million at the end of

Nov-18 to 518.55 million at the end of Dec-18 with a monthly growth rate of 1.30%. Segment-wise broadband subscribers and their monthly growth rates are as below:

# Segment-wise Broadband Subscribers and Monthly Growth Rate in the month of December, 2018

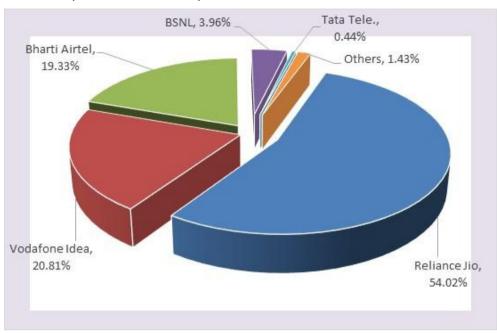
	Broadband (in mi	Monthly growth	
Segment	As on 30 <sup>th</sup> November, 2018	As on 31st December, 2018	rate in the month of Dec-18
Wired subscribers	18.09	18.17	0.45%
Mobile devices users (Phones and dongles)	493.40	499.95	1.33%
Fixed Wireless subscribers (Wi-Fi, Wi-Max, Point-to- Point Radio & VSAT)	0.41	0.43	2.83%
Total	511.90	518.55	1.30%

 Top five service providers constituted 98.57% market share of the total broadband subscribers at the end of Dec-18. These service providers were Reliance Jio Infocomm Ltd (280.12 million), Vodafone Idea (107.92 million), Bharti Airtel (100.26 million), BSNL (20.55 million) and Tata Tele. Group (2.26 million).

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

• The graphical representation of the service provider-wise market share of broadband services is given below:

# Service Provider-wise Market Share of Broadband (wired+wireless) Services as on 31.12.2018



- As on 31st December, 2018, the top five Wired Broadband Service BSNL providers were (9.17)million), (2.27)Bharti Airtel million), Atria Convergence Technologies (1.39 million), MTNL (0.78 million) and Hathway Cable & Datacom (0.78 million).
- As on 31<sup>st</sup> December, 2018, the top five <u>Wireless</u> Broadband Service providers were Reliance Jio Infocomm Ltd (280.12 million), Vodafone Idea (107.90 million), Bharti Airtel (97.99 million), BSNL (11.38 million) and Tata Teleservices (1.79 million).

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Authorized to issue:

					Wireless	Subscribe	er Base											Annexu	re-I
	Bharti	Airtel	Relianc	e Com.	Vodafor	ne Idea	Tata Tele	Tata Teleservices		BSNL		(VNO's)	м	NL	Relian	ice Jio	Total		Net
Circle	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Addition
Andhra Pradesh	29910249	29798728	2317	2298	23343019	23144533	1775981	1700765	10120866	10145072					21676902	22422936	86829334	87214332	384998
Assam	8400240	8382180			5429789	5303241	0	0	2398599	2418559					5436194	5639950	21664822	21743930	79108
Bihar	39484571	39346424	125	129	23652071	23417362	332814	310450	4812751	4890882					19282993	20119506	87565325	88084753	519428
Delhi	15185787	15164364	5052	3920	19518337	19570240	81798	62435					2223150	2220516	14043912	14108953	51058036	51130428	72392
Gujarat	12352211	12322135	297	314	34040798	33947738	945422	884064	5665443	5775864					17368502	17720545	70372673	70650660	277987
Haryana	3822401	3812942	84	90	11283270	11247676	882790	832938	4895554	4904904					6652923	6880952	27537022	27679502	142480
Himachal Pradesh	3625481	3615762	72	72	1401598	1371833	4725	4291	2750156	2767116					2672960	2744696	10454992	10503770	48778
J & K	5662138	5642025			1364924	1339981	0	0	1216613	1214265					3210867	3309640	11454542	11505911	51369
Karnataka	27227136	27186628	3550	3155	16117363	15923911	3283682	3150454	7100130	7101238					14816287	15258054	68548148	68623440	75292
Kerala	5143007	5131817	304	317	20354931	20404012	339150	318184	10838850	10850884					6807729	6942760	43483971	43647974	164003
Kolkata	6462727	6439985	45	42	9747043	9674397	1133949	1083018	1760312	1792484					7868206	8072806	26972282	27062732	90450
Madhya Pradesh	15674471	15617229	555	589	32412661	32185390	2038768	1936607	6053950	6119647					20491619	21044892	76672024	76904354	232330
Maharashtra	16475445	16404201	983	923	49051770	48916041	1759403	1647573	6819600	6907764					20298143	21132249	94405344	95008751	603407
M umbai	8459225	8447178	5770	5427	15746707	15776272	914643	850151					1255711	1254382	10952552	11209409	37334608	37542819	208211
North East	5349921	5335815			2261332	2067625	0	0	1631525	1642752					2537465	2622832	11780243	11669024	-111219
Orissa	13156393	13114987	62	75	6063240	5885690	564031	527842	5545728	5527595					7765811	8078892	33095265	33135081	39816
Punjab	10461029	10362648	131	137	11643628	11494406	941135	891419	5269546	5335427					10994602	11234533	39310071	39318570	8499
Rajasthan	23454701	23357048	253	243	18884902	18751708	135615	123990	5662320	5694204					17938192	18458434	66075983	66385627	309644
Tamil Nadu (incl. Chennai)	25977613	25771495	3507	3390	25528930	25332666	1589243	1511988	11850637	11879836	26594	29804			17619400	18221611	82595924	82750790	154866
U.P.(E)	32849495	32724449	597	624	36618419	36564291	1844635	1765487	11905419	11820748					18334225	18914302	101552790	101789901	237111
U.P.(W)	14028886	13772831	61	60	29553828	29513753	1434550	1365337	5902048	5923283					13599038	14177099	64518411	64752363	233952
West Bengal	18597686	18508444	302	333	27058102	26912269	42342	38546	1589751	1630129					11185018	11802717	58473201	58892438	419237
Total	341760813	340259315	24067	22138	421076662	418745035	20044676	19005539	113789798	114342653	26594	29804	3478861	3474898	271553540	280117768	1171755011	1175997150	4242139
Net Addition		-1501498		-1929		-2331627		-1039137		552855		3210		-3963		8564228	0	4242139	
Rural Subscribers	170205815	168632566	0	0	223642819	220709247	2731784	2577837	35893329	36044189	0	0	46464	46409	93529767	100467784	526049978	528478032	2428054

