

# Rural Telephony: A Socio-Economic Case Study

Sayandeep Sen

Sukant Kole

Bhaskaran Raman

<http://www.cse.iitk.ac.in/users/braman/dgp.html>

<http://www.iitk.ac.in/mladgp>

Indian Institute of Technology Kanpur

A Project supported by Media Lab Asia

# Goal

- VoIP service deployed over **37km** Wi-Fi link between Sarauhan (village site) & IIT Kanpur (landline site)
- Service running **successfully** for the last **15 months**
- Statistics collected from logs at village & landline sites
- We present statistics on:
  - Operational Aspect
  - Business Aspect
  - Social Aspect
- An **optimized** infrastructure & revenue model proposed

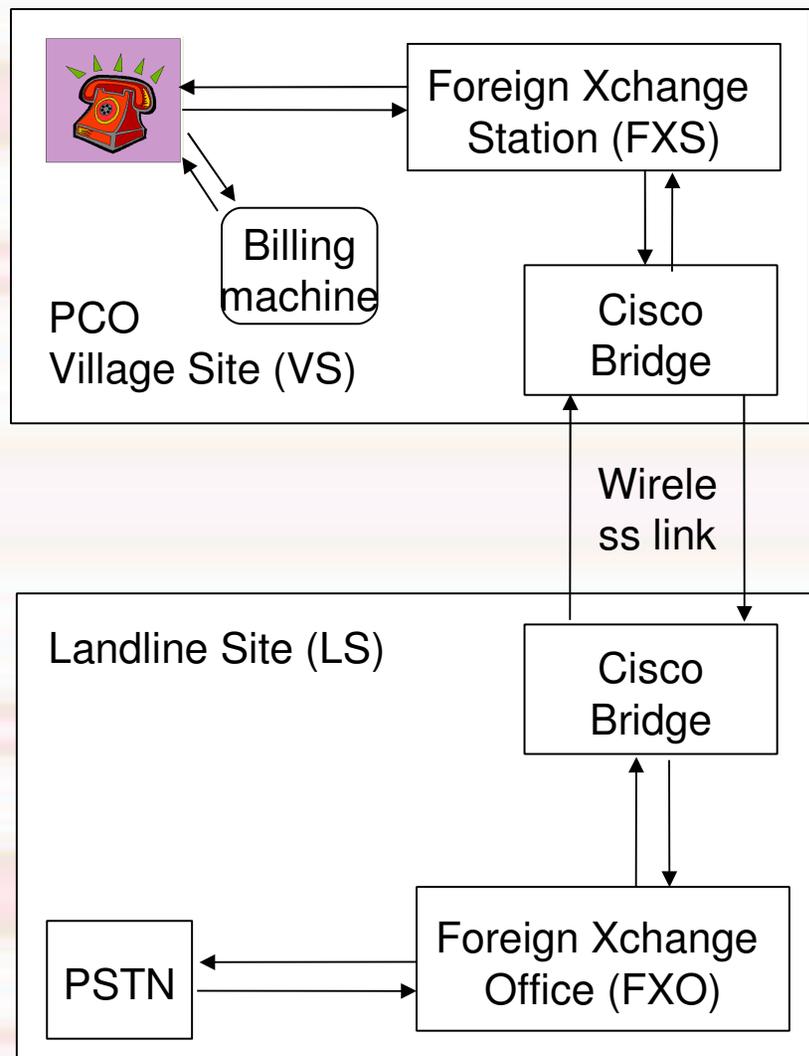
# The Two Sites

Village Site (Sarauhan)

Landline Site (IIT Kanpur)



# Testbed Hardware & Setup



Parabolic grid antennae



802.11b bridges



Foreign eXchange Station (FXS)

