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

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Background

Zacatecas, Mexico – Agricultural State

- 8\textsuperscript{th} Largest and 2\textsuperscript{nd} 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**
  o Register Farmers
  o Aggregate crop information

Figure by MIT OpenCourseWare.
Crop Market Price Query

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

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

Figure by MIT OpenCourseWare.
Operational Sustainability

Project manager
- Smooth hand off
- Next-lab team
- ITESM

System administrator
- ITESM
- Local community leaders
- Farmers
- Local community members

Timeline:
- Sep ‘08
- Jan ‘09
- Trip 1
- Mar ‘09
- Trip 2
- Development
- Trial Operation
- Full Operation
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**
- MIT Team Visit 1
  - Jan 2009
- Fund
  - $5,000 from NextLab & partners
- Agenda
  - Deploy the prototype.
  - Train agents, and farmers.
  - Collect feedback and improve the system

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

**Maturity**
- Maintained by ITESM
  - Funded by farmers and other stakeholders
  - 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

- Low Income
- Low Productivity
- No Negotiation Power
- Workforce Emigration
Virtuous Cycle of Prosperity

Community Reinvestment

Sustainable Livelihood

Equitable Price

Price Transparency

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Your turn...

• To: 617-909-5107
• Message: “query crop”
  – Where crop is your favorite of the following:
    • tomatoes
    • potatoes
    • wheat
    • grapes
    • apples
    • corn
Questions