Note: 1. M/s Vodafone and M/s Idea have been merged together and became a new company namely M/s Vodafone Idea Ltd.

<sup>2.</sup> Virtual Network Operator (VNO) of BSNL has reported its subscriber number from the month of October, 2018.

Proportion of V	n of VLR on the date of Peak VLR in the month of Dec-18 (%)										
Circle	Bharti	BSNL	Vodafone Idea	MTNL	Reliance Com.	Reliance Jio	Tata Tele.	Total			
Andhra Pradesh	99.96	67.68	94.27		71.06	83.58	0.70	88.55			
Assam	96.53	63.34	97.22			92.54		91.97			
Bihar	90.78	54.29	89.60		40.31	94.11	0.17	88.88			
Delhi	94.35		91.13	22.97	60.79	75.82	28.93	84.82			
Gujarat	99.36	44.74	95.15		39.49	78.37	0.03	86.36			
Haryana	120.15	33.66	95.22		38.89	65.14	0.57	77.42			
Himachal Pradesh	92.39	45.01	97.45		91.67	71.04	1.89	74.95			
J & K	90.40	72.61	89.97		-	74.10		83.78			
Karnataka	105.06	61.57	96.11		64.60	81.42	0.50	88.43			
Kerala	104.42	63.08	95.77		55.84	72.83	2.28	84.33			
Kolkata	104.65	52.69	91.76		83.33	73.89	7.37	83.53			
Madhya Pradesh	102.28	52.60	92.12		51.44	89.59	0.50	88.04			
Maharashtra	99.77	55.41	96.48		63.49	92.98	0.61	91.62			
Mumbai	120.02		81.22	49.43	59.52	80.08	1.90	86.75			
North East	96.68	73.57	99.63		-	86.32		91.62			
Orissa	96.33	71.45	96.21		41.33	93.53	0.46	89.95			
Punjab	106.59	48.13	97.03		40.88	80.18	0.10	85.90			
Rajasthan	92.60	45.86	93.49		50.21	84.62	0.57	86.45			
<b>Tamil Nadu</b> (incl. Chennai)	96.94	68.03	95.10		77.26	77.52	0.66	86.18			
U.P. (E)	100.10	44.89	91.67		54.81	88.75	0.12	86.82			
U.P. (W)	102.73	42.06	91.66		55.00	80.73	0.23	85.16			
West Bengal	92.48	86.98	92.96		62.46	85.25	1.32	91.04			
Total	98.68	56.20	93.33	32.52	63.57	83.59	1.02	87.28			

Note: Peak VLR figures in some circles of some of the service providers are more than their HLR figures due to a large number of inroamers.

