What role for the telco in the smart metering value chain?

Valérie Le Peltier

Business Development Director M2M, Orange Business Services

25 mai 2011
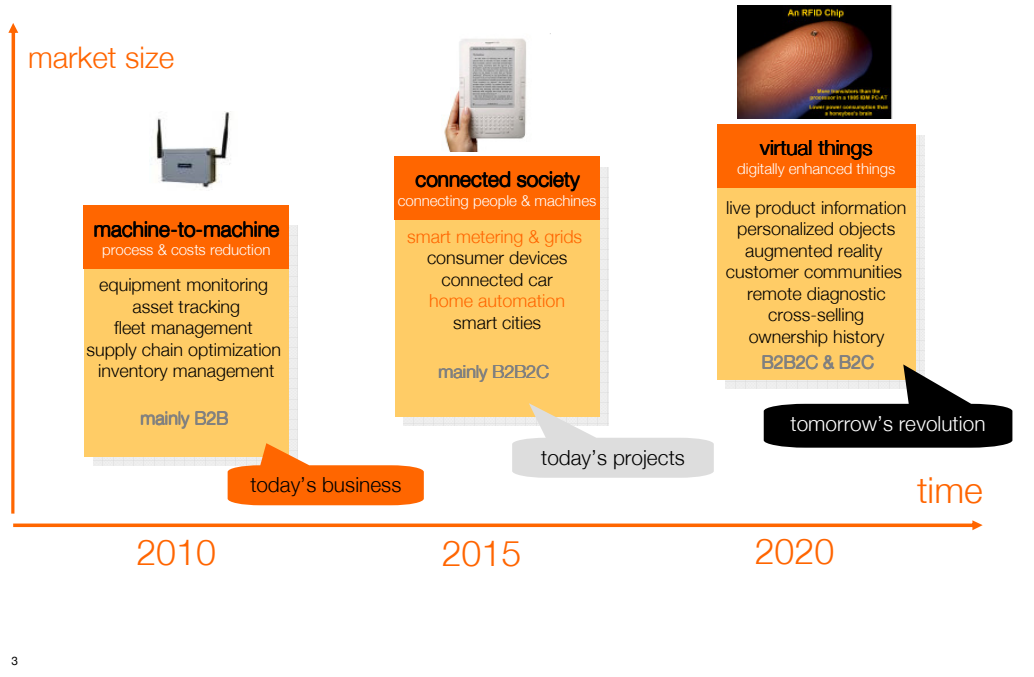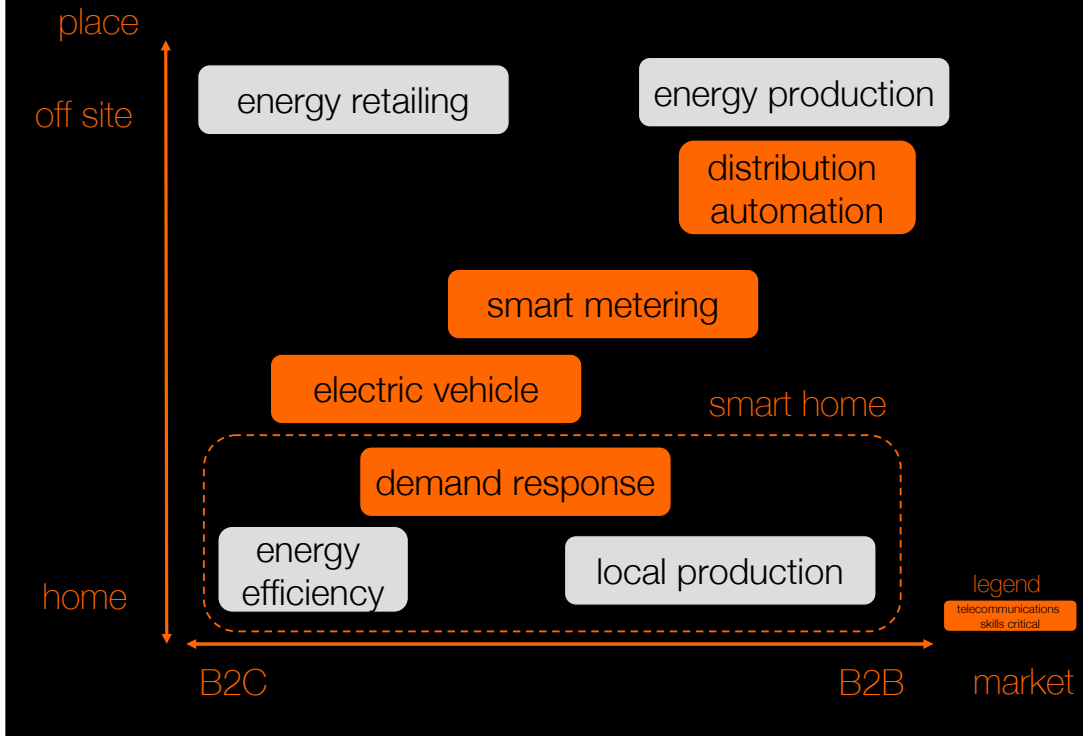
agenda

