ITU Workshop on "ICT as an Enabler for Smart Water Management"

(Luxor, Egypt, 14-15 April 2013)

TheTelco opportunity in enabling the smart utilities including: connectivity, technology platform and consumer service

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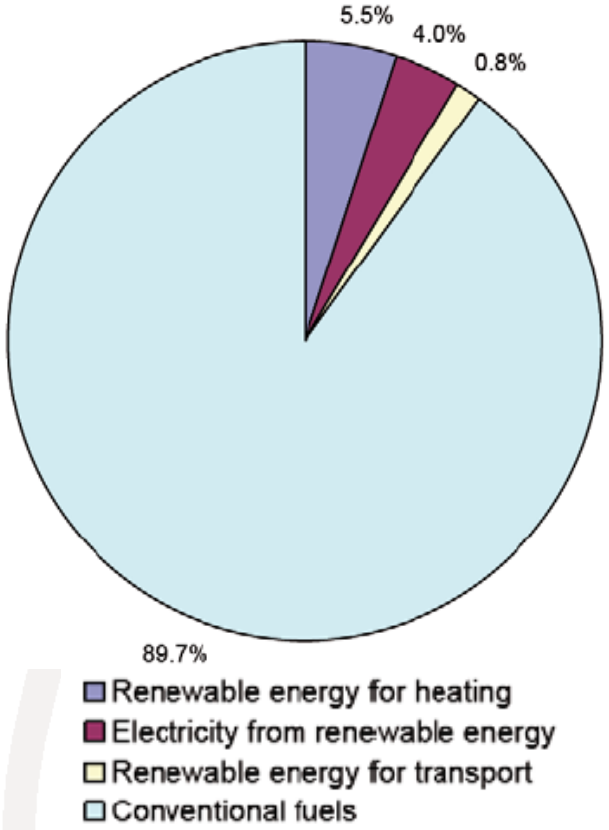
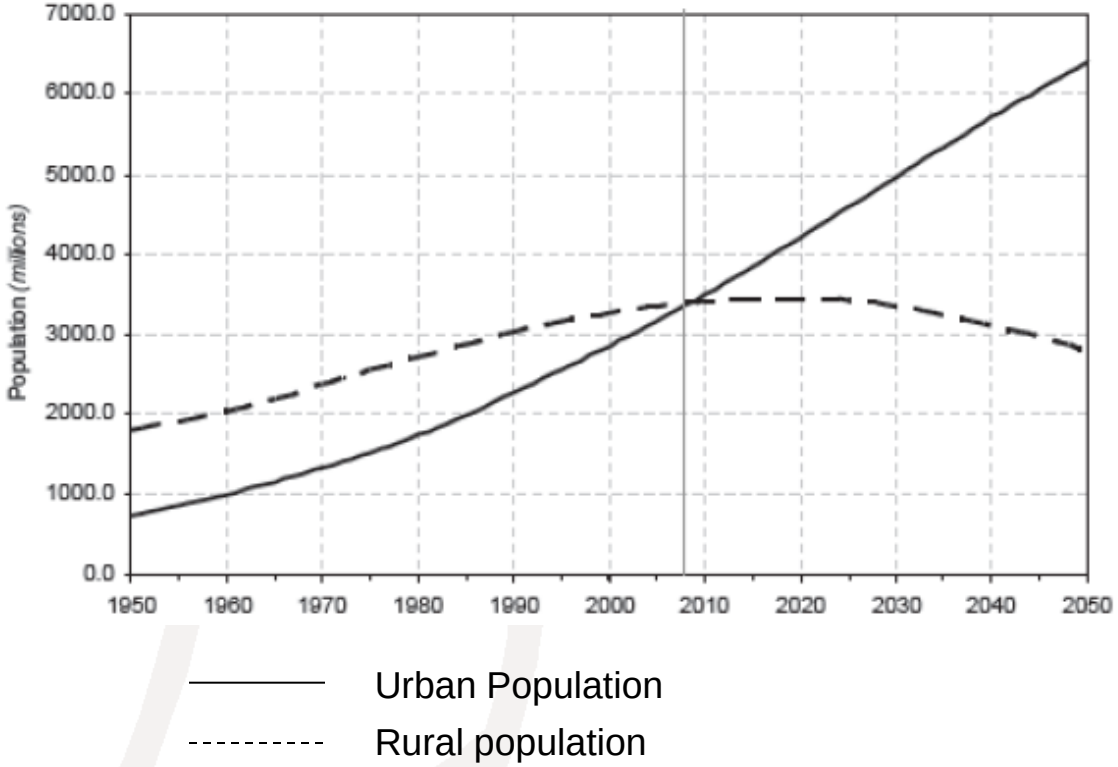
The problem of cities substainability





