

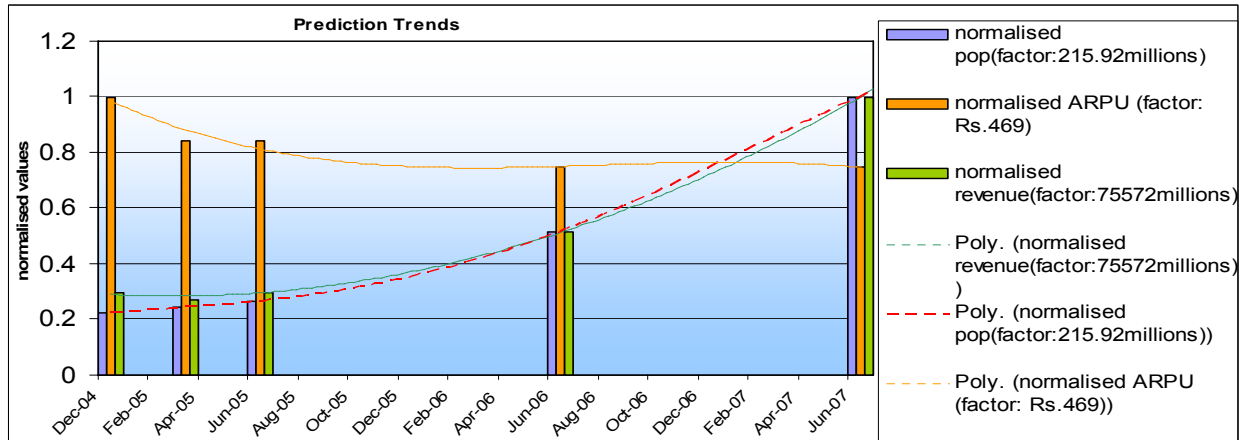
# INDIA - A POTENTIAL 3G MARKET

## A FEASIBILITY STUDY

Global telecommunications' market situation is undergoing a sea-change with respect to diversities in the upcoming technology & market trends. Undoubtedly, Indian telecom market has a considerable share of it (almost **19.7 billion INR**).

### CURRENT MARKET STATUS

With emerging semiconductor technologies combined with the thrust in Indian telecom market (which is world's 2<sup>nd</sup> largest mobile market, only after China), global telecommunications majors are considering it as a potential market for expansion. Chart 1 shows various trends to highlight the recent opportunity in Indian Telecom market.



**Chart 1: Normalized Subscriber population, ARPU prediction and total revenue earned.**

The above trends predict the population of mobile subscribers in India reaching around **111million** by June 2006 (CAGR: 94%). Following data encourages the growth of 3G market.

**Young India:** Nearly **54%** of the population is below age of 24 yrs.<sup>1</sup>

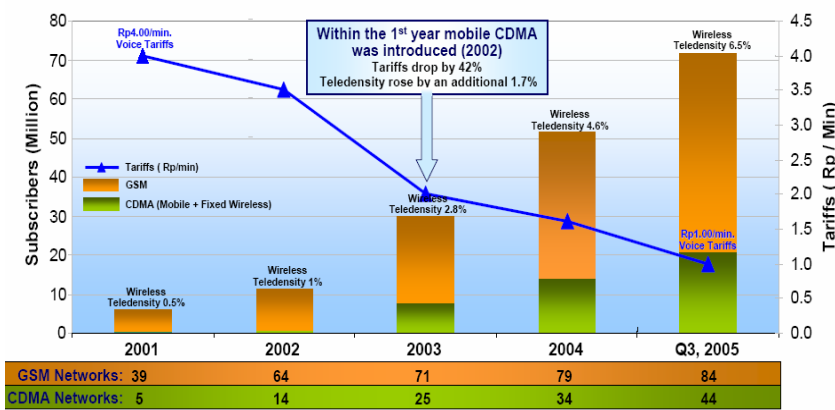
**Consumer Market:** Estimated youth's annual spending is **US\$10.5 billion**, with growth-rate of 12%.<sup>1</sup>

**Internet users in India:** Currently 38.5 million will shoot up to 100 millions in 2 years<sup>2</sup>

**Manpower:** 55% of young Indians are opting for careers in web-related activities<sup>3</sup>, which guarantees the market demand for internet access and the manpower required for 3G technology.

