

ICT for D: examples in service delivery

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Access, Operations, Reliability, Sustainability

- Linked
- Similar issues
- Access: spreading first costs over time
- In many places
- Access but poor supply,
- High losses, High transaction costs
- Not much left for investment

What comes first?

- Generation
- Transmission
- Distribution
- Customer

India: Rs \$60 Billion just in electricity distribution

- Per consumer \$300
- 70% of problem in 30% customer base,
- **\$700/customer**
- Not helping the poor

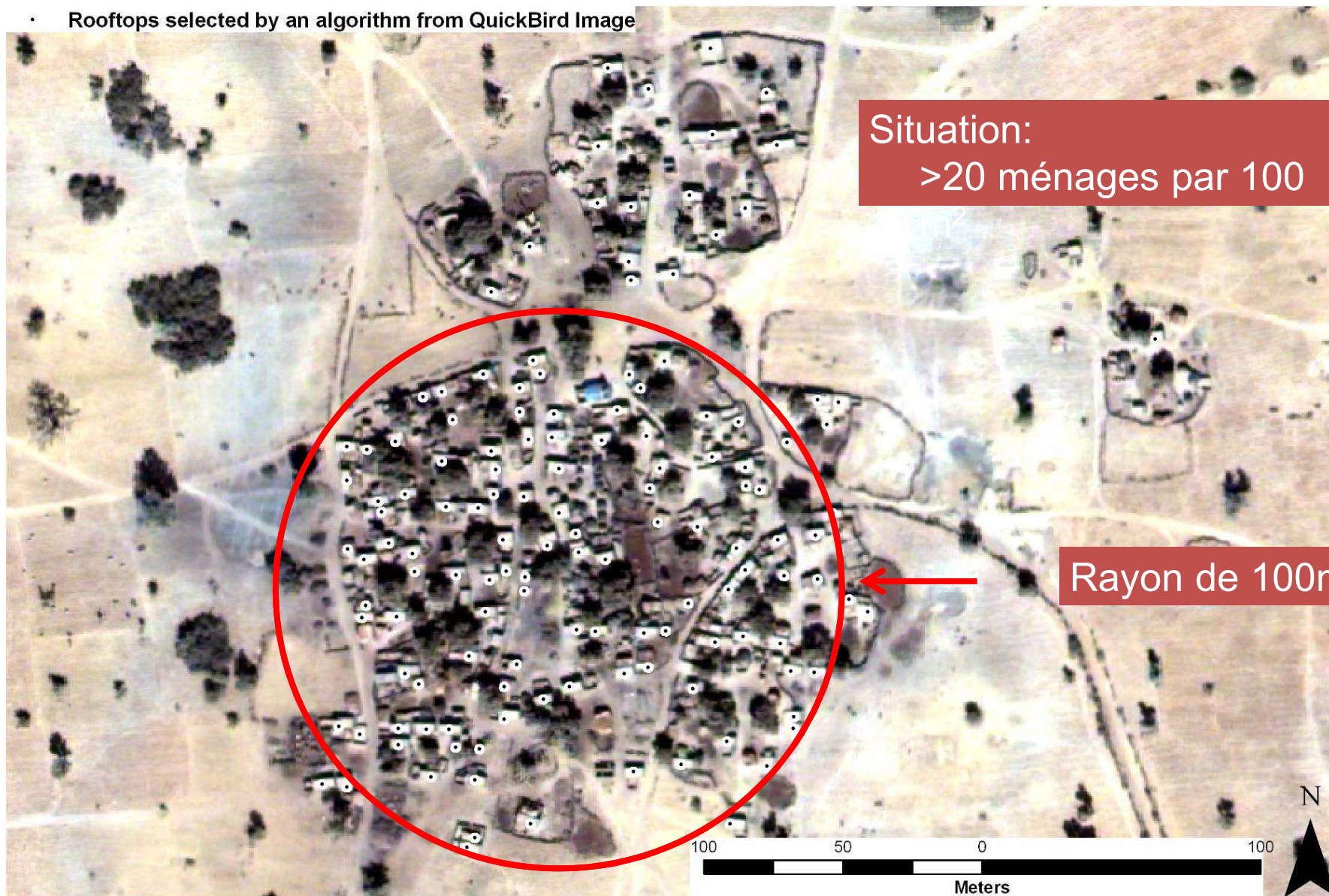
Start building local systems that are fully prepaid and do not rely on erratic grid supply

