

Driving Cellular Growth in India

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Current Status of the Industry

Indian Cellular = GSM



- ▶▶ Cellular Mobile Services in India are offered on GSM.
- ▶▶ GSM standard was chosen by the Indian Government in 1992 for cellular mobile services.
- ▶▶ Although technology neutrality was allowed in 1999, all cellular operators continue to offer their services on GSM.
- ▶▶ GSM is the world's leading standard in mobile communications.
 - Accounts for over 70% of the mobile market.
 - In 2001, 80% of all the new mobile users went mobile with GSM.
 - In China, the world's largest cellular market, 95% of all new additions in 2002 were on GSM.

Indian Cellular – Current Status



▶▶ Networks

- 69 Networks on Air

▶▶ Subscribers

- Nearly 13 million subscribers by March end 2003
- Subscriber adds now, at around 5-7 lakh subscribers per month.
- Subscribers have grown at a CAGR of 109% since 1995
- Constitute around 20% of current national Tele Density

▶▶ Tariffs

- Have dropped by over 75% since 1996
- Presently amongst the lowest tariffs in the world

▶▶ Coverage

- Services in over 1500 cities & towns – September 2002
- Cellular coverage over thousands of villages
- Have fulfilled all roll-out obligations

▶▶ Investments

- Around Rs. 25,000 crores by March 2003

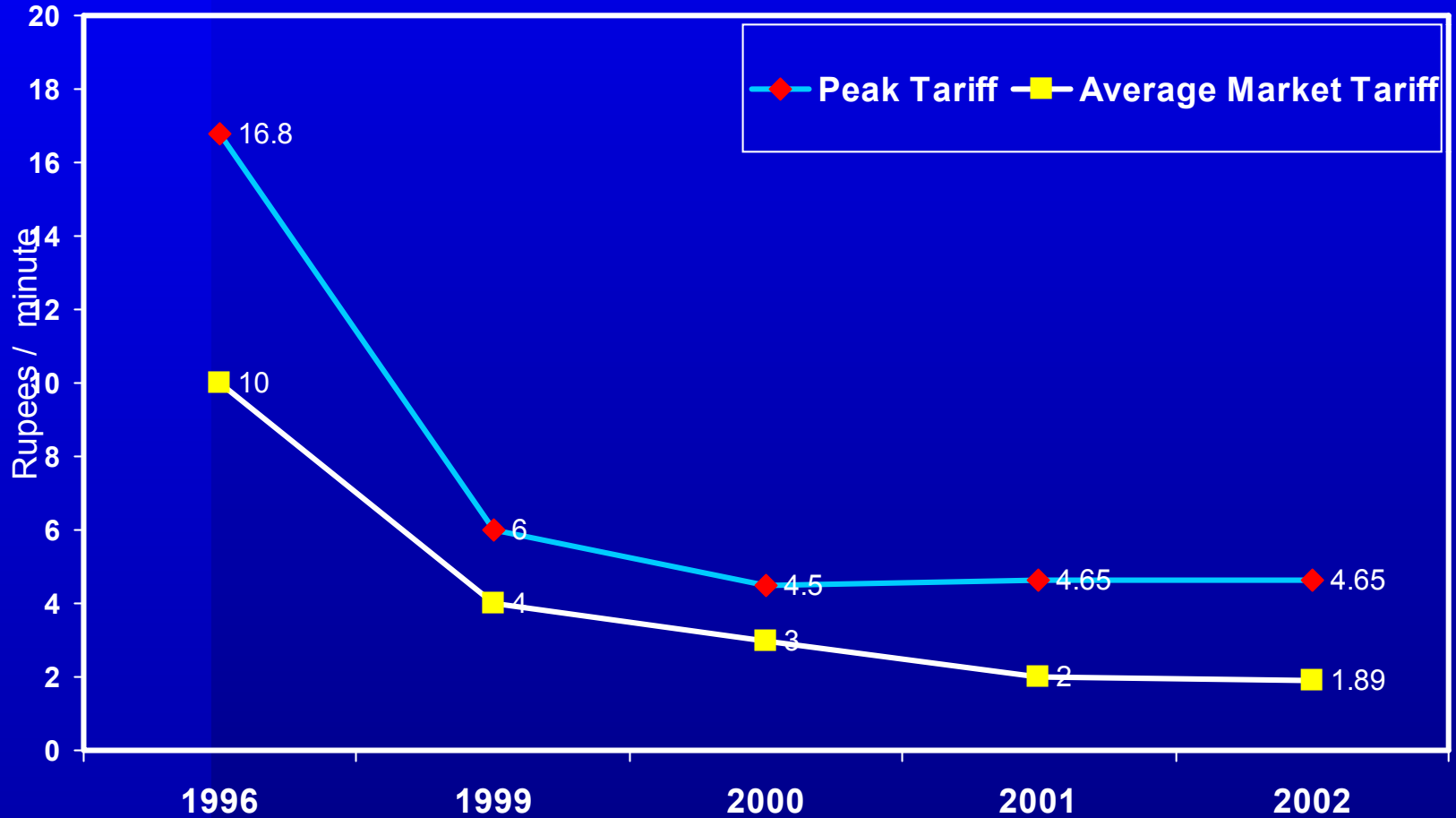
Nationwide Infrastructure



- 15,000 Kms Backbone.
- 66 Mobile Switching Centres (MSCs)
- 214 Base Station Controllers (BSCs)
- 6215 Base Transceiver Stations (BTSs)

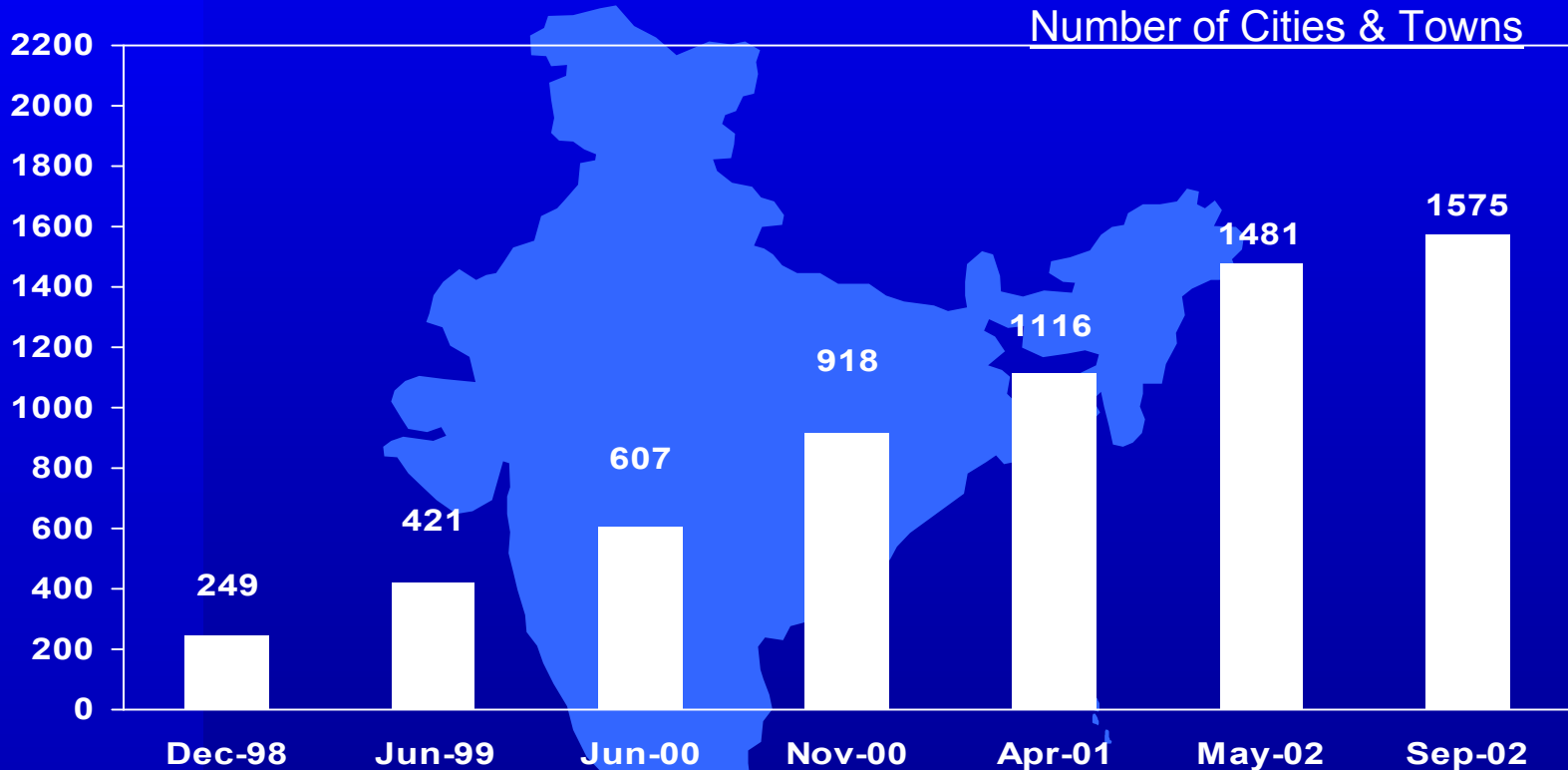
This infrastructure represents an investment of around Rs. 25,000 cr.

