

Banking towards Rural Empowerment: Challenges and Opportunities

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Rural India has 700 million people

- ♦ in 600,000+ villages
(about 1000 people per village with per-capita income of Rs 20 per day)
 - per capita GDP of Rs 10000 per year



135 million rural households

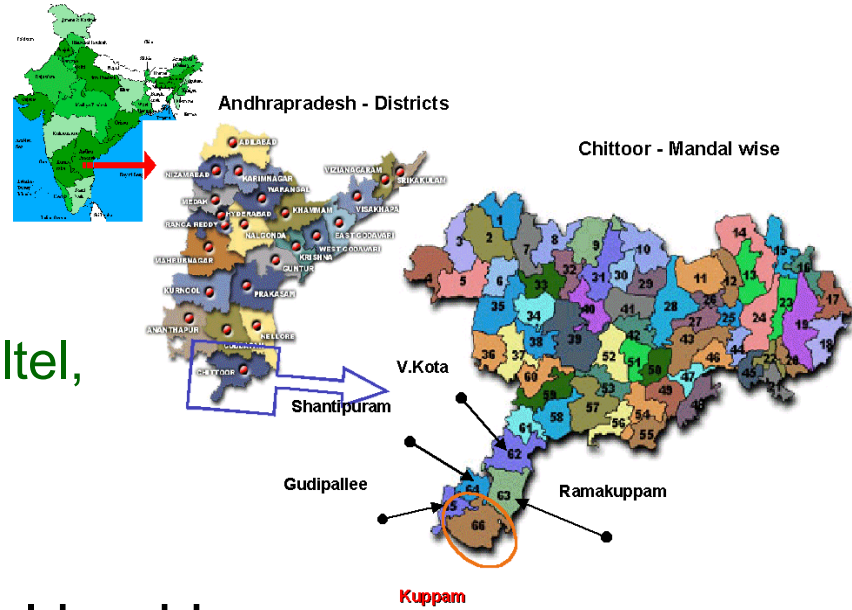


- ♦ Can technologies make a significant difference in lives of such people?
 - Can it bring to them health & Education
 - Can it significantly enhance their incomes?
- ♦ How can Banking be a vehicle?

To make an impact in Rural India, it must Scale

- ♦ can an effort scale to all the villages in India?
- ♦ To Scale
 - Technology
 - Sustainable Business Model
 - Organisation which thinks and acts Rural
- ♦ Let us start with technology to connect Rural India?

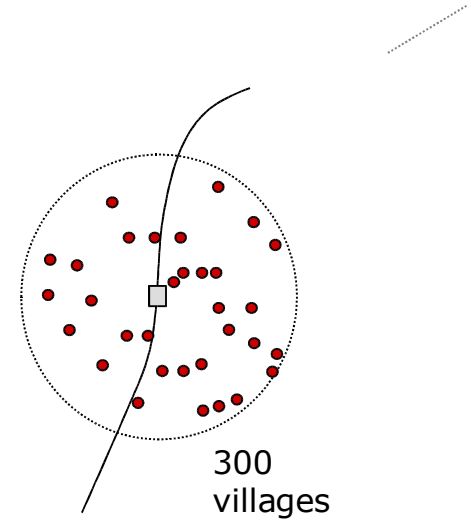
Backbone Connectivity



- BSNL, Tata, Relaince, Bharati, Railtel, others have fibre to each Taluka

- ♦ Lease Bandwidth to make a Rural backbone network (Intranet)