**LACK OF ACCESS ALSO AN
OPPORTUNITY FOR INNOVATION**

Two large drivers for change

- Accountability for utility and staff
- Ability to DETECT losses, pilferage, broken or tampered equipment, meters
- Low-transaction costs
- Example from Mali/Uganda/L. America

• Rooftops selected by an algorithm from QuickBird Image



Diarake Were Village, Tiby Cluster, Mali

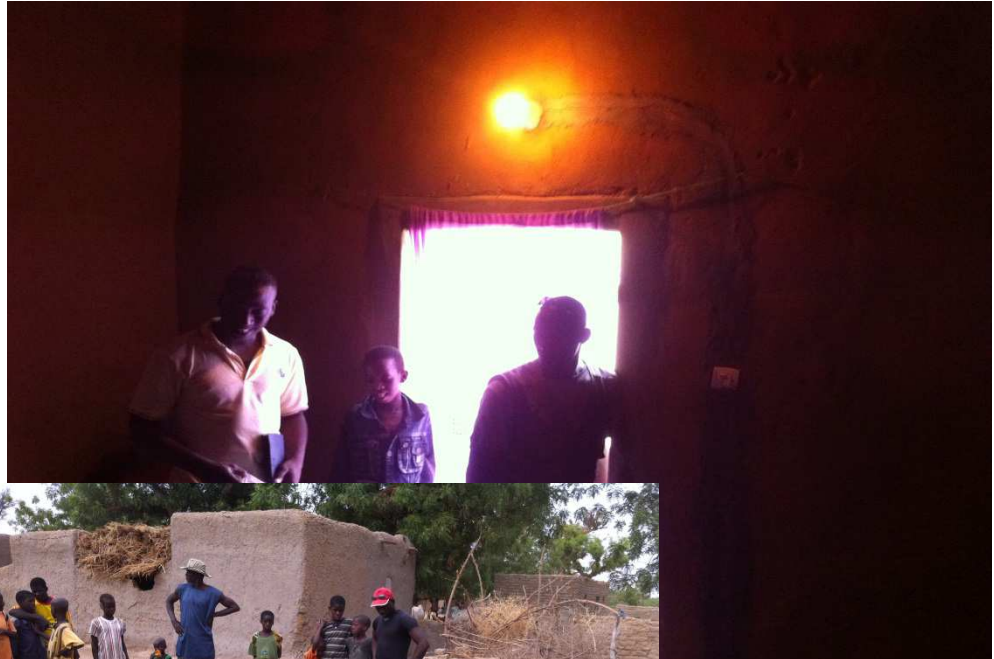
Sources:

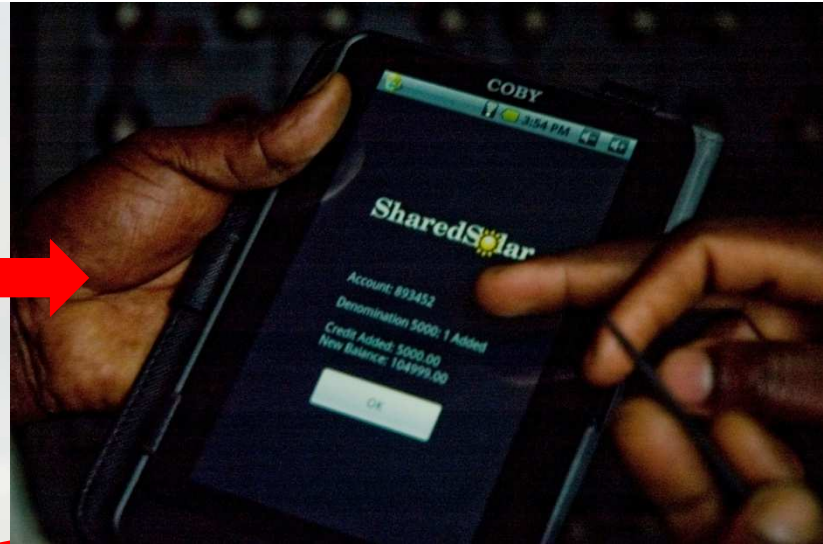
- Millennium Villages Project, Tiby, Mali
- Millennium Villages Project Infrastructure at The Earth Institute, Columbia University

