



## “M2M Opportunities & Challenges”

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# Agenda



- M2M – An Introduction
- M2M – Applications
- M2M – Markets & Challenges





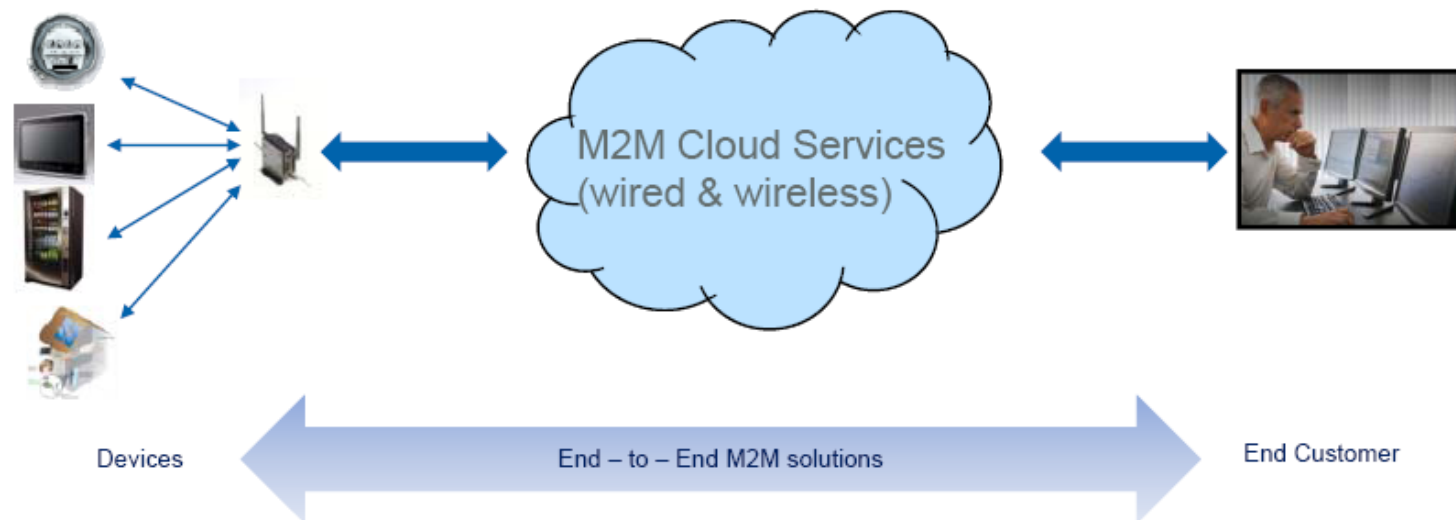
- M2M – An Introduction
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# M2M – What is it?



M2M **connects** people, devices & systems and turns machine data into **actionable** information for **smart services**

Connected World





# M2M – What is it?

M2M refers to technologies that involve data communication between devices over wired or wireless networks and software applications

## DEFINITION

### Machine to Machine

- Exchange of information among devices or devices and central servers
- Substitutes or minimizes human intervention while enabling greater control



M2M examples are wide-ranging, from scales that transmit weights to a physician's system, to automated forklifts in a warehouse