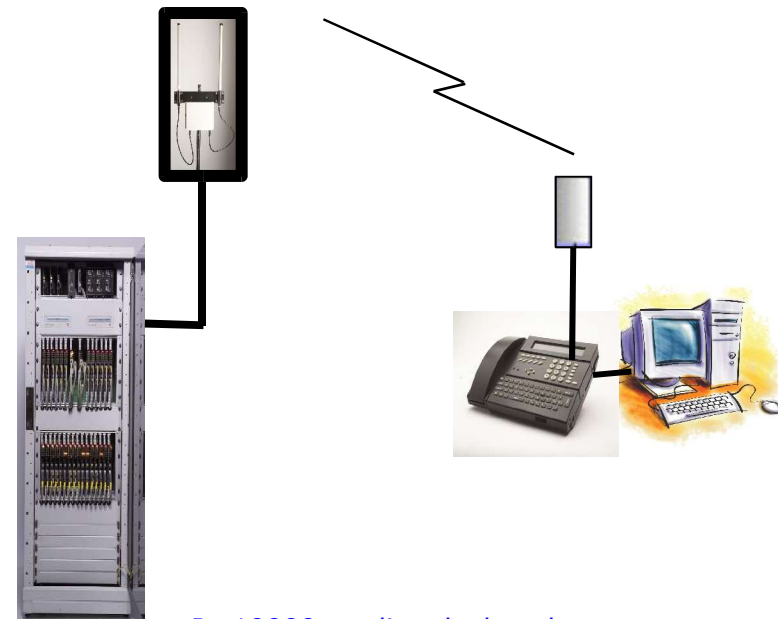
- National / International bulk BW at City
 - Rural (video Conf) BW on intra-net, Cache servers
 - Serve 300 villages around each fibre point



Innovative Technology to connect Rural India

- ♦ **Broadband CorDECT WiLL** developed at IITM, India
 - provides a telephone line and 128/256 kbps Internet connection in 25 Km radius
 - Exchange and tower in town
 - Works at 55° C
 - Power requirement: 1 KW
 - start-up costs very low

- ♦ **Newer technologies emerging**
 - Promising 1/2 Mbps connectivity
 - with OFDM (like 802.16 / WiMax)
 - with HDR and HSDPA



Rs 10000 per line deployed
Exchange and tower in town
Works at 55° C
Power requirement: 1 KW

Business Model:

Use Local Entrepreneurs to drive ICT

- ♦ Entrepreneur-driven operator assisted telephone booths (STD PCOs) introduced in India in 1987
 - Today in urban areas:
 - 950,000 such PCOs covering every street of smallest town
 - generate 25 % of total telecom income
 - 300 million people use these PCOs
- ♦ Lesson for Rural:
 - To serve Rural people with incomes less than \$ 1/day, aggregate demand and let Entrepreneurs drive it

Aid/ Grant does not scale
Successful **Enterprises can scale** to all villages



Innovative Business Models

♦ n-Logue / Drishtee / e-chuapal : Rural Service Providers

- aggregate demand into a kiosk
- owned & driven by a local entrepreneur
- Rs 55000 (including taxes) per Kiosk providing telephone, Internet, multimedia PC with web-camera, printer and power back-up for PC
 - plus Indian language software, video conferencing software, training and maintenance and 6 months unlimited Internet
- set up by a village entrepreneur on the lines of urban PCOs
 - Provides multiple services to break even
 - needs Rs 4000 pm to break even



The Kiosk Owner

- Should have studied up to Class 10
- Need have no prior computer Training
- Should be able to communicate to the people in the village



Top: Suganya from Madurai Dist, TN
Left : Anishaben from Banaskanatha Dist, Guj

Kiosk: Bouquet of Services (besides telephony)



- Learning typing
- Computer education
- Photography
- movies on CD
- DTP work
- Email/voice & video mail
- E-Government
- **Video conferencing providing**
 - Tele-medicine
 - Vet Care
 - E-learning
 - E-Agriculture

Where are we?

- ♦ Infrastructure
- ♦ Capacity Building
- ♦ End to End Services using ICT
 - Basic Services (email, browsing, games, DTP, astrology, matrimonial, photography)
 - Communication Services (VoIP, Mobile)
 - Education
 - Micro-franchise
 - ITeS
 - Telemedicine
 - Agriculture
 - Financial Services
 - Jobs
 - Buying and Selling
 - E-governance
 - Micro-enterprise
 - Online Games

4

Rating in
0 to 5 scale
based on
understanding

Infrastructure

- ♦ Rural backbone
 - India has fibre to most taluka headquarters
 - Lease BW on these fibre to make a Rural Backbone VPN
 - Add capacity as and when needed
 - Intra-rural communication remains on VPN
 - VPN connected to Internet at one or two points