Enhanced Affordability – Airtime Rates



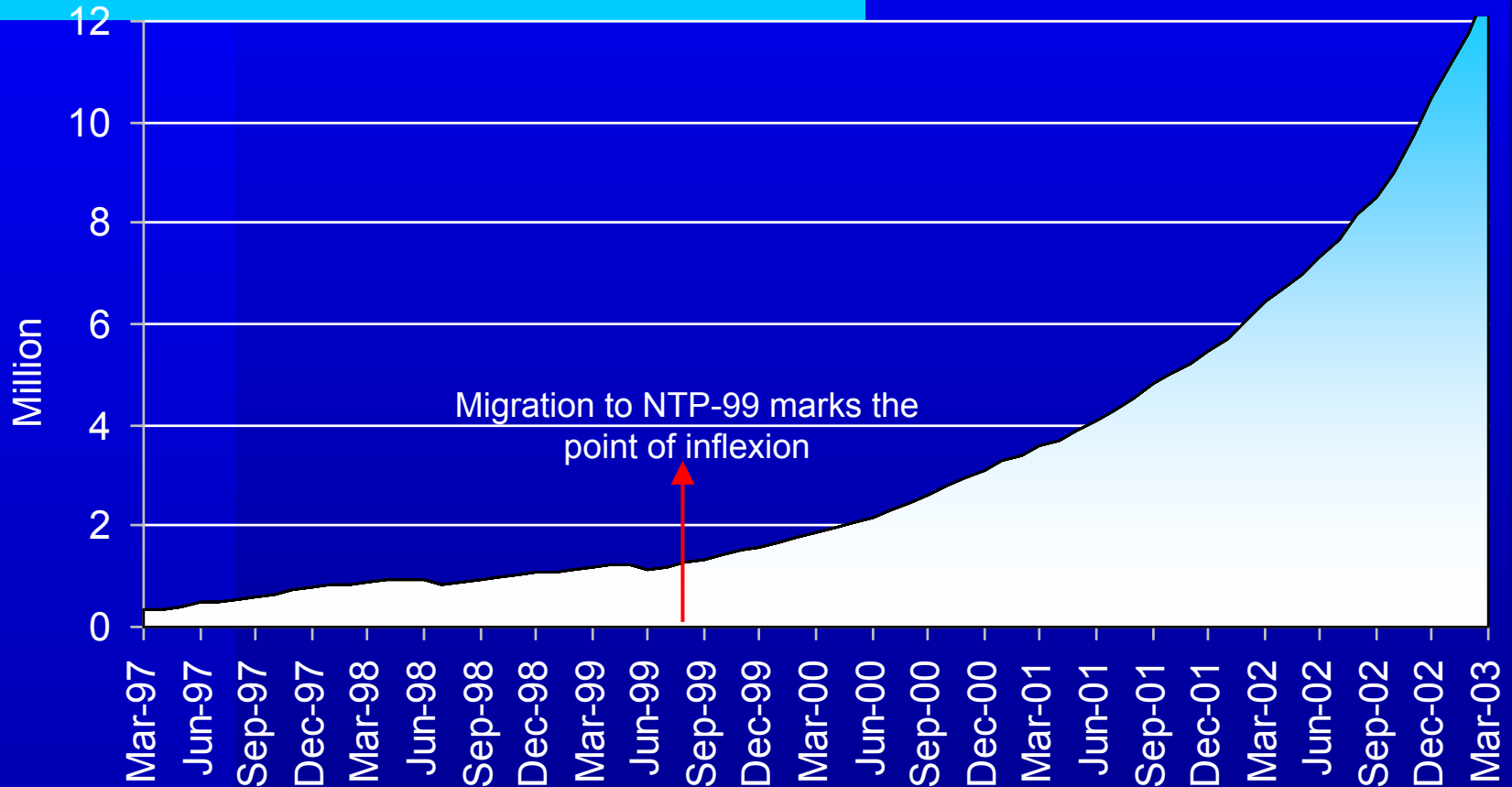
- Air time rates have plunged by over 75% from 1996 to date
- Market tariffs have always been below TRAI prescribed standard tariff
- Below cost tariffs reflect intensity of market competition

Increased Coverage



- Network coverage as a % of geographical area is 100% for Metros, 15% for Category A Service Area and 9% for Category B Service Areas.
- Cellular Density in the Metros is 10% while in A and B Category Service areas it is 0.8% and 0.4% respectively
- Population covered is 100% in Metros, 30% in A Category Circles and 20% in B Category Circles.