EU-27 breakdown of gross final energy consumption in 2008 (Eurostat, Statistics in focus, Environment and Energy, 56/2010)

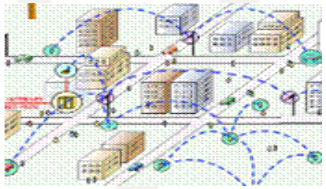
Worldwide population trend for urban and rural areas (UN, World urbanization Prospects – The 2007 revision, 2007)

The Smart City: a concept not a service

Smart City #1 | Smart City #2 | Smart City #3

Safecity

Smart Mobility



Smart Grid e Smart Energy

Smart Utility

Smart Building and Connected Home

The Smart City ICT platform: the advantages of an horizontal approach

City Command & Control Centers

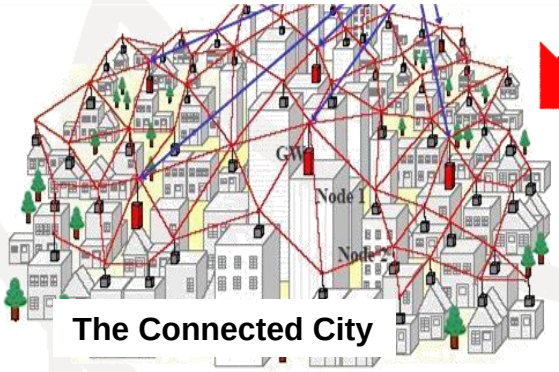
Cloud Computing

Networks

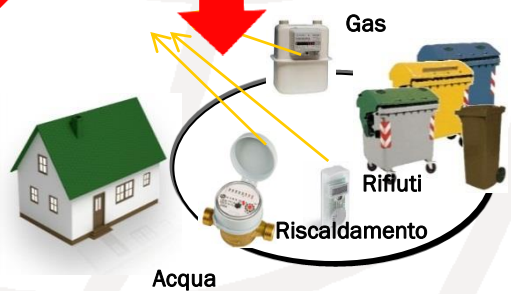
MANAGEMENT PLATFORM M2M