**GSM vs. CDMA:** Analysts believe that CDMA is going to take over GSM in near future (ref: chart 2)<sup>4</sup>.

**Decreasing cost of 3G handsets:** Detailed study follows.



**Chart 2: Growth of CDMA over GSM<sup>4</sup>**

### PROBLEM

#### • System Performance

Pivotal technical issues related to the 3G market expansion.

- Particular 3G technology to aim (GSM/CDMA).
- High bandwidth (1900MHz) requirement, share between the GSM and CDMA networks.<sup>13</sup>
- Utilities and applications demanding open platform websites accessed by the cell phones.

- Handsets should be affordable and compatible with the 3G technology.
- **Issues in designing the cost structure**
  - Considerable cost involved in setting up infrastructure for 3G market
  - Sales & distribution channel: Tie up with established service provider to reach target customers as the indirect sales model (technology compatibility & customer base determines choice)
  - Experts predict that **US wireless market** would attain **near-saturation by 2009**<sup>10</sup>. Logically we deduce that the other telecom giants from West will soon penetrate India, (like Vodafone). Essentially, an **earlier break-even** should be targeted.
  - Increase in foreign direct investment ceiling clearly implies that Indian market is opening up
  - Plummeting ARPU sends a mixed signal for the investors. It implies tough competition among the service providers, however, it also shows shrinking maintenance prices.

## SOLUTION

We will be closely following the **Japan's example** to formulate our revenue model and cost structure. We describe the implementation of our plan as follows.

- **Collaboration with Reliance:** Company should tie up with **Reliance** (the largest **CDMA** service provider with a market share of 20.3% in mobile telephony) and obtain sufficient stake% taking advantage of the 79% foreign direct investment ceiling.
- **Target sector and launch time:** As we target the youth section, the launch date may be **Valentine's Day** i.e. *February 14, 2006*.
- **Analysis of break-even for Vodafone:** Analyzing the market trends, we can predict that by **February, 08** Vodafone is reaching its break-even point. So **December '07** is the target break-even. Henceforth, company will offer lucrative schemes to grab market.
- **Cost Structure:** Following the **packet-wise billing** scheme,

Computation Steps	Values	Assumptions
Charge(C)	<b>50p</b>	for each <b>128 byte packet</b>
Estd. avg packet consumption per month (APC)	<b>8192(1MB)</b>	These figures closely resemble those of Japan <sup>5</sup>
Total internet users in India currently	<b>38.5 million</b> <sup>6</sup>	
Reliance subscribers access internet	20.3% of 38.5 million <b>=7.82 million</b>	(assume homogenous distribution in Reliance subscribers)
Young Reliance subscribers accessing internet	<b>4.22million</b>	Targeted youth population 54% of total Indian population
The ratio = Row5/11.65million	<b>36%</b>	

Hence, estimated revenue by **December, 2007** (target break even period) is given by the following.

**Total Reliance Revenue (TRR) =**

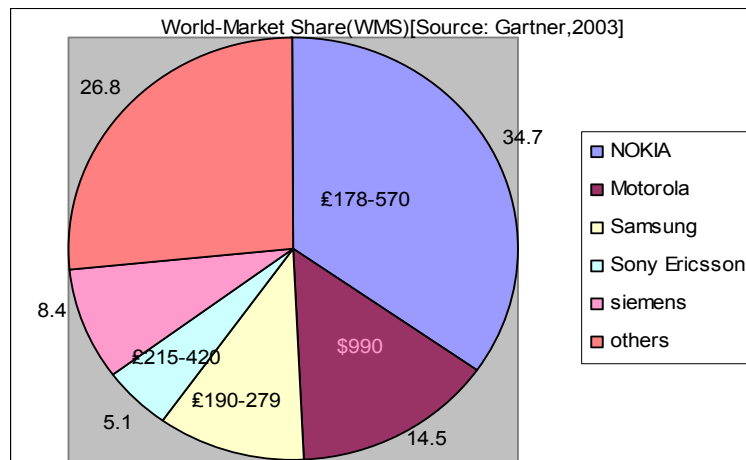
$$\int_{Feb06}^{Dec07} ARPU(t) \times pop(t).dt + C \times APC \times 0.36 \times \int_{Feb06}^{Dec07} pop(t).dt$$

