



Centre for

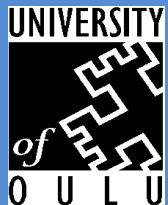
Wireless Communications

CWC- IoT

A
proposal
for
Celtic-plus Proposers's Day
Berlin 25th June 2014

Connect-&-Grow with the Internet of Smart Things: COExIST

Prepared by: CWC, University of Oulu
Finland



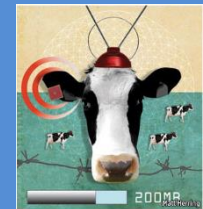
A new corridor to the future: the Internet of Smart Things



Smart cities



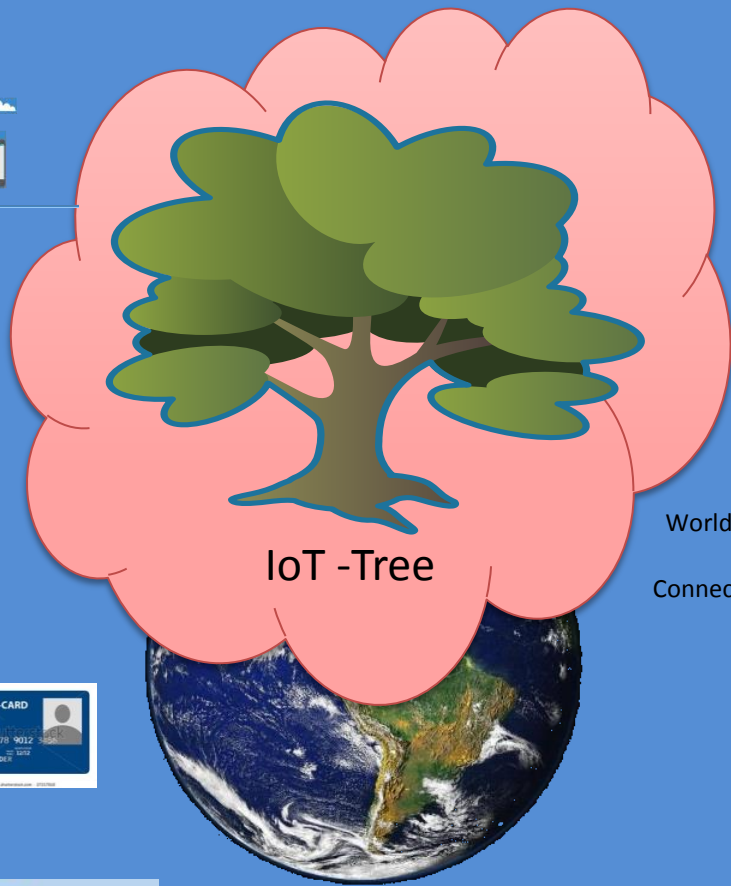
Smart homes



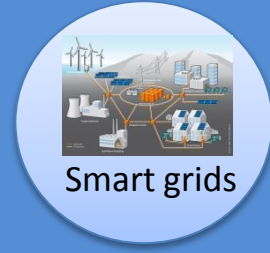
Smart parking



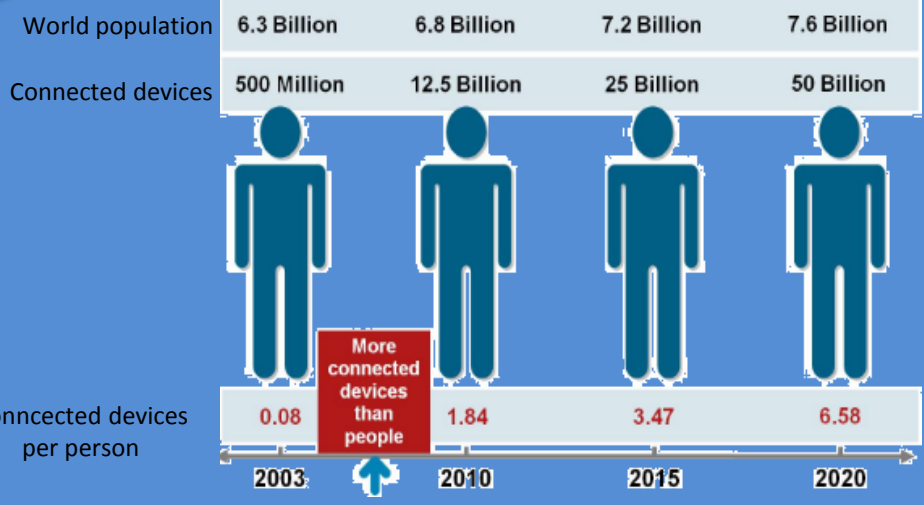
Smart cars



IoT-Tree

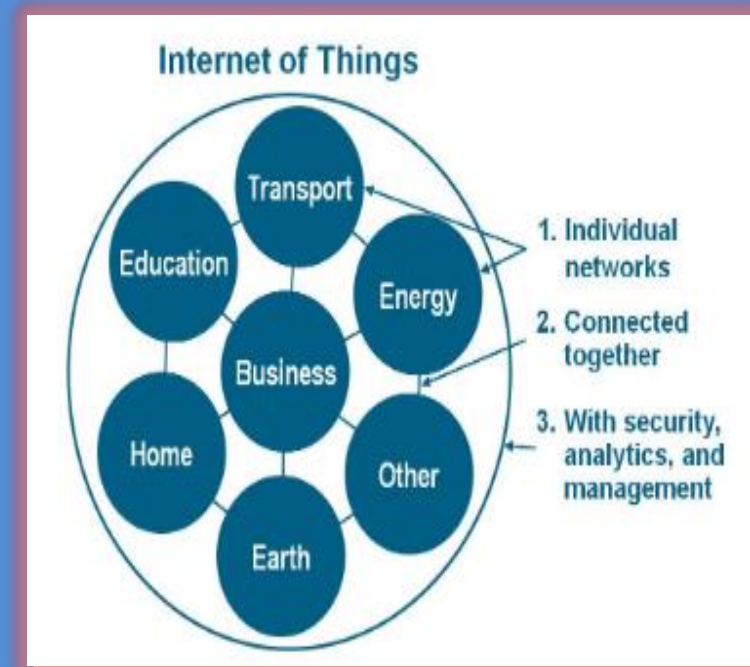
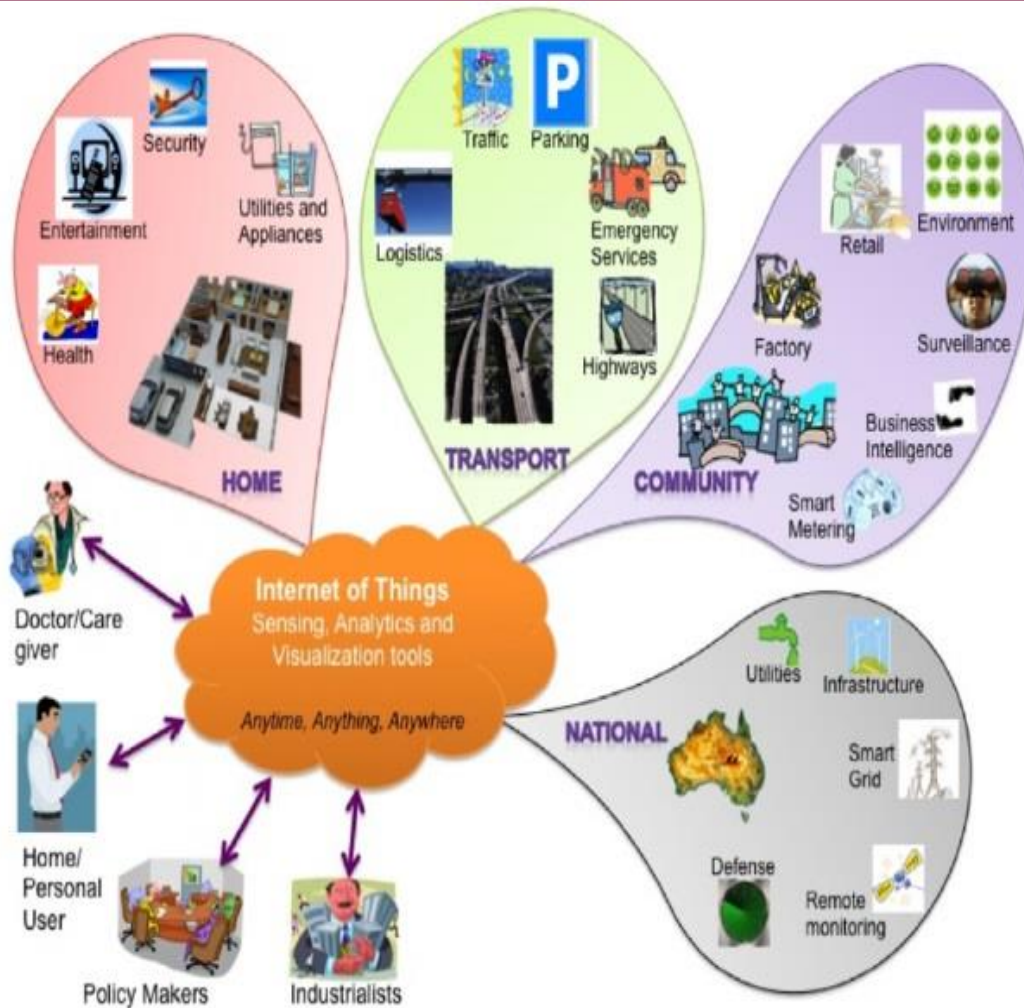