TELCO NETWORK

CAPILLARY NETWORK



The Connected City



The Multi Utility Network

169 MHZ WMBus

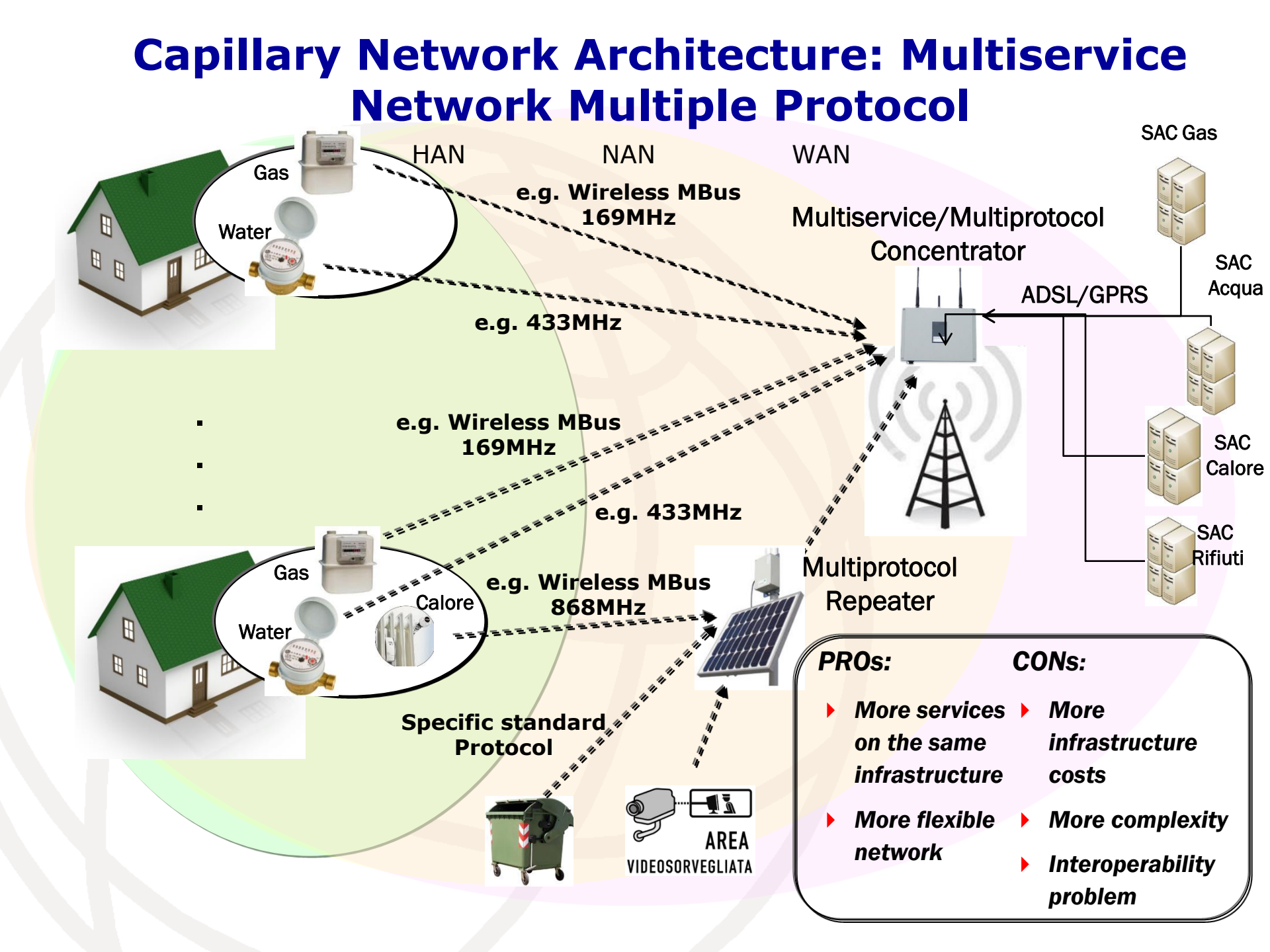
Public Lighting

TelCo commercial networks benefits for the Smart City

- Network Maturity: The network is already there, to build an ad hoc network takes time!
- Network Planning & Management: Never neglect network planning & management issue complexity!
- Network capillarity
- Network & Data Security
- AAA protocols (Authentication, Authorization, Accounting)
- Data Center
- Costs: it is much more expensive to build a new broadband network than to adapt the already existing

- Issues to be tackled:
  - Mission critical management: latency, availability and redundancy.

