



The Wireless Experience India - 2002

Session III: Telecommunication in Developing Countries

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This Presentation is About..

- My view of India's wireless experience as a window into a developing Country
- The explosion throughout 2002
- **The factors that drive the introduction of a “disruptive” technology into a new territory.**

I am

- Speaking from the perspective of a wireless SP
 - 5 years in the US
 - 1 year in Mumbai (“Bombay”)
 - Scattered Negotiations in Europe/Asia

- Covering
 - TDMA, CDMA, CDMA 2000, GSM
 - Network design through rollout
 - Regulatory, business, and government issues

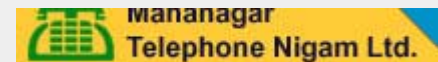
The India Marketplace

- Telecom is an enabler to business
 - Metrics are separate village and city strategies
 - 500 people per PCO (teledensity)

- Two tier wireless licenses
 - Roaming GSM and WLL (“limited mobility”)
 - 22 circles with two cellular providers each

- Government as
 - licensor, competitor, partner, regulator
 - “disvestment” in international, local

The View from Mumbai



The View of all India



- Aircel Limited
- Aircel Digilink India
- Bharti Cellular
- Bharti Mobile
- Bharti Mobinet Ltd
- Bharti Mobitel Ltd
- Bharti Telenet
- BPL Cellular
- BPL Mobile
- Escotel Mobile
- Fascel
- Hexacom India
- Hutchison Essar South
- Hutchison Essar Telecom
- Hutchison Max Telecom
- Hutchison Telecom East
- Idea Cellular
- Koshika Telecom
- MTNL
- Reliance Telecom
- RPG Cellular
- Spice Communications

Factors Driving Wireless in India

- ❑ The Grand Plan
- ❑ Starting Point
- ❑ Technology Issues
- ❑ Participation of the Government
- ❑ Relations with other Parts of the Business
- ❑ The Cultural Reference Points
- ❑ **Show Stoppers!**

The Grand Plan 1

Teledensity

- ◆ India's teledensity is one of the lowest in the world -- a mere 2.6 % of the population has access to telephones.
- ◆ India hopes to reach 7% national teledensity (75 million lines) by 2005 and 15 % (175 million) by 2010. This is at an estimated cost of around \$37 billion in the next four years and \$69 billion between 2005 and 2010.

Telecom Growth

- ◆ Expansion in the telecom sector has been strong, growing 23 percent annually
- ◆ The number of cellular subscribers in India grew 76 percent to 5.48 million in 2001 alone.
- ◆ By January 2002, India had 5.725 million cellular subscribers, up from 3.27 million at the end of January 2001.
- ◆ By 2008, the number of wireless subscribers is expected to overtake the number of wireline subscribers.
- ◆ India Internet growth is expected to average 44% a year, with the subscriber base hitting 21.3 million by 2005.

The Grand Plan 2

New Communications Convergence Bill

India's Convergence Bill ([link to Convergence Bill document](#)) creates a "super regulator" -- to be named the Communications Commission of India (CCI) -- by consolidating India's Ministries of IT, Communications, and Information and Broadcasting. The CCI will be responsible for spectrum management, granting licenses and enforcing license conditions, determining tariff rates and ensuring a competitive marketplace. As of February 2002, the bill is still awaiting formal approval by India's parliament.

Starting Point

- ❑ “mediocre” service
 - Can’t call neighbor
 - Not reliable
 - Distance sensitive costs
 - Burden to access international
 - (incoming vs. outgoing)

- ❑ few land lines on “old” technologies
 - No SS7

- ❑ low socioeconomic base (literacy/addresses)
 - PCO

The Technologies Themselves

- GSM & CDMA 2000
- Local & Roaming & WLL
- Voice & Data
- pre and post paid
- Services (SMS, Games, Matrimonial)

Participation of the Government

- Government
 - Owners & Competition
 - “disinvestment”
 - changing rules
- License fee’s changed 3 times in one year
- Regulation
 - Bureaucratic
 - “influenced” by financial considerations
 - Intermixed with business
- For international equipment the government was a part of your shipping/receiving dept and took 16 weeks

Relations with other Parts of the Business

- The Industry
 - Foreign partners (49 %)
 - Expatriate staff
 - Most with no experience in telecom
 - Isolated from incumbent government providers
 - Cut-throat negotiations
- One company started with \$167m from the petroleum field and decided one day to be a telco
- The Business
 - Majority (lower classes)
 - Prepaid
 - Anonomous
 - Voice only
 - Minority
 - Postpaid
 - Data & games & SMS
- Business Structure
 - Local partners and franchise
 - Stocks and bond
 - PCOs and the Handicapped
 - Cell phones as a “benefit”

The Cultural Reference Points

- ❑ You have to be prepaid if you have no address or identity
- ❑ Pre-paid cards can be used with wired PCOs
- ❑ Anonymity & theft & Terrorism
- ❑ Matrimonial Services and Cultural Usage
 - Class & Caste distinction

Show Stoppers 2002

- License Fee Changes (3 times)
- Anonymity Issue (2 months lost)
- IP pre-paid cards (1 month lost)
- “Limited roaming with WLL” (3 months lost)
- International Call Routing (2 weeks lost)

Over the Year

	Start of 2002	End of 2002
# of actual SPs	2 (per circle)	8 (all tech)
Prepaid month	\$6	\$3
Call cost minute (off net)	\$0.20 (if available)	\$0.02 (.008)
Call cost minute (on net)	\$0.20	free
Subscribers/Mon	200k	700k

View Throughout 2003

Major challenges for India's telecom reform process

2003 will be a watershed year for India's telecom sector. Many private sector companies are going to be in a do-or-die battle for subscribers and revenues. Consumers can expect to be further spoilt with better and cheaper services.

India's telecom regulator, the Telecom Regulatory Authority of India will be faced with increasingly complex challenges especially related to competition management and will need all the expertise and luck to get it right.

2003 will be throwing up major challenges for India's telecom reform process. It will be soon clear whether the fruits of competition in India's telecom sector are going to be available to all. The expansion of connectivity and services to the poor and rural will determine whether India's telecom reform programme is actually working.

As a Comparison 2002

	India	China
SPs	8-10	2
Technologies	3	1 or 1
Population	1 billion	1 billion
Adaptation	700k / month	5m / month
Showstoppers	Multiple	Switch to 3G

Conclusion

- Thank you!
- Any Questions?

From the Indian Perspective

- ❑ My SP went live in December 2002
- ❑ One month before they went live
 - They had a employee trial with free phones
 - They had sold 10,000 handsets that could not be used until the new year.
 - They had a complete sales distribution network and revenue stream ready
- ❑ They were in the black