Smart grids



Sorce: Cisco IBSG, April 2011

IoT-enabled Smart Networks in the smart cities



1st Observation: Interconnection between the high speed Internet and the physical smart things/objects or devices

➤ Internet of Things in 2020, a roadmap for the future [1]:

- ❑ Pervasive Interconnection of (heterogeneous) mass-scale smart objects over the high speed Internet requires new and more *efficient interoperable* and *scalable networking* technologies

➤ Confirmed in [2] and [3]

References:

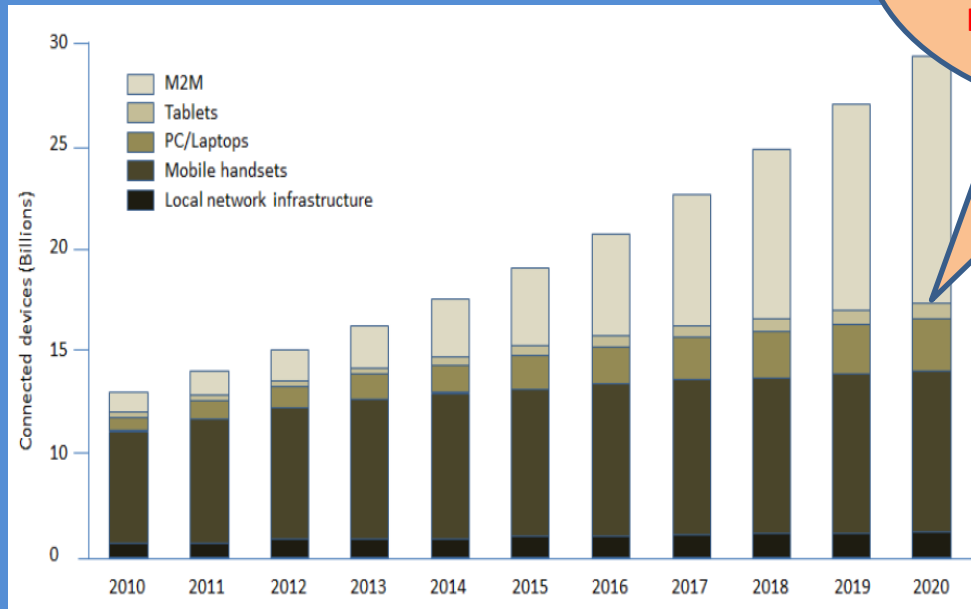
[1] Internet of Things in 2020, a Roadmap for the Future

[2] Consultation on Future Network Technologies Research and Innovation in HORIZON2020.

[3] Internet of Things: Converging Technologies for Smart Environments and Integrated Ecosystem

2nd Observation: Security and Privacy Issues are big barriers

The sum of all forms of smart objects is going to be massive and even **more worst** in coming years



Expected growth in the number of connected devices (GSMA 2011)

Source: IoT Market, value networks, and business models: SOTA-Technical report- University of Jyvaskyla,2013

➤ It is a great feeling that the public acceptance for the IoT-enabled smart objects/networks will be required :

- ❑ The strong security and privacy solutions, and
- ❑ The adequate threat analysis of the IoT-networks.

Observation: an announcement



To connect
the high speed Internet with the
massive smart things,
Focus on
*Interoperable and scalable
networking, &
security and privacy* issues

Main goals of the proposal



To study, think and understand the interoperable and scalable networking systems and identify the potential technologies



To study the barrier free security and privacy issues and identify the potential threats practice



To propose adaptive & efficient solutions for interoperable and scalable networkings, and security and privacy issues