Capillary Network Architecture: Multiservice Network Multiple Protocol

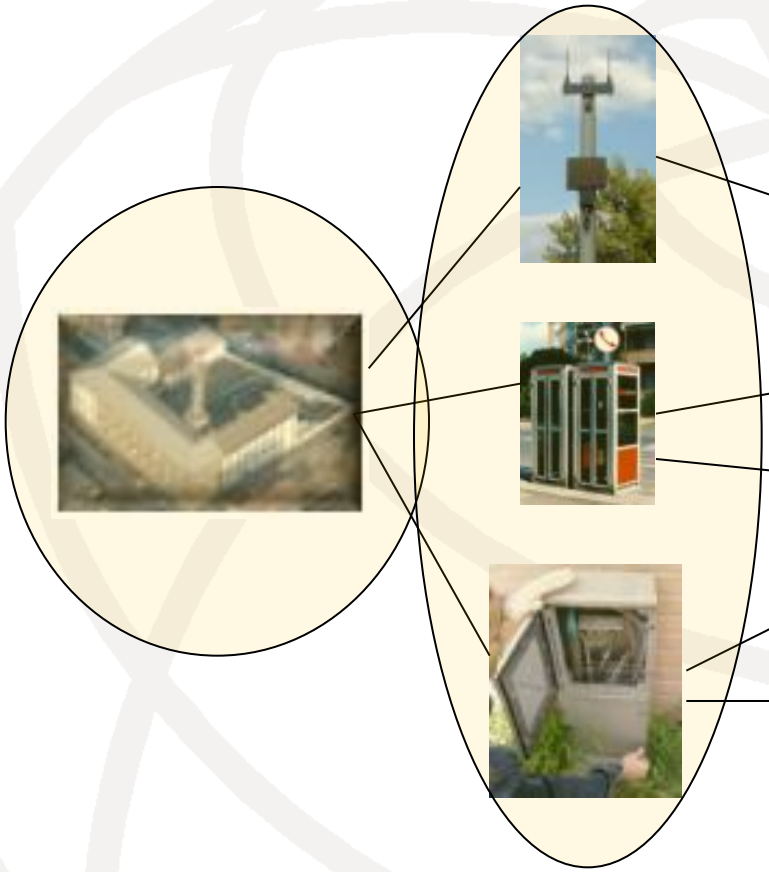


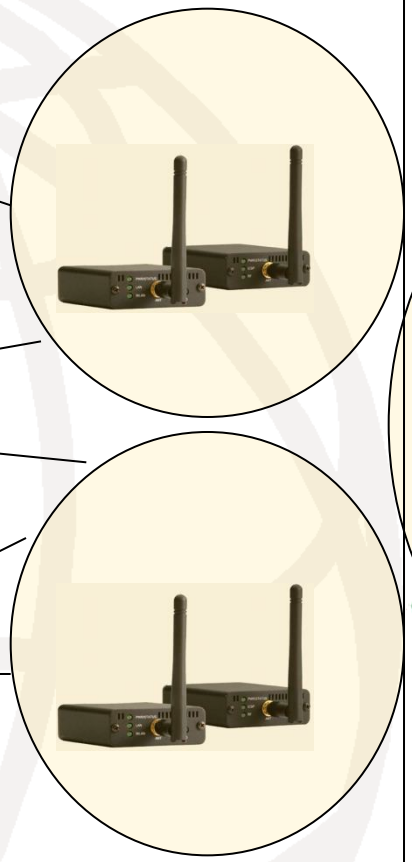
PROs:	***CONs:***
More services on the same infrastructure	***More infrastructure costs***
More flexible network	***More complexity***
	Interoperability problem