- Telecommunications are critical for smart grid
- Telco know how will contribute to new value chain
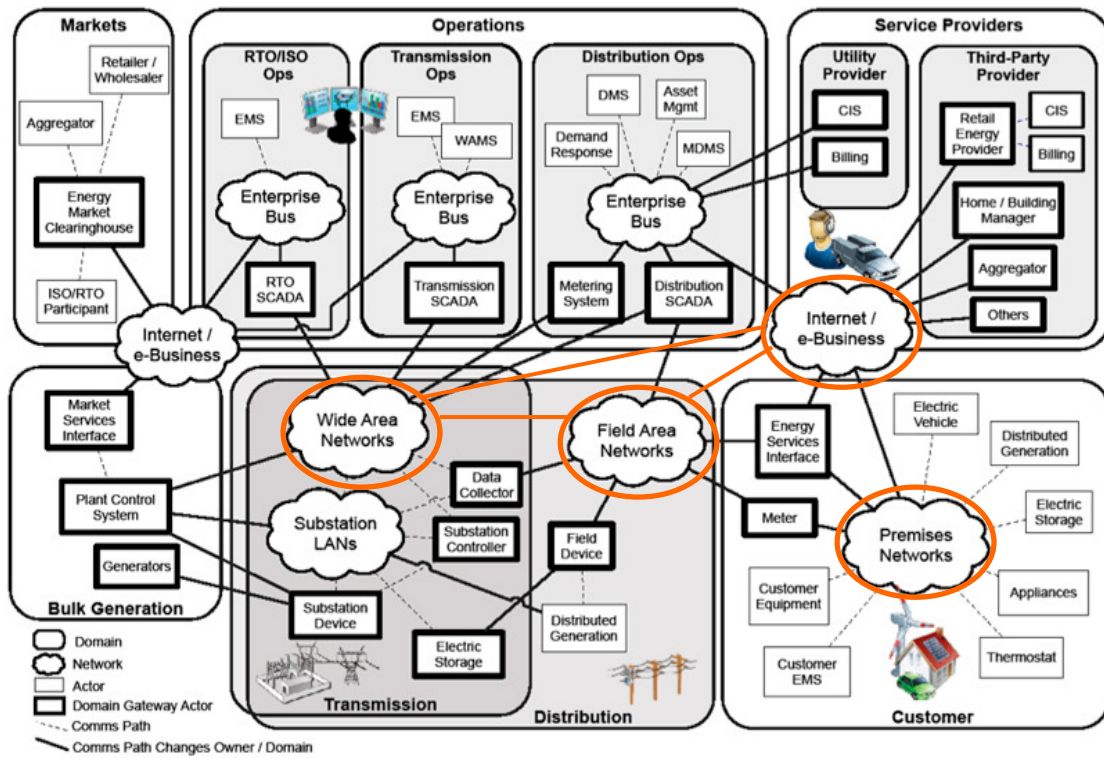- Telcos: partners or competitors?

