

# Connectivity for NeGP

Presented By:

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# NeGP Connectivity Components

- SWAN (min 2 Mbps connectivity)
  - Vertical Locations: 7500+ PoPs
  - Horizontal Locations: 41000+ Departmental offices
  - Initially 60% locations were feasible - majority by BSNL
- CSC (Broadband connectivity)
  - 100,000+ rural locations
  - 5-10% locations were feasible initially
  - 28000 BSNL rural exchanges

- BSNL was identified as a key Bandwidth Service Provider (BSP) for NeGP connectivity
- MoU was signed with BSNL for discounted tariff for SWAN.
  - 90% discount on main bandwidth portion for 2 Mbps
  - No discount on local lead
  - Minimum 3 yrs commitment
  - Free Right of Way to BSNL

## Issues / Concerns at that time

- Coordination between State level BSNL CGMs & State government for SWAN scheme
- Availability of Broadband connectivity at remote locations (Blocks & below Block level)
- Provisioning of OFC on local lead
- High Lease Line bandwidth charges
- Signing of Service Level Agreement (SLA)/ MoUs
- Re-instatement charges
- Connectivity from other operators for Bandwidth
- Provision of end equipment for termination

## Working Group on Connectivity Issues

- Constituted in January 2006
  - JS (e-Gov), JS (DoT) & Director (BSNL)
  - Continues to work till required Connectivity is achieved
- Meetings of held at regular intervals to resolve connectivity related issues
- BSNL Circulars for SWAN issued from time to time accordingly

# Terms of Reference of Working Group

1. Issues relating to Local Leads between the
  - BSNL exchanges and the SWAN PoPs
  - SWAN PoPs and the State Government Horizontal Offices
2. Various parameters of Bandwidth SLA to be drawn up between BSNL and State Government and to finalize a standard format for the same which would be applicable nationwide.
3. Discount on Lease Line charges for higher bandwidth.
4. Inconsistencies and variations in the BSNL Headquarters directive and Local interpretation by different Circles of BSNL on pricing and operational Guidelines.
5. To monitor implementation of CSC connectivity being provided by BSNL & issues related to the same.

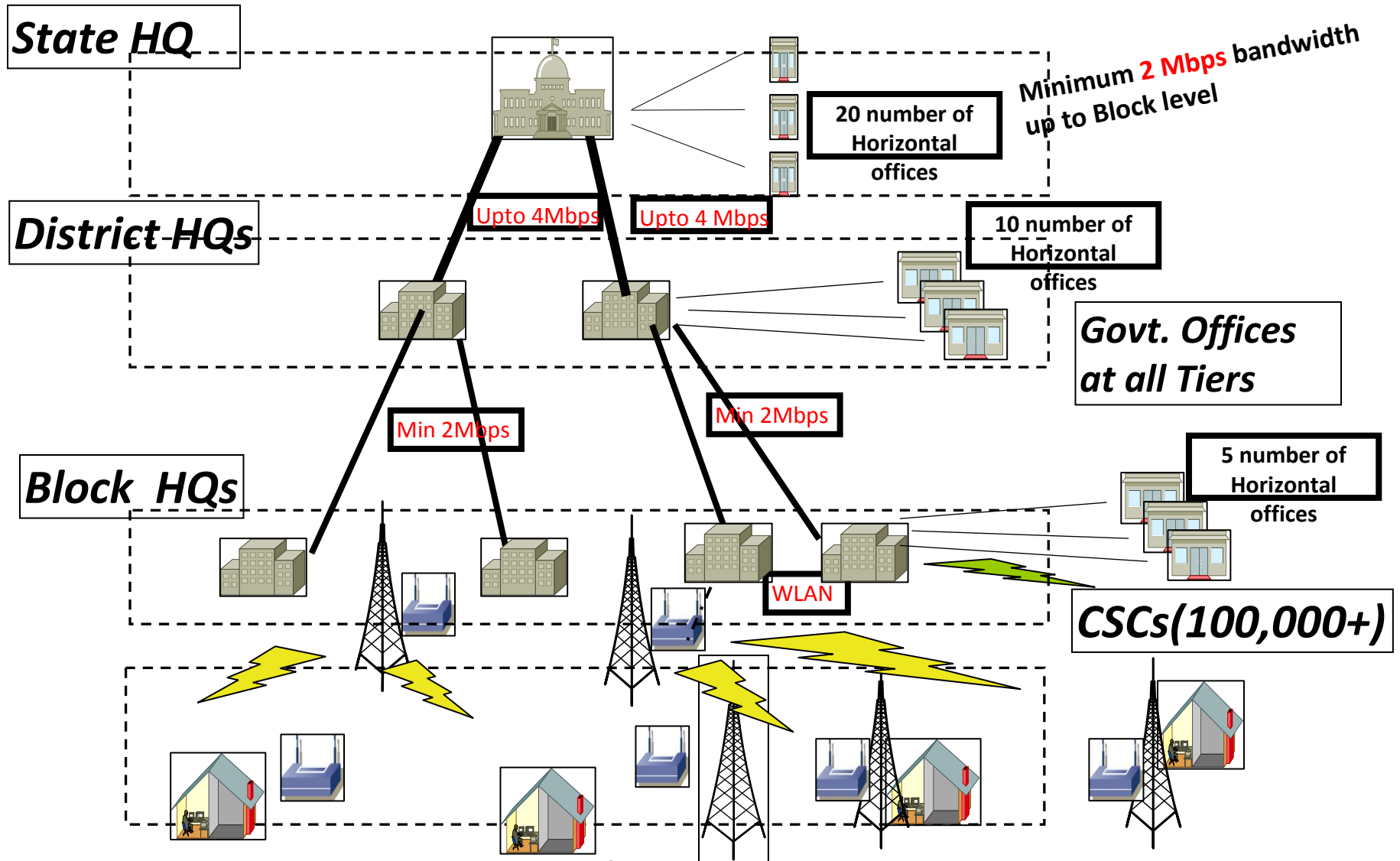
## Progress so far...