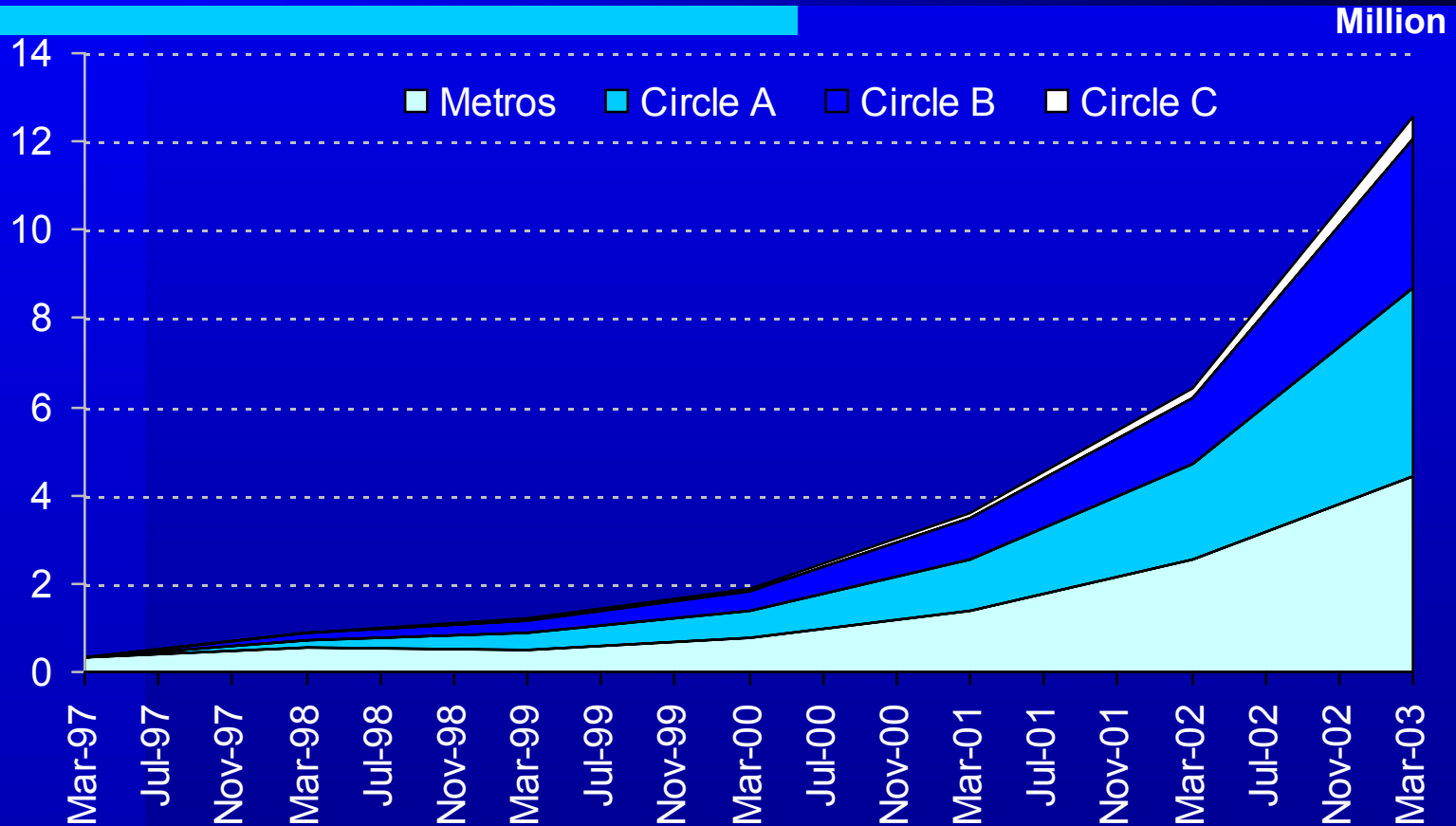
Increased Subscriber Growth



Migration to NTP-99 allowed operators to :

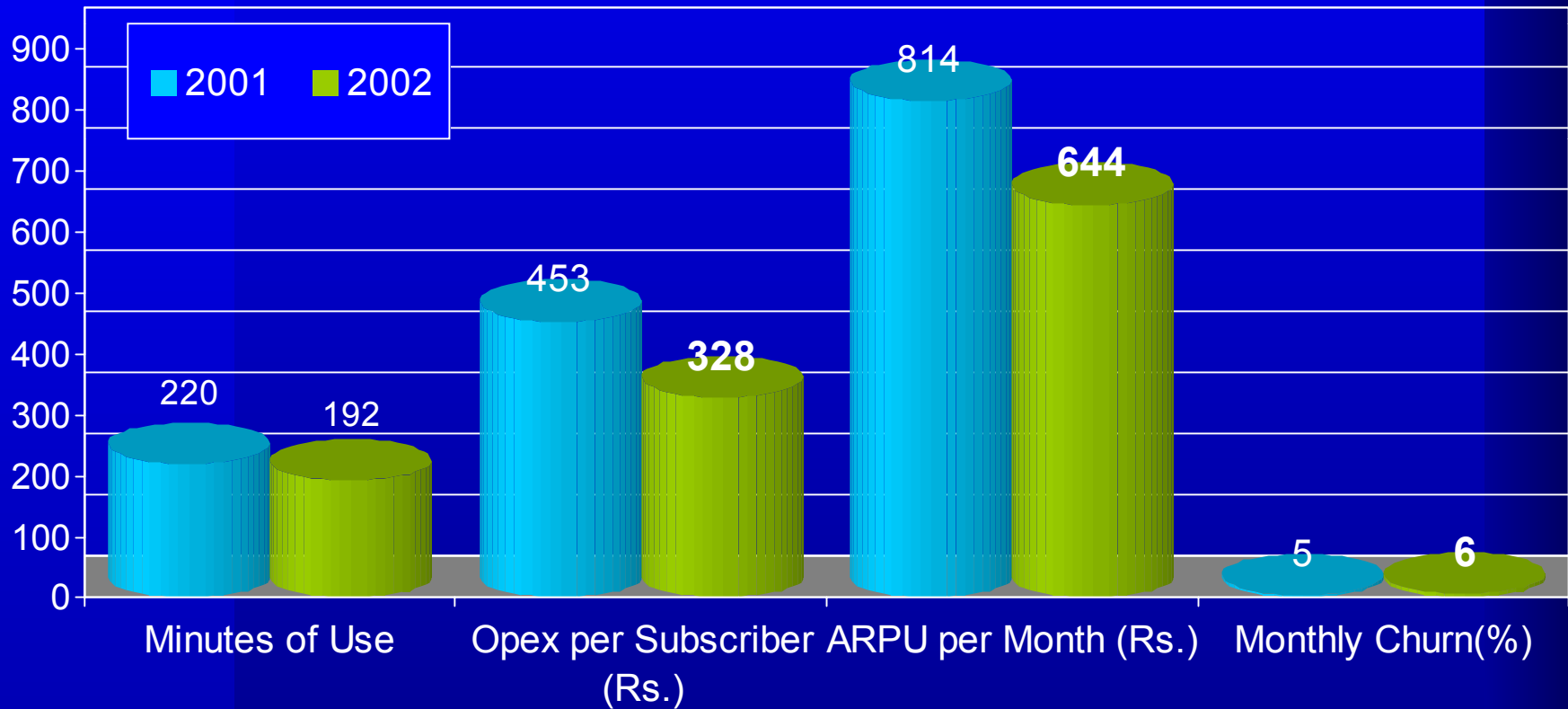
- regain viability
- pass on benefits to consumers in form of more affordable services
- Increase coverage &
- Serve more subscribers

