

SHARED INFRASTRUCTURE

“One Vision... A Reality”



- + **150 million subscribers**
 - Growing at 5 million subscribers per month
- + **Investments of over Rs. 200,000 crores**
 - growing @ 12% per annum
- + **Revenues of over Rs. 85,000 crores,**
 - increasing @ 21% per annum
- + **FDI of > Rs. 10,000 crores**



A Proud Flag Bearer of the Indian Reforms Process

- ▶▶ Propagation of radio signal requires setting up of Towers
- ▶▶ At present ~ 70, 000 towers catering to 100 million subscribers
- ▶▶ At this rate, the industry will need
 - ~ 140,000 towers for 200 million subs by 2007
 - ~ 350,000 towers for 500 million subs by 2010

**For maintaining growth of service,
setting up of towers should be facilitated**



**Challenges Associated
with Setting up of Towers**

- ▶▶ **Identification of Sites**
 - **In consonance with RF Planning**

- ▶▶ **Time frame for obtaining clearances**
 - **From Government & civic authorities**

- ▶▶ **Clearances/ Permissions from other bodies**
 - **SACFA, Building societies, etc.**

- ▶▶ **Non availability of sites leads to Dark spots**

- ▶▶ **25- 35 “Dark Spots”* in Central & South Delhi alone**
 - **Affects ubiquitous coverage**
 - **Impacts Quality of Service**
 - **Network Congestion, call drops, etc**

* Dark Spot is a place where no cellular coverage is available

- ▶▶ **Huge Investment in Cellsite Deployment**
 - **Incremental cost of ~ Rs. 25,000 crores by 2007**

- ▶▶ **A Price Sensitive Indian Consumer**
 - **Lowest Tariffs in the world & Declining ARPUs**

- ▶▶ **Inadequate Resources to Fund network expansion**
 - **Will impact future growth & development**

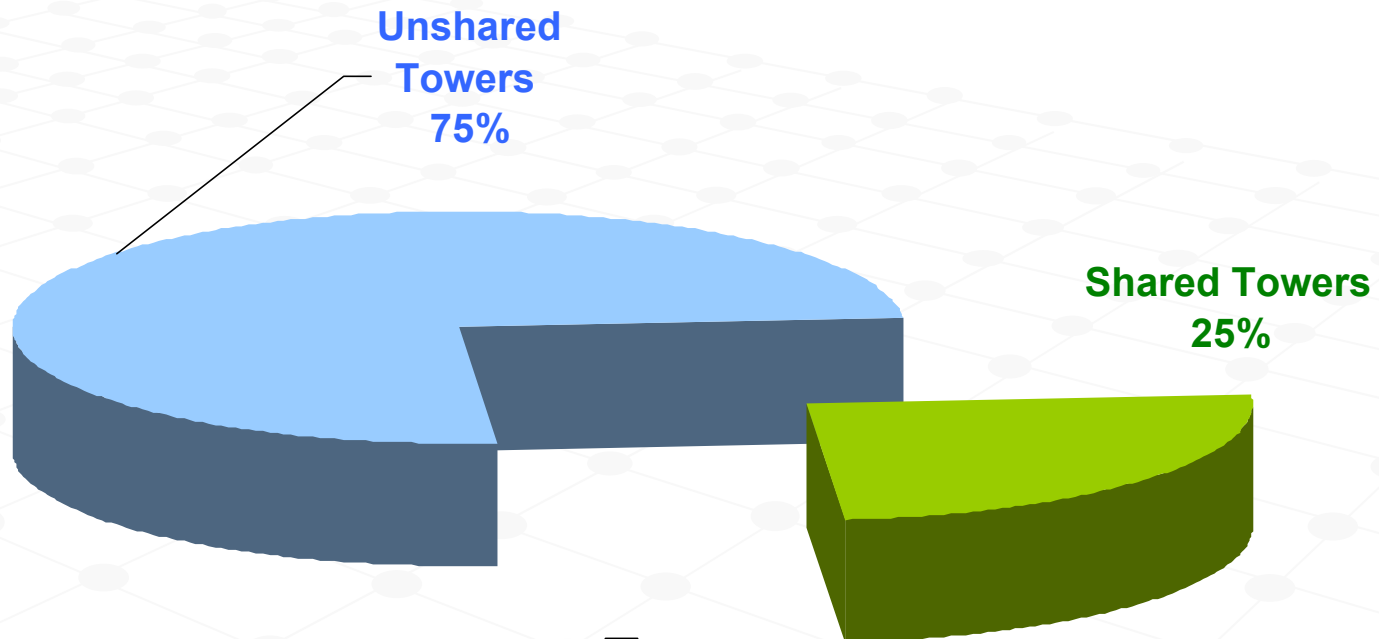
- ▶▶ **Rapid Growth in Subscriber Base**
 - ~ 5 million additions per month