- Uniform directives for all BSNL circles
  - State level coordination committee
  - Discounted Tariff for SWAN scheme against free Right of Way
    - 74% on one 2Mbps main link up to BHQ
      - 45% on additional 2 - 8 Mbps
      - 50% on 34 & 45 Mbps
      - 55% on 155 Mbps & above
    - 30% on local lead charges (provided on copper)
  - Discounted Tariff for SWAN scheme without free Right of Way
    - 45% on 2 - 8 Mbps
    - 50% on 34 & 45 Mbps
    - 55% on 155 Mbps & above
  - Signing of SLA for MLLN circuits (99%) and for non-MLLN circuits (98%)
  - Last mile connectivity on OFC, without any additional cost, when aggregated Bandwidth at any PoP is 10Mbps (5x2 Mbps) or more.

## **Financial Support provided by DIT through ACA for Bandwidth Connectivity for SWAN Scheme**

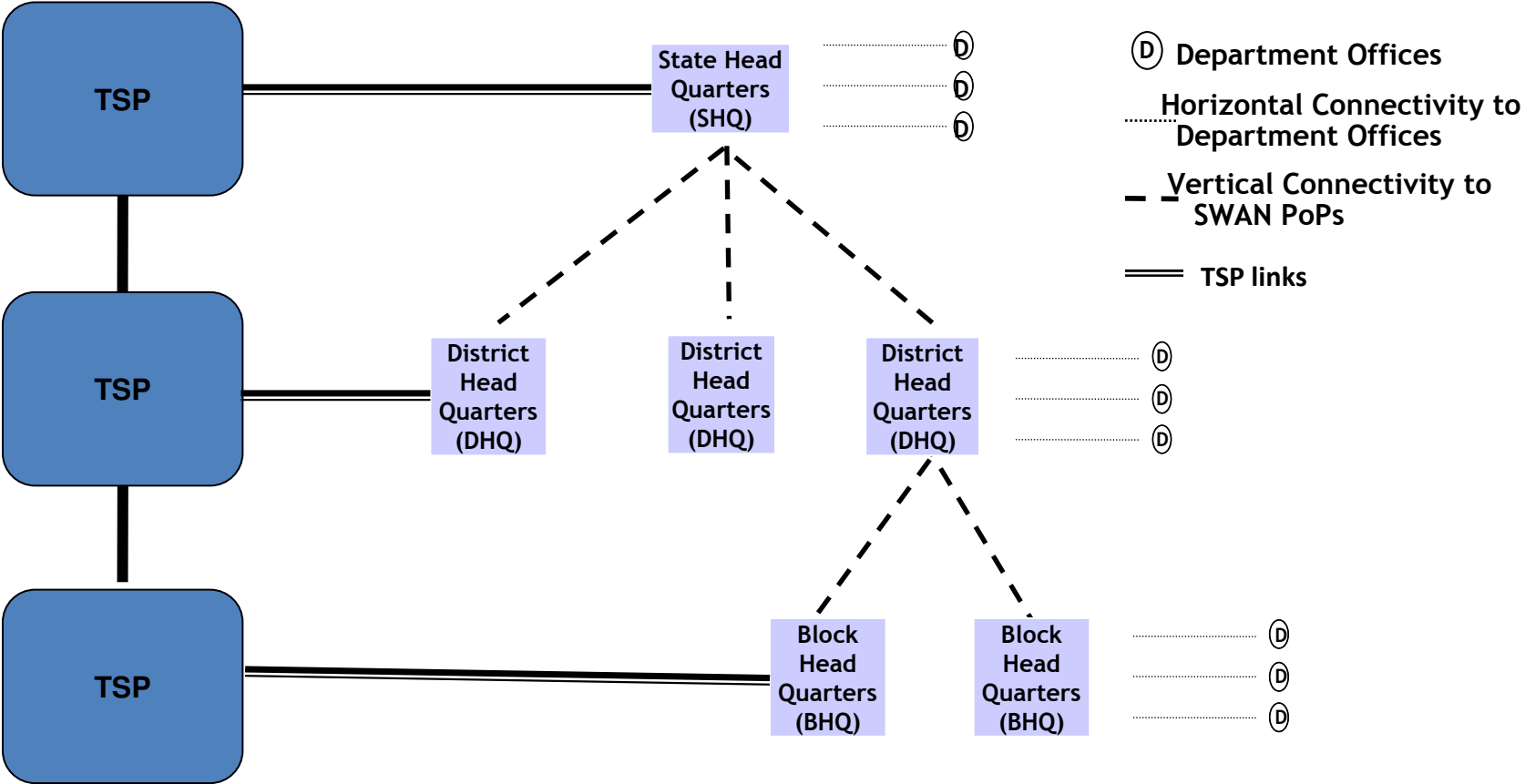
- 4 Mbps bandwidth for each SHQ-DHQ link
- 2 Mbps bandwidth for each DHQ-BHQ link
- Upto 2 Mbps for horizontal offices
  - 20 at SHQ, 10 at each DHQs & 5 at each BHQs
- Any additional bandwidth required to be funded by State/ UT.