Subscriber Growth across Categories



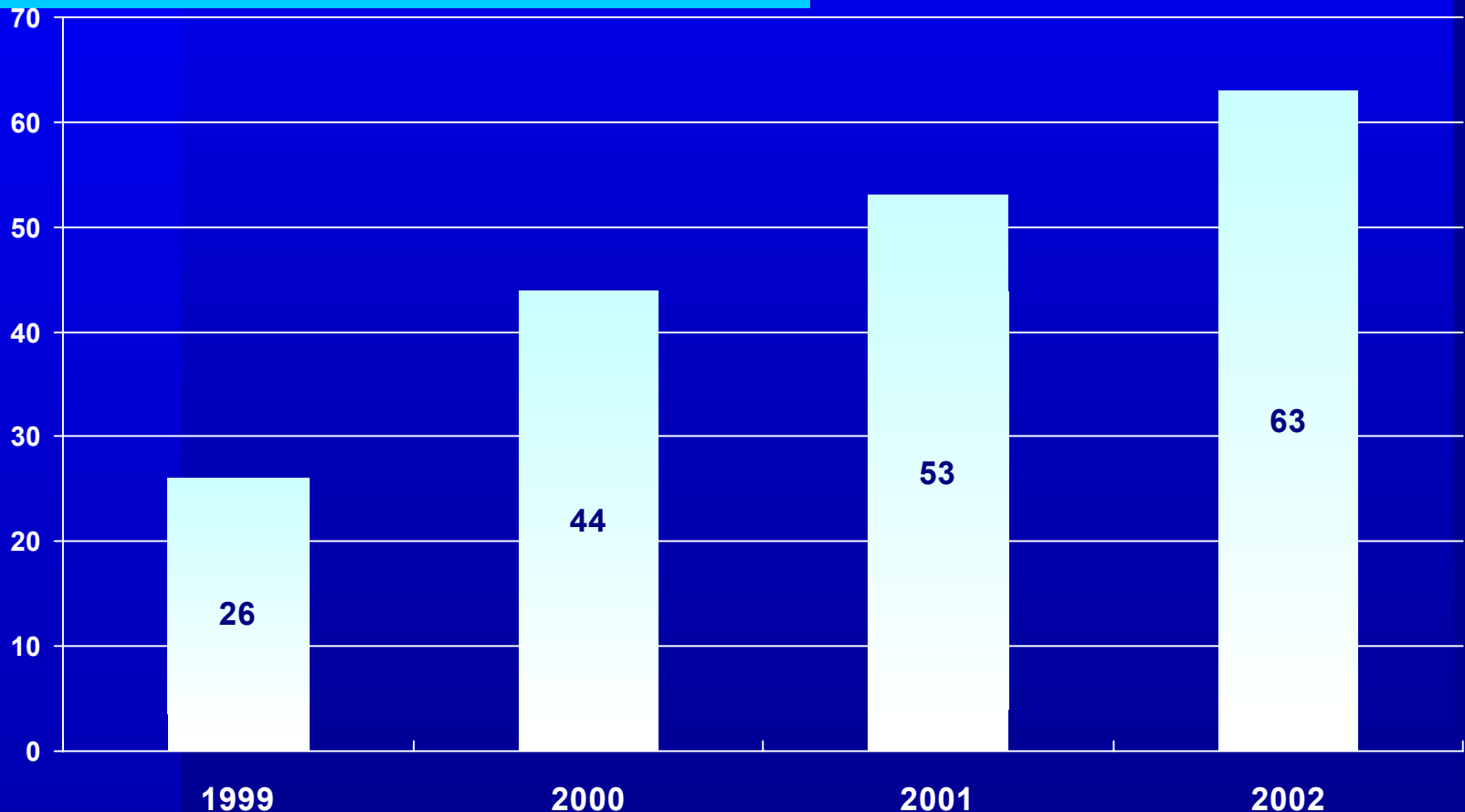
- Metros dominated the show till 2001.
- Post 2001, Metros accelerate, but Circles A and B zoom.
- Indicative of long-gestation nature of larger Indian market.

Key Industry Indicators



- Increased number of prepaid / marginal subscribers lead to lower MOUs, lower ARPUs & higher churn levels.
- Better cost efficiencies & increased subscriber base lead to lower opex per subscriber

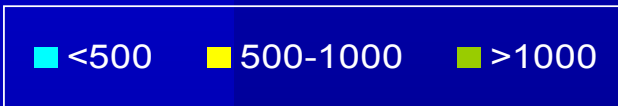
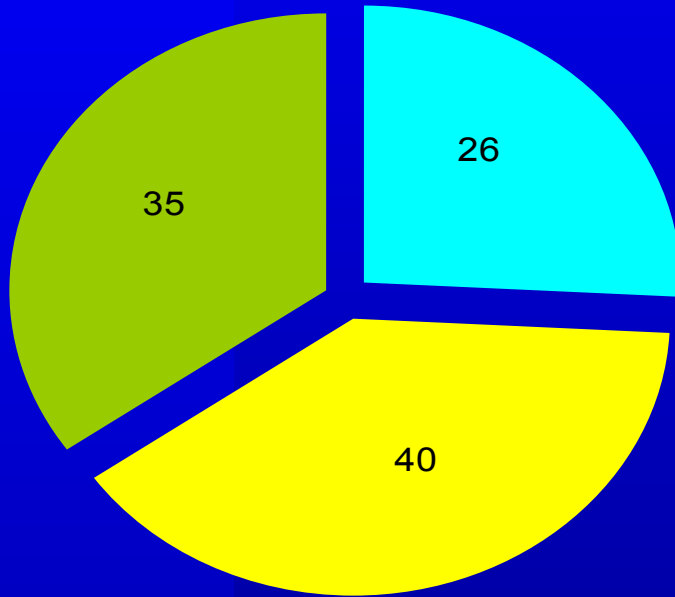
Growth in Prepays



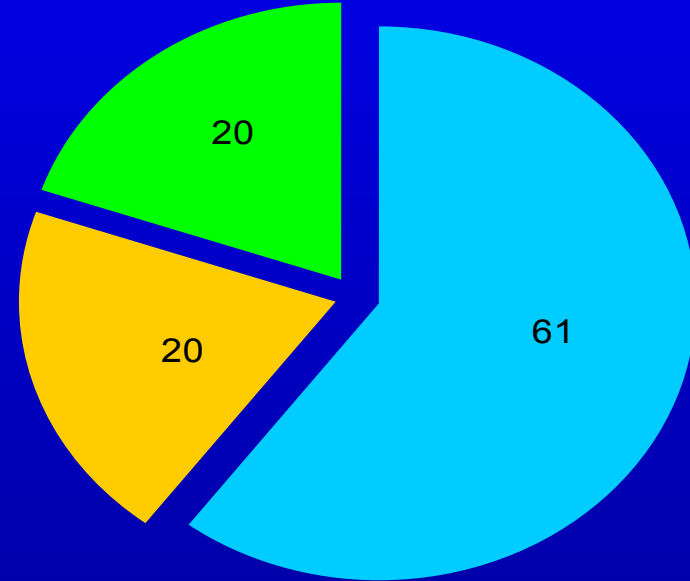
- Pre-Paid subs have increased steadily since 1999. Now constitute 63% of total subscribers and over 80% of new additions
- Introduction of recharge coupons of smaller values has effectively lowered entry barrier and attracted marginal consumers

ARPU Based Subscriber Mix

Postpaid Subscribers



Prepaid Subscribers

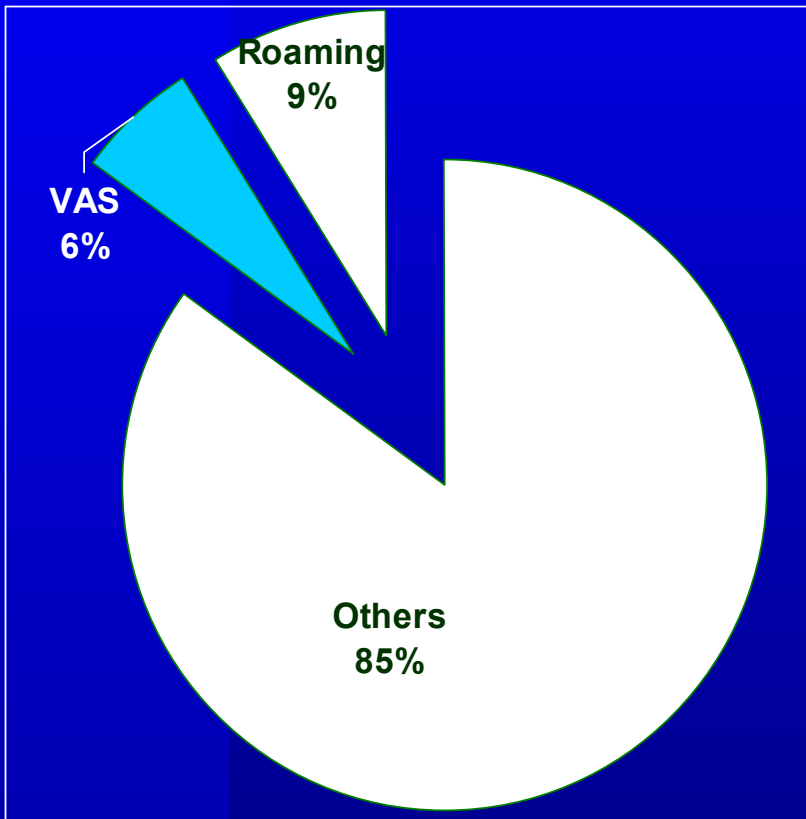


- Postpaid subscribers roughly balanced in different ARPU categories, while prepaid segment are largely (61%) in below Rs. 300 per month category.
- Blended industry ARPU :-
 - 72% of cellular subscribers have ARPU of less than Rs. 500 per month,
 - 20% between Rs 500-1000 per month and
 - 8% have an ARPU of over Rs. 1000 per month.