- ▶▶ **Proportionate increase in Number of Towers**

- ▶▶ **Managed growth required**
 - To enable adequate coverage in an aesthetic environment

Thus, Infrastructure Sharing assumes critical importance

- + Improve Quality of Service through better coverage**
- + Improve the aesthetics of the landscape**
- + Reduce costs involved in infrastructure creation**
- + Optimally utilize scarce national resources**



**In almost all the cases, Sharing is Bilateral
More as a form of barter**

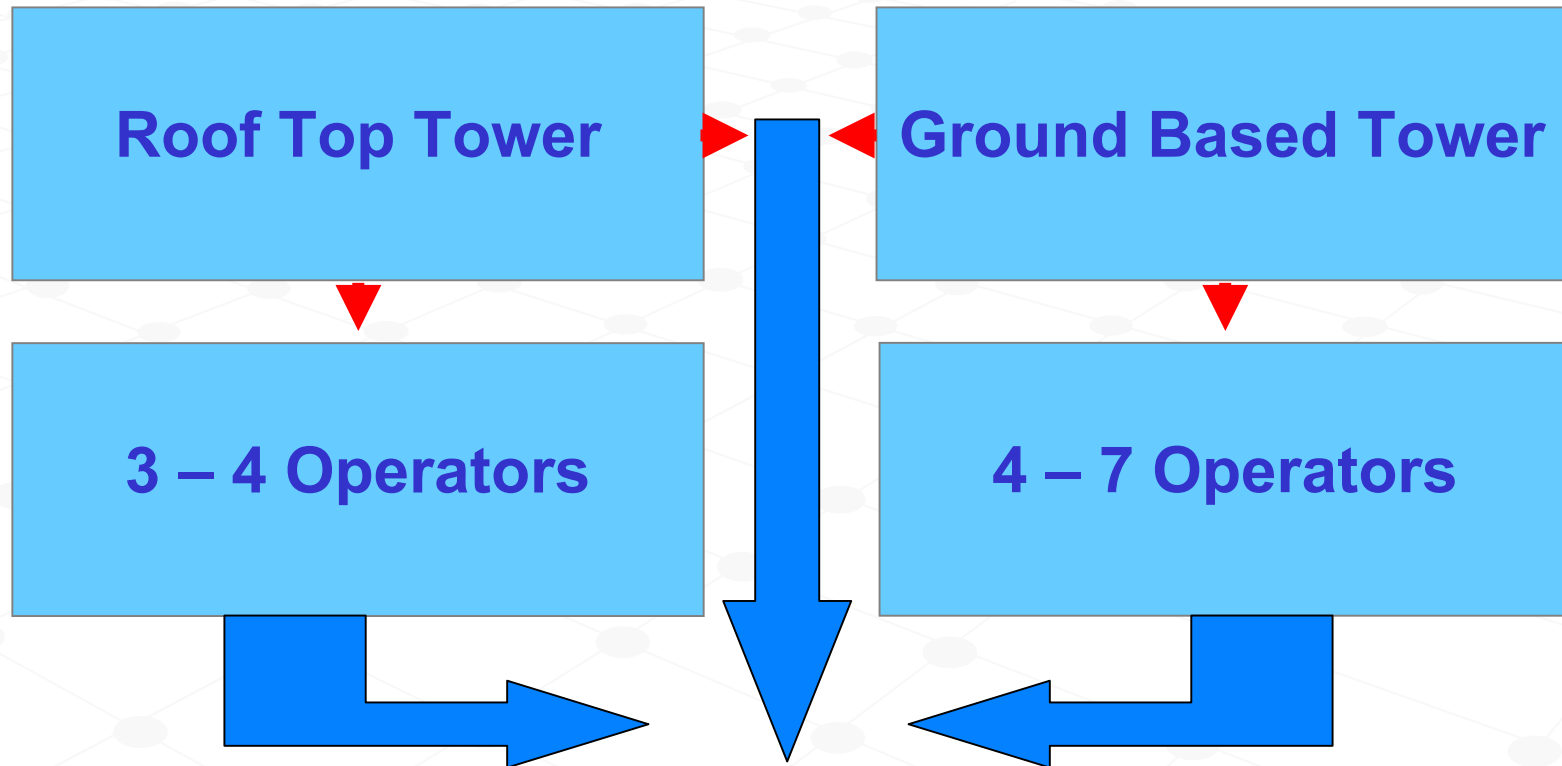


**New Vision of
Infrastructure Sharing**

On 20th March 2006, Hon'ble Minister of Communications & Information Technology, Thiru Dayanidhi Maran enunciated his vision of ushering in an Infrastructure Sharing Revolution