telecom is being integrated in many sectors
the beginning of the "internet of things"

market size

machine-to-machine
process & costs reduction

equipment monitoring
asset tracking
fleet management
supply chain optimization
inventory management

mainly B2B

today's business

connected society
connecting people & machines

smart metering & grids
consumer devices
connected car
home automation
smart cities

mainly B2B2C

today's projects

An RFID Chip

virtual things
digitally enhanced things

live product information
personalized objects
augmented reality
customer communities
remote diagnostic
cross-selling
ownership history
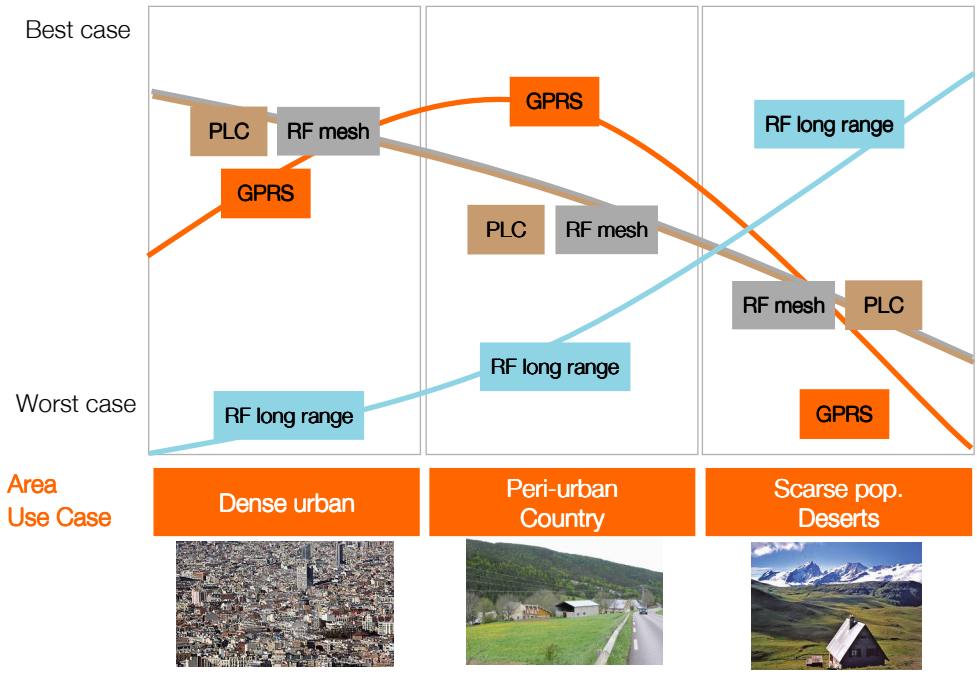B2B2C & B2C

tomorrow's revolution

time

2010   2015   2020

3

smart grids is a network of networks of many subsystems

Source : NIST

there is no single anwer to technology question

which technology for smart metering ?