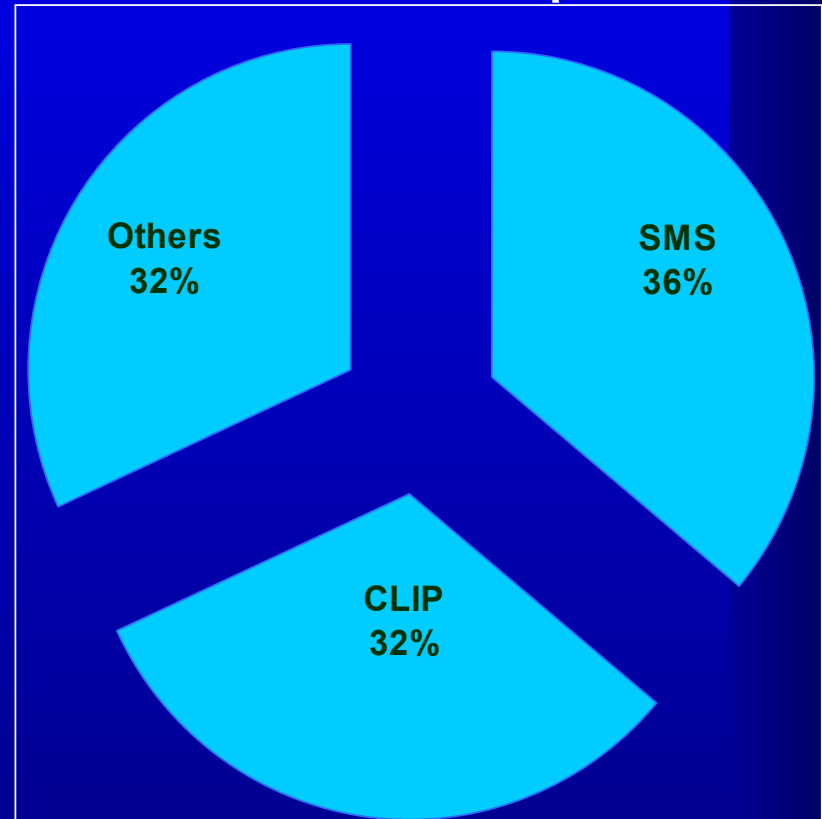
Growth in Value Added Services



Service Revenues - % break-up



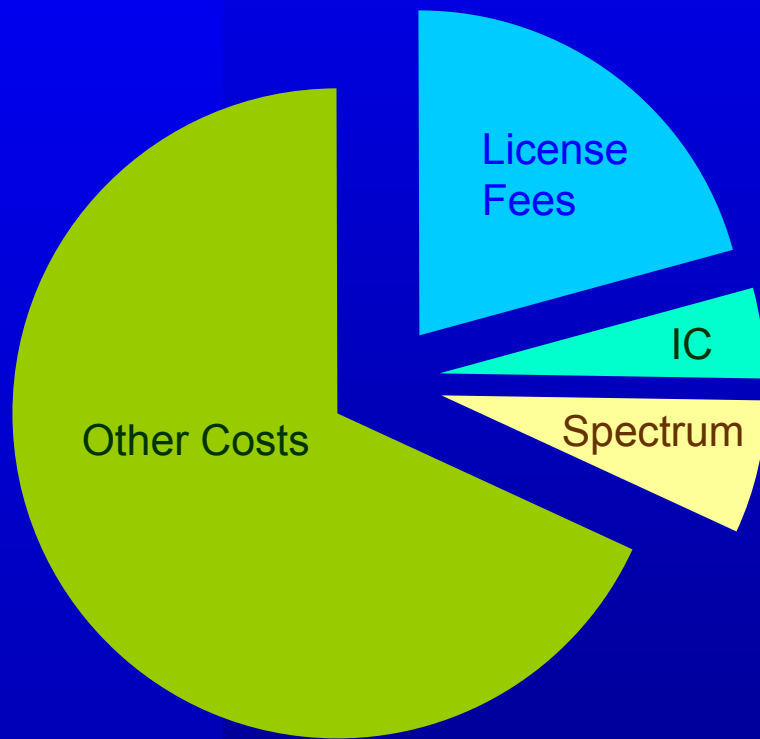
VAS -% break-up



2002

- Revenues from value added services have gone up from 4% in 2001 to 6% in 2002. Roaming Revenues have remained stagnant at 9%
- Within VAS revenues, SMS revenues have gone up sharply from 15% in 2001 to 36% in 2002.

Cost of Regulation



- License Fees
- Physical Interconnection
- Spectrum & WPC
- Other Costs

- ▶▶▶ Cost of Regulation constitutes almost 1/3rd of total operating costs and 19% of service revenues.
- ▶▶▶ This does not include Interconnect access charges which constitute around 15% of revenues.
- ▶▶▶ License fee is the largest component at 65% of the regulatory cost, followed by Spectrum & WPC Charges at 21% and costs of Interconnection at 14%.
- ▶▶▶ The high costs of regulation are passed on to the consumers in the form of higher tariffs.
- ▶▶▶ A review of the high cost structure of the industry would have a significant impact on end-consumer tariffs.

Future Potential

Growth Drivers



- ▶▶ Prepaid Cards - today account for □ 63% of total base & around 80% of new adds.
- ▶▶ Free Incoming Calls - introduction of the IUC regime & free incoming calls from May 1, 2003 will give a tremendous fillip to cellular growth.
- ▶▶ More Affordable Handsets – Available from Rs 2000 onwards & flourishing 2nd hand market has significantly lowered entry barrier. Can be made still more affordable if government waives license fee levy on handset sales.
- ▶▶ Value added services e.g. SMS provide small, but growing share of revenue enhance overall category attractiveness.
- ▶▶ Cheaper Intra-circle long distance calls - Cell operators have discarded monopolist distance-based pricing model - generally, the Service Area is a local call.
- ▶▶ Lowering of STD & ISD tariffs -presently mobile to mobile STD anywhere to anywhere is as low as Rs. 2.99 per minute.