# The World of Connected Assets – A case in point



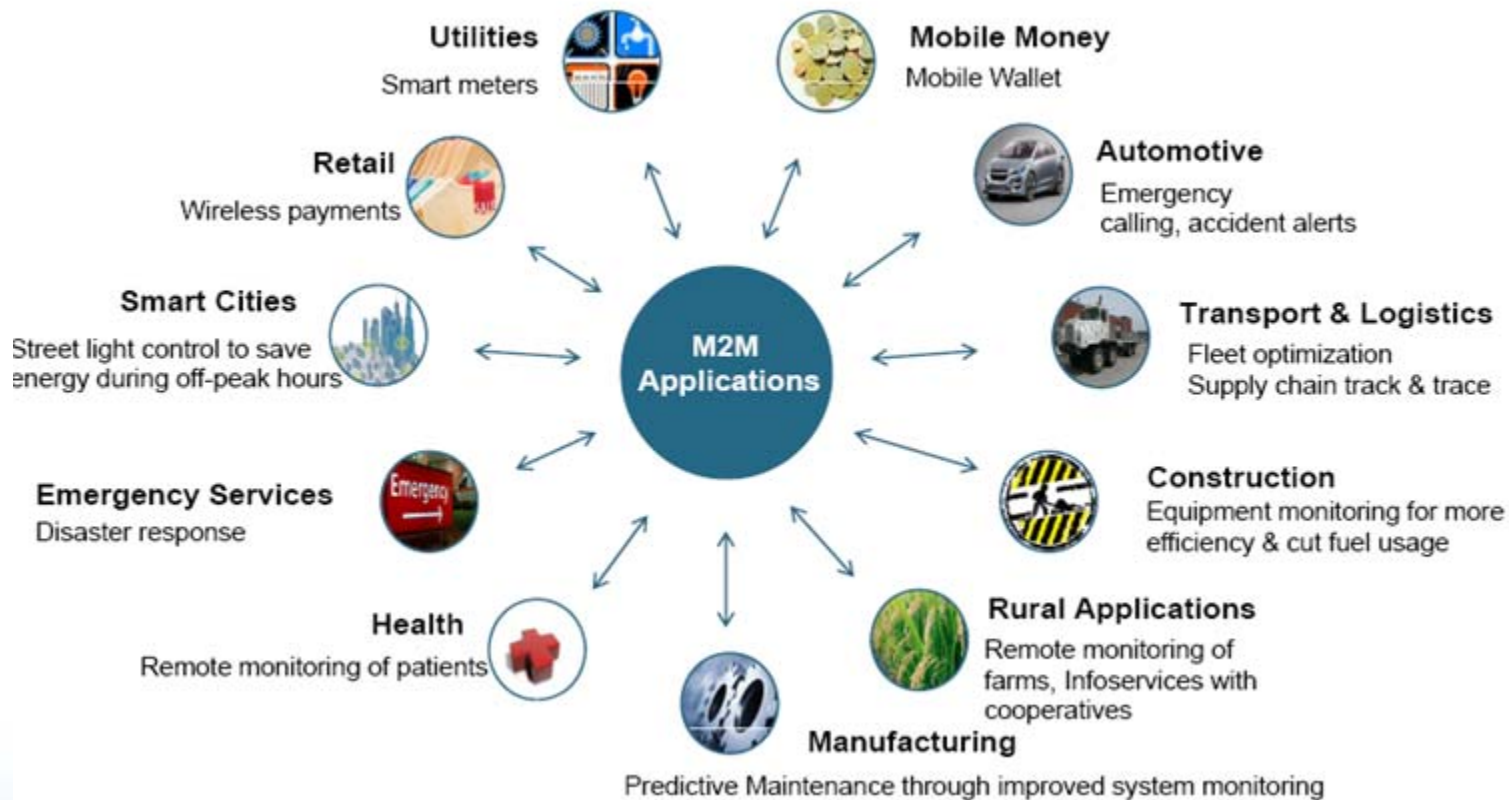


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# End-user segments for M2M applications...



...span from individuals to institutions (business & government) in various sectors