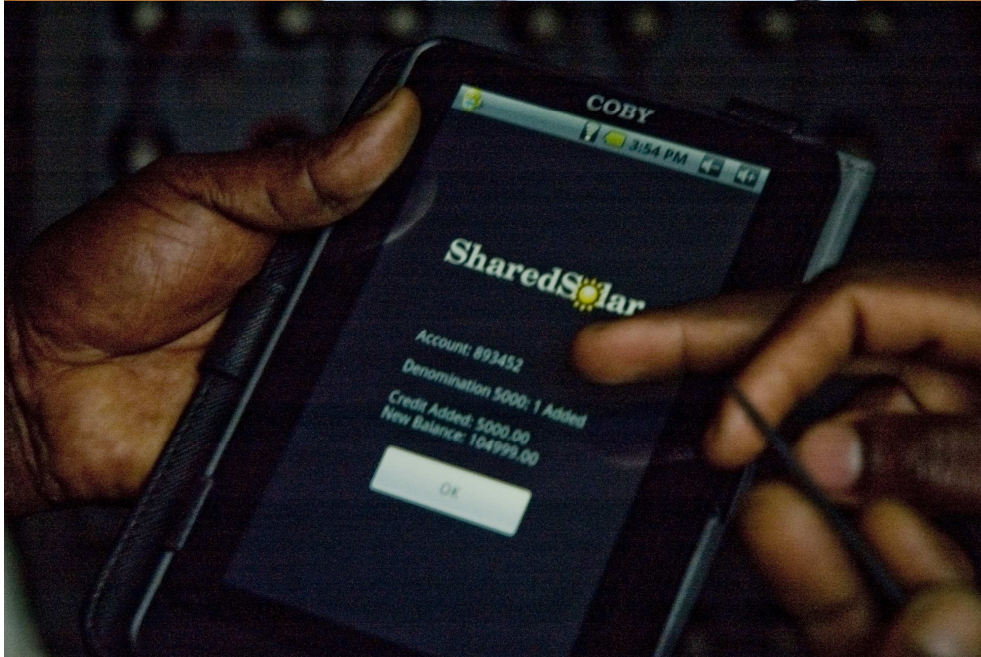
Projection: WGS84 UTM 30N

FINANCED

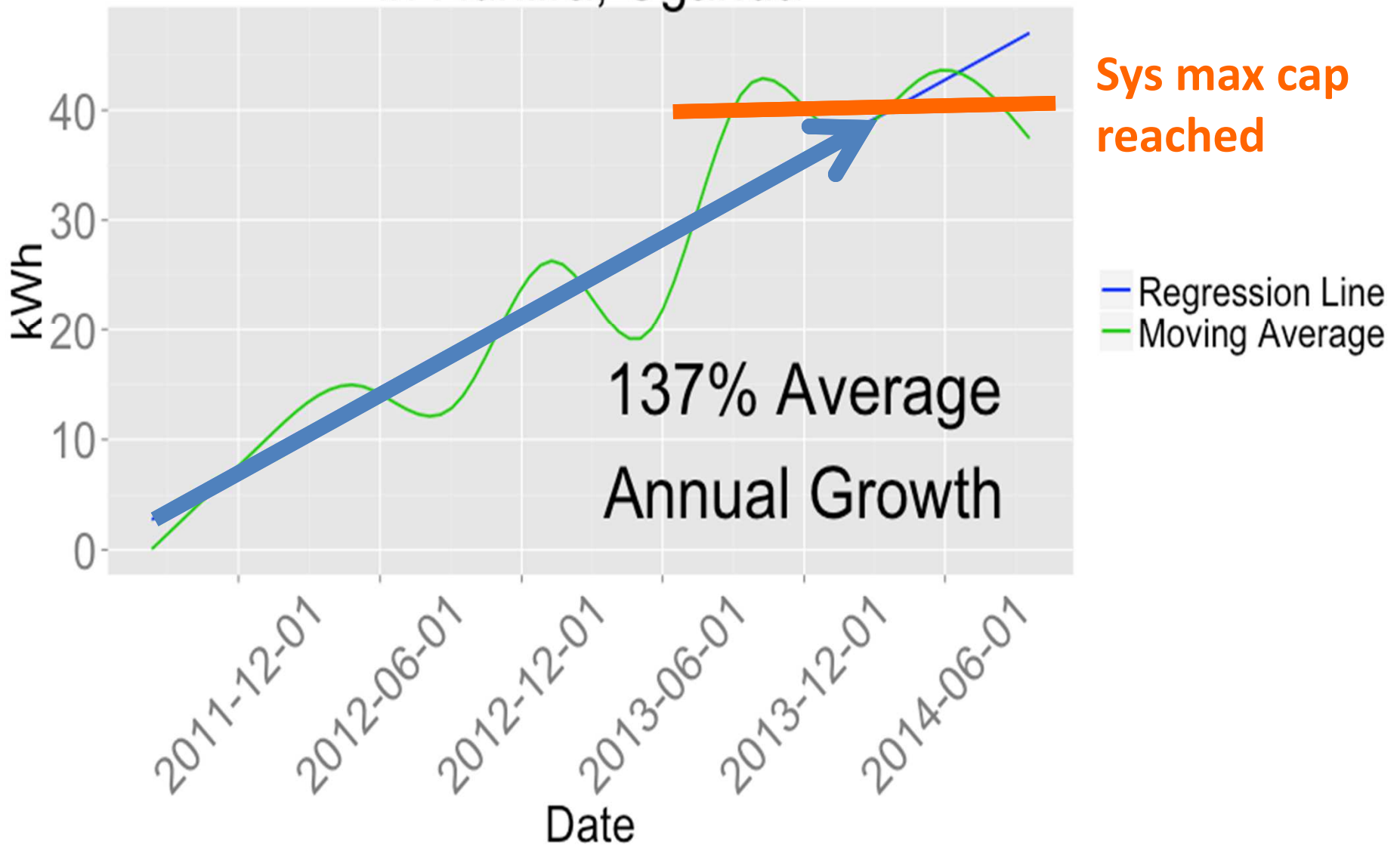