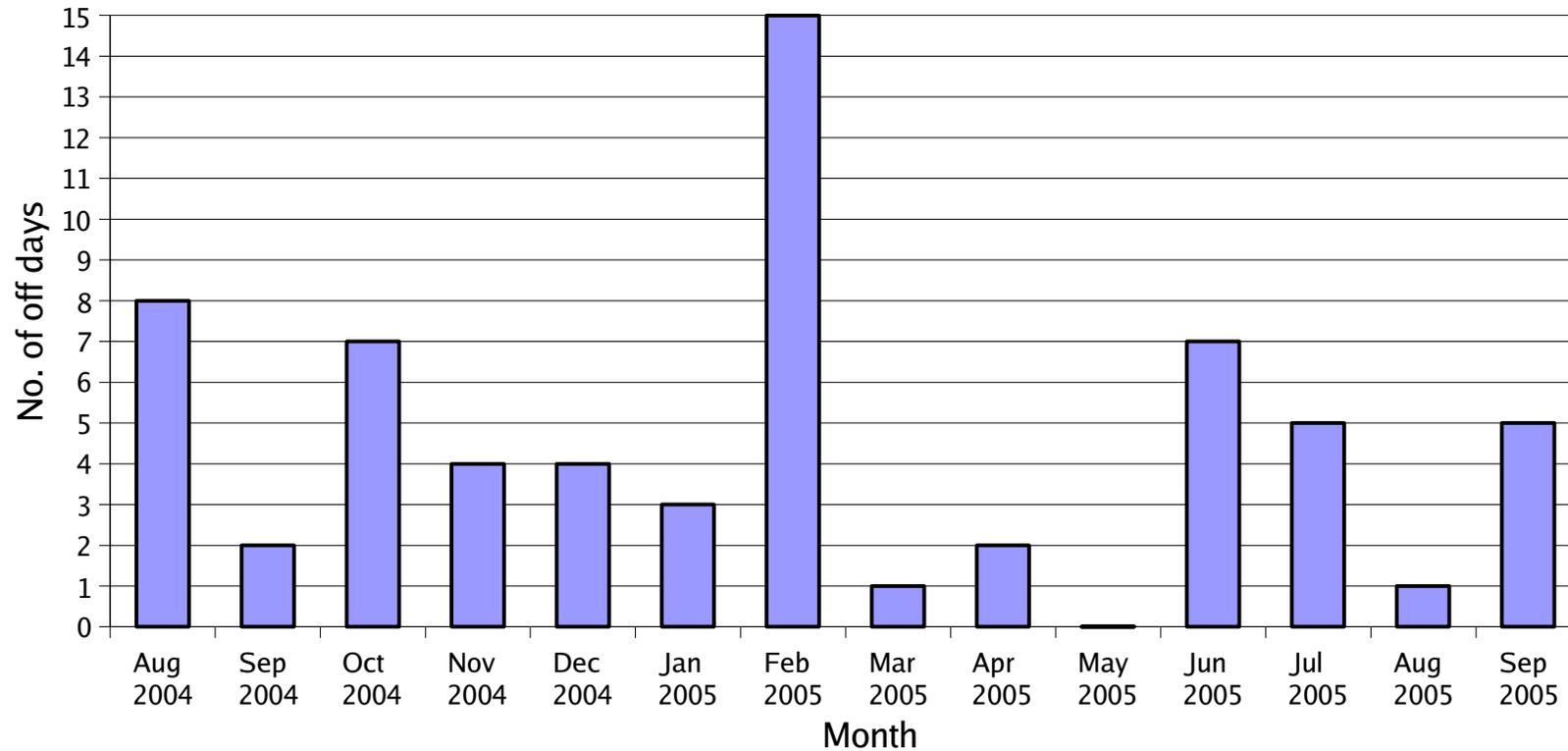


Billing Machine



Foreign eXchange Office (FXO)

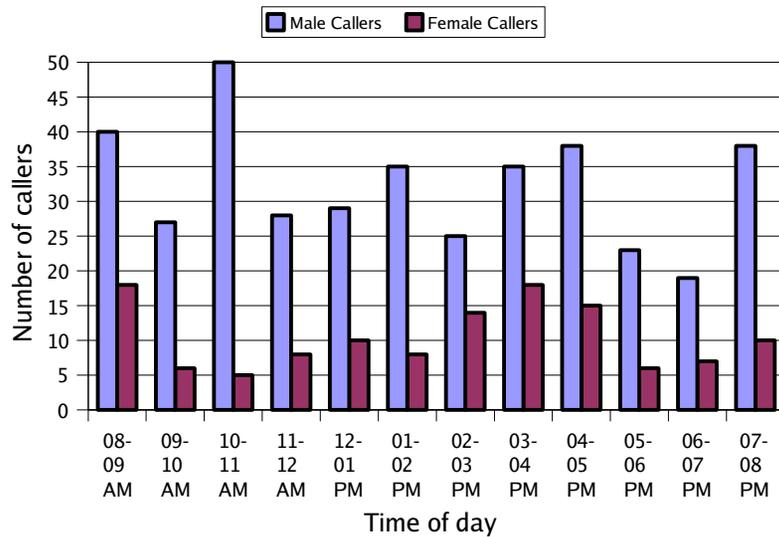
# Operational Aspect



*Count of days without PCO service*

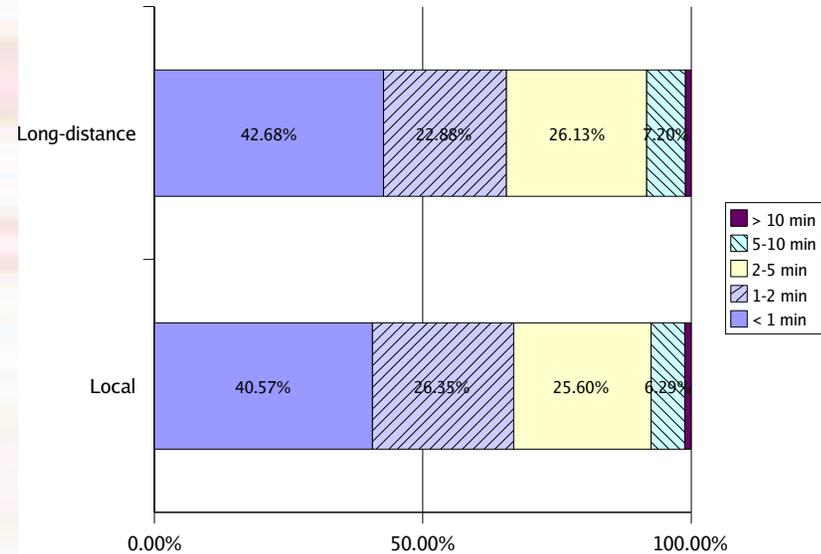
- Off days in February 2005 were due to solar power failure at village site