# M2M applications can be classified into four categories



## Static

Monitor assets in fixed locations

- ✓ Soft drink Machines, ATMs or Photocopiers etc



## Nomadic

Rely heavily on mobile networks to track people and assets on the move

- ✓ Trucks and shipping containers



## Transformational

Create a brand-new annuity revenue stream for the end customer

- ✓ Pay-as-you-drive Insurance

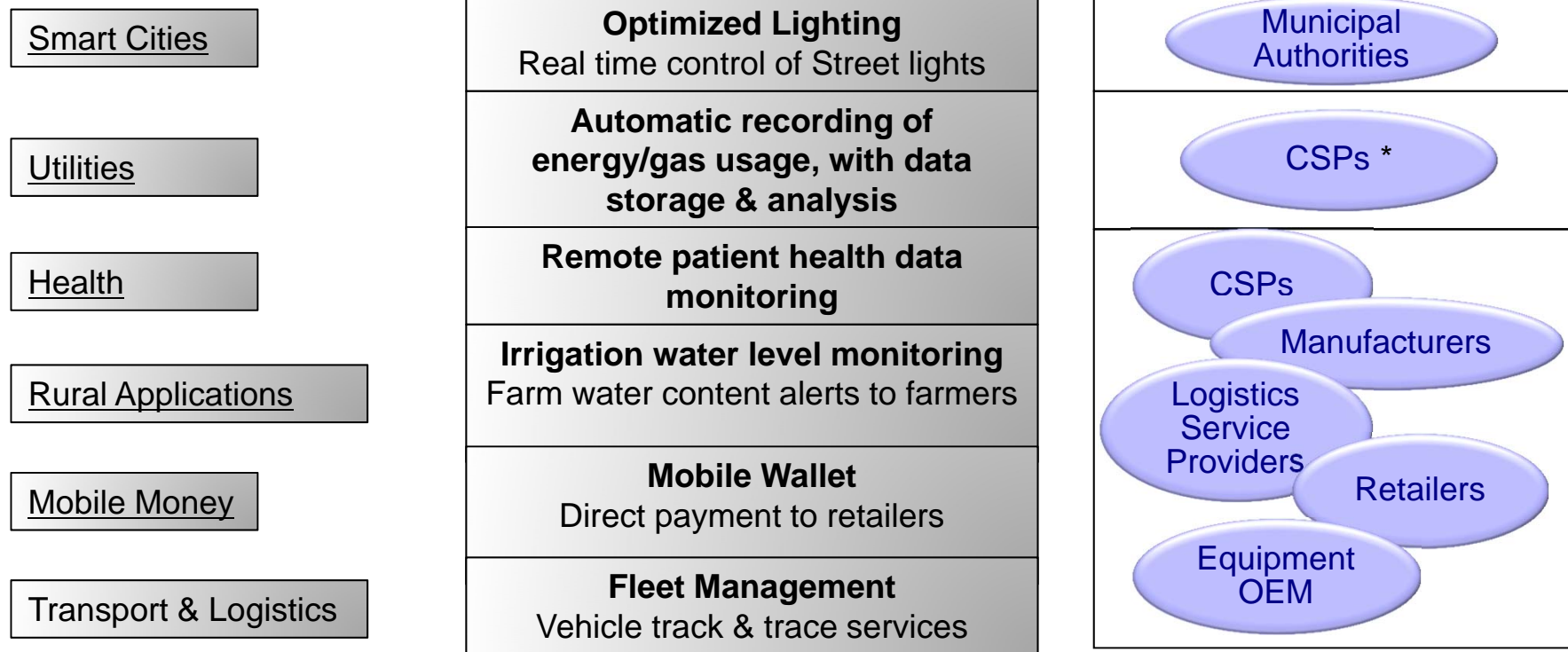


## Horizontal

Functionally similar across various industries

- ✓ Tracking of elderly Alzheimer's patients or even prisoners uses fundamentally the same technology

# Multiple applications with unique challenges



\* Communication Service Providers



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- **M2M – Markets & Challenges**

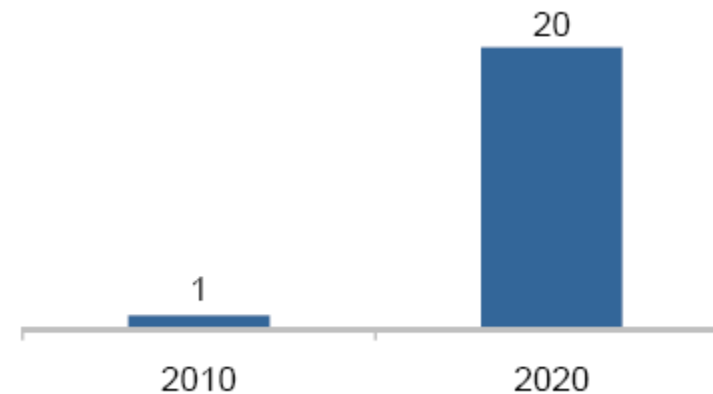
# Opportunity size is large



Various opportunity size figures are quoted for M2M; all place it as a lucrative revenue option

Machina research predicts drastic rise in the number of connections by 2020

No. of M2M Connections (in Billions)



