Giving Farmers a Fighting Chance:
Transforming the Rural Economy in Zacatecas, Mexico through Mobile Technology

MIT Team
Scot Frank
M. Ehsan Hoque
& two anonymous
  MIT students

Advisor
Esmeralda Megally

Media Partners
Luke Einsiedler
Paul Moore

Community Partner
Geoff Groesbeck

nextlab

Background

Zacatecas, Mexico – Agricultural State

Map: Wikipedia

- 8th Largest and 2nd poorest state
- Word of mouth communication

Project Partner

Instituto Tecnológico y de Estudios
Superiores de Monterrey (ITESM Zacatecas)

Strategy

Farmer's dilemma
- No market price information
- No negotiation power with traders and middlemen
- No profits. Unsustainable conditions

Technology Platform
- Improve Communication among the farmers
- Aggregate crop information
- Access market information

Desired Outcome
1. Better Information access & increased Negotiation power
2. Equitable Price
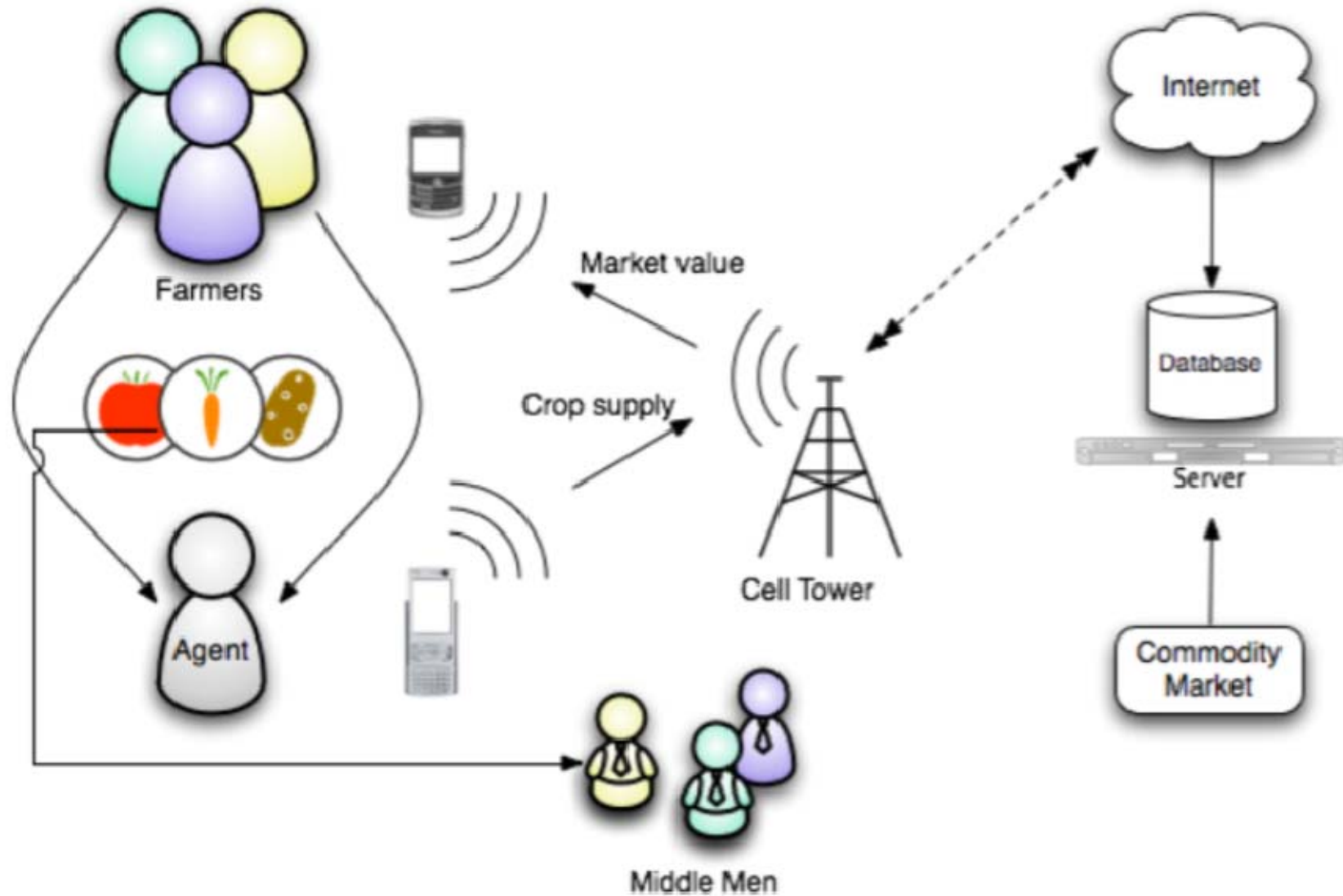3. Increased Social Mobilization