- ♦ Broadband Access
 - 100 kbps plus Connectivity
 - For 400 villages in 30 km radius
 - At Rs 10K per connection including towers

- ♦ PC + SW + Power (battery back-up or genset) + Accessories

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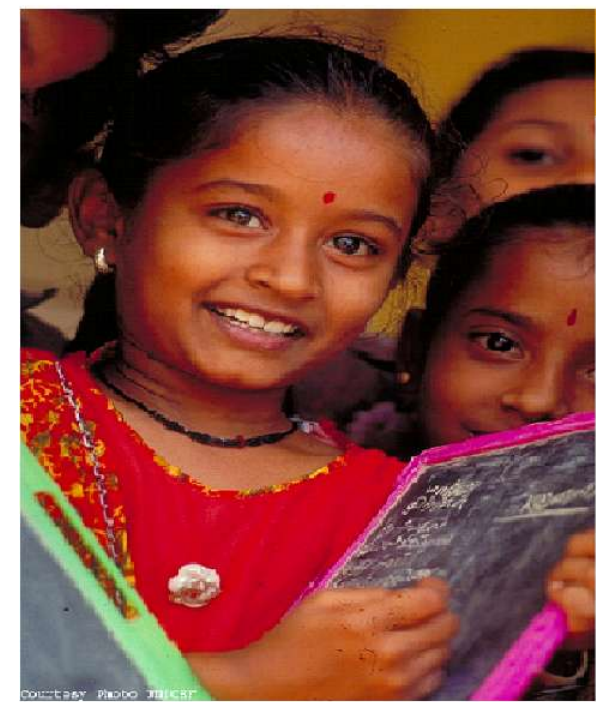
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Capacity Building

- ♦ Selection of Operator
- ♦ Training of operator
 - On-going training
 - Identifying weak operators and retraining
- ♦ Marketing and Driving Services

2



Using multi-party video-conferencing tool by OOPS

Education

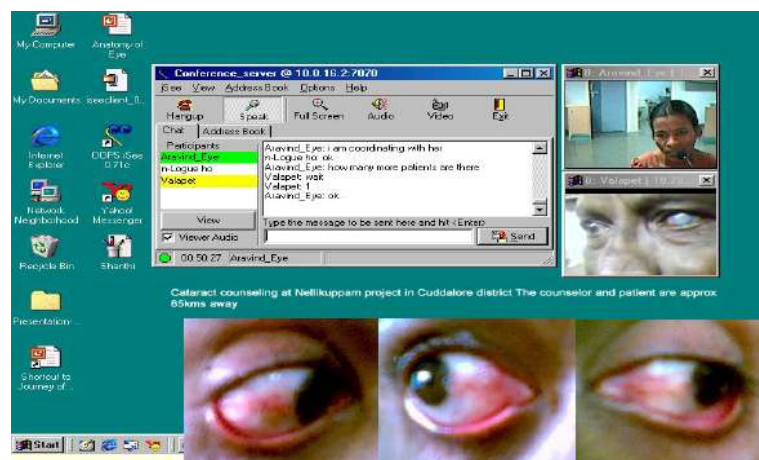
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Education portfolio

- ♦ Basic computer course
 - BLUE (6-9yrs): 6 hrs, BLUE PLUS (6-9 yrs), certified: 26 hrs, GREEN (10-17yrs), certified: 20 hrs, RED (17+yrs), certified: 72 hrs
- ♦ Web based 9th and 10th Std Online Test and Tutorial (TN)
 - Focused on passing exams
- ♦ Web based Spoken English on video (TN)
- ♦ Potential for Vocational Courses
 - Audio/video editing, Graphics and animation, Web development, CAD/CAM

Kiosk Operators estimate that in a village of 1500, one can earn a minimum of Rs 4000 / month with these services

Is there a scope for a Rural Education company?