## Revenue through Connectivity

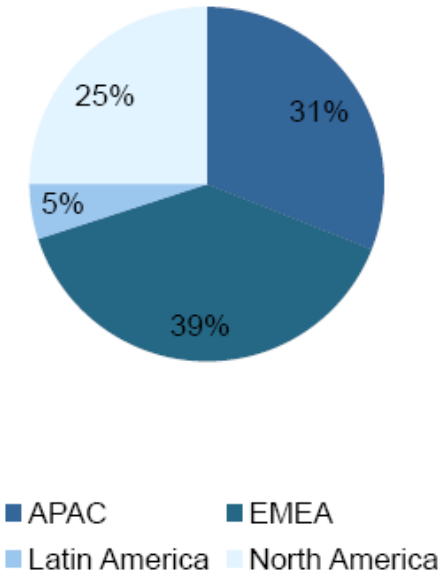
- Yankee Group – USD 6.7 Bn by 2015
- ABI Research – USD 35 Bn by 2016



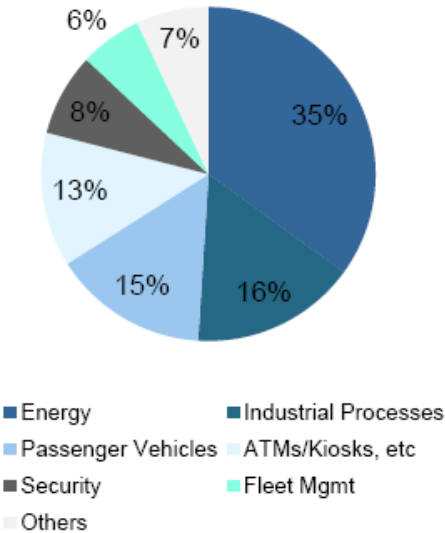
# Growing opportunity....Regions & Sectors

Estimated number of M2M connections by 2015, ~6 billion

M2M connections by Region, 2015



M2M connections by Sector, 2015



Source: Yankee Group

# End User Perspective



## ■ What do end users want to do with M2M ?

- Support business decisions with M2M data intelligence
- Secure and manage M2M data
- Identify and create new applications for M2M