# State Wide Area Network (SWAN)

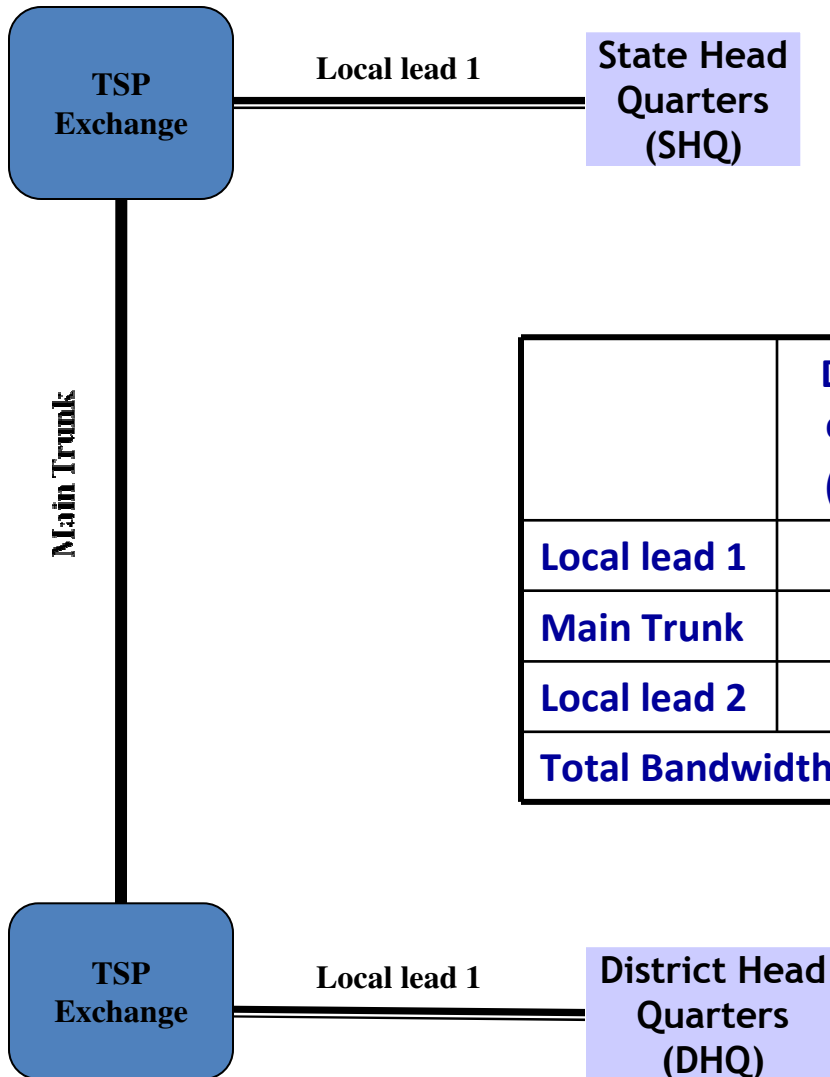


When fully implemented, makes a  
**1 Million** + route-kilometer network !

# SWAN – Connectivity



# Bandwidth Charges Calculation mechanism for Vertical Link



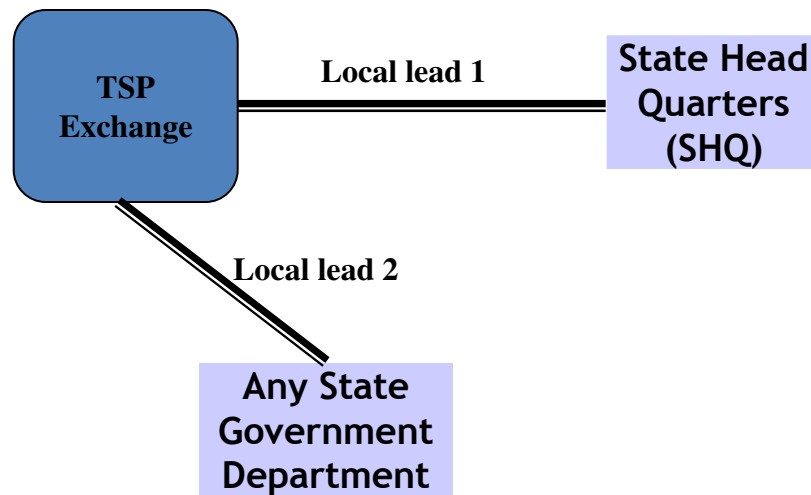
## Sample Data

	Distance covered (in Kms)	Bandwidth capacity (in Mbps)	Actual Leased line tariff as per BSNL (in Rs. per annum)
Local lead 1	5	4	34032
Main Trunk	200	4	688224
Local lead 2	5	4	34032
<b>Total Bandwidth Charges</b>			<b>756288</b>

## Bandwidth Charges Calculation mechanism for Vertical Link (cont..)

	Actual Leased line tariff as per BSNL (in Rs. per annum)	Free RoW		Without Free RoW	
		Discount offered by BSNL (%)	Bandwidth charges (Rs.)	Discount offered by BSNL (%)	Bandwidth charges (Rs.)
Local Lead 1 (4 Mbps on fiber)	34,032	0	34,032	0	34,032
Main Trunk (first 2 Mbps)	3,44,112	74	89,469	45	1,89,262
Main Trunk (another 2 Mbps)	3,44,112	45	1,89,262	45	1,89,262
Local Lead 1 (4 Mbps on fiber)	34,032	0	34,032	0	34,032