Total cost of ownership
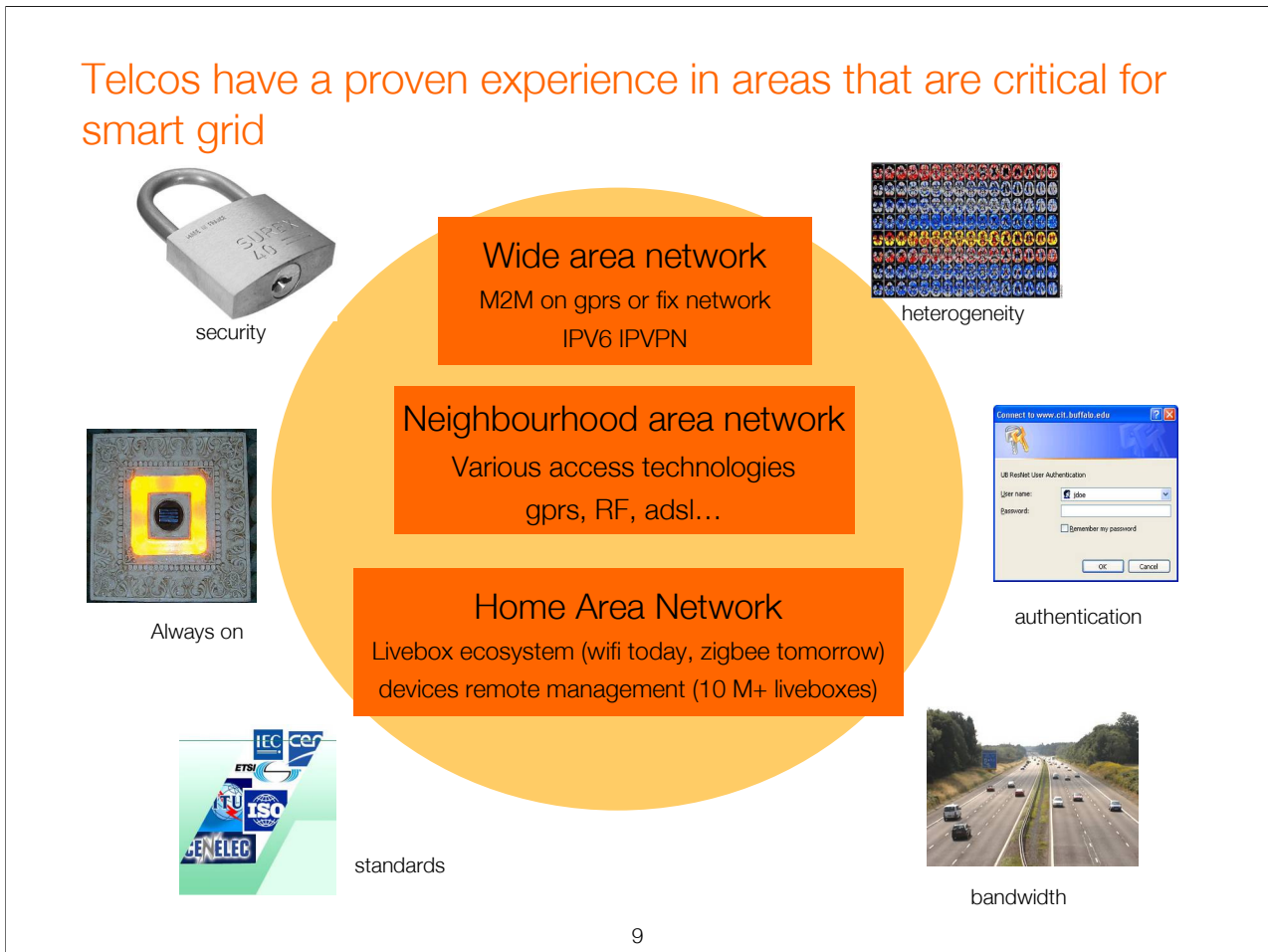
Best case

| PLC | RF mesh | GPRS | | RF long range |

GPRS

| PLC | RF mesh |

| RF mesh | PLC |

RF long range

Worst case

RF long range

GPRS

| Area Use Case | Dense urban | Peri-urban Country | Scarse pop. Deserts |

However standardisation will be key for smart grid

WAN + (wireless) LAN

wavenis
more than wireless

I E T F

ZigBee™

KNX

IEEE

cen IEC CENELEC

basic operator service

ETSI/ERM

ETSI

more advanced services

ETSI/M2M

ETSI/SCP

2010

World Class Standards

3GPP
A GLOBAL INITIATIVE

orange strongly believes that
telecommunication solutions for utilities
must be open and interoperable