## ■ Current Reality:

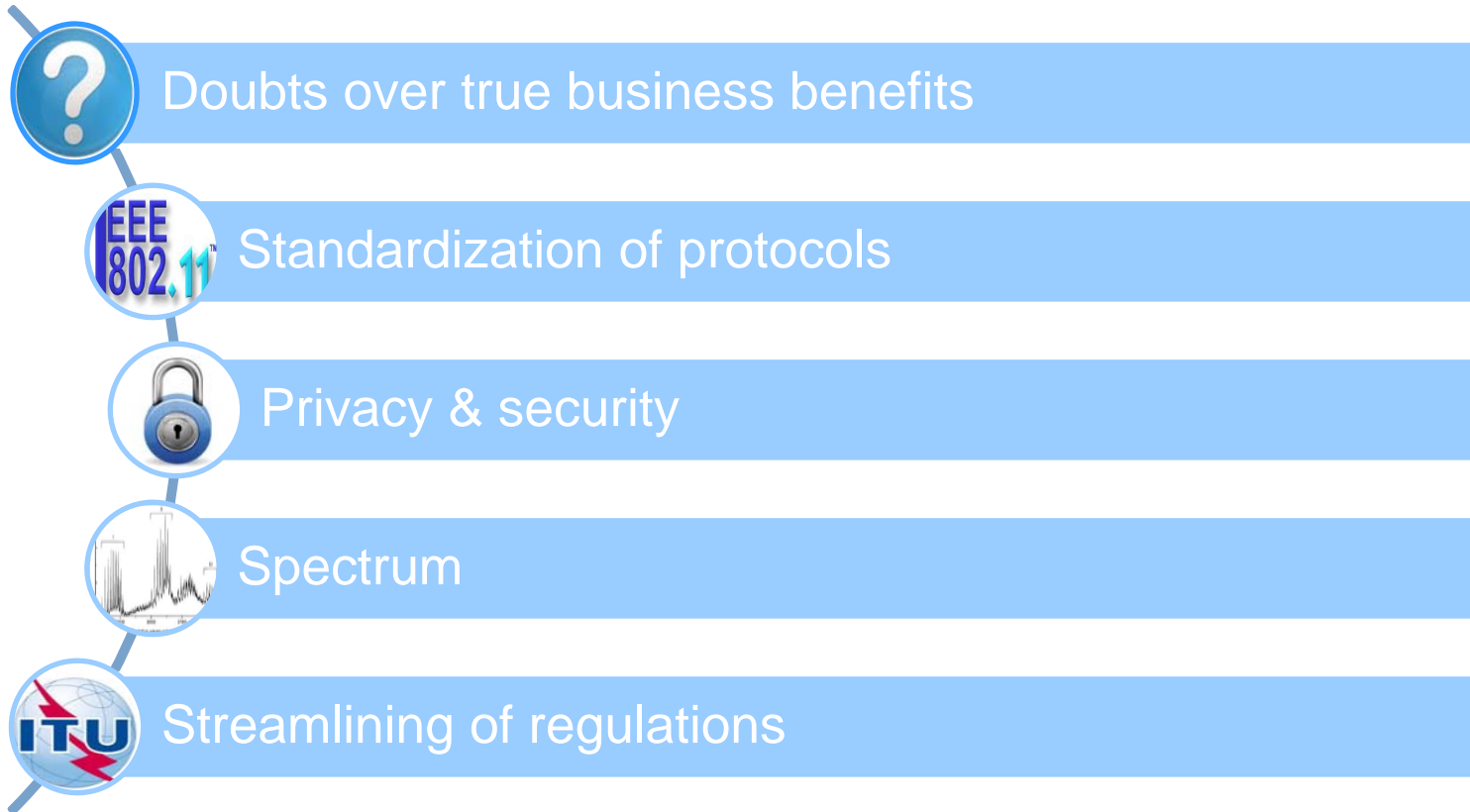
- End-Customer needs are not the priority concerns of many M2M stakeholders today
- Worries about M2M supply chain are more dominant
- Telecom operators are largely playing a “Bit-pipe” role in the M2M market

## ■ Barriers to Success:

- Building scale is a persistent problem
- Navigating the fragmented ecosystem is a top barrier to success

Source: Informa-telecom & media [www.informatandm.com](http://www.informatandm.com)

# Issues & challenges in wider M2M adoption



M2M solution providers need to work on innovation approaches to address the growing demands from varied sectors.



*Some men see things as they are and say  
'Why'? I dream of things that never were  
and say, 'Why not'?*

*Robert Francis "Bobby" Kennedy*

**Dankie!!!  
Asante!!!**



# Smart Cities



Optimized Lighting

## Real-time control of street Lights

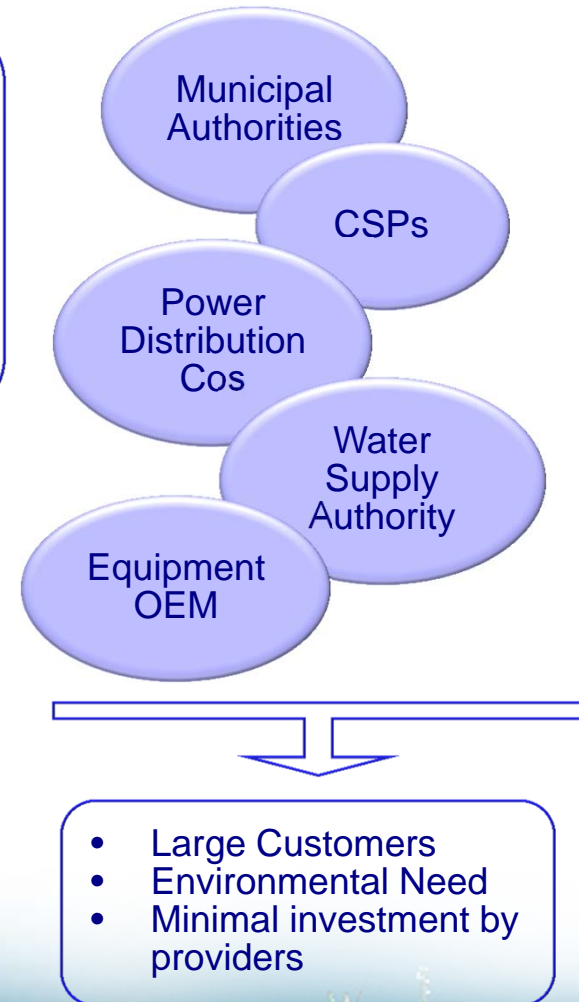
- Dimming during off-peak hours
- Fault alerts to maintenance staff
- Power pilferage detection
- Lamp health reports
- Savings in energy, manpower & lesser maintenance costs

