

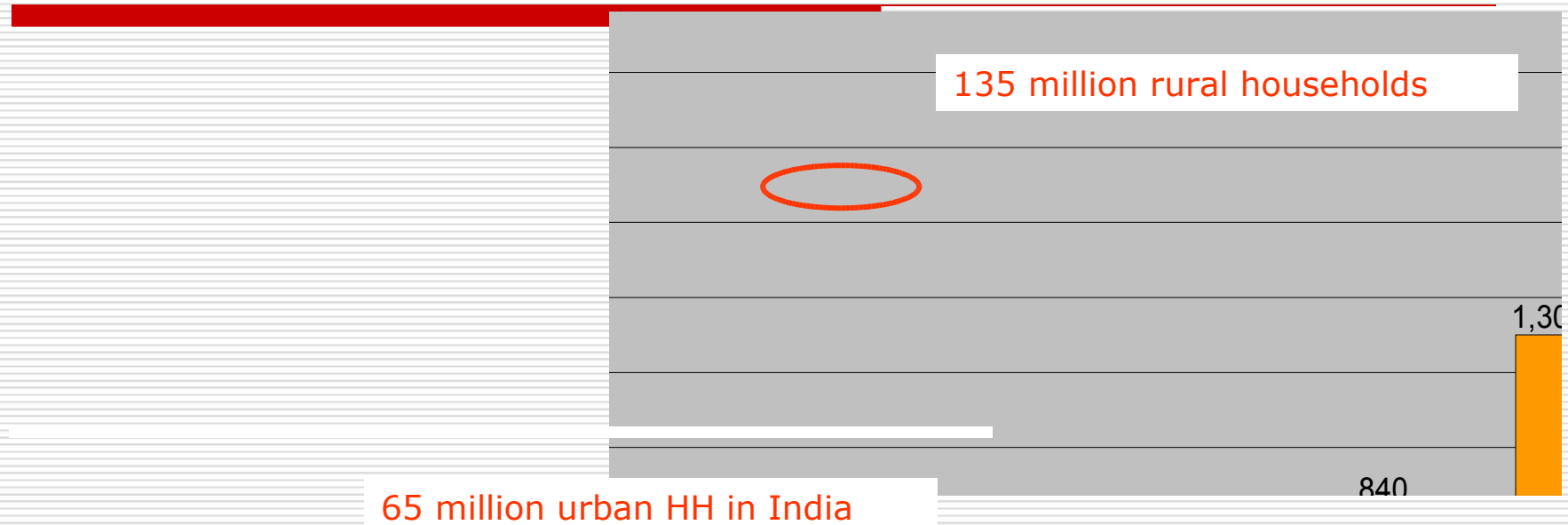
# Leveraging India as India Stands up

through Innovations in Technologies, Business models and Policies

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# India has billion people, but...

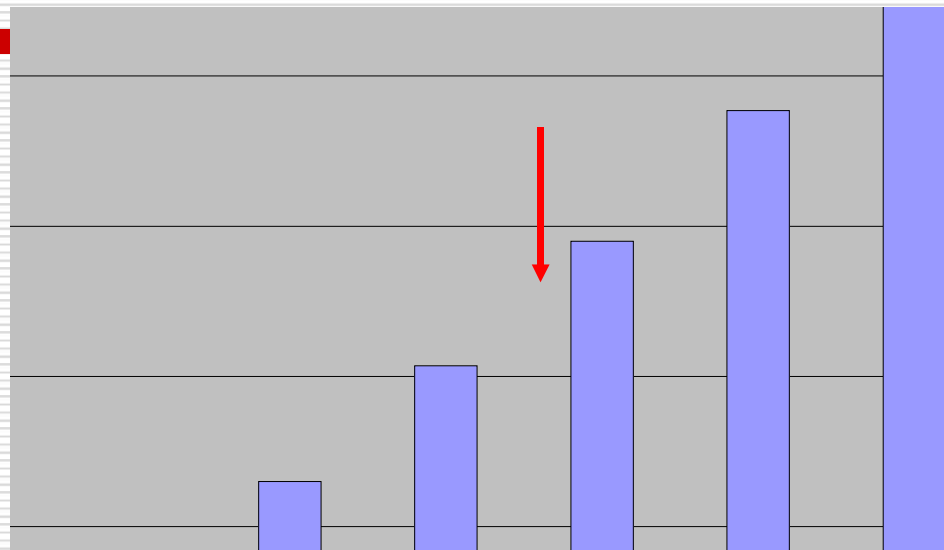


is a large market  
but only at the  
right price point

# Mobile Market in India boomed

5 million ⇒ 50 million ⇒ 150 million ⇒ 400 million

- ◆ Not until Mobile Infrastructure Capex < US\$ 100 per line
  - and with handset price of \$ 50 onwards
  - service available at 2 cents per minute
  - ARPU of about US\$ 7
  - 5 million subscribers added last month



