

S. Asian Wireless – The 'Happening' Sector

- Over 100 state-of-the art Networks (GSM + CDMA) on Air
 - Wide variation among countries
 - SL is good in coverage
 - India is ramping up very fast
 - Bangladesh yet to get critical mass
 - Nepal not adequately served
- Total Investments of over 10 billion USD.
 - Services in over 2500 cities & towns
- 28 million mobile subscribers (GSM + CDMA) in India alone
 - Subscriber adds at around 2.5 million per month now
 - Mobile already constituting around 40% of current national Teledensity in India
- ❖ Mobile Fixed crossover expected in 2004

Growth Drivers

Cellular growth in India has been fuelled by:

- A World Class Telecom Policy from 1999
 - Replaced high fixed license fee with entry fee + revenue share model
 - Renewed viability, kick-starts growth
- Vibrant competition
- Increased Affordability
 - Over 90% drop in tariffs since commencement of service
- Introduction of CPP from May 2003
- Growth in Pre-paids
 - Catering to price conscious & marginal users
- Increased rollout and coverage
 - State-of-the art nation wide infrastructure
 - All Leading to a surging Subscriber Base......

Affordable Services

Tariffs-100 Minute Basket



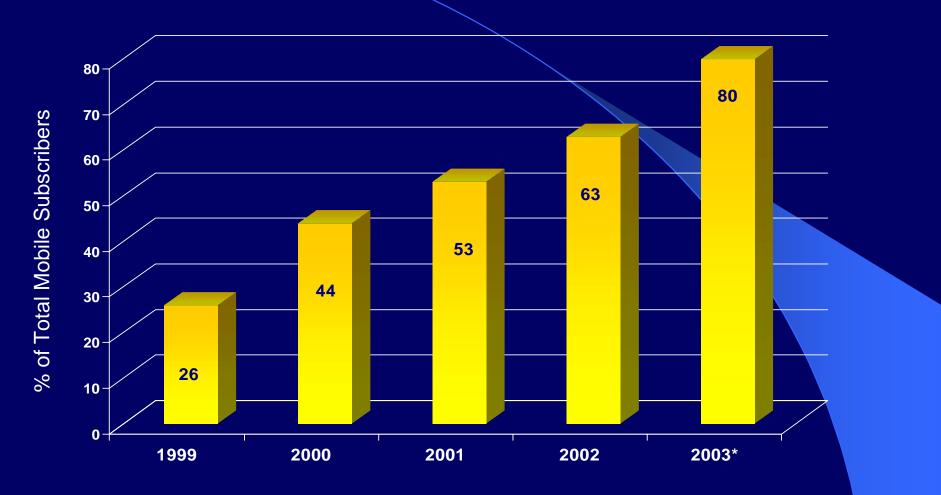
For a 100 minute basket, tariffs are around 4 cents a minute, while for a 400 minute basket, they are even lower at less than 2 cents per minute – arguably the lowest mobile tariffs in the world.

Indian Cellular Tariffs – Lowest in the World

Country	Connection	Peak Tariff	Off-peak Tariff	Cost of SMS
India	3.76	0.05	0.05	0.02
Indonesia		0.16	0.13	
Brazil		0.57	0.28	
China		0.07	0.07	0.02
Philippines	3.29	0.15	0.08	0.02
Thailand	9.31	0.12	0.12	0.07
Argentina		0.11	0.11	0.04
Chile		0.39	0.39	0.07
Asia Pac. Average	23.88	0.24	0.22	0.09
World Average	24.77	0.31	0.25	0.09

As of date, Indian Cellular tariffs are even lower at 1.5-2 US cents / minute – apparently the lowest in the world

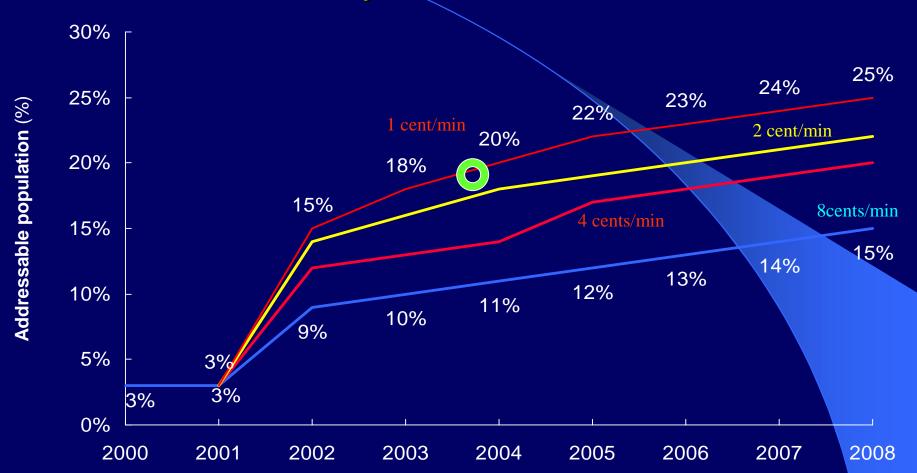
Phenomenal Growth in Prepaids



 In a price-sensitive market like India, availability of prepaid mobile services at around USD 6 per month has lead to an explosive growth in the subscriber base