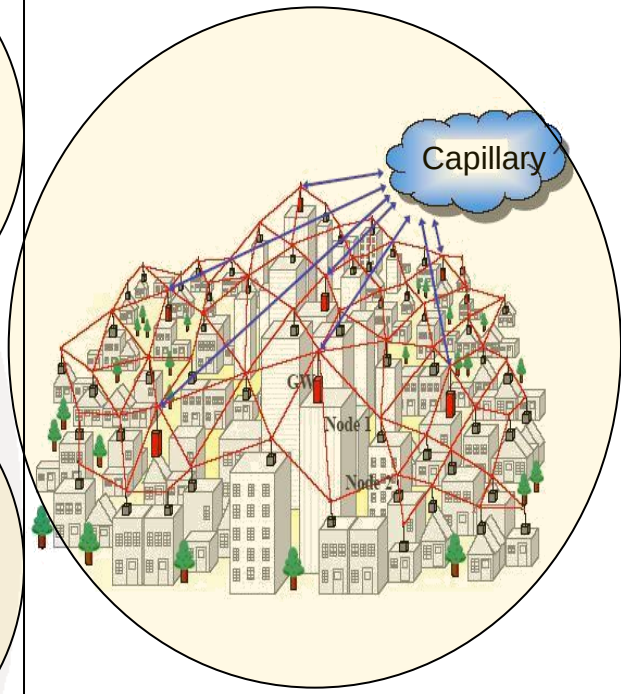
La Capillary Network: the operator view

Public Telco available hotspot

Radio GW







Public Telco network wired and wireless

Capillary short range radio protocols

CONNECTED CITY

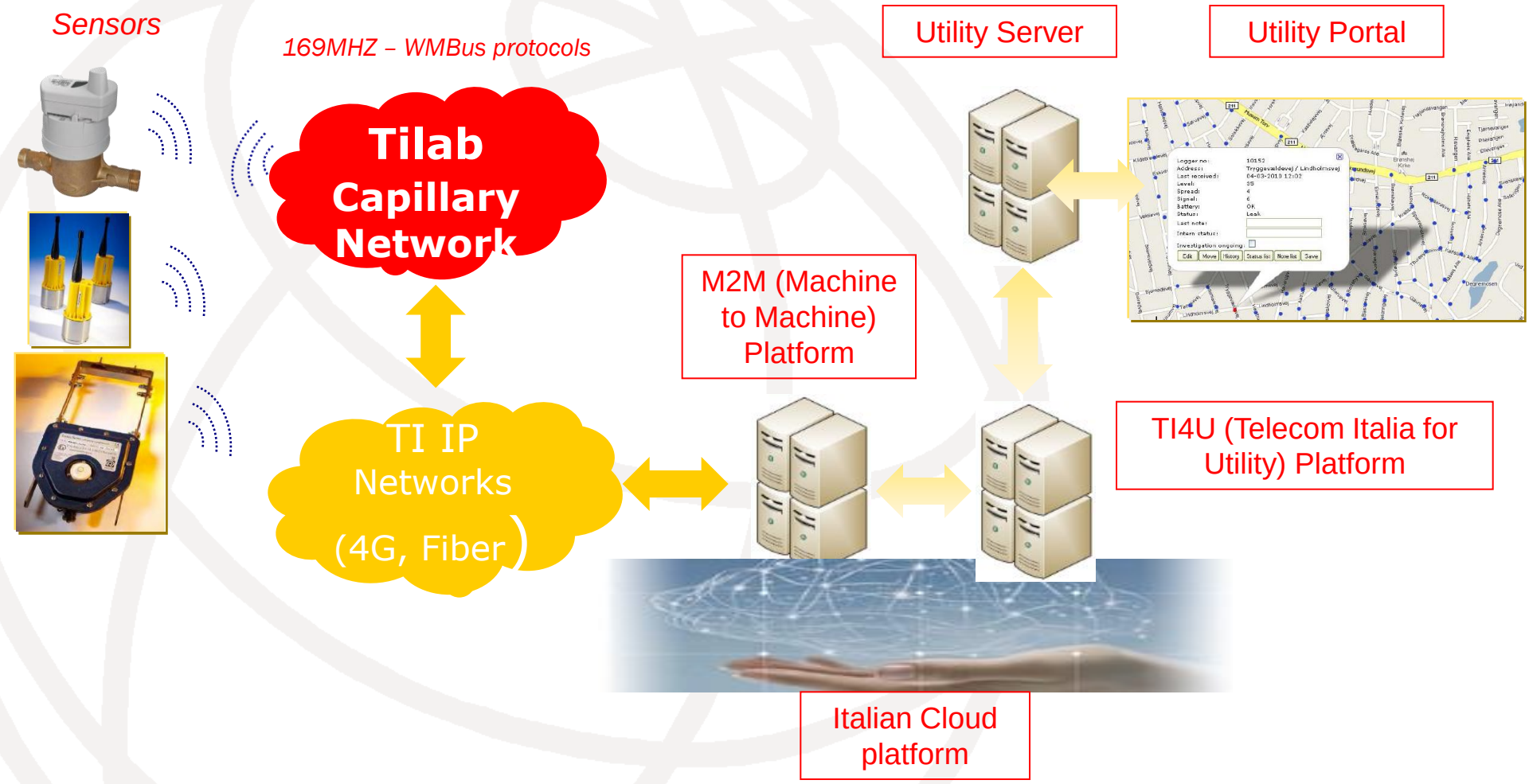
The Power Consumption issue

- **To send a data packet of 1 Kb**

TECHNOLOGY	POWER CONS.
GPRS	22.64 J/giorno
868 MHZ	69 mJ/giorno
169 MHZ	84 mJ/giorno