◆ Just Like number of TVs in India rose from 10 million to 100 million in 90's when prices became \$50 onwards and cable TV tariff fell below \$2 per month

- Number of TV channels boomed
- Entertainment industry in India one of the biggest

- 
- ◆ Indian Telcos having learned to provide service at such low price point
    - ◆ By carrying out innovations in technology and business models
    - ◆ Will be in unique position to become the telecom service providers for the world

# Airline Industry

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- ♦ Is booming in India
  - ♦ Probably tripled its passenger carrying capacity in two years
  - ♦ Average tariffs have fallen by more than three times making it affordable to middle class Indians
    - ♦ In spite of rising petrol prices
  - ♦ Leveraging large middle-class and lower middle class manpower

The only limitation to growth is the airport infrastructure

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# Auto Sector is booming

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- ◆ Scorpio and Tata Cars are comparable to the best of the world
  - ◆ R&D driven initiatives
    - ◆ Goenka and Sumantran were fully empowered
- ◆ India is destined to become
  - ◆ Leader in auto-component sector
    - ◆ CARS project

- 
- ◆ Growth of IT and IT enabled services is legendary
    - ◆ Crossed \$28 billion last year
      - ◆ Likely to reach US\$ 50 billion revenue by 2008

**The World is Flat**

**But you aint seen nothin yet**

for the changes has not yet touched Rural India

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## The not so visible

# Engineering Education

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- ◆ 400K engineering students graduate every year from 1500 engineering colleges
  - ◆ Up from 25,000 in 100 schools in early eighties
- ◆ Uneven quality is a major problem
  - ◆ was foreseen and resulted in reluctance to expand

But it is this human resources which has driven growth

# “Our politics is obstacle to growth!”

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- ◆ License fee bids in 1994 was astronomical
  - ◆ Operators soon found that they were chasing a mirage
  - ◆ Privatization was caught in legal quagmire
  
- ◆ Democratically elected Government changed the ground rules completely in 1999
  - ◆ Agreed to forego the large license revenue
  - ◆ And entered into revenue share agreements with NTP99
    - ◆ Quite unlike what European Governments were able to do with 3G license

We make plenty of mistakes, but we correct them in nick of time

# Innovation

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The Story of **TeNeT Group**  
Incubating Entrepreneurs in a University  
Balancing Economic Growth & Social Development

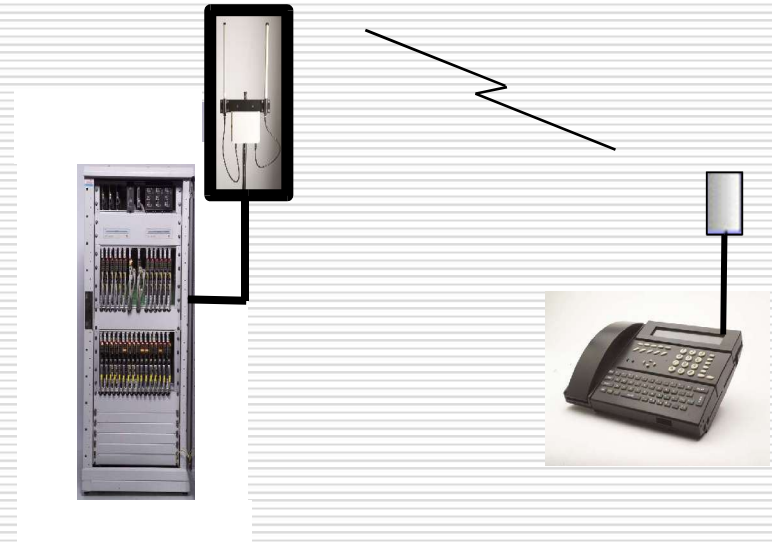
A group of 16 faculty members at IITM and about 14 companies incubated or nurtured by it with about 1400 engineers

# TeNeT Learnings

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- ◆ Successful Business is the best way to drive **development dreams** of a country
  - ◆ Let entrepreneurs flourish
  - ◆ Examples:
    - ◆ Entrepreneur lead PCOs (STD) brought in telephony to 300 million middle and lower middle class Indians
    - ◆ Local Cable TV operators brought in cable connection to homes at US\$2 per month
- ◆ India is a large market at the right price point
  - ◆ Nirma, sachet shampoo