					•	Wireline	Subscri	ber Base	!					ı	Annexur	e-III	
	BS	NL	MT	NL	Bharti		Reliance		Tata		Quad	irant	Voda	fone	Total		Net
Service Area	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Nov-18	Dec-18	Addition
Andhra Pradesh	1002188	998736			172711	174826	48951	46869	174635	174471			30340	34580	1428825	1429482	657
Assam	119097	116309											2820	2820	121917	119129	-2788
Bihar	228431	222513					3789	3540	8478	8410			1770	1770	242468	236233	-6235
Delhi			1495038	1490886	1371572	1382801	132794	124216	153257	154349			50850	51070	3203511	3203322	-189
Gujarat	1008158	1008211			82548	82520	22815	20620	90072	89660			20310	20539	1223903	1221550	-2353
Haryana	220778	220020			22690	22800	2925	2894	36136	36258			150	150	282679	282122	-557
Himachal Pradesh	113704	113046					3066	3035	1866	1831			60	60	118696	117972	-724
J & K	106247	105329													106247	105329	-918
Karnataka	1043592	1039637			668925	671236	142944	140110	275626	274109			42435	42475	2173522	2167567	-5955
Kerala	1808479	1809217			59749	59997	18226	17170	19542	19413			2550	2550	1908546	1908347	-199
Kolkata	506268	500573			126394	126895	41346	39764	52986	52749			8280	8390	735274	728371	-6903
Madhya Pradesh	656829	656076			242589	242111	11400	10724	15506	15770			930	870	927254	925551	-1703
Maharashtra	1135855	1123163			88212	88787	51648	49324	292243	289655			17720	18343	1585678	1569272	-16406
Mumbai			1777792	1773866	362885	363306	185216	179535	575432	571166			49995	53050	2951320	2940923	-10397
North East	106895	106397											270	270	107165	106667	-498
Orissa	227956	225488					2484	2520	7640	7463			2100	2160	240180	237631	-2549
Punjab	415876	411522			127958	128549	12130	10571	14116	14096	228611	227164	1590	1620	800281	793522	-6759
Rajasthan	458062	451088			53310	53518	24674	20999	12506	12273			7260	7320	555812	545198	-10614
Tamil Nadu (incl. Chennai)	1463431	1456658			558015	555593	75012	72696	118802	118701			18405	18675	2233665	2222323	-11342
U.P.(E)	358167	358611			66344	66088	8279	6174	8197	8215			11780	11840	452767	450928	-1839
U.P.(W)	275117	273129			23235	23323	4016	3749	5584	5342			3900	3990	311852	309533	-2319
West Bengal	245381	242995					1752	1694	2430	2410			120	120	249683	247219	-2464
Total	11500511	11438718	3272830	3264752	4027137	4042350	793467	756204	1865054	1856341	228611	227164	273635	282662	21961245	21868191	-93054
Net Addition		-61793		-8078		15213		-37263		-8713		-1447		9027		-93054	
Rural Subscribers	3026275	3010972	0	0	0	0	1488	1484	51803	51351	47320	46879	0	0	3126886	3110686	-16200

## VLR Subscribers in the Wireless Segment

Home Location Register (HLR) is a central database that contains details of each mobile phone subscriber that is authorized to use the GSM core network. The HLRs store details of every SIM card issued by the service provider. Each SIM has a unique identifier called an International Mobile Subscriber Identity (IMSI), which is the primary key to each HLR record. The HLR data is stored for as long as a subscriber remains with the service provider. HLR also manages the mobility of subscribers by means of updating their position in administrative areas. It sends the subscriber data to a Visitor Location Register (VLR).

**Subscriber numbers** reported by the service providers is the difference between the numbers of IMSI registered in service provider's HLR and sum of other figures as given below:-

1	Total IMSI's in HLR (A)
2	Less: $(B = a + b + c + d + e)$
a.	Test/Service Cards
b.	Employees
	Stock in hand/in Distribution Channels
c.	(Active Card)
d.	Subscriber Retention period expired
e.	Service suspended pending disconnection
3	Subscribers Base (A-B)

**Visitor Location Register** (VLR) is a temporary database of the subscribers who have roamed into the particular area, which it serves. Each base station in the network is served by exactly one VLR; hence a subscriber cannot be present in more than one VLR at a time.

If subscriber is in active stage i.e. he is able to send/receive calls/SMSs he is available both in HLR and VLR. However, it may be possible that the subscriber is registered in HLR but not in VLR due to the reason that he is either switched-off or moved out of coverage area, not reachable etc. In such circumstances he will be available in HLR but not in VLR. This causes difference between subscriber number reported by the service providers based on HLR and numbers available in VLR.

The VLR subscriber data calculated here is based on active subscribers in VLR on the date of Peak subscriber number in VLR of the particular month for which the data is being collected. This data is to be taken from the switches having the purge time of not more than 72 hours.