WAN only

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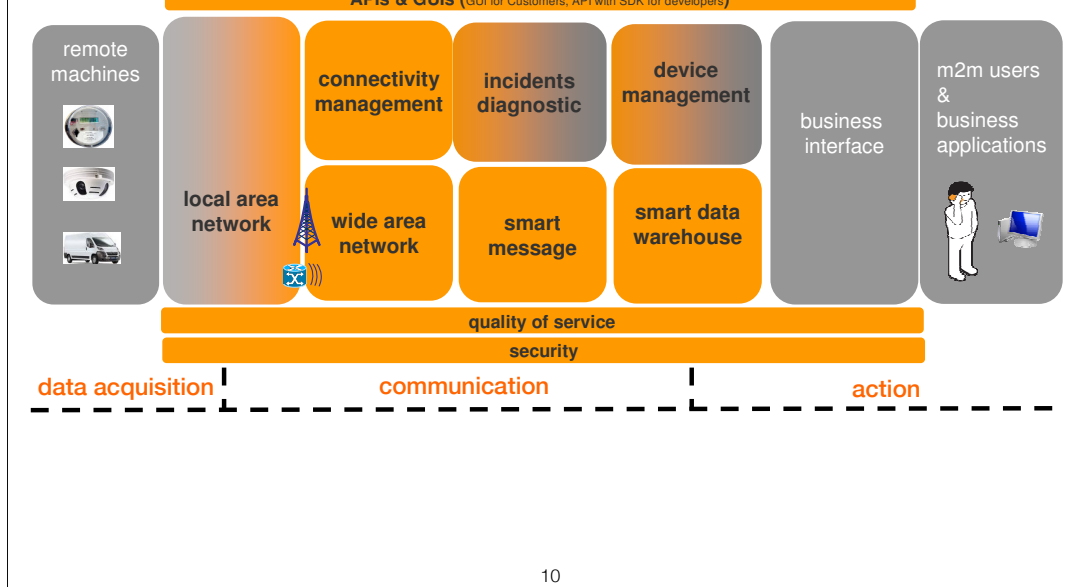- Telcos: partners or competitors?

Telcos have a proven experience in areas that are critical for smart grid

security

heterogeneity

Wide area network

M2M on gprs or fix network
IPV6 IPVPN

Neighbourhood area network

Various access technologies
gprs, RF, adsl…

Home Area Network

Livebox ecosystem (wifi today, zigbee tomorrow)
devices remote management (10 M+ liveboxes)

Always on

authentication

standards

bandwidth

• SecurityThe worry isn't for nothing either. Wired magazine reported earlier this month that the Information Trust Institute at the University of Illinois received an $18.8 million grant for a five-year investigation of Smart Grid cybersecurity. The research group successfully took out power in 15,000 homes for a full day with a digital worm

• Always on : to ensure grid protection and control, and dynamic pricing

•Heterogeniety : various data types (formats, protocols, availability reqs…)

•Bandiwidth : the great question. Manual meter read : 30 bytes per month. Smart meter collecting 15 minutes intervals data : 50 to 60 kbytes. Acording to IEEE a basic 12 kbits for 3 voltages and 3 currents sampled. To be added to raw data : computed informaton (phase amplitude, angle sequence compoents). To be added future functions of smart meters : outage detection, remote disconnect, distribution plnning, distrib automation, power quality monitoring…

•Open standards : IP based?

•Large range of technology communication links : wireless, wireline, cpl, bpl

•Self service diagnosis of the telco network : fault detection, monitoring, and network quality of service
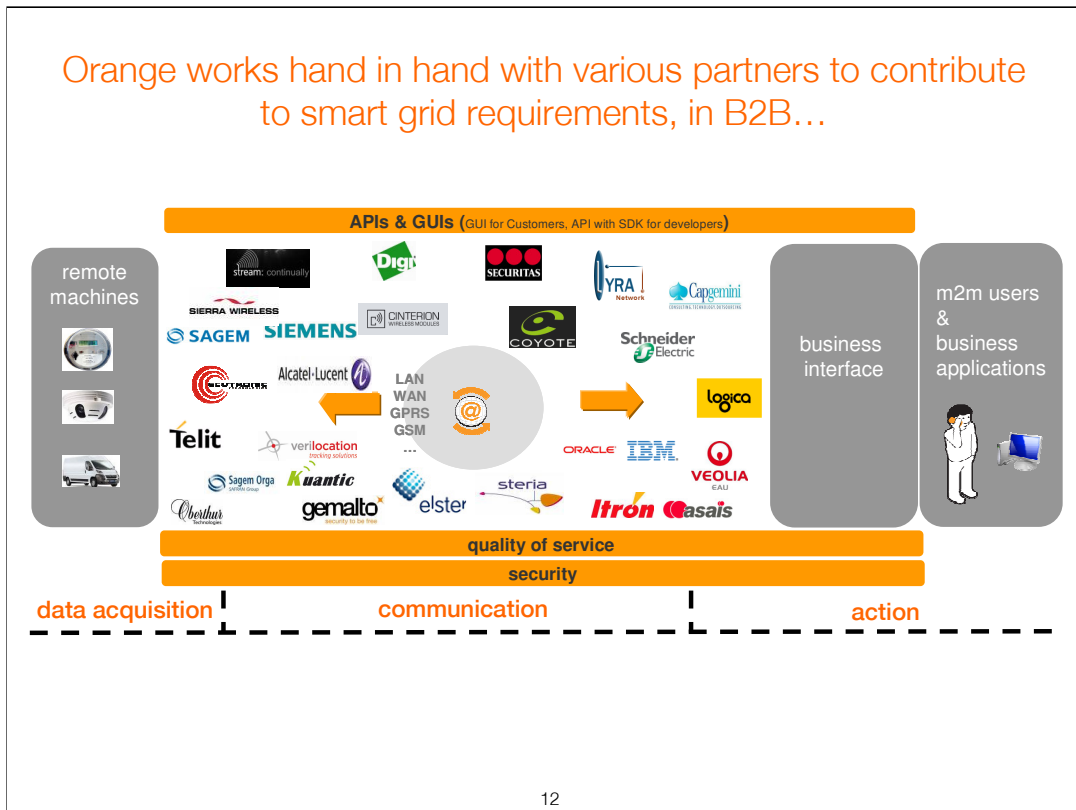
En pointillés, le scope Malima