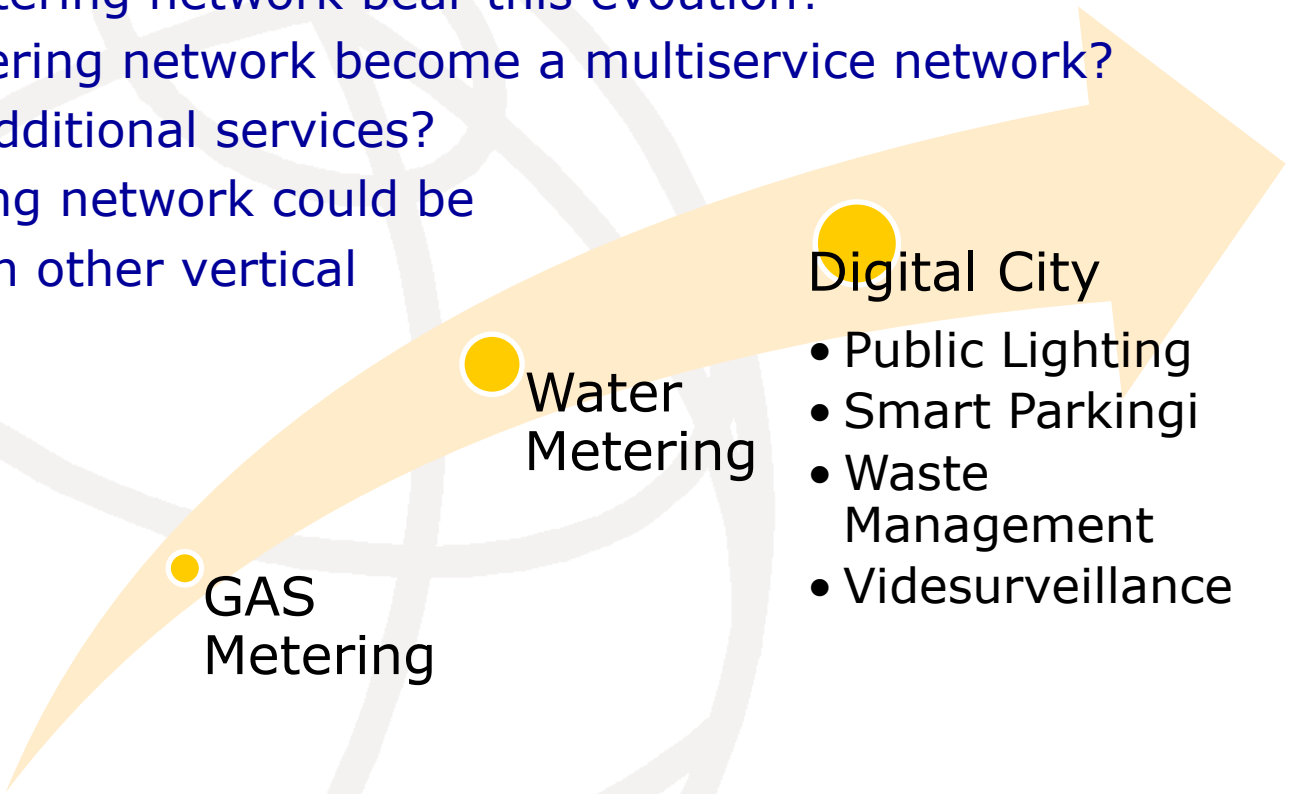
- **GPRS power consumption is something like 260 times bigger.**