Concepts of Infrastructure Sharing



**Special Committee formed of AUSPI, COAI & TEMA,
under the Chairmanship of Shri. M. Sahu, Joint
Secretary, DoT**

PROJECT "MOST" TEAM



समृद्धि करो
Govt of India

Department of Telecommunication

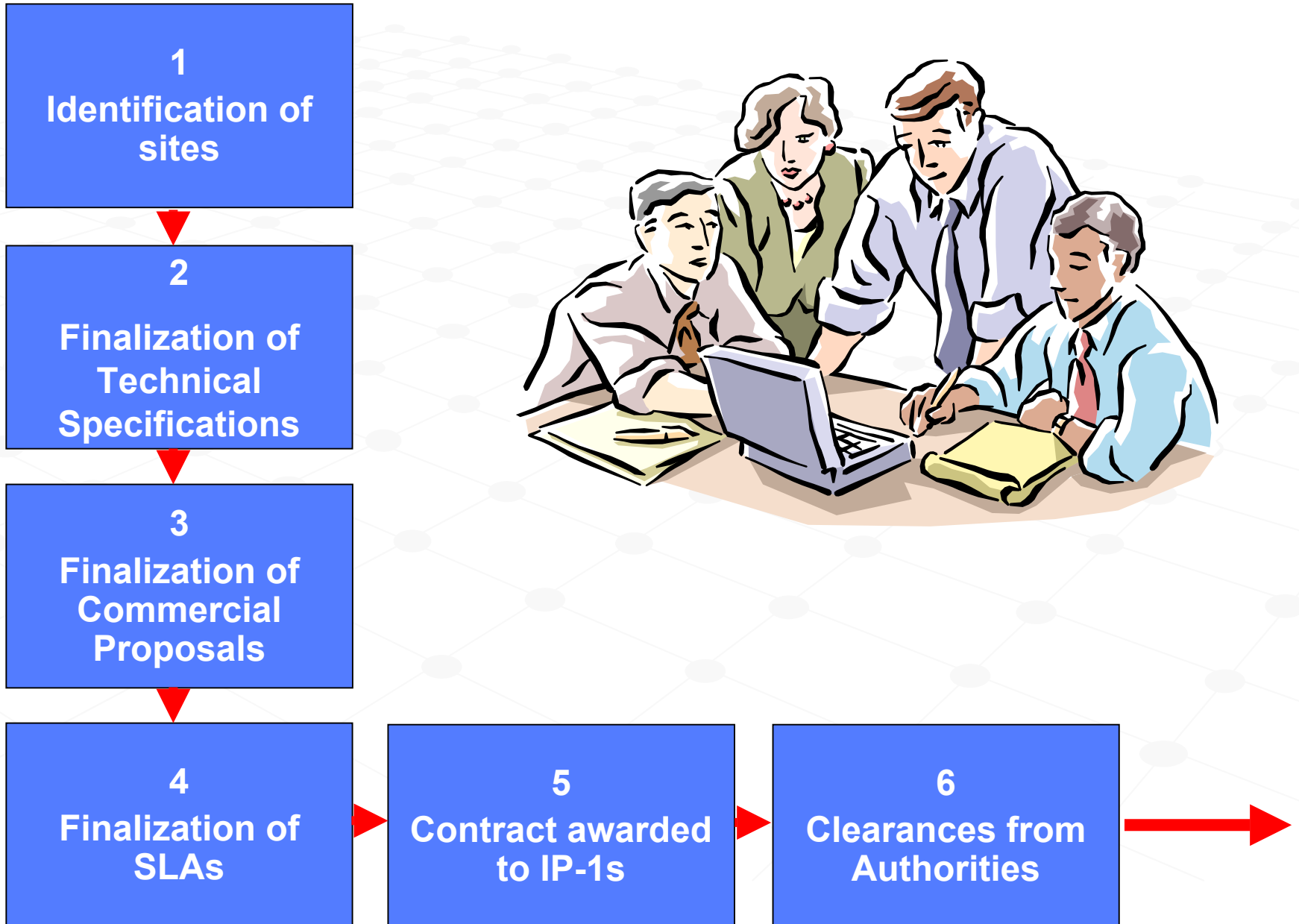


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- **No. of GSM/ CDMA/ Microwave Antennas per Tower**
- **Desired Azimuth and AGL for each operators**
- **Direction and Tilt of the Antenna**
- **Interference free operation for each operator**
- **Wind Loading Capacity – Safety factor of the tower**
- **Power requirements**
- **Requisite clearances from various Authorities**