Desired Impact

Transparent Market

Fair bargain abilities for all
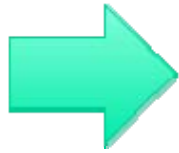
Self-sustainable Agricultural Livelihood

System Architecture

Crop Data Collection

- **Agent**
  - Register Farmers
  - Aggregate crop information

Figure by MIT OpenCourseWare.

Crop Market Price Query

- **Farmer**
  - Report crop yield and trades to the agents
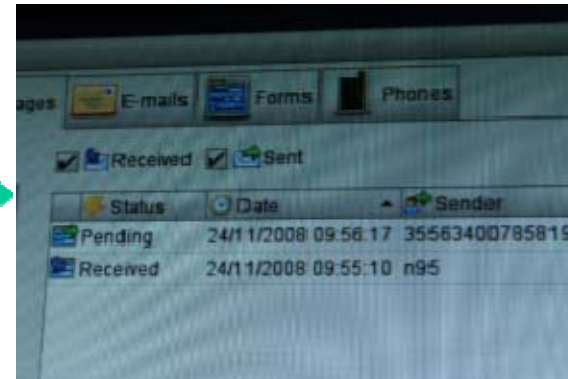 - Query crop market price

Figure by MIT OpenCourseWare.

Systems Management

- **Administrator**
  - o Manage server application and database
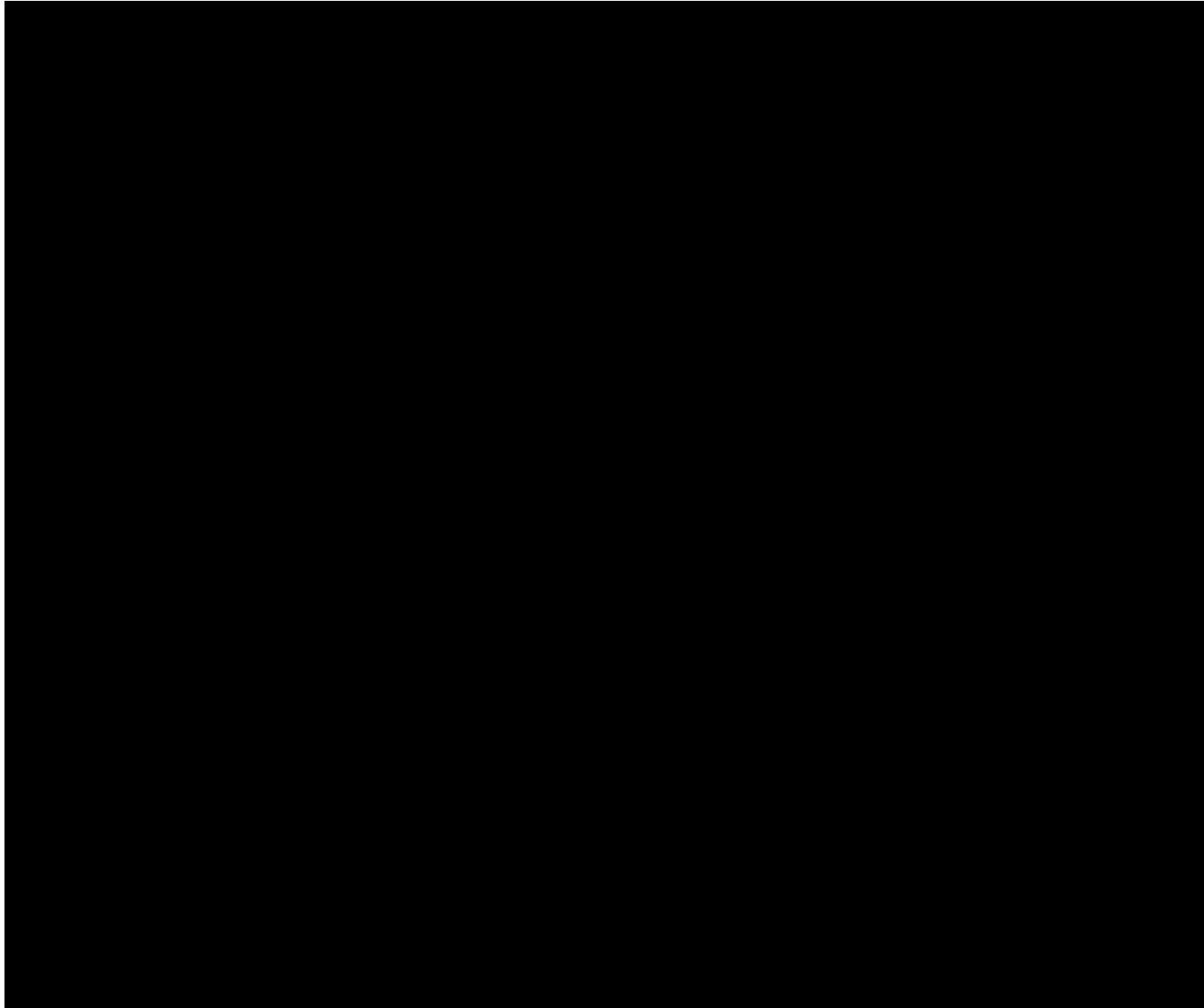