Strategies for Growth

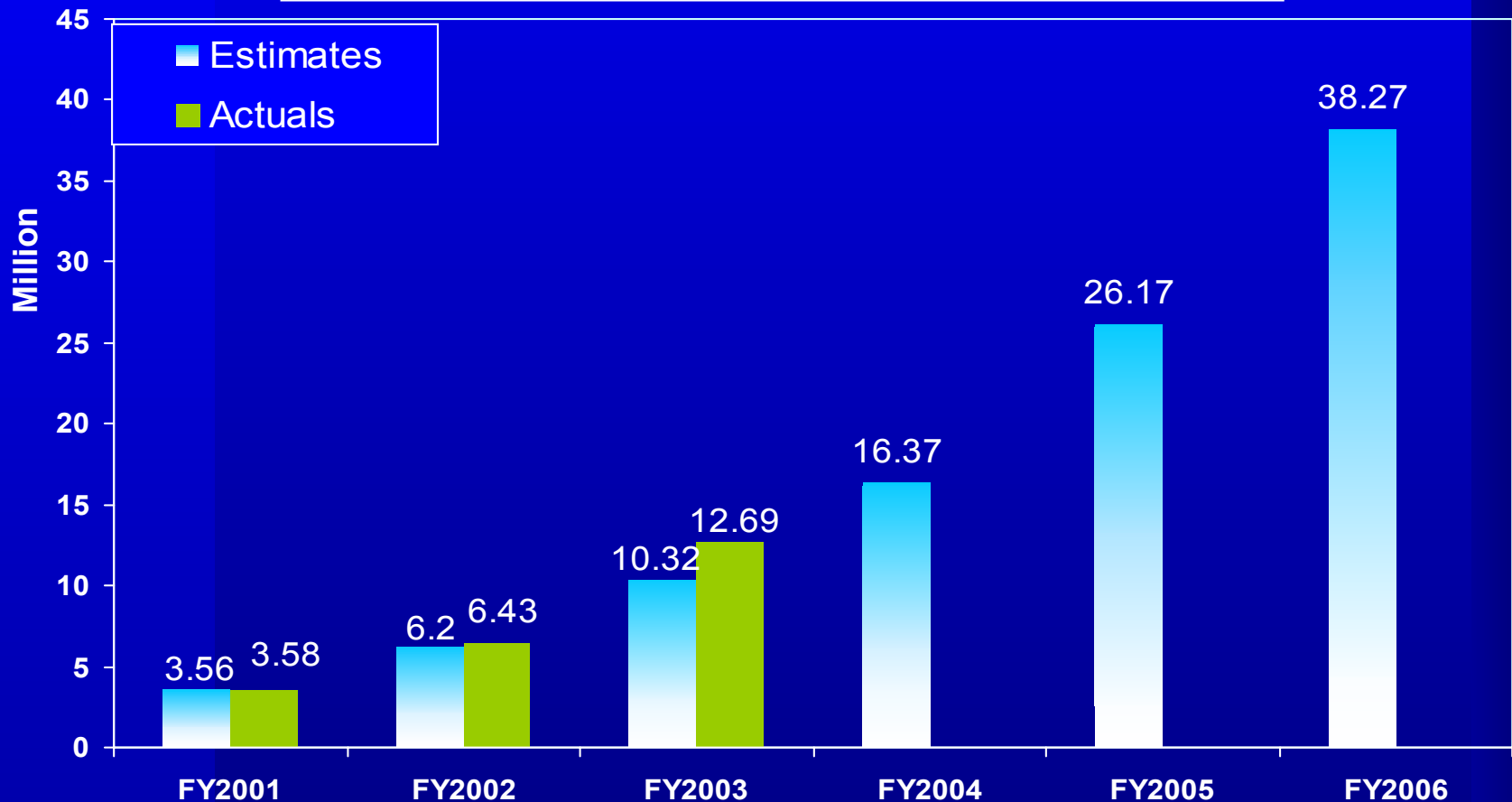


- Consolidation
 - 4 large groups account for nearly 70% of the subscriber base.
 - M&A activity is the market response to the policy which induced proliferation of operators.
 - In most European & Asia Pacific countries, the average number of cellular operators is between 3-4.
- Entry pricing
 - Prepaid an entry weapon – available for just Rs. 300 p.m.
 - Lower airtime & flexi tariff packages for postpaid users.
- Cost Efficiencies
 - Opex per subscriber has reduced by 75% in the last 4 years - primarily due to increased subscriber base, economies of scale & cost efficiency measures.
 - Reduction in handset costs & flourishing 2nd hand handset market.

Growth Potential



Average of Estimates by Independent Analysts

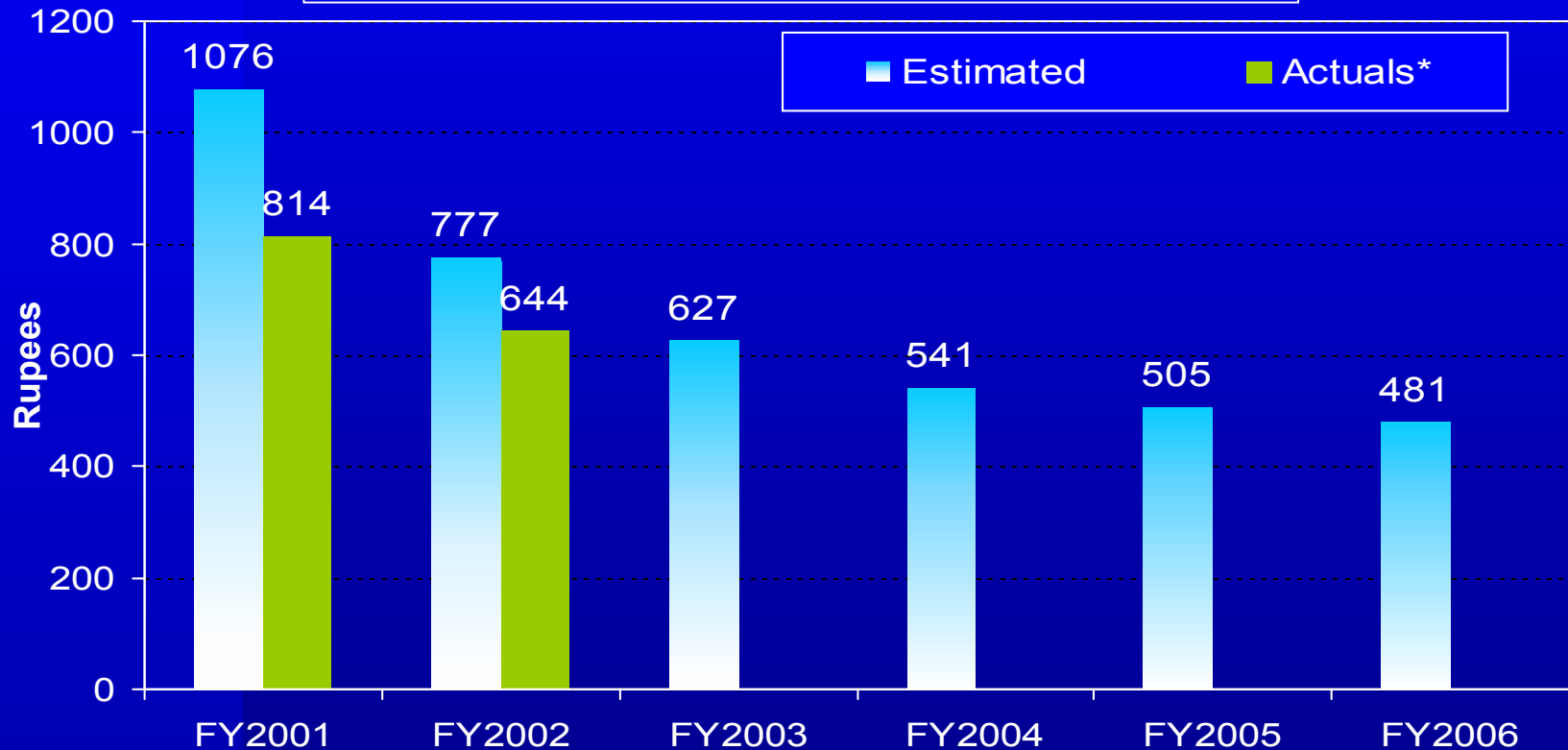


- Most analyst estimates project 40 million by 2006.
- WLL (M) effect not factored in above.
- Cellular growth has always exceeded estimates

Fuelled by Lower Tariffs & ARPUs



Average of Estimates by Independent Analysts



- Analysts project nominal ARPUs to plunge by over 50% in 5 years.
- Reflecting changed customer profile plus reduced tariffs due intense competition.
- Actual ARPUs are well below analysts' estimates

Requires Heavy Investments



- ▶▶ Investments to meet projected subscriber / traffic growth humungous
- ▶▶ It is estimated that incremental investments of around Rs. 13 –15,000 crores will be required in next 3-4 years to meet the growth requirements of the industry
- ▶▶ There is over-dependence on foreign capital due to inadequate participation of domestic investors in equity funding.
- ▶▶ However, foreign investors view India as high-risk on account of:
 - Policy Inconsistencies & regulatory risks
 - High incidence of Litigation
 - High Costs due to imposed government levies
- ▶▶ Need to whet foreign investor appetite by ensuring :
 - clear & stable policy regime
 - independent and transparent regulatory regime.
 - improved viability of businesses