**The challenges were met after exhaustive deliberations in
> 20 meetings of the Special Committee**

PROJECT IMPLEMENTATION



WORK IN PROGRESS





**Flagship Sites in Delhi
Service Area**

FLAGSHIP SITE 1 – DELHI HIGH COURT



- **2 Roof-top Towers**
- **First Tower - 3 Operator Sharing (GSM)**
 - **Airtel, Hutch & Idea**
- **Single Tower supporting 9 GSM & 3 Microwave Antennas**

- **Second Tower- 3 Operator Sharing**
- **1 GSM + 2 CDMA**
- **MTNL, Reliance & TTSL**
- **Work in Progress**

- Ground-Based Tower
- 4 Operator Sharing
- 3 GSM + 1CDMA
- **Airtel, Hutch, Idea & TTSL**
- Single Tower supporting 9 GSM, 3CDMA & 4 Microwave Antennas



FLAGSHIP SITE 3 - DHANDSA

- **Ground-Based Tower**
- **6 Operator Sharing**
- **4 GSM + 2 CDMA**
- **Airtel, Hutch, Idea, MTNL, Reliance & TTSL**
- **Single Tower supporting 12 GSM, 6 CDMA & 6 Microwave Antennas**
- **Tower Design Certified by IIT, Delhi**



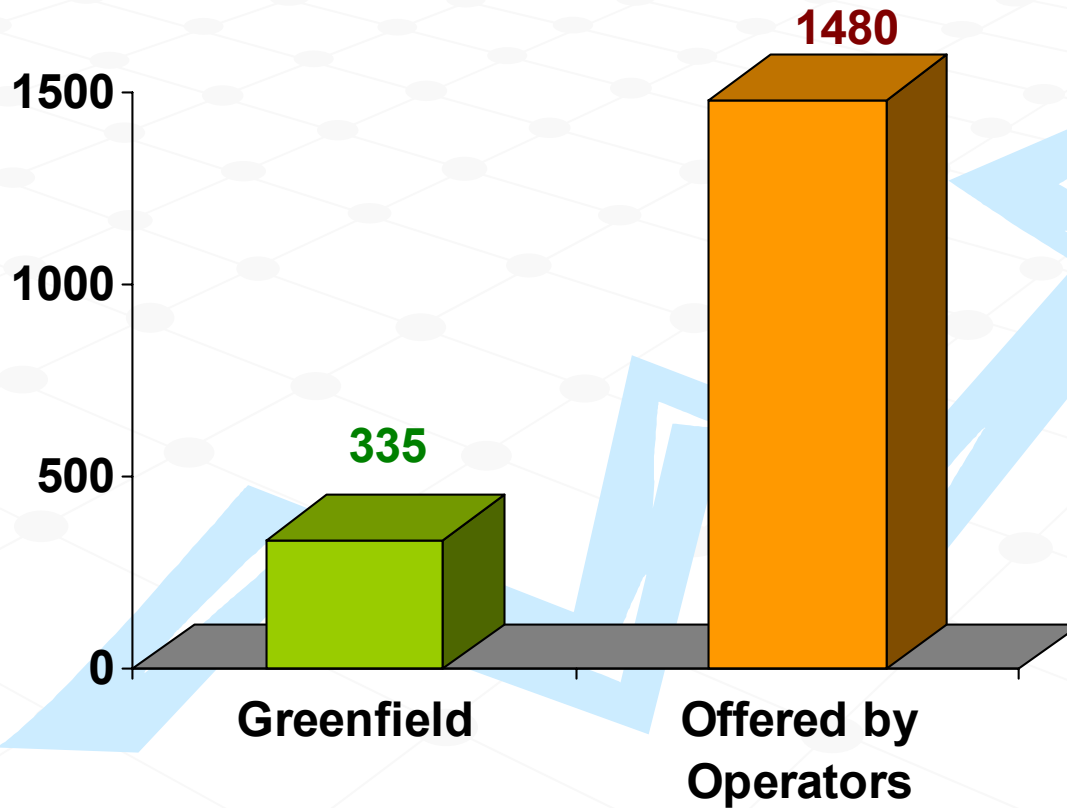
PROBABLY THE FIRST TIME IN THE WORLD



- **Ground-based Tower**
- **7 Operator Sharing**
- **4 GSM 3 CDMA Operators**
- **Airtel, Hutch, Idea & MTNL-GSM, MTNL-CDMA, Reliance & TTSL**
- **Site is Under construction**

ANOTHER WORLD RECORD

▶▶ ~1800 sites targeted for sharing by 2007



- ▶▶ **Project Rollout in other cities and towns of India**
- ▶▶ **Increased Participation of IP-1s**
- ▶▶ **Target 4 Operator sharing for RTT**
- ▶▶ **Further improvement in aesthetics**
- ▶▶ **Antenna sharing**

THANK YOU !!