<b>Total Charges</b>	<b>7,56,288</b>		<b>3,46,795</b>		<b>4,46,588</b>

# Bandwidth Charges Calculation mechanism for Horizontal Link



## Sample Data

	Distance covered (in Kms)	Bandwidth capacity (in Mbps)	Actual Leased line tariff as per BSNL (in Rs. per annum)
Local lead 1	5	2	17,016
Local lead 2	5	2	17,016
<b>Total Bandwidth Charges</b>			<b>34,032</b>

## Bandwidth Charges Calculation mechanism for Horizontal Link (cont..)

	Actual Leased line tariff as per BSNL (in Rs. per annum)	Free RoW		Without Free RoW	
		Discount offered by BSNL (%)	Bandwidth charges (Rs.)	Discount offered by BSNL (%)	Bandwidth charges (Rs.)
Local Lead 1 (2 Mbps on copper)	17,016	30	11,911	0	17,016
Local Lead 2 (2 Mbps on copper)	17,016	30	11,911	0	17,016
<b>Total Charges</b>	<b>34,032</b>		<b>23,822</b>		<b>34,032</b>
Local Lead 1 (2 Mbps on fiber)	17,016	0	17,016	0	17,016
Local Lead 2 (2Mbps on fiber)	17,016	0	17,016	0	17,016
<b>Total Charges</b>	<b>34,032</b>		<b>34,032</b>		<b>34,032</b>