# Business Aspect



*Caller time*

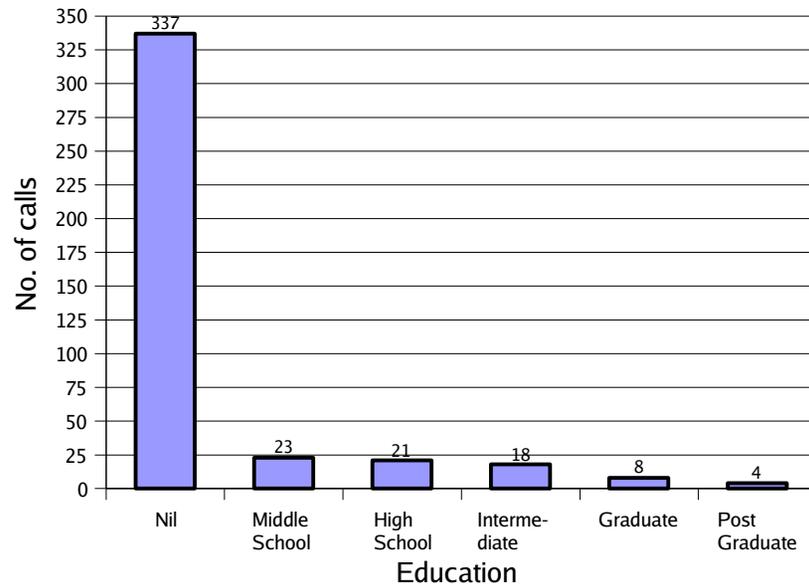
- Female members prefer calling between 2-5 PM period
- Male callers frequent from 10-11 AM



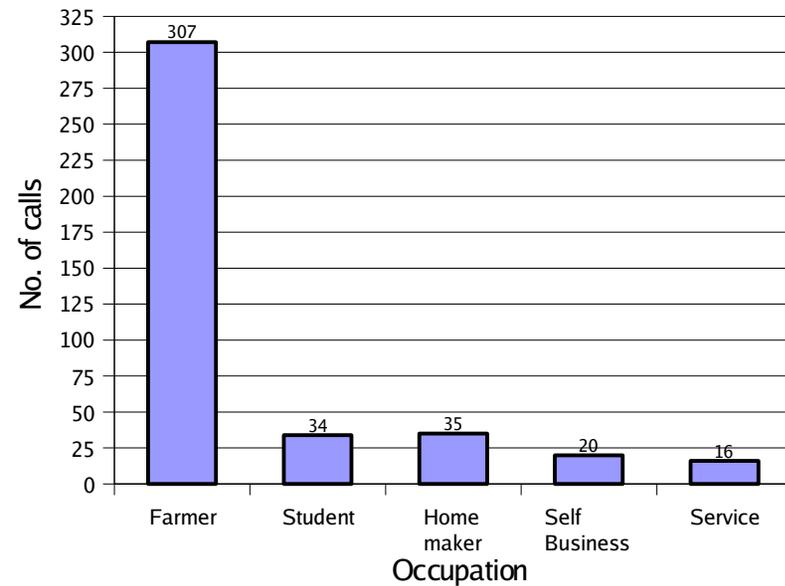
*Duration wise call break-up*

- Substantial portion of calls are less than 1 minute duration
- Majority of calls greater than 1 minute in duration

# Social Aspect



*Callers' education*



*Callers' Occupation*

- 82% of callers illiterate
- Necessity for remote educational service
- Farming is the chief occupation
- Agricultural ICT applications seem appropriate

# Optimization

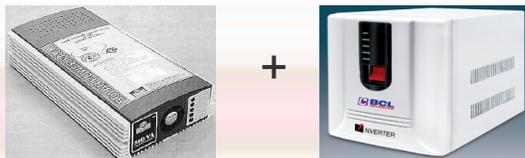
## Current Model



Antenna tower: \$6600



Cisco Bridges: \$2000



TataBP Solar: \$1100  
& Inverter



## Optimized Model



Antenna Mast: \$80



Soekris Board: \$300  
& (mini) PCI card



Lead Acid Battery: \$24

# Summary & Conclusion

- Rural telephony service deployed for past 15 months
- Technical feasibility of this deployment achieved with **success**
- Current financial model is a **loss making venture**
- An **optimized** infrastructure & revenue model is proposed
- **More ICT services** other than telephony will only increase the viability of such a deployment