From the above equation we find that TRR is around **1430 billion INR**. It is safe to acquire a *stake of 10%* of total revenue. The *estimated ARPU* (ref: chart1) for 3G services should be around **1475 INR** adding to existing ARPU from telephony. Statistics based on investment costs for 3G networks in other countries<sup>14</sup> gives the *estimated cost for infrastructure, planning services, site civil works* to be **106.4 billion INR** for the estimated subscriber population obtained. In addition, *licensing fees, sales and marketing cost, etc* (**26%**<sup>15</sup> of the acquired revenue, **28.4billion** (ref: chart 1)) is **7.49billion** which takes the total investment approximately **115 billion INR**. So the initial investment of the company should be close to **115 billion INR**. We estimate the returns in the stipulated break-even period of less than **22 months**.

- **Utilities to be provided**<sup>11</sup>: Services provided by the UMTS-3G-CDMA based mobile system has the advantage of a faster data rate of **1920Kbits/sec** unlike the existing 2G (GSM) rate of

14.4Kbits/sec, & 2.5G (GPRS) rate of **140.8 Kbits/sec**<sup>8</sup>. Following basic services are proposed initially.

- ✓ **Communication**: mailing, video telephony & conferencing, business communication,
- ✓ **Entertainment**: launching radio-stations, communication with non-portal mediums, games.
- ✓ **Information Services**: news, information related to different services, railways & air ticket bookings, Medical services, etc.
- ✓ **Agro-business**: networking the telecom-based supply chain execution in rural India.
- ✓ **Optional commercial services**: as a carrier for *advertisements*, *online bidding* etc. These commercial services, a good source of revenue, will reduce the cost of services.
- **3G Handset Cost Analysis**:



**Chart 3: World Handset Market Shares of diff. Companies**

Compatibility of 3G networks and SIM cards with 2.5G & 2G handsets and PCs, handsets, WLAN and 3G **interoperability** and ability of some 3G phones' **back-compatibility** are factors encouraging the demands of the 3G networks. The figures for the global sharing of telecom technology are as follows:  
 2G-46.5%,  
 2.5G-29.6%  
 3G-23.8%.<sup>9</sup>

From this figure the avg cost of 3G handsets can be computed. Average Cost in INR =

$\sum (World\_Market\_Share_i \times Cost_i \times INR\_Conversion\_factor) = 19,448 \text{ INR}$ , which is comparable with the existing cost of the 2G/2.5G handsets.

## EVALUATION

### Evaluation of penetration & compatibility with Indian market

- ✓ Larger network of Bharti as against Reliance's can be countered by the fact that CDMA technology will usurp GSM market in near proximity. (as GSM eventually will take the form of WCDMA).
- ✓ Drawing profits from **untapped sectors** like the growing *telecom based agro-business* industries because of 3G advantages like extended reachability, 110kms talk range from tower (GSM: 35Kms), medical purposes etc

### Evaluation of overall profitability

- ✓ Early start with a profit margin makes it capable to handle fluctuations in the future telecom market.
- ✓ Options for pushing the break-even to Dec '07, by lowering cost per packet adapting with the market forces.

### Future scopes

- ✓ Proposal for lifetime subscription scheme after break-even is reached.
- ✓ Upgradation of UMTS systems to HSDPA to increase data rate to 14.4 Mbits/sec<sup>8</sup>.

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