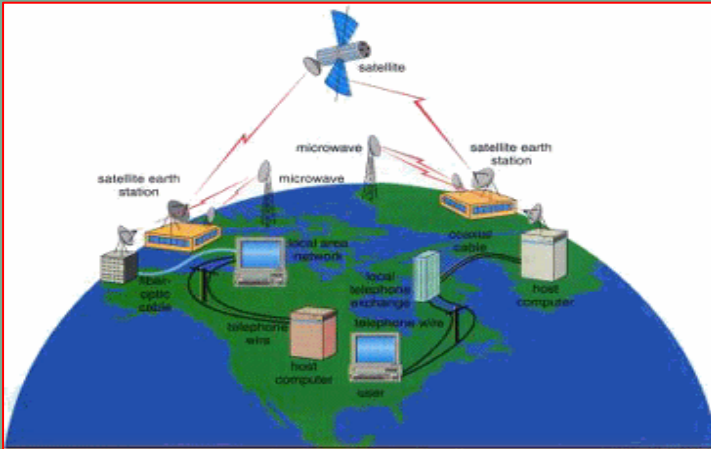


To demonstrate the feasibility of proposed solutions in real-life applications and immediately deploy and integrate them in commercial (online) services and systems

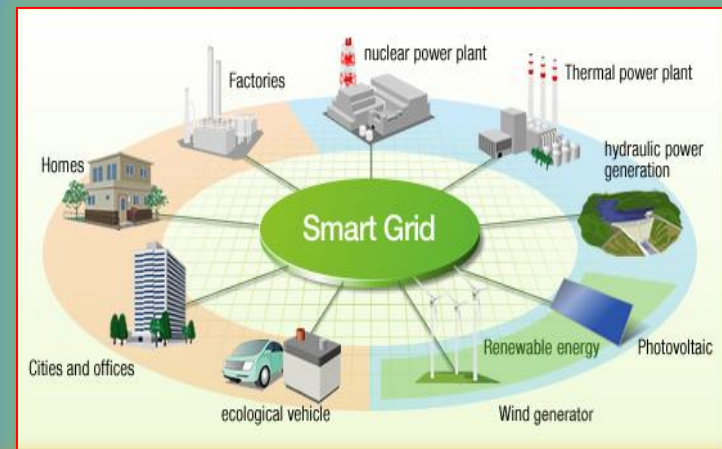


To push these solutions to standardization bodies in order to allow the wide commercial deployments

Main areas



IoT-Wide area networks (IoT-WANs)



IoT-Short range networks (IoT-SRN)