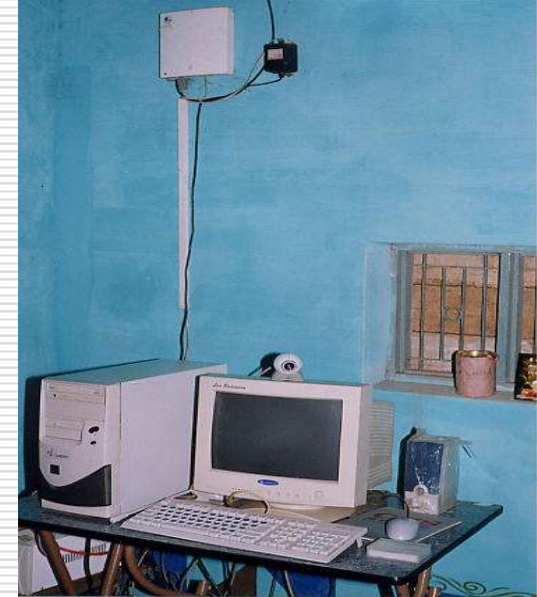
1994 **TeNeT** Vision:  
Connect India with 100  
million telephones



Identify Local Loop Capex as  
primary bottleneck:  
Incubate **Midas**: help develop  
Wireless in Local Loop  
technology

- ◆ 2005
  - ◆ India crosses 100 million telephone lines
  - ◆ corDECT WiLL sales cross Rs 1000 Crore

**TeNeT 2001** Vision:  
Connect every village  
of India



**n-Logue** focuses on  
Internet Connection to each  
village and drive education,  
health and microenterprises  
Double per capita  
Rural GDP using ICT

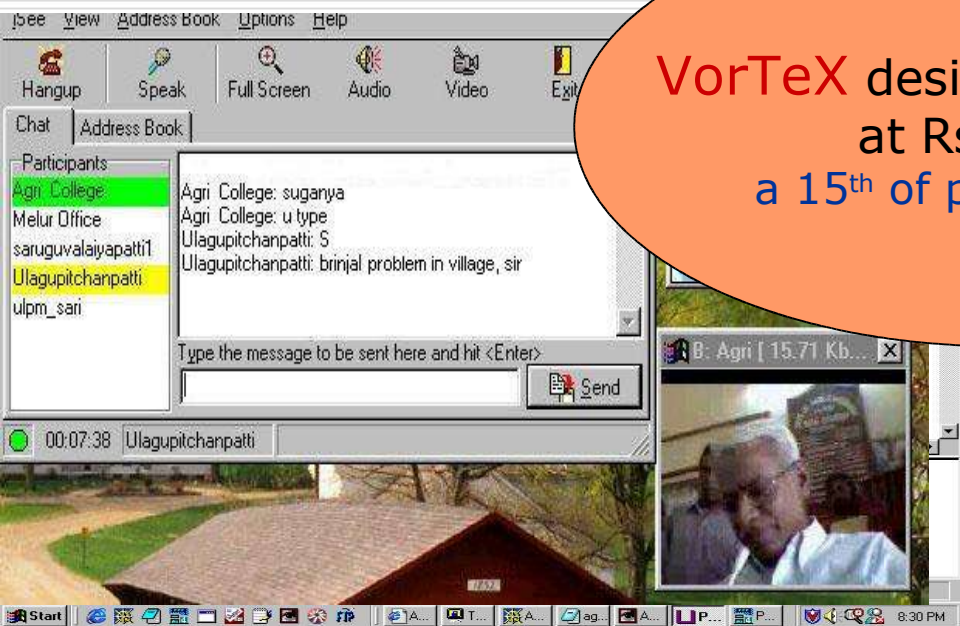
- ◆ aggregate a village demand into a kiosk owned & driven by a local entrepreneur
- ◆ **Rs 50,000 per Kiosk** providing telephone, Internet, multimedia PC, printer and power back-up, plus Indian language software, video conferencing software, **training** and maintenance and 6 months unlimited Internet



**TeNeT Vision:**  
Double per capita  
Rural GDP using ICT

**VorTeX** designs ...  
at Rs5...  
a 15<sup>th</sup> of pr...

**NeuroSynaptic** designs  
ReMeDi: a medical diagnostic kit  
to sell at Rs 12000



# Distributed Production enabled by Internet

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- ◆ Embroidery for Life
  - ◆ Women embroiderers trained by designer entrepreneur in villages
  - ◆ An emerging business model for entrepreneur and kiosk operator