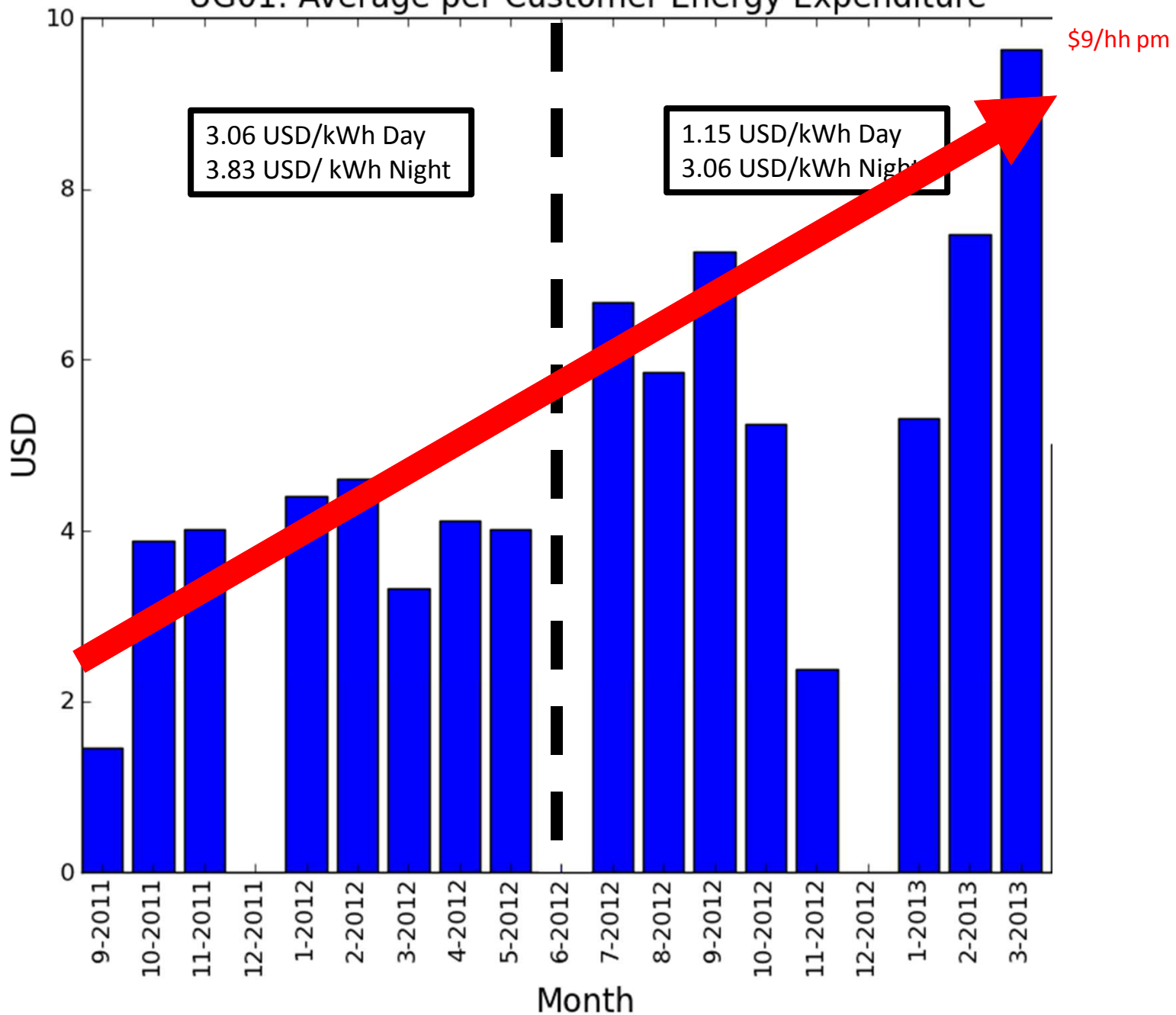




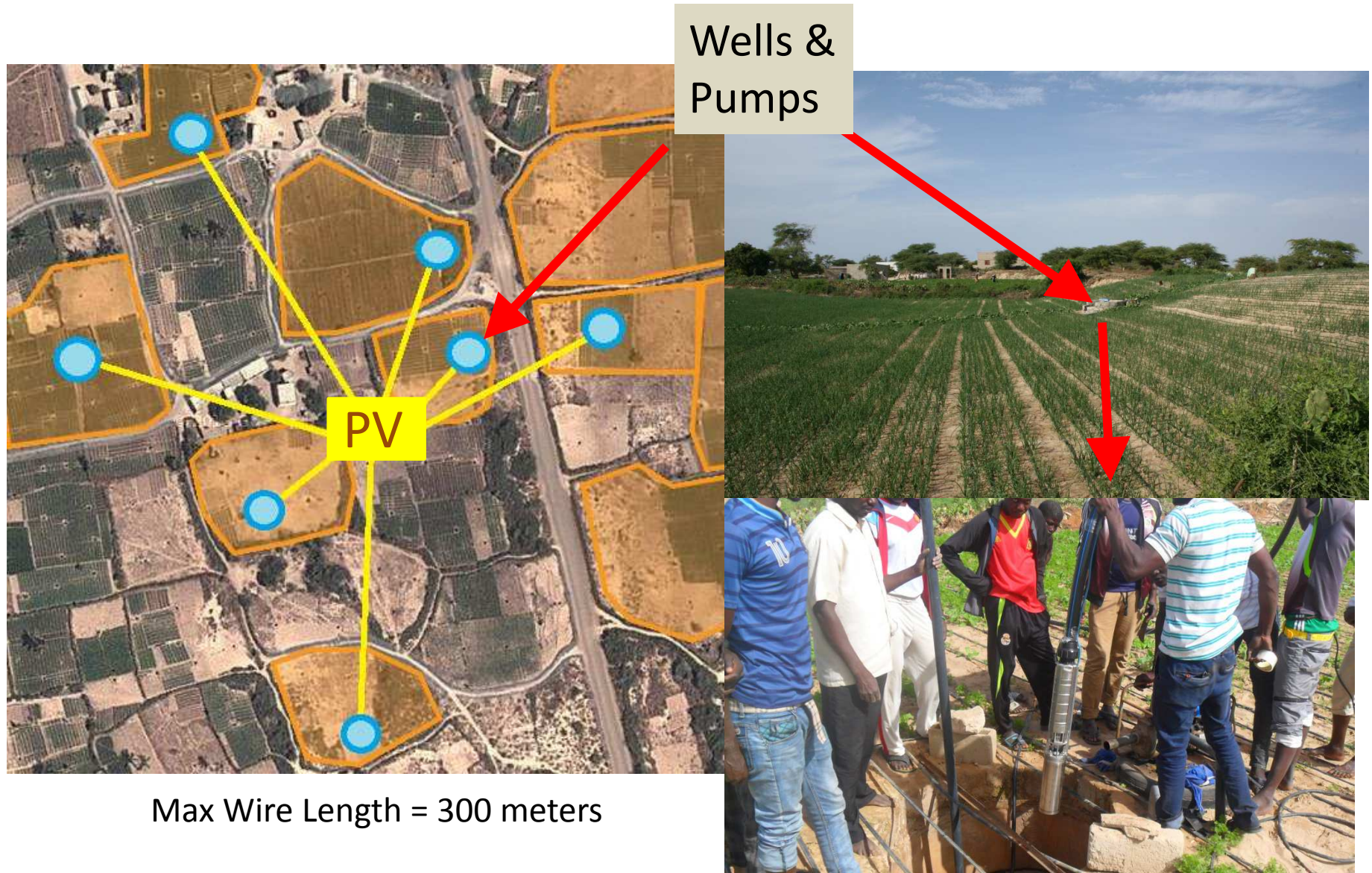
Moving Average with Regression line for Monthly Energy Usage for Systems in Ruhiira, Uganda



