Sagemcom

From Connected Lightweight Devices (CoLD) to Home of Things (HoT)

Eclipse IOT Day

February 19, 2014

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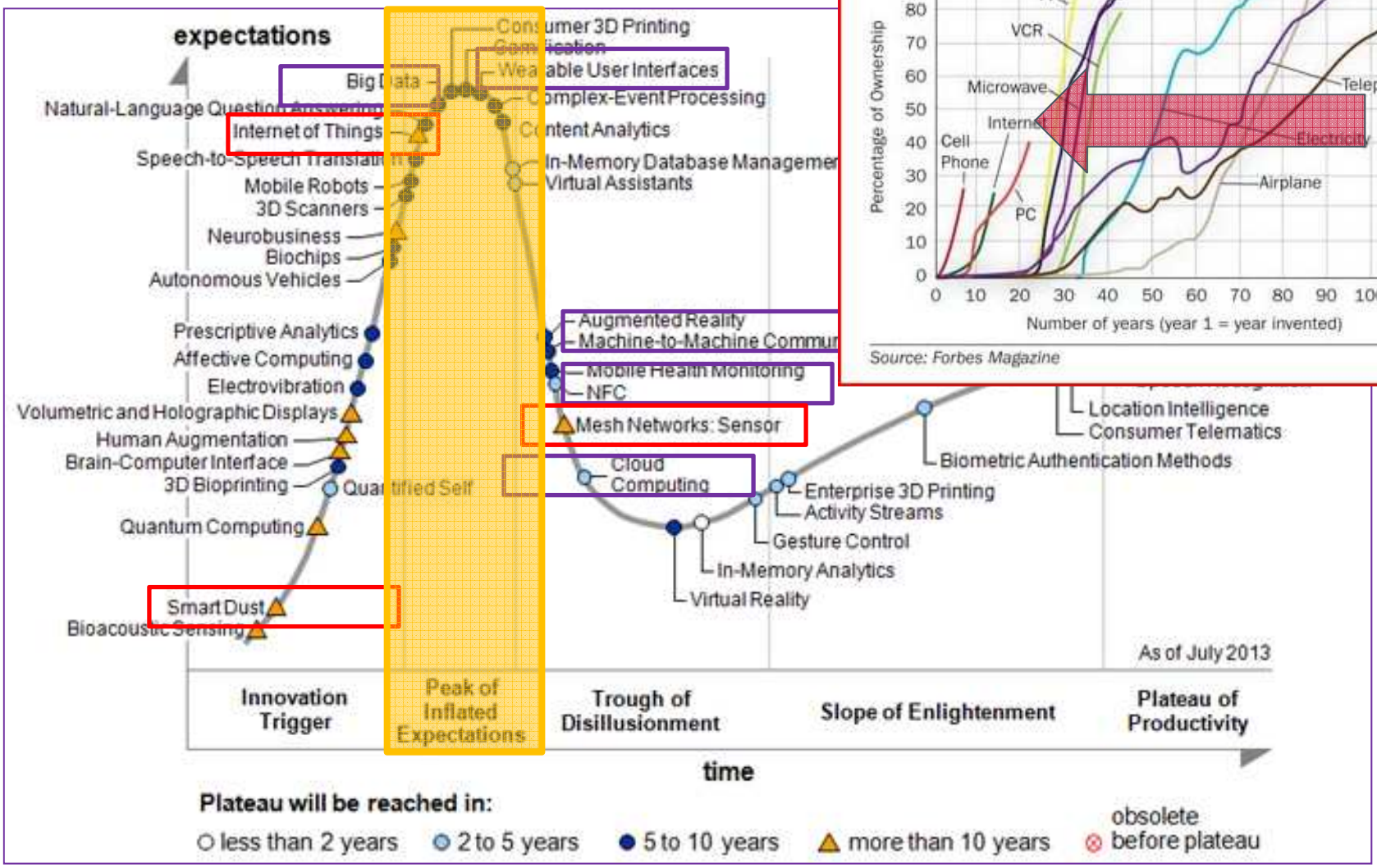