Remote Eye Care with Aravind Hospitals



Vet care with Veterinary college



Telemedicine

2

Started with video based eye care, contacting doctor and Vet doctor

ReMeDi™ Tele-medicine solution



Tele Diagnostic Kit-Version 0.9

Settings Connect Record Help Tools Audio

Patient Details

ID: 2
First Name: Rajan
Last Name: M
Age: 24
Sex: Male Female

Send Create

Measurements

Case ID: 1 For:

Stethoscope

Close

Blood Pressure

Current Pressure

Systolic: 101 Diastolic: 76 Pulse: 96

Control

Stethoscope: Start Stop Close
Blood Pressure: Start Stop Close
Electrocardiogram: Start Stop Close
Thermometer: Start Stop Close
Control: Delegate Grabback
Result: Get Result

ElectroCardioGram

Print Close EnableFilter

LEAD I

Vert: 0.1mm/mV, Horz: 25mm/Sec

B: Doctor | 49.38 Kbps / 4.41 fps

Temperature (Deg F) 97.6

symptoms

Symptoms Diagnosis Prescription

Send

B: Patient | 51.29 Kbps / 3.43 fps

For Help, press F1

Start Connected t... B: Doctor [4... B: Patient [5... NUM 6:27 PM

Distributed Production In Rural India: Crafts, Outsourced Production & Micro-franchise

Current Status: 7 villages, 5 to 10 women in
each village

1+

Distributed Production enabled by Internet

♦ 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





IT enabled Services

Current Status: 35 villages

2

Job work performed at the kiosk

Rural ITeS Map – skills vs jobs available

Level of Skill	Data	Voice	Visual
Unskilled [May only know how to converse in a regional language]			<ul style="list-style-type: none"> • Downloading images • Image identification
Semi skilled [May only know how to read and write in English in addition to a regional language]	<ul style="list-style-type: none"> • Typing • Data Entry 	<ul style="list-style-type: none"> • Providing Voice for flash CDs 	
Skilled [Must have some basic technical capability]	<ul style="list-style-type: none"> • Translation • Desktop Publishing 	<ul style="list-style-type: none"> • Audio editing 	<ul style="list-style-type: none"> • Web development • Multimedia using Flash