UG01: Average per Customer Energy Expenditure



Layout



Power Electron/**Control**/Payment

- No Batteries!
- Inverter/VFD
- 415V, 3ph, 50 Hz
- **Microprocessor**
- **Payment app**

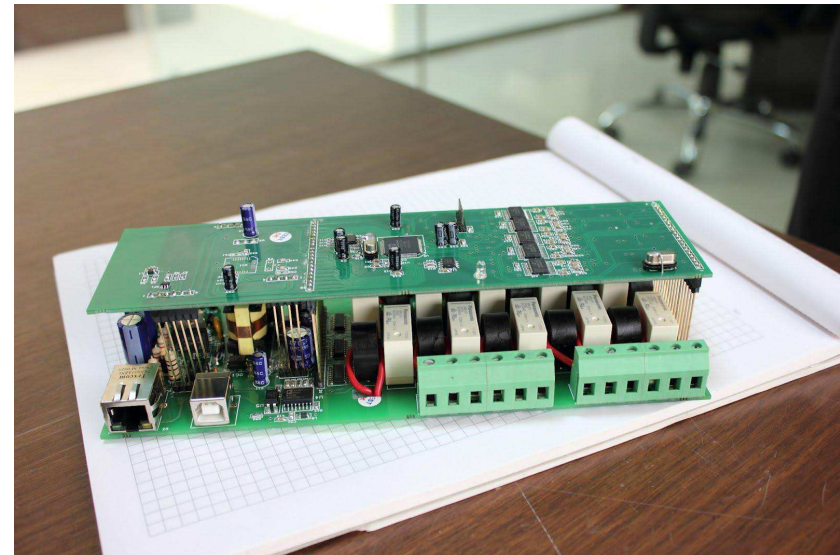


10 Consumer System: Metering + Communications

Meter Enclosure



Ver1: 40 x 30 x 20 cm
Lab made (\$200/hh)