Architectural view of the Smart Water test bed in TI Lab

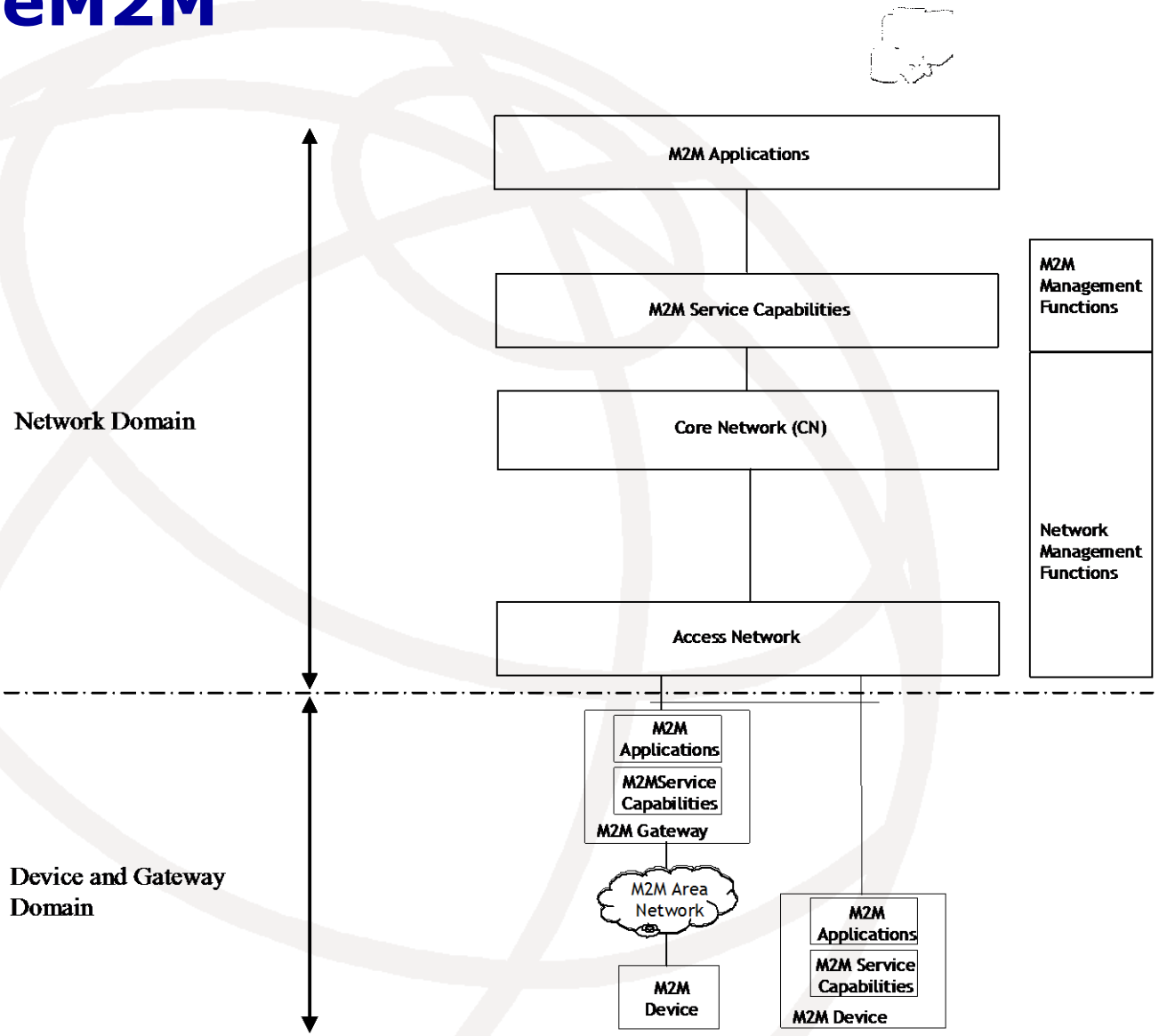


The Capillary Network business case: An evolution of the Smart Metering Network ?

- Can the gas metering network bear this evoution?
- Can a multimetering network become a multiservice network?
- Which are the additional services?
- How the metering network could be integrated with other vertical networks ?



The standard ETSI M2M moving toward OneM2M



Conclusions: The approach of Telecom Italia vs Standards and Vertical Applications

- ►TI developed vertical applications before the existence of a consolidated standard for M2M;
- ►Now TI has planned to develop a M2M platform and it has already launched a SIM management platform as the first important module toward the M2M horizontal platform;
- ►Once the platform will be available the vertical use cases will evolve becoming vertical applications running on top of the platform;