Before



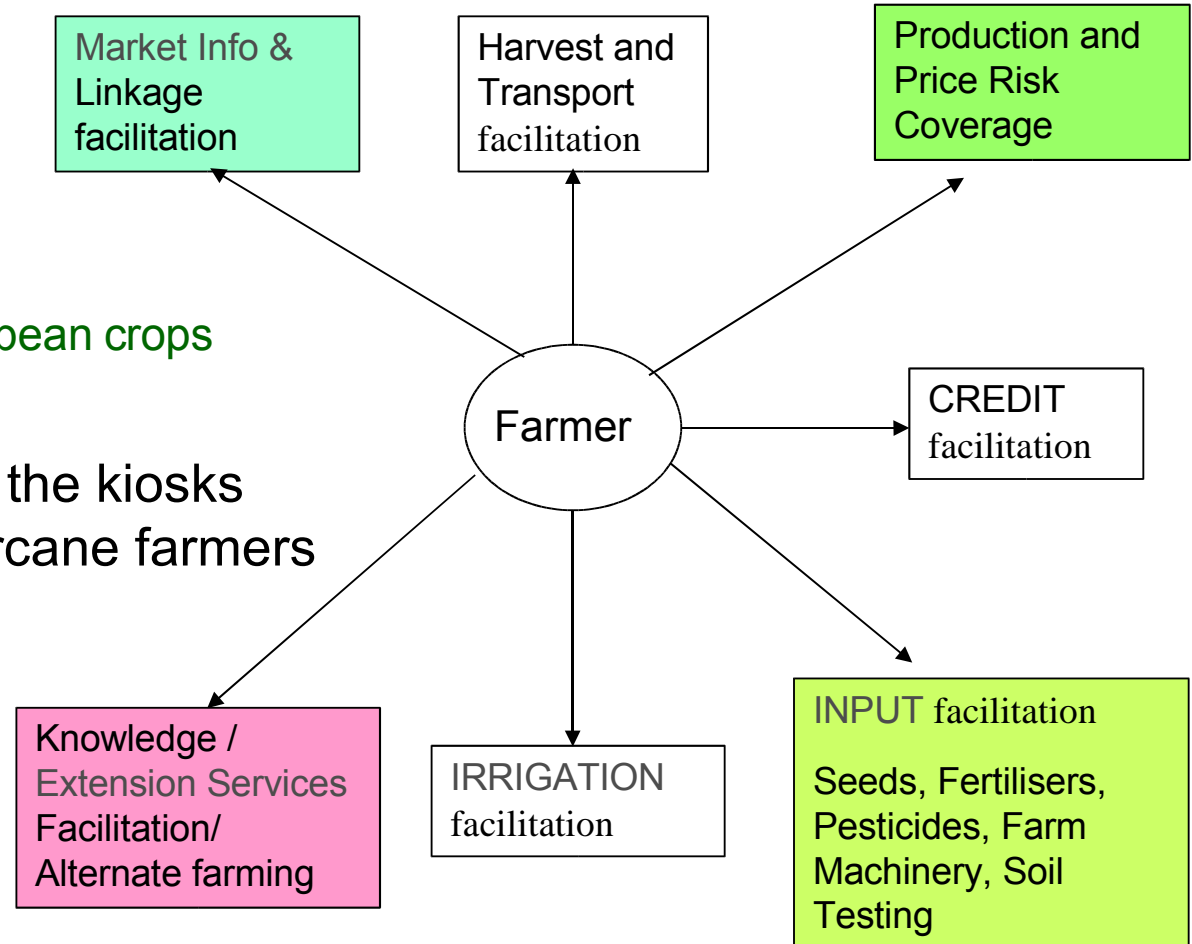
After

Agriculture

2- leaving out ITC e-choaupal

Agriculture

- ♦ ITC doing great job
 - Sunflower and soybean crops
- ♦ EID Parry has used the kiosks for supporting sugarcane farmers
- ♦ Others struggling

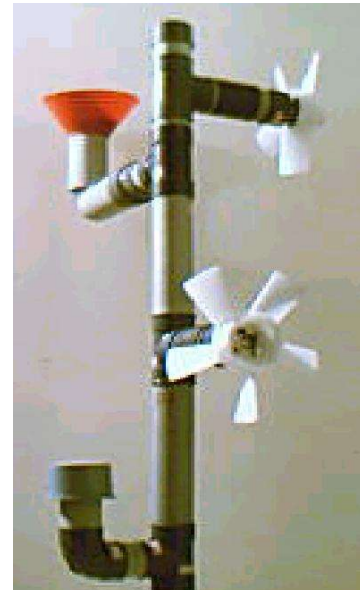


N-Logue's Agri-efforts

- ♦ Knowledge/Extension Facilitation
 - Expert Consultation over Video mail (MV4 recorder)
 - Expert Consultation over Videoconferencing
- ♦ Input Facilitation
 - with SPIC for online ordering: Tissue Culture Banana
 - with Rural Innovation Network for online ordering
- ♦ Irrigation Facilitation
 - with International Development Enterprise (IDE)
 - Online ordering: Small Farming Solutions like Low Cost Drip Irrigation
- ♦ with Godrej Agrovet
 - Seeds, Fertilisers, Pesticides, Farm Machinery, Technical Advice & Soil Testing Acqua (from IIT Mumbai): expert answering questions

Micro-weather prediction

- ♦ Collect weather data at each village
 - Temperature, humidity, pressure, wind speed, wind direction and rainfall
 - Can one use micro-weather prediction systems?
 - Use village data for weather insurance
- ♦ TeNeT & Neurosynaptic develops
 - Weather Monitoring Kit : Rs 10,000
 - Remote Measurement of each of these parameters at each village multiple times a day and recoding at some central server
 - Drives Rainfall Insurance



Huge potential Impact on crop insurance, micro weather models, prediction, disaster management

But all this requires Financing!