^{*} September 2003

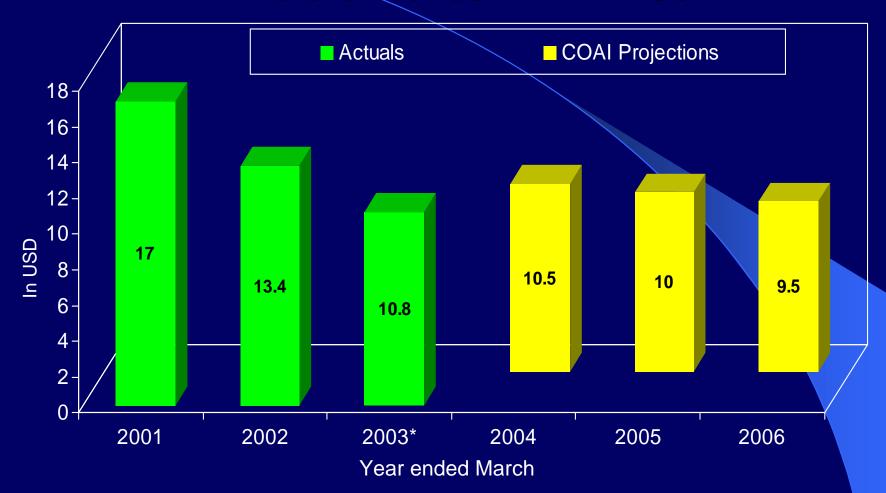
Affordability: Addressable Market



- Addressable market increases at Lower Prices.
- At current tariffs, addressable market is 180-200 million by 2008
- With current subscriber base at 28 million, the potential is tremendous

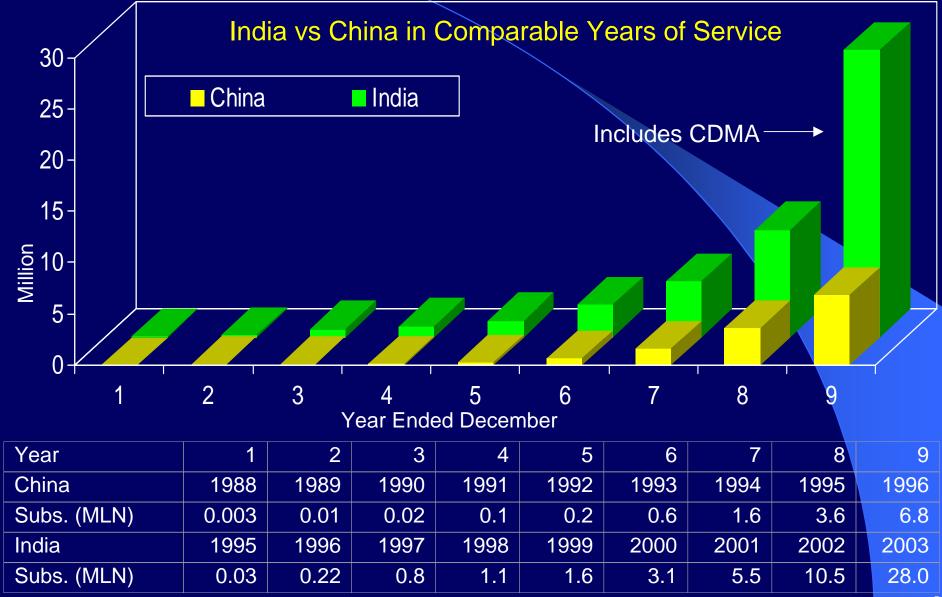
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Future Trends – In ARPUs