## Financial Support provided by DIT for provisioning of Broadband Connectivity for CSC Scheme

Mode of Connectivity	Organization	Fund Sanctioned (Rs. In Crore)	Initially no. of CSCs locations planned to be covered	Actual no. of CSC locations planned to be covered
Upgrading existing BSNL rural exchanges – ADSL2 +	BSNL	170.00	25000	29818
Wimax Broadband Connectivity	BSNL	710.00	66500	63334
VSAT connectivity	NIC	49.88	2500	2500
<b>Total</b>		<b>929.88</b>	<b>94000</b>	<b>95662</b>

## CSC connectivity Status

Mode of CSC Connectivity	Planned	Covered	Expected Timelines for completion
Rural Exchanges (ADSL2+)	29818	23914	<b>Oct 2009</b>
Wimax	63334	0	11000 by end of <b>Nov 2009</b> Remaining by <b>Jun 2010</b>
Other (EVDO & DSPT)	2890	630	<b>Nov 2009</b>
VSAT Connectivity	2500	0	<b>Dec 2009</b>
<b>Total</b>	<b>98542</b>	<b>24544</b>	



## Proposed Tariff Plan for CSC connectivity

From BSNL

- Rs. 400 & Rs.1000 per month for 256 Kbps bandwidth with 4GB & 8GB download respectively
- Rs. 1500 per month for 256 kbps bandwidth with unlimited download
- **Unlimited download plan for 256 & 512 kbps at Rs 750 & Rs. 1350 respectively being considered based on DIT request**

From NIC

- Rs. 400 per month for 256/64 kbps VSAT connectivity for remote locations only

## Issues being addressed...

### SWAN

- Last mile connectivity issues for some of the remote PoPs
- Reliability of Bandwidth availability
- Timely deployment of Bandwidth at many SWAN PoPs
- Helpdesk or any other mechanism to escalate & resolve the Connectivity related issues
- Signing of Comprehensive SLA
- Provision of End Equipment

### CSC

- To work out SCA-wise/ District wise CSC locations for requirement of connectivity.
- Integration and monitoring of the Implementation plan of SCA's & BSNL with respect to CSC scheme

## **Proposed Solution**

- Ensure participation of BSNL circle coordinator in State Level Committee meetings on SWAN & CSC
- Status & roadmap of BSNL Bandwidth availability across State/UT.
- Closely monitor the Implementation of Connectivity for SWAN & CSC locations
- Coordinating with BSNL as per proposed Roadmap fortnightly to speed up the implementation process.
- Sign MoU/SLA with BSNL for both MLLN & Non-MLLN Circuits.

## **Proposed Solution (cont...)**

- Generate Bandwidth usage report through SWAN NMS to ensure Committed Interface Rate(CIR) of network.
- To work out SCA-wise/ District wise CSC locations for requirement of connectivity.
- To work out details of PoP locations Block & District wise.
- States may please verify the demand note for SWAN as per the tariff calculations shown.

For any further information, queries,  
suggestions, recommendations ...

please email to

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### CSC Connectivity: Status as on 24/07/2009

Sl. No	Name of State	Circle	CSCs in circle	Total CSCs to be provided by BSNL						Covered		
				ADSL2 +	Wimax	EVDO	DSPT	Soma	Total	DSL	EVDO	Total
1	A & N	A & N	85	32	0	0	0	0	32	9	0	9
2	Andhra Pradesh	Andhra Pradesh	4471	2220	1690	0	0	0	3910	2188	0	2188
3	Assam	Assam	4220	801	3188	231	0	0	4220	801	32	833
4	Bihar	Bihar	6558	1222	5264	0	0	0	6486	1157	0	1157
5	Chattisgarh	Chattisgarh	3317	834	2288	195	0	0	3317	784	20	804
6	Daman & Diu	Gujarat	4	0	0	0	0	0	0	0	0	0
7	Dadra & nagar haveli	Gujarat	12	0	0	0	0	0	0	0	0	0
8	Gujarat	Gujarat	3035	1728	320	1002	0	0	3050	1728	0	1728
9	Himachal pradesh	Himachal pradesh	2939	1464	1255	161	59	0	2939	853	148	1001
10	Haryana	Haryana	1136	835	299	0	0	0	1134	804	0	804
11	Jharkhand	Jharkhand	4920	321	4524	0	0	0	4845	20	0	20
12	J&K	J&K	1078	176	840	7	55	0	1078	169	2	171
13	Karnataka	Karnataka	4616	2998	1407	8	0	0	4413	2292	0	2292
14	Kerala	Kerala	230	230	0	0	0	0	230	223	0	223