- ♦ How does one take financing to Rural India?
 - Traditional money lenders have been wiped out
 - What is available is at usurious rates
 - Financing from nearby towns too expensive

- ♦ Answer in the form of Microfinance
 - Has made great strides
 - But what is the interest rate?
 - At 24 to 30% interest rate it is good loan for
 - Short term consumption loans
 - Trading
 - But not for any manufacturing / agriculture?

Financial Services

2-

- ♦ Can kiosks become mini-banks?
 - Internet banking
 - But how will cash be delivered?
 - Can they facilitate agricultural loans?
 - Can money transfer from cities/ urban areas be facilitated?

- ♦ Can kiosks facilitate micro-finance?
 - Can the interest rate be significantly brought down?

- ♦ Can kiosks carry out credit-rating of rural people?

- ♦ What about Insurance?
 - Can they enable different kinds of insurance?
 - Life Insurance, health insurance, General Insurance, rainfall insurance

We could put Internet in every village but for its cost?

- ♦ TeNeT / VorTex takes up a challenge to develop totally indigenous ATM starting from scratch
 - Finger print detection
 - Smart card / credit card
 - Internet kiosk based or Stand alone
 - Through switch or integrated to Rural bank computers
 - Deliver soiled notes
 - Single denomination today
 - Can be extended to multiple denomination
 - Electronic Lock operated using finger print detection
 - Cost about Rs 55 K for kiosk ATM / Rs 75 K for stand alone

Vortex GramaTeller initiative with ICICI, reducing the cost of ATM to 1/15th



Towards Credit rating

Family Head Name	A.P.Veeranan			
Address	6/ 4,,T.Ulagupitchanpatti,Thiruvathavoor,Melur,Madurai			
Total Land	None Acres			
Water Source(Agri)	None			
Water Source(Drink)	Water Tank			
Residence Details				
Residence type	Own Kaccha			
Bought by Loan	No			
Total Houses Own other than residence	House Type	Number Bought with Loan?		
	-	- -		
Crops Grown	-			
Items Own	Item Name	Bought with Loan?		
	-	-		
Total Animals Own	Animal	Number	Vaccinated	Health Problem
	Cows	2	No	None
	Hens/ Chickens	4	No	Vella Erukku
	Sheep	above 12	No	None
Number of Relatives abroad	0			
Relationship				



Family Members

- A.P.Veeranan-Head
- V.Karuppayi-Wife
- V.Thirumathi-Daughter
- V.Ranjith Kumar-Son
- V.Muthupandi-Son

Other Services

- Jobs 0
- Buying and Selling 1-
- E-governance 1+
- Micro-enterprise 0+
- Online Educational Games 0
 - ▣ Intra-village
- Transportation 0

Services Status

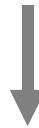
- ♦ Infrastructure 3
- ♦ Capacity Building 2
- ♦ End to End Services using ICT
 - Basic Services (email, browsing, games, DTP, astrology, matrimonial, photography) 4
 - Communication Services (VoIP, Mobile) 3
 - Education 3
 - Micro-franchise 1+
 - ITeS 2
 - Telemedicine 2
 - Agriculture 2-
 - Financial Services 2-
 - Jobs 0
 - Buying and Selling 1-
 - E-governance 1+
 - Micro-enterprise 0+
 - Online Games 0

- ♦ How do we drive each of these to 4+ in the next two years?
- ♦ How many companies does each require?
- ♦ What about community oriented services?

The Dream

Current Rural GDP in India = Rs 700,000 Crores
For a Population = 700 million people
GDP / Person = Rs 10,000 per year

Rural Prosperity



DOUBLING per-capita Rural GDP



Rs 20,000 per person per year

Tomorrow's kiosk

- ♦ Tomorrow the kiosk should become
 - a communication hub: providing 50 telephone and Internet connection in a village
 - a center for virtual university / training center
 - technology support center
 - a support center for Entrepreneurship
 - a banking outlet
 - micro-finance outlet
 - a trading outlet
 - agri-support center
 - a medical support center
- and more