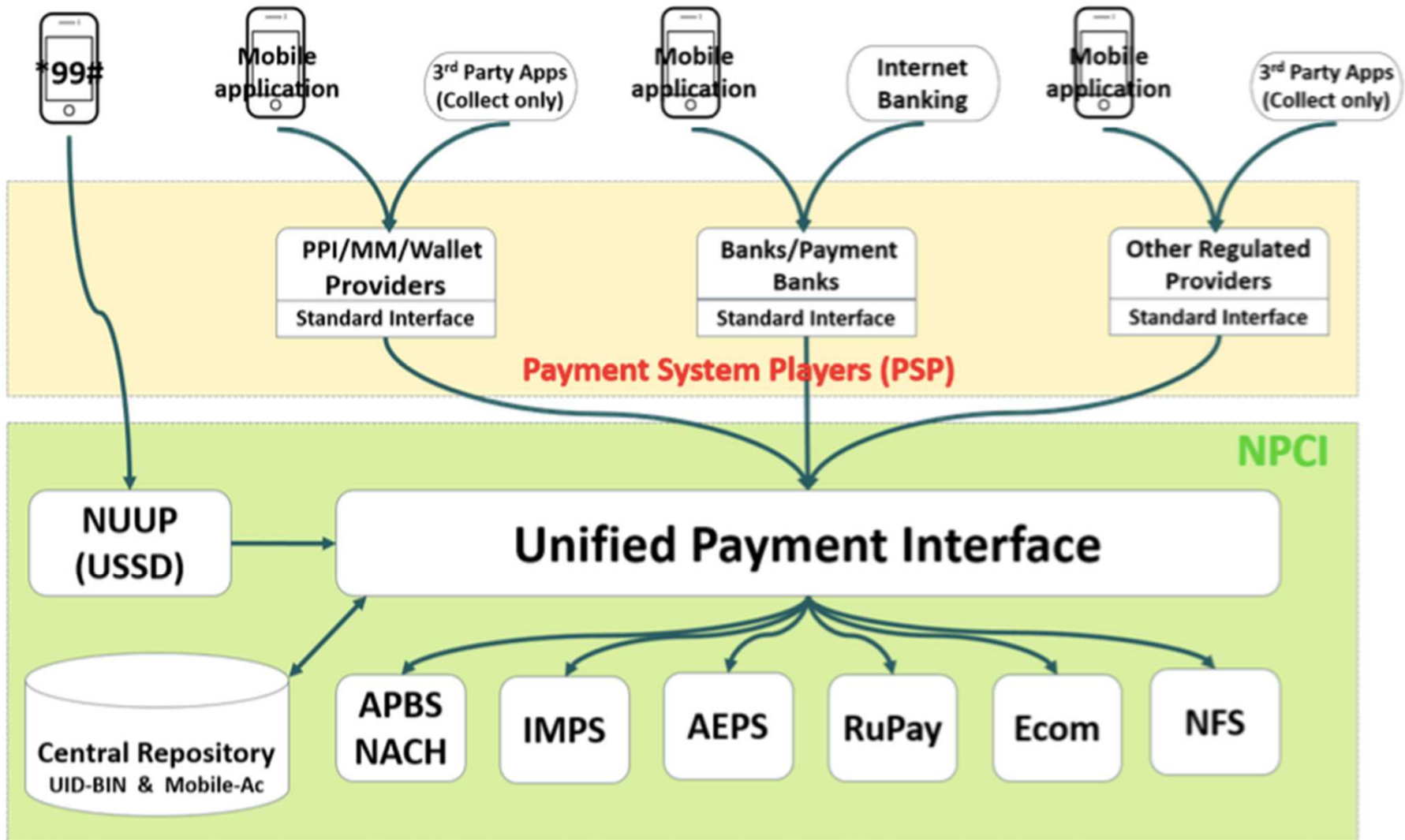


Ver2: 15 x 7 x 7 cm
\$65/hh factory made

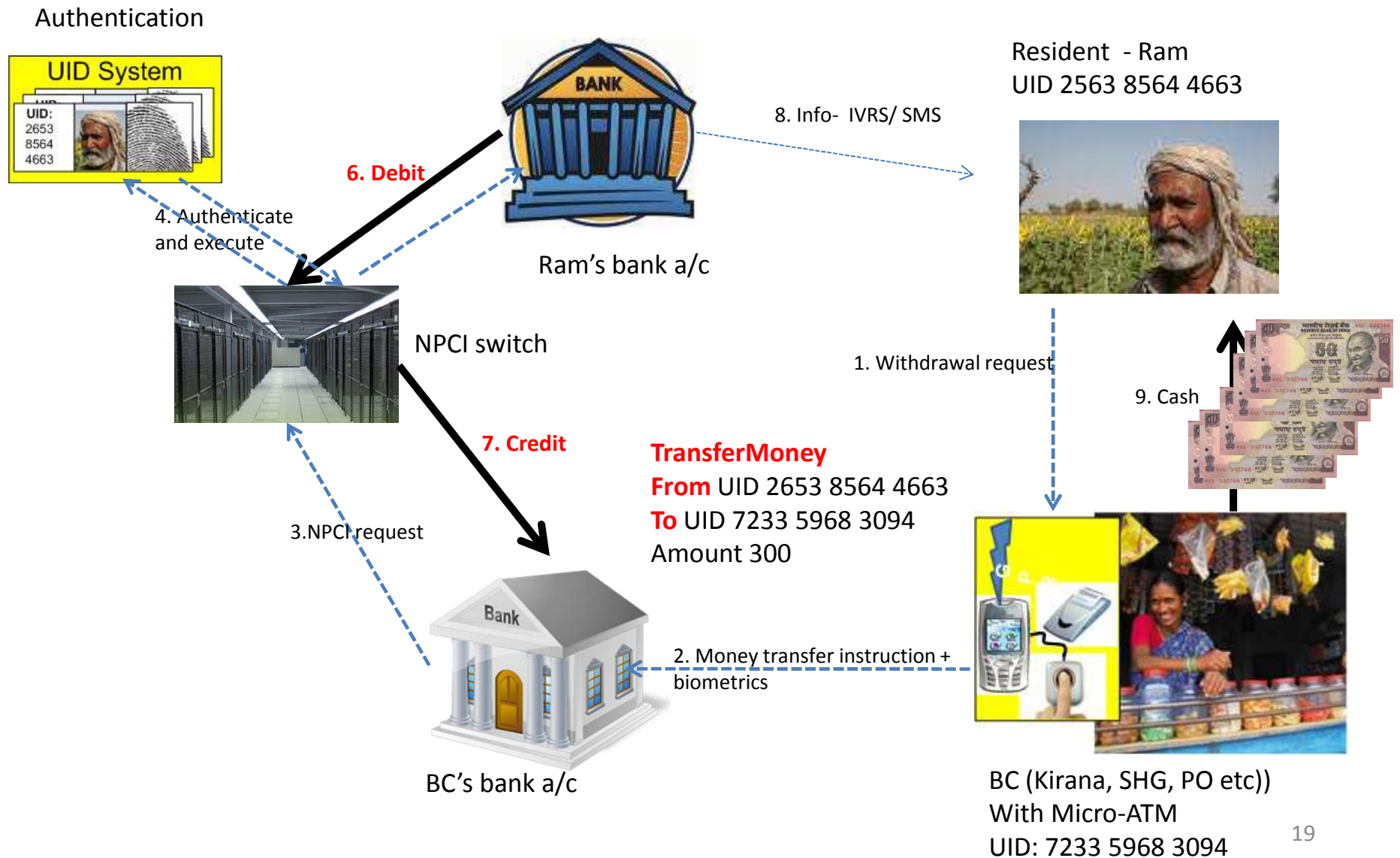
Ver3: \$32/hh with wireless and factory made

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LOW TRANSACTION COST PAYMENT SYSTEMS



Convenient cash withdrawal



Features of the UIDAI Model

- Identity, not entitlement
- Identity, not citizenship
- A pro-poor approach
- Proper data verification
- Scaling via partners
- Enrolment not mandated
- UIDAI issues a number, not a card
- Collect only basic information
- Nationwide Portability
- Life time Identity
- Usage not meant for criminal investigation

Lessons

- Energy, Electricity, Water, Irrigation: How to carry out reliable service delivery
- While ensuring sustainability
- Serving small consumers with \$2-\$5/month for water and electricity is a very different problem from that of the developed countries
- National systems needed.
- Proliferation of silo-ed proprietary systems

Thank You

- Contact Information
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