Water Supply based services

## Real time leak detection, water quality monitoring

Savings in water, manpower & lesser maintenance costs

## Ecosystem players



# Smart Cities



Traffic Monitoring

## Mapping of traffic movement & build-up

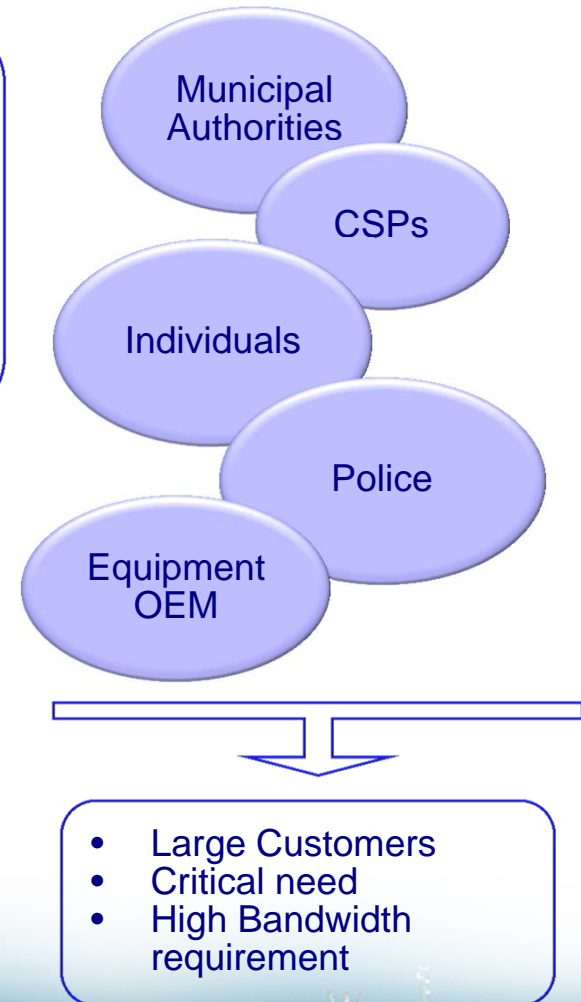
- Dynamic road signage to direct traffic for smoother transport
- Lesser pollution, lesser travel time, fuel savings, manpower savings

Security Services

## Real time video recording at critical points across the city

Faster reaction times, Better co-ordination of disaster management

## Ecosystem players



# Smart Metering



Remote  
Monitoring of  
Meters

## Automatic recording of energy/gas usage, with data storage & analysis

- Enable better load planning
- One-stop solution for inaccessible areas
- Manpower savings
- Greater control over energy usage
- Faster outage detection & restoration

Ecosystem players

CSPs

Utility  
service  
providers

Equipment  
OEM

- Large Customers
- Low bandwidth requirements
- Critical Need

# Healthcare



Remote health data monitoring

**Remote monitoring of patient data through field devices like glucose readers, BP monitors, etc**

- Data storage & analysis
- Manpower savings
- Flexibility & convenience for old patients