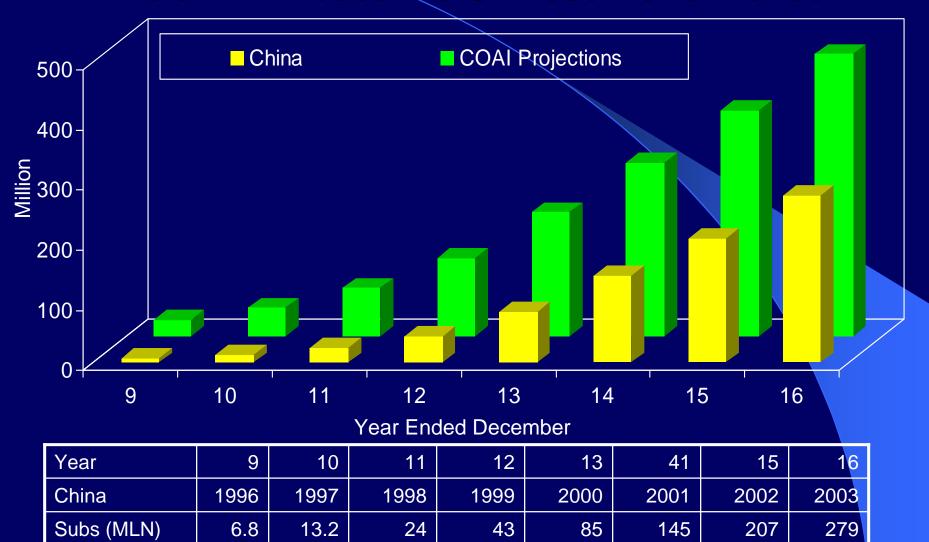


- Falling ARPUs expected that this trend will continue in future also
- Lower ARPUs, suited to Indian consumers, will enormously expand market

India Outshining China



India will Exceed the Chinese Performance



India

Sub (MLN)

Other Growth drivers

- Large unsatisfied demand
 - Affordability: Middle class embracing cheap low-cost services, with low entry barriers
 - Large urban take-up due to aggressive marketing by Telcos
 - Take-up across all sections- maids, chauffeurs, cobblers, school kids, vegetable vendors, wayside hawkers.....
- High GDP growth rate
 - Expected to be around 7% in current fiscal
 - As per Goldman Sachs, India could emerge as third largest economy in next 50 years
 - Rising Income Levels
 - 4th largest economy in terms of purchasing power parity (PPP)
- Increased Urbanization
 - With increased development of infrastructure, rural India will become increasingly mainstreamed
- High forex reserves and Booming knowledge sector

The Demographic Dividend

The Young Ones

"This is the first non-socialist market economy generation, growing up in the thick of the Information Revolution, the Connectivity Boom, coalition politics, IT-enabled everything and the rise f the service economy. As this age cohort wends its way through life, it will be shaping markets".

-Rama Bijapurkar Market Strategy Consultant

The Demographic Dividend

The Working Age Group

- A growing working population means higher per capita income
- An ageing population needs more services
- Hence the "downside" of ageing economies like US & Europe & China would be India's "upside"
- India's working age population will grow and stay at the peak for over a decade in the 2020's & 2030's before actually declining. China's, conversely, will peak sooner, decline sharply thereafter"

.....Goldman Sachs.

Technology & Growth

- India keenly adopting new technologies
 - GPRS & 20001x available in many networks
 - Some operators have already announced launch of EDGE, other expected to follow suit, expected to be fully launched by mid 2004
 - Growth in Data revenues expected : SMS volumes exploding
 - Expect keen popularity of mobile internet in India

Future drivers

- Small cities starting to pick up
 - Rural take up has a long way to go
- Lowered in-country and international roaming charges
- GPRS/CDMA the most efficient means to connect ATMs, POS terminals, kiosks
 - no leased lines, no dial-up problems, pay-per use
 - already a large number of ATMs in Bombay are connected
- Corporate extranet access is another effective application

Take-up will soon ramp from present 1.5-2 million/month to 4 million/month

Inhibitors

- Low RPUs (2 cents a minute) do not leave room for innovation or huge new Capex
- Over-served urban areas
 - four to six operators, undercutting each others
 - marginal players will vanish, service levels can deteriorate
 - major urban markets will saturate in next 18 months
- No data services in local Indian languages
 - handsets with Hindi very few, other languages non-existent
- No local manufacture of handsets in India-market that will absorb 40 million new subs next 12 months
- Fraud still not a concern, but companies still not adequately protected-particularly incumbent and CDMA operators
- Investment from overseas very little
 - \$10 billion or so needed to bring the teledensity to 15%

Future Trends - In Competition

- Currently 3 to 7 mobile operators in different service areas
 - Policy and Regulatory framework however facilitating consolidation
 - M & A activities already happening

Thus, market structure will soon evolve from "Hypercompetition" to "Adequate competition"

Adequate Spectrum – Crucial Factor in Mobile Growth

"Shortage of radio spectrum is potentially one of the most serious inhibitors to a fast and positive development of the industry. If regulators, in a smart way, allocate more spectrum for wireless communication, growth will be much faster and prices lower."

Wireless Foresight By Karlson & others

Future Trends - In Interconnection

- Multi-operator, multi service environment
 - Increased Complexities in Interconnection
 - Focus on implementing interconnect billing / introducing interconnect exchanges a pre-requisite
- Introduction of Carrier Access Codes
- Imminent introduction of Number Portability
 - Both under consideration of Regulator, ensures freedom & flexibility to consumer
- Reduction in costs by improving efficiencies, sharing infrastructure & facilities
 - Already started in a small way amongst private operators
 - Increased reliance on infrastructure providers