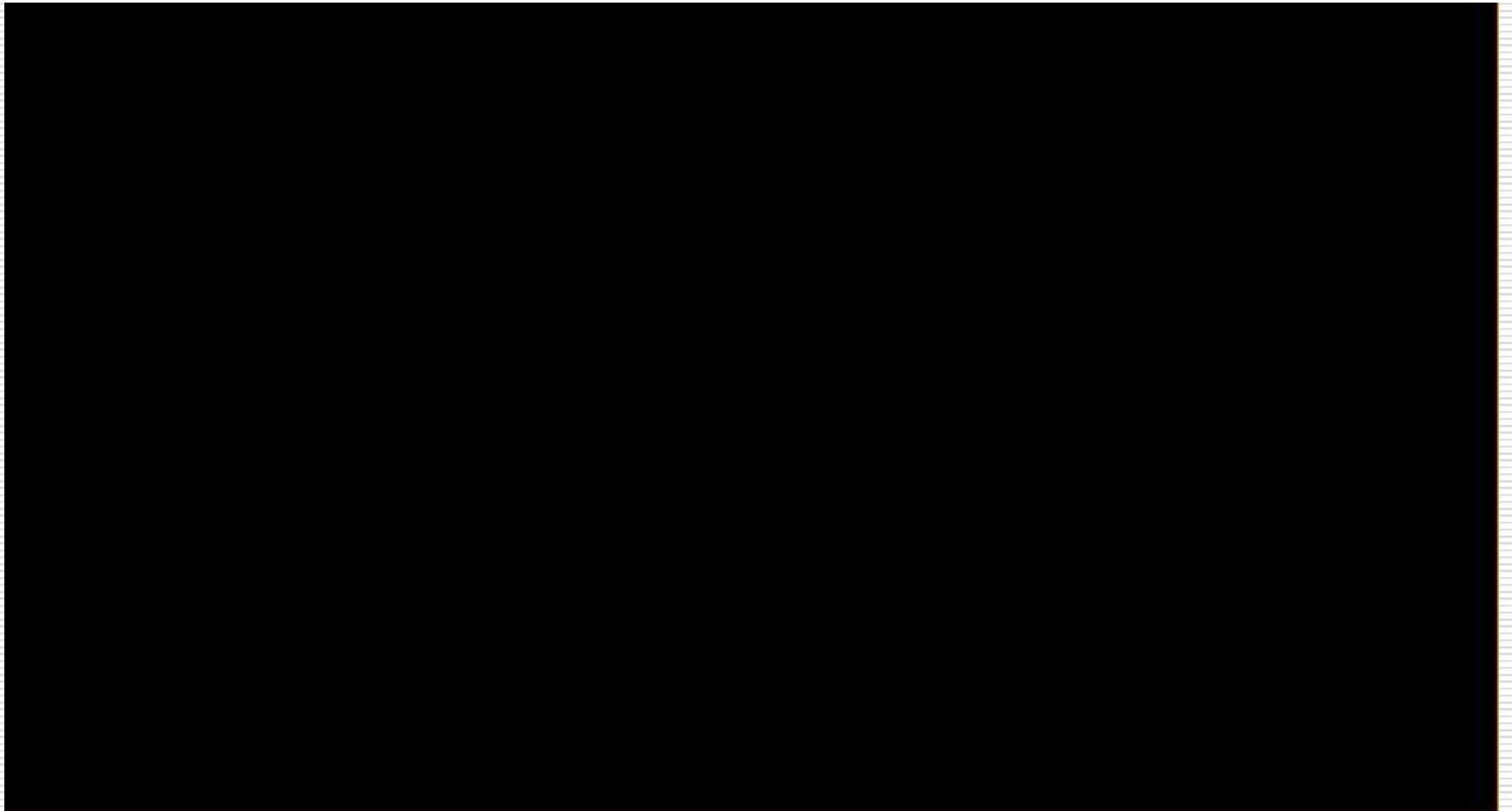


- ◆ Bags for Life
  - ◆ Training in handmade paper bag, organizing production, quality control
  - ◆ Quality products for the domestic and export market