Driving Growth Resolution of Key Issues

Key Issues



1. Role of Institutions;
2. Backdoor Entry into Mobility by FSPs through WLL(M);
3. Non-availability of a cost based & equitable interconnection;
4. Non-availability of optimal spectrum;
5. Competition Issues
 1. Anti-competitive Practices by BSNL & Other Vertically Integrated Operators
 2. Non-level Playing Field between WLL(M) & Cellular Operators
6. Concerns regarding a premature move towards Convergence

1. Role of Institutions

▶▶ Ministry, DoT, TRAI, TDSAT

- Telecom deregulation a complex subject, needs top-class empowered institutions.
- Government has framed Policy, now TRAI & TDSAT are to drive.
- TRAI & TDSAT must be reinforced and supported to build investor confidence and attract huge investments.
- Policy changes in one stroke, mind-sets take longer.
- Regulation may focus on big issues, adopt light handed approach for others.

▶▶ Role of the Institutions will be the key factor in the success of the sector.

2. WLL Mobility



2A. Backdoor Entry into Mobility by FSPs



- ▶▶ NTP-99 prescribes a service specific licensing regime – I.e. separate licenses for fixed & mobile services.

- ▶▶ WLL (M) is contra to provisions of NTP-99 & FSP License – is a backdoor entry into mobility without a mobile license & under the more advantageous terms of the FSP license

- ▶▶ Further, even the conditions on which WLL(M) was allowed are not being enforced by the Licensor / Regulator
 - WLL(M) operators are using Mobile Switching Centres (MSCs)
 - They are not using V5.2 interface to connect the WLL system directly to the Local Telephone Exchange
 - They are offering roaming under the garb of call forwarding & multiple subscriptions
 - They are offering all offer several tele & supplementary service like SMS, etc. which can only be offered by CMSPs

2B. Ensure Strict Enforcement of WLL(M) terms



- ▶▶ Legality, permissibility, due process, legitimate expectation, etc., under review by TDSAT under direction of Supreme Court
- ▶▶ While TDSAT review underway, must be ensured that WLL (M) is consistent with Government / TRAI's position i.e.:
 - No Mobile Switching Centre
 - Use of V5.2 interface
 - Strictly non-cellular mobility - i.e. no hand-off is permitted. This is in full consonance with applicable TEC specifications and ITU understanding of limited mobility
 - In SDCA use only. No roaming
- ▶▶ Full disclosure in advertising including impact of IUC from 1 May
- ▶▶ All Interconnection provision subject to compliance with above conditions

3. Interconnection



3A. Interconnection is Not Cost Based



- ▶▶ In January 2003, Regulator has fixed termination charges at
 - 30 paise/minute for calls terminating on a cellular operators' network in Metros.
 - 40 paise/ minute for calls terminating on a cellular operators' network in Circles.

- ▶▶ This is about 10% of the total cost that is actually incurred by the CMSPs for terminating a call on their network!!

- ▶▶ The above termination charges are also in sharp variance with the costs determined by Regulator itself in mid-2002.

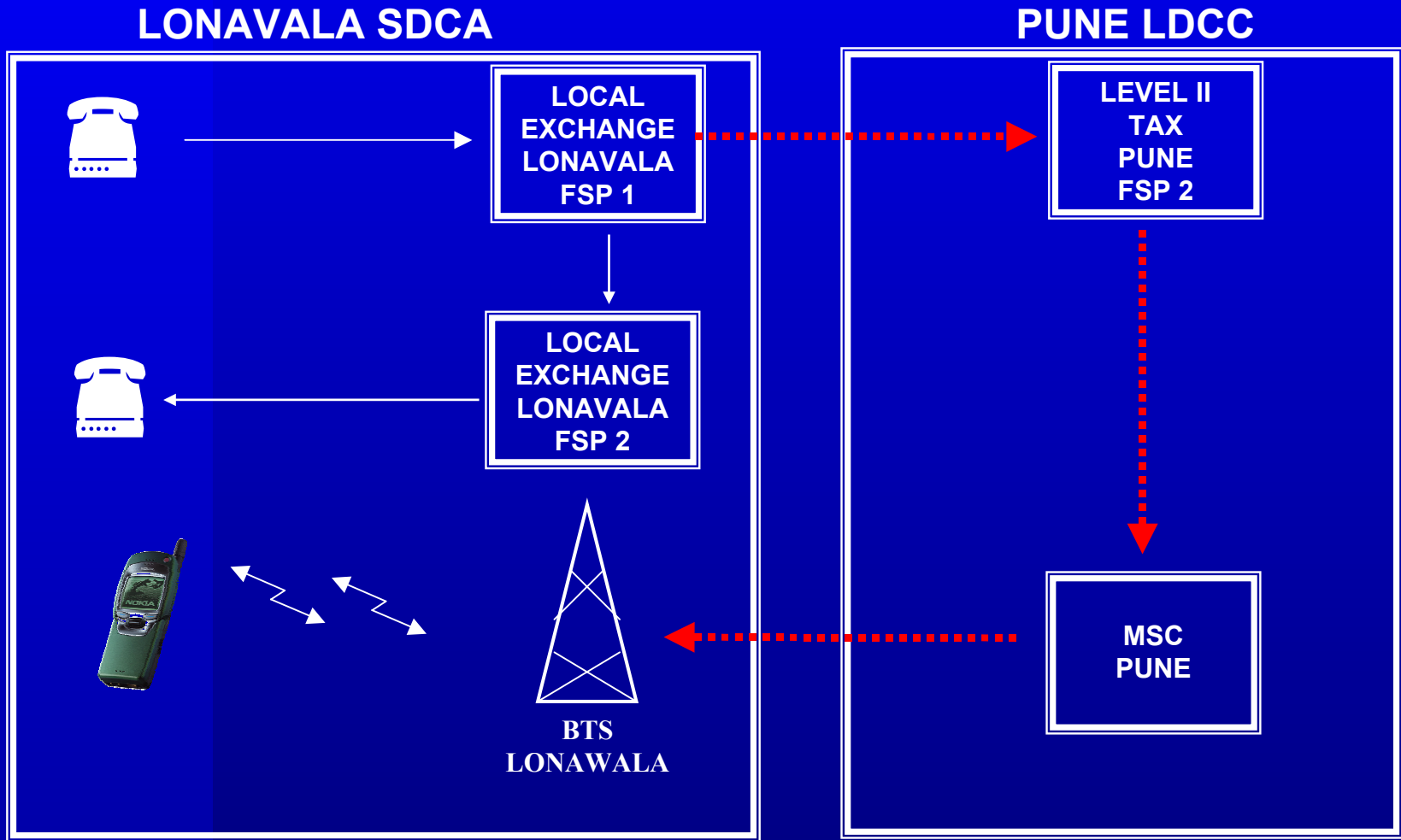
- ▶▶ Imposition of such artificial, unrealistic and unsustainable low termination charges for the CMSPs would make the entire cellular industry unviable resulting in the closure of the cellular businesses by majority of the operators.

3B. Inadequate Points of Interconnection



- ▶▶ In 1997, TRAI prescribed any number of POIs for CMSPs subject to network integrity & technical feasibility.
- ▶▶ This position was reversed in 2001 when TRAI prescribed that CMSPs be given POI only at Level I & Level II TAXs.
- ▶▶ There is a sharp inequity in the POIs between CMSPs & FSPs / WLL(M) operators.
 - FSPs are allowed POIs at every SDCA (2648 POIs),
 - CMSPs are allowed POIs only at Level I & Level II TAX (322 POIs)
- ▶▶ Because of more POIs, FSPs can choose the most optimal and affordable routing for their calls – an option denied to the CMSP because of limited number of POIs.
- ▶▶ Because of fewer POIs, cellular consumers are forced to pay a long distance charge because calls have to be carried all the way to the POI at²⁹ the DHQ Level (Level II TAX)

3C. Impact of POIs



- A fixed to mobile call is subjected to a sub-optimal routing resulting in loading of a unnecessary STD tariff on the calling subscriber.