Quality of service : operation dashboard (analysis reporting), build with integrators

La partie base qui démarre par Wan connectivity jusqu'à smart data warehouse représente le flux, la partie du dessus représente les fonctions de management au dessus du flux , dont connectivity management qui comprend Malima et pourrait s'étendre à la connectivité fixe.

Business interface = règles « métier » sur les données et avant l'application métier

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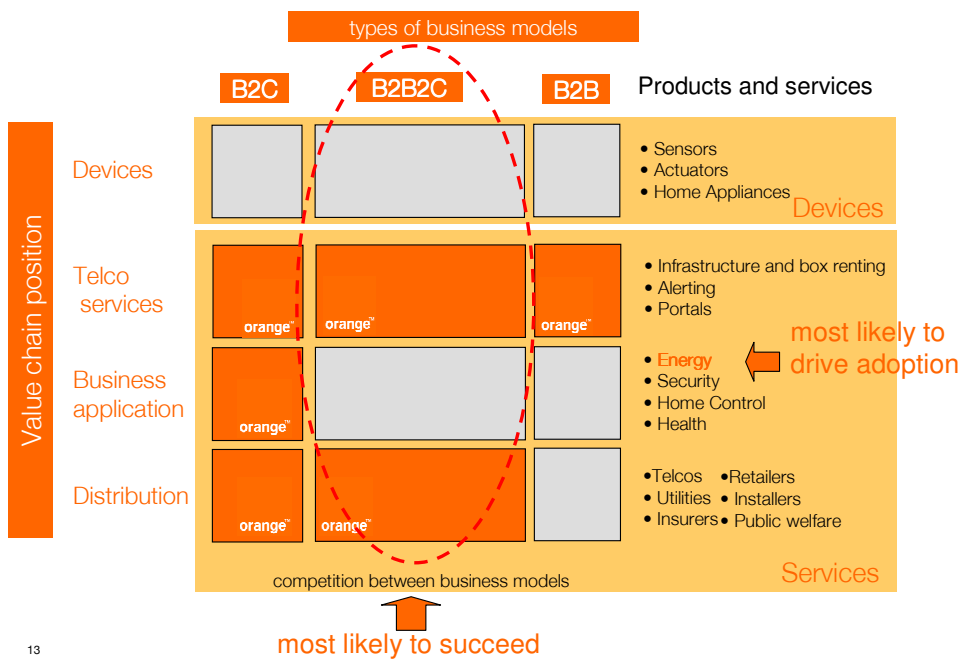- **Telcos: partners or competitors?**

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And also in B2B2C

types of business models

	B2C	B2B2C	B2B	Products and services

Value chain position

Devices
- Sensors
- Actuators
- Home Appliances

Devices

Telco services
- Infrastructure and box renting
- Alerting
- Portals

Business application
- Energy
- Security
- Home Control
- Health

most likely to drive adoption

Distribution
- Telcos • Retailers
- Utilities • Installers
- Insurers • Public welfare