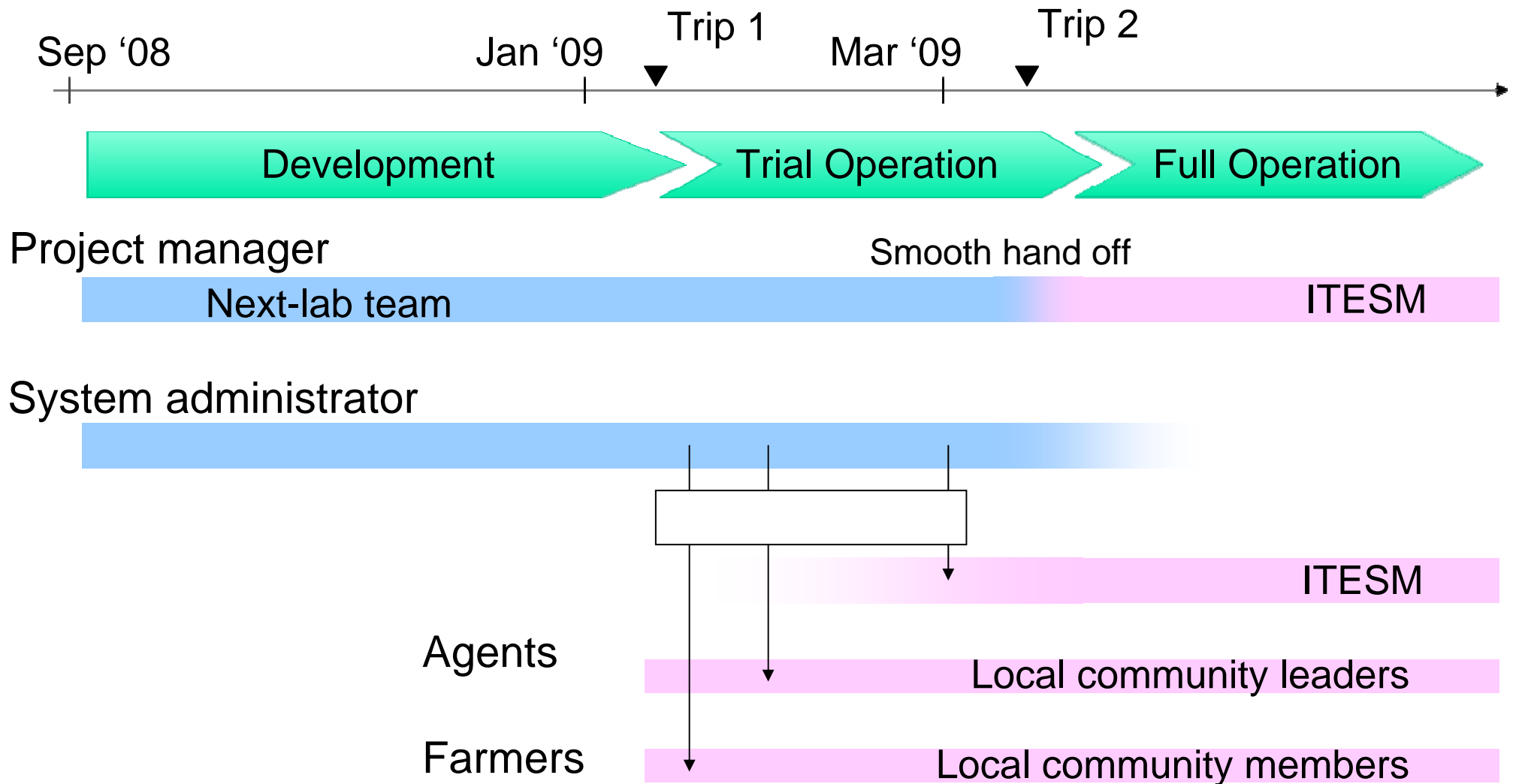Figure by MIT OpenCourseWare.

Crop DB

Demo

Operational Sustainability

Financial Sustainability

Jan 2009   Spring 2009

Trial Operation → Full Operation → Matured

20   # Farmer Communities   722 (Covering all Zacatecas State)

$2,000/yr   A Farmer's Income $3000/yr

Cash Out (to be supported by public/private funds)

$300 for 3 mon. ⟶ $6,000/yr

- Investment in equipment is supported by ITESM
- Operation is helped by volunteer farmers and ITESM students
- etc.

Cash out by investment $500/yr
Cash out by operating $5,500/yr
(Assumption)
   - office space offered by ITESM
   - helped by volunteer farmers
   - etc.

Rollout Plan

| Trial Operation | Full Operation | Maturity |

- MIT Team Visit 1
  o Jan 2009
- Fund
  o $5,000 from NextLab & partners
- Agenda
  o Deploy the prototype.
  o Train agents, and farmers.
  o Collect feedback and improve the system

- MIT Team Visit 2
  o Mar 2009
- Fund
  o Seeking grants
- Agenda
  o Deploy the final system.
  o Train the technology partners
  o Handoff the project

- Maintained by ITESM
  o Funded by farmers and other stakeholders
  o Platform extended to other value added services