Greater system capacity



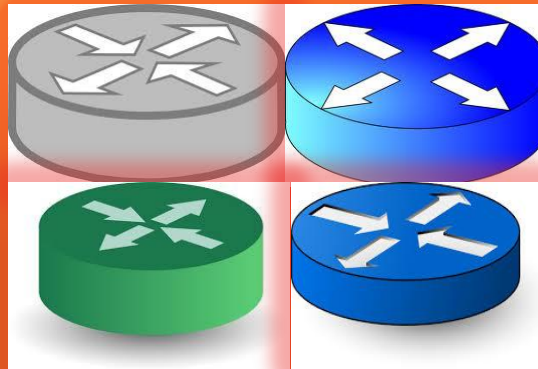
Technologies at lower cost

An << object-to-object >> approach....would be

Communications



Networks



Terminals



Think and share more ideas

Think and share more ideas

Looking for University, institute and Industrial partners



Software-experts



Security-experts



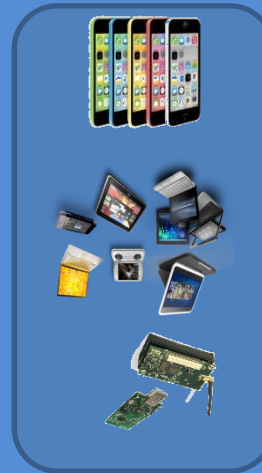
Communication experts



Cloud-experts



Network operators

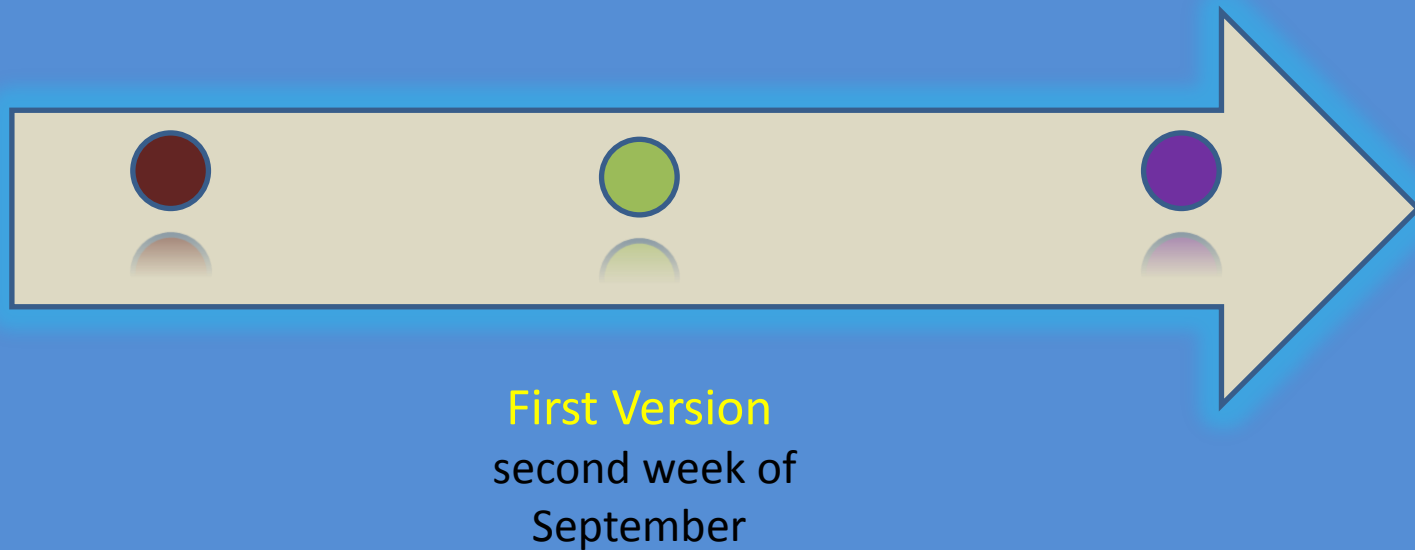


Terminal manufacturers /
service providers and
application developers

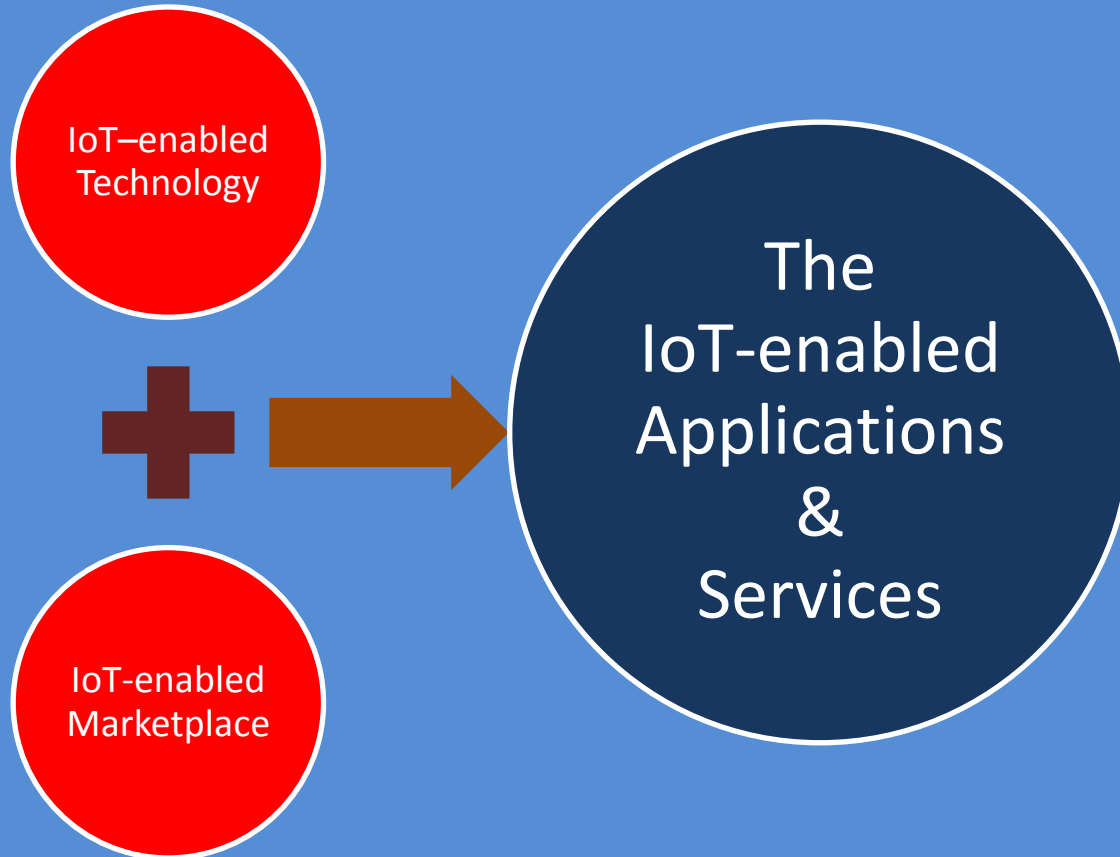
Proposal Schedule

Consortium building
First week of August

Submission
14 October 2014



Lets Connect-&-Grow with COExIST



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