Services

competition between business models

most likely to succeed

orange™ (repeated in cells)

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Orange references with utilities…

Engaged in JV, water

N°1 water utility in France and worldwide presence
JV to propose smart metering services to water utilities

VEOLIA

Participating to pilots, electricity and water

Pilot on 300.000 meters and 5000 concentrators (2010-2012)

eRDF
ÉLECTRICITÉ RÉSEAU DISTRIBUTION FRANCE

N°3 electricity distributor in Spain, 3 mio customers

Pilot in 2009

gasNatural fenosa

Pilot in 2010-2011

Sorégies
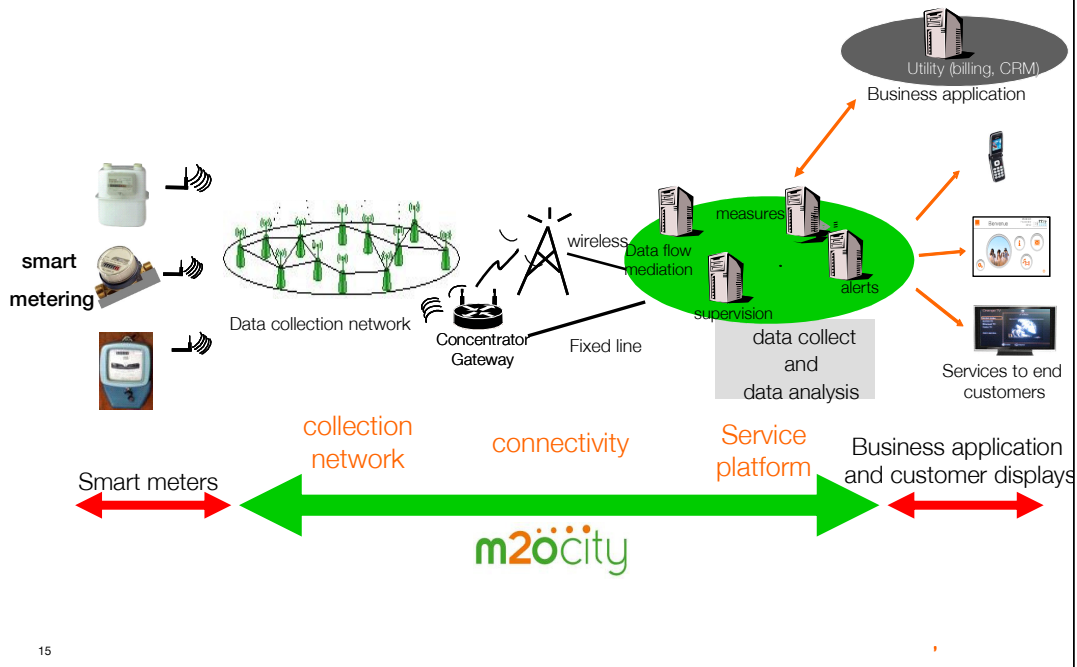
Pilot in 2010

AGUAS DE VALENCIA, S.A.

Pilot in 2010, mix GPRS and wavenis

M2O city: the alliance of utility and telecommunication know how

Today: Orange is on the backhaul network. Sales of wireless (GSM/GPRS, wifi) and fixed (Ethernet, Fiber, RTC) communication services

Tomorrow: Orange could be able to sell the expected collection network, the network that will connect smart objects. The network for the Internet Of Things.

Orange services added value relies on the mutualised infrastructure from the collection network (connecting various smart objects) to the service platform presenting services to consumer displays.

Orange M2M powering the imagination

at home

building the Digital Home beyond internet, voice and entertainment
- security
- energy efficiency
- comfort

in the town

smart cities
- reduced traffic jam
- pollution and natural risks control
- greener lighting and waste handling

in the car

connecting the car for a secure and carefree driving
- enhanced navigation
- call assistance
- pay as you drive

everywhere

from health monitoring…

…to the Internet of Things

Thank You