The Future

Community, Government, Corporations

- Government - provide monitoring, educational and informational services
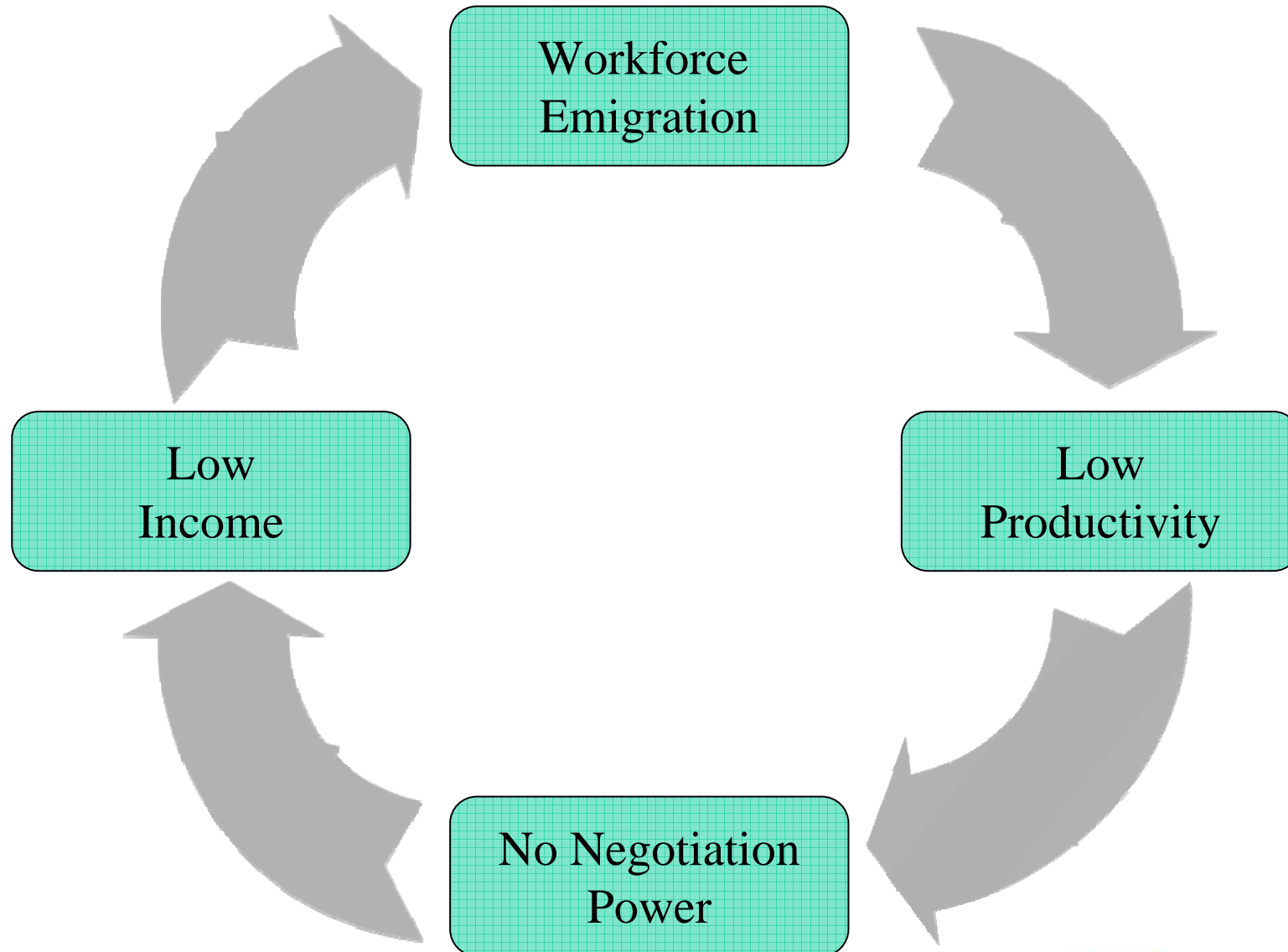- Corporations - provide storage and logistics services