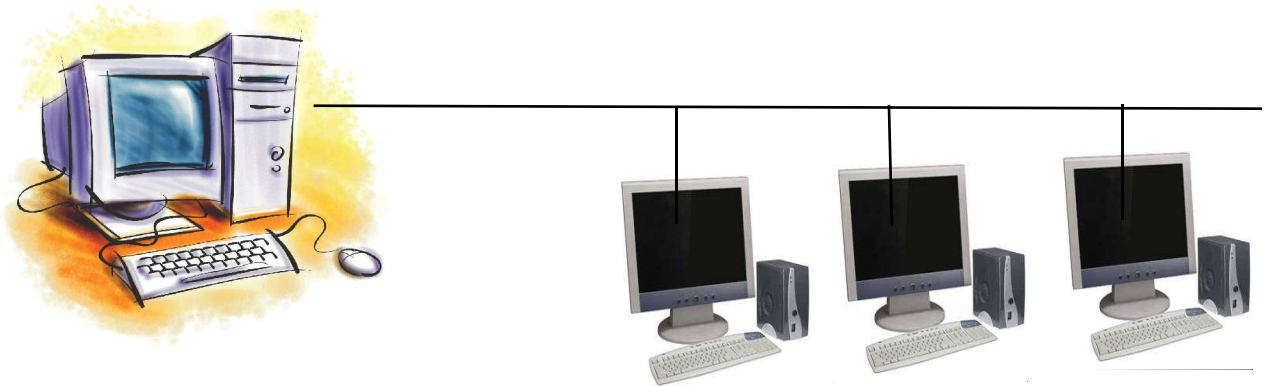
As kiosks needs multiple computer

♦ Introducing NetPC (Multimedia Network PC)

- Connected to the Kiosk PC Server on LAN

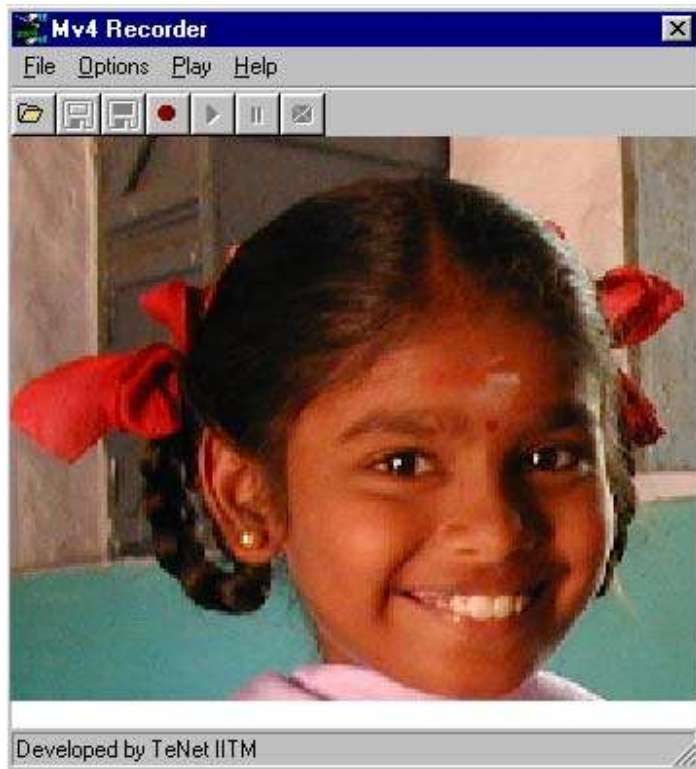
- No virus, no back-up required
- Functions identical to a PC

- Target price: Rs 4000 plus monitor



To Sum Up

- ◆ Technologies can impact lives provided there is a big enough Vision behind it



- Dream of Doubling per capita Rural GDP

□ Finance, Commerce, Training & Information are key

- Driving Education, Health and Entrepreneurship is the means

□ Financing Rural India will be the biggest challenge

□ Power Supply will be key bottleneck

- Entrepreneur sets up (20-50KVA) back-up power plant and distribute in the village
- initially with diesel, later with bio-diesel