Healthcare information dissemination

**SMS alerts/reminders for dosage, or medical visits**

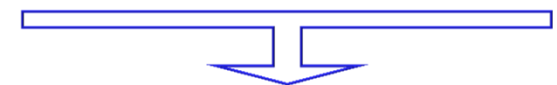
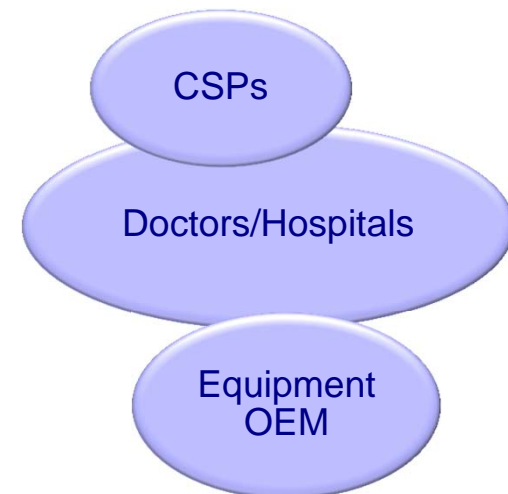
- Preventive measure: Avoid potential worsening of patient's condition
- Potential cost & time savings

Ambulance Services

**Ambulance tracking & patient information relay**

Reduction of hold-ups on admission

Ecosystem players

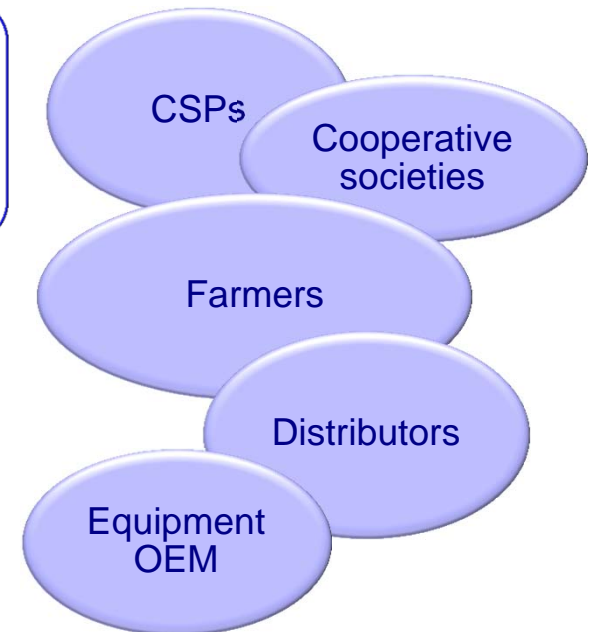


- Customer adoption for remote monitoring
- Large customers (Hospitals)
- Critical Need
- Medium Bandwidth

# Rural Applications



## Ecosystem players



Irrigation water level monitoring

### Farm water content alerts to farmers

- Energy savings, Manpower savings
- Reduction in maintenance costs

Co-operatives-related services

### Produce availability & market rates

- Collation of data on available produce, for aggregators
- Timely & accurate market rates for producers
- Lower transport costs, Lesser losses/damage, Better prices for farmers

- 
- Customer adoption for water monitoring (-)
  - Large Co-ops
  - Medium bandwidth
  - Critical real-time need

# Mobile Money



Mobile Wallet

**Direct payment to retailers who are subscribed to the service**

- Limited by network externalities
- Payment without logging into own bank account

Mobile Remittances

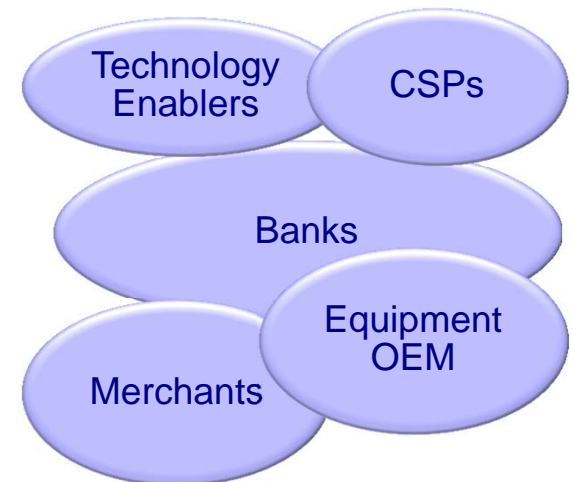
**Cash payments from account holders to individual not having a bank account**

Efficient way to pay those who do not have bank accounts

Mobile Payments

Similar to online payment, enables on the cellphone

Ecosystem players



- High Network Externalities
- Consumer adoption required
- Low Bandwidth