Traders, Retailers, Wholesalers

- Publish demand information. Benefits – stable supply & economies of scale
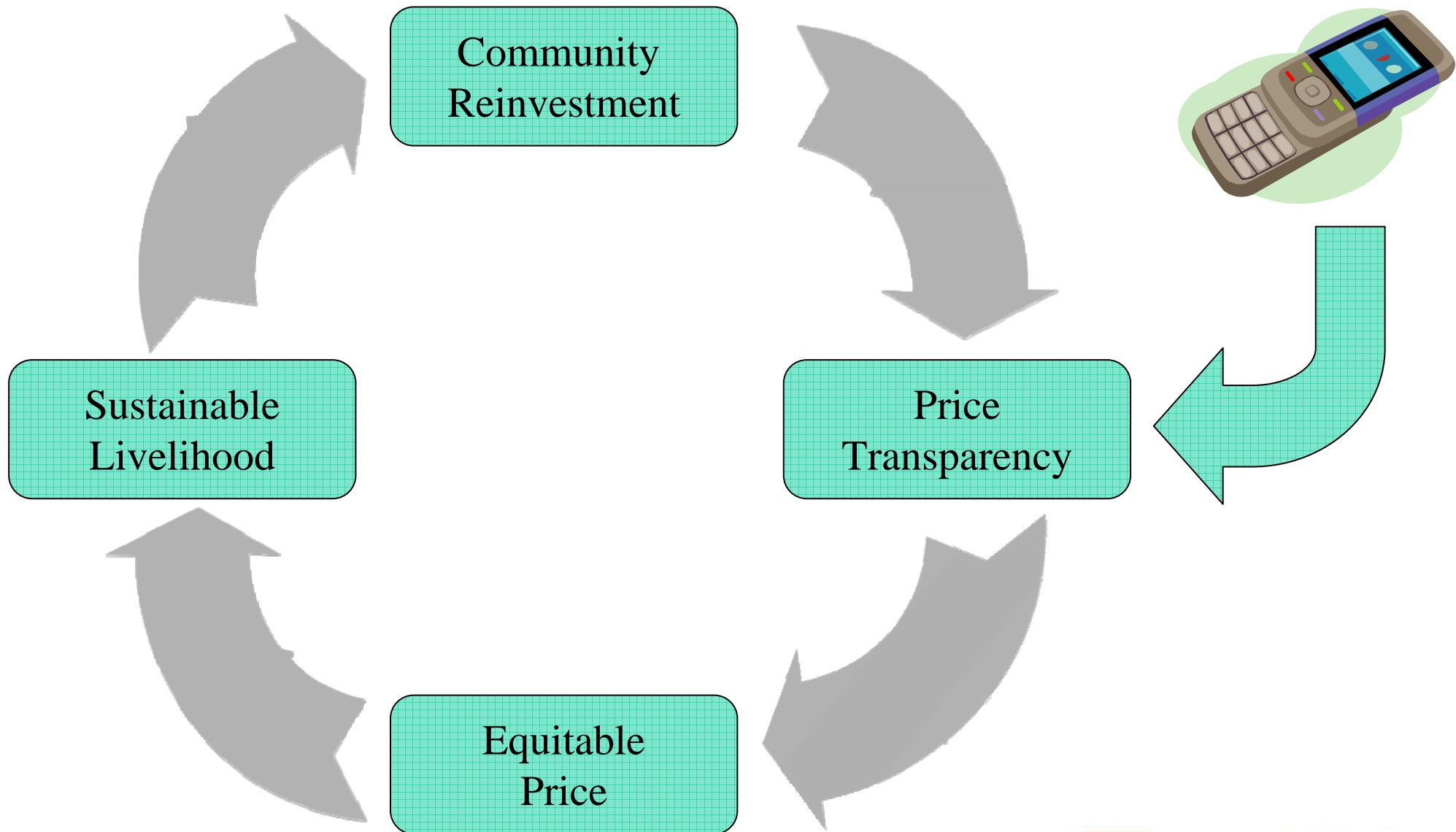- New traders can participate in the online marketplace

Farmers

- Lock-in future prices based upon demand information
- Use mobile platform to invest in other social programs

Vicious Cycle of Poverty

Workforce Emigration

Low Productivity

No Negotiation Power

Low Income

Virtuous Cycle of Prosperity

Community Reinvestment

Price Transparency

Sustainable Livelihood

Equitable Price

Your turn…

- To: **617-909-5107**

- Message: "**query** *crop*"
  - Where *crop* is your favorite of the following:
    - tomatoes
    - potatoes
    - wheat
    - grapes
    - apples
    - corn

Questions

MAS.965 / 6.976 / ES.S06 NextLab I: Designing Mobile Technologies for the Next Billion Users
Fall 2008