### CSC Connectivity: Status as on 24/07/2009 (cont...)

Sl. No	Name of State	Circle	CSCs in circle	Total CSCs to be provided by BSNL						Covered		
				ADSL2 +	Wimax	EVDO	DSPT	Soma	Total	DSL	EVDO	Total
28	Pondicherry	Tamil Nadu	15	15	0	0	0	0	15	15	0	15
29	Tamil Nadu	Tamil Nadu	2309	1006	1213	7	0	0	2226	989	2	991
30		Chennai	278	139	97	36	0	0	272	139	19	158
31	Rajasthan	Rajasthan	6678	1940	4747	2	0	0	6689	1187	2	1189
32	Uttar pradesh	UPE	12976	1520	10111	0	0	0	11631	1520	0	1520
33		UPW	3477	988	2489	0	0	0	3477	988	0	988
34	Uttaranchal	Uttaranchal	2648	708	1277	183	0	0	2168	689	11	700
35	West Bengal	West Bengal	6376	1616	4058	1	0	0	5675	423	1	424
36	Sikkim	West Bengal	76	19	31	12	14	0	76	17	0	17
<b>Total</b>			<b>99690</b>	<b>29929</b>	<b>62135</b>	<b>2351</b>	<b>539</b>	<b>16</b>	<b>94970</b>	<b>23914</b>	<b>630</b>	<b>24544</b>

**Remarks: Total number of CSCs under various technologies may change slightly, once actual installation of Wimax starts.**



## SWAN Connectivity Status

Sl. No.	Name of State / UT	SHQ	DHQ	THQ/ot her	BHQ	Total no. of PoPs	No of PoPs operational
	<b>State</b>						
1	Andhra Pradesh	1	23	0	1088	1112	0
2	Arunachal Pradesh	1	16	0	160	177	0
3	Assam	1	26	27	250	304	100
4	Bihar	1	37	0	495	533	300
5	Chhattisgarh	1	17	0	133	151	0
6	Goa	1	2		11	14	
7	Gujarat	1	25	14	211	251	251
8	Haryana	1	22	0	126	149	145
9	Himachal Pradesh	1	12	0	118	131	124
10	Jammu & Kashmir	1	20	0	121	142	0
11	Jharkand	1	22	35	212	270	240
12	Karnataka	1	27	0	148	176	0
13	Kerala	1	14	2	152	169	150
14	Madhya Pradesh	1	49	0	310	360	48
15	Maharashtra	1	35	0	324	360	30
16	Manipur	1	7	0	34	42	0
17	Meghalaya	1	7	8	39	55	0



## SWAN Connectivity Status

Sl. No.	Name of State / UT	SHQ	DHQ	THQ/ other	BHQ	Total no. of PoPs	No of PoPs operational
	<b>State</b>						
18	Mizoram	1	7	0	34	42	0
19	Nagaland	1	10	0	37	48	0
20	Orissa	1	30	0	284	315	0
21	Punjab	1	20	0	175	196	195
22	Rajasthan	1	31	0	208	240	0
23	Sikkim	1	4	0	38	43	40
24	Tamil Nadu	1	43	0	664	708	704
25	Tripura	1	3	0	61	65	56
26	Uttarakhand	1	13	0	121	135	0
27	Uttar Pradesh	1	70	241	573	885	800
28	West Bengal	1	18	46	304	369	300
	<b>UT</b>						
1	Andaman & Nicobar	1	3		7	11	
2	Chandigarh	1			6	7	7
3	Dadra & Nagar Haveli	1			2	3	0
4	Daman & Diu	1			2	3	0
5	Lakshadweep	1			9	10	0
6	NCT of Delhi	1	9		12	22	21
7	Puducherry	1	3		8	12	3
	<b>Total</b>	<b>35</b>	<b>625</b>	<b>373</b>	<b>6477</b>	<b>7510</b>	<b>3514</b>