3D. Ensure cost-based & equitable IC



- ▶▶ Cost-based & non-discriminatory interconnection are the two fundamental tenets of Interconnect pricing.

- ▶▶ TRAI's Telecommunication Interconnection (Charges And Revenue Sharing) Regulation 1999 (1 of 1999) dated May 28, 1999, clearly state that Interconnection pricing should be :
 - based mainly on incremental or additional costs directly attributable to provision of interconnection, and
 - applied on a non-discriminatory basis.

- ▶▶ These tenets have been adopted by TRAI in principle, but must also be implemented in practice.

4. Spectrum



4A. Sub-optimal spectrum to CMSPs



- ▶▶ Spectrum - pre-requisite to offer cellular mobile services
 - Adequate availability of spectrum key to high quality, cost-efficiency
 - Piecemeal allocation leads to inefficient network planning, sub-optimal utilization

- ▶▶ Cellular services presently offered with GSM technology in the 900 & 1800 MHz band. ITU specs:
 - 2x25 MHz in 900 MHz - 3 CMSPs
 - 2x10 MHz in E-GSM 900 MHz – in India uniquely given to FSPs / WLL(M)
 - 2x75 MHz in 1800 MHz – 1 CMSP

- ▶▶ Of 2x110 MHz total in ITU specs, only 2x28.4 MHz released for CMSPs
 - CMSPs now entitled to 2x10 MHz per operator
 - Actual allotment only 2x8 MHz in only Delhi/ Mumbai

4B. International practices in Spectrum



- ▶▶ Every country has equal availability of spectrum.

- ▶▶ Spectrum allocation in GSM bands covering 114 GSM operators in 31 countries across Europe & Asia-Pacific (excluding India):
 - Average GSM spectrum per operator is 2x17.1 MHz per operator
 - In China, average GSM spectrum per operator 2x22.5 MHz

- ▶▶ Globally, spectrum policy always precedes competition reform – In India it is the other way around

- ▶▶ Indian Cellular Operators allocated a fraction of the world average & in an ad hoc piecemeal manner in small chunks – leading to inefficient network design, network congestion, complaints of weak signals, call drops, poor quality of service, etc

4C. Follow International Best practices in Spectrum



- ▶▶ Spectrum entitlement for Indian CMSPs be immediately enhanced to at least international average of 2x17.1 MHz per operator
- ▶▶ Several creative solutions possible to address legitimate defence/security requirements
- ▶▶ Ideally, allocation must be made in one go, upon signing of license. In the alternative, it is incorrect to link spectrum allocation to subscriber numbers. More appropriate to base it on traffic erlangs in Central Business District.
- ▶▶ Extended GSM band must be vacated for the GSM operators – FSPs may be relocated in the 1800 / 1900 MHz bands
- ▶▶ Usage charges must be sufficient only to cover the costs of administrating and regulating radio spectrum.

This will facilitate lower cost, higher quality and more efficient mobile services

5. Competition Issues



5A. Predatory Behaviour by VIUs



- ▶▶ Predatory & anti-competitive behaviour of Vertically Integrated Units (VIUs), especially BSNL of serious concern

- ▶▶ Must be noted:
 - BSNL as incumbent fixed line operator controls 38 million fixed line customers, has dominant control of almost 99% of bottleneck fixed-mobile interconnect facilities
 - Vertically integrated – no legal, structural or accounting separation for its different businesses

- ▶▶ Consequently, ideally placed to exploit its dominant position & indulge in anti-competitive practices including misuse of significant market power

- ▶▶ Absence of adequate regulatory safeguards will make 'pure play' mobile operators vulnerable to unfair competition.

5B. Predatory Behaviour by VIUs



Few instances of anti-competitive actions

▶▶ Its Cellular Mobile Services

- providing incoming free from BSNL fixed wireless (98% of the total market)
- routing its cellular traffic through its fixed line business – free interconnection to network of CMSPs

▶▶ Interconnection

- Not paying access charge for use of CMSP network
- Levying exorbitant charges for POIs –misuse of market power
- Not signing separate IC agreement for different services

▶▶ The above anti-competitive practices can also be adopted by other vertically integrated operators

5C. Ensuring Competitive Safeguards



- ▶▶ Integrated operators should not be allowed to indulge in anti-competitive bundling across services
- ▶▶ Regulator must introduce & implement principles of asymmetric regulation
- ▶▶ Competition Regulation of VIUs must cover all aspects of transfer pricing norms for common facilities, accounting separation requirements, safeguards / rules concerning bundling, safeguards against predatory pricing tactics, etc.

5D. Differential Tariffs for WLL(M) & Cellular



- ▶▶ A two minute call from the fixed line to a Circle cellular network costs Rs. 2.40 while the same two-minute fixed line call to a WLL (M) phone will cost only Rs. 1.20.

- ▶▶ As a result of this discrimination in tariff, the retention by the fixed line network is higher for calls that are terminated on a cellular phone vis-à-vis a WLL (M) phone. This is explained below :
 - For a two-minute call to a circle cellular network, the fixed operator levies a call charge of Rs. 2.40, passes on Rs. 0.80 to the cellular network as a terminating charge and retains Rs. 1.60.
 - However, in the case of same two-minute call made to a WLL (M) network, the call charges will be only Rs. 1.20. Of this, the fixed operator will pass on Rs. 0.80 to the WLL (M) operator as the terminating charge and retain only Rs. 0.40.

5E. Ensure Level Playing Field



- ▶▶ Whilst the issue of legality & permissibility of the WLL(M) service is being reviewed by TDSAT, it is imperative to ensure level playing field between WLL(M) & Cellular

- ▶▶ For the above, it is important to ensure that the cost of the call from the fixed line is the same for both the cellular as well as the WLL (M) phone and that the fixed network retains the same net revenue from either type of call so that no one service is subsidized by the other

6. Convergence



6A. Premature Move to Convergence



- ▶▶ Complex, legacy, technical and legal issues to untangle.
- ▶▶ Malaysia only country to adopt-results indifferent / unknown.
- ▶▶ UK has just floated a discussion paper.
- ▶▶ Indian regulatory environment insufficiently developed to attempt path-breaking change. Therefore;
 - Ready for the future.
 - But, move with caution.

6B. Concerns about Convergence



- ▶▶ NTP-99 fully provides for convergence – additional services can be offered on existing infrastructure after obtaining a license for the service.
- ▶▶ Rationale for complete reclassification of licenses under the proposed convergence bill is not clear.
- ▶▶ Several lacunae in proposed Bill that must be addressed. These relate to :
 - i. Migration of existing licensees
 - ii. Role of the spectrum manager
 - iii. Overriding powers of the Government.
 - iv. Overlap in competition issues, etc

6C. Introduction of Convergence- Necessary Steps



- ▶▶ Convergence must be introduced in a phased & logical manner. The crucial steps in this regard include :
1. Implementation of the mandates of NTP 99.
 2. Enunciation of a clear convergence policy.
 - Formulated in an open transparent & consultative manner with inputs from all stakeholders.
 3. Constitution of a strong Competition Commission.
 4. Enunciation of a clear migration path for existing licensees.

Conclusion



“Creating effective competition in telecommunications is the single most important step that Governments around the world need to take to bring the benefits of the death of distance to their people”

Frances Cairncross
Authoress – ‘Death of Distance’