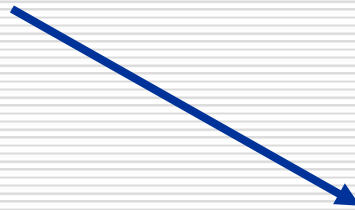


# Enabling IT enables Services in rural areas

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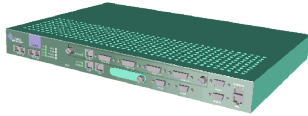
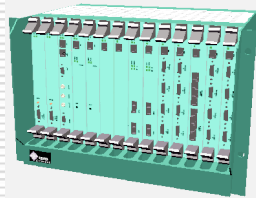
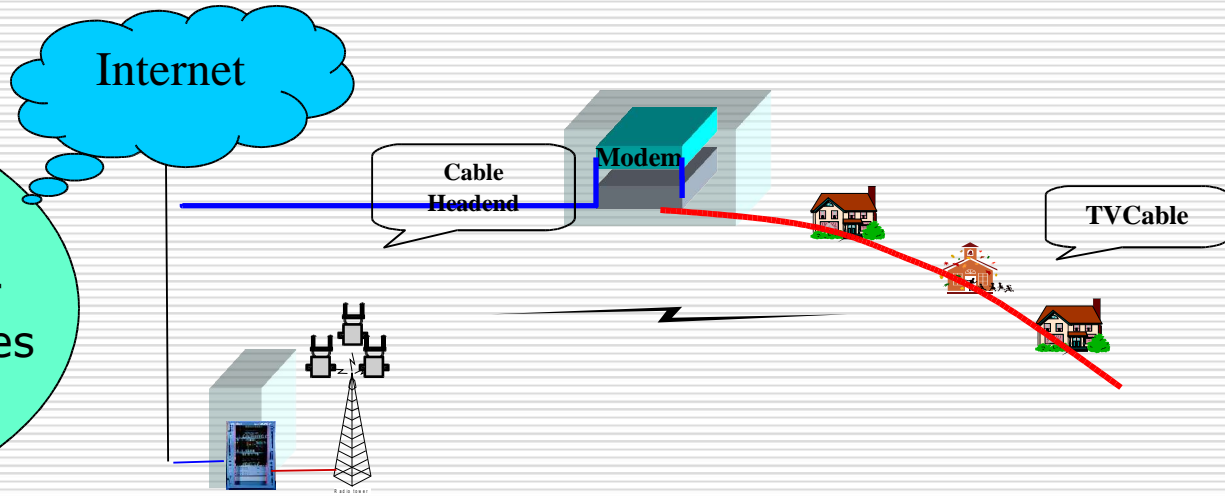
**TeNeT Vision:**  
50 Million Broadband in India



**Novatium** introduces  
Multimedia NetPC  
at Rs 4000 plus monitor

CSL

**TeNeT Vision:**  
Create a few billion dollar  
Telecom product companies  
out of India



**Tejas** become leader  
in Optical Networking products  
(STM-1, STM-4, STM-16 Technologies)

# Training

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- ◆ Can we help train human resources
  - ◆ High quality?
  - ◆ Large number of private colleges bringing out sufficient number of Engineers
    - ◆ For India to become the **Design House for the World**
      - ◆ But they are wanting in quality
  
- ◆ TeNeT group along with IIIT Hyderabad, LNMIT Jaipur and DAIIT, Ahmedabad
  - ◆ initiating a Distributed Finishing School
  - ◆ to train 10K Telecom and IT graduates every year

# Can we become World Leaders in a few Technology areas?

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- ◆ Wireless is one such possibility
  - ◆ Public-private initiative
    - ◆ Center for Excellence in Wireless Technology (CeWiT) to drive India towards this

# Learnings and Strategy: Leadership in the world market

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- ◆ India is a large market at right price point
  - ◆ In innovating on products for **this market** and making it **affordable here** would enable one to become **leader in the world**

# Learnings and Strategy: Attracting Talent

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- ◆ Technology and business innovation
  - ◆ with the aim of doing what has not been done elsewhere alone
  - ◆ would **capture the imagination** of the engineering and business talent

# Learnings and Strategy

## Retaining Talent

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- ◆ Half Life of Knowledge today is two years
  - ◆ Only by training and continuous training one can nurture and retain talent
- ◆ New wave of industry
  - ◆ Empowers individuals
  - ◆ Share gains

# To Conclude

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- ◆ India has changed immensely over the last fifteen years
  - ◆ IT and Telecom industry may have triggered these changes
  - ◆ Today India can be leveraged by most industries, once they recognise its strengths
  
- ◆ India is a large internal market at right price point
  - ◆ Provides enough learning ground to become world leaders
  
- ◆ India has the human Resources
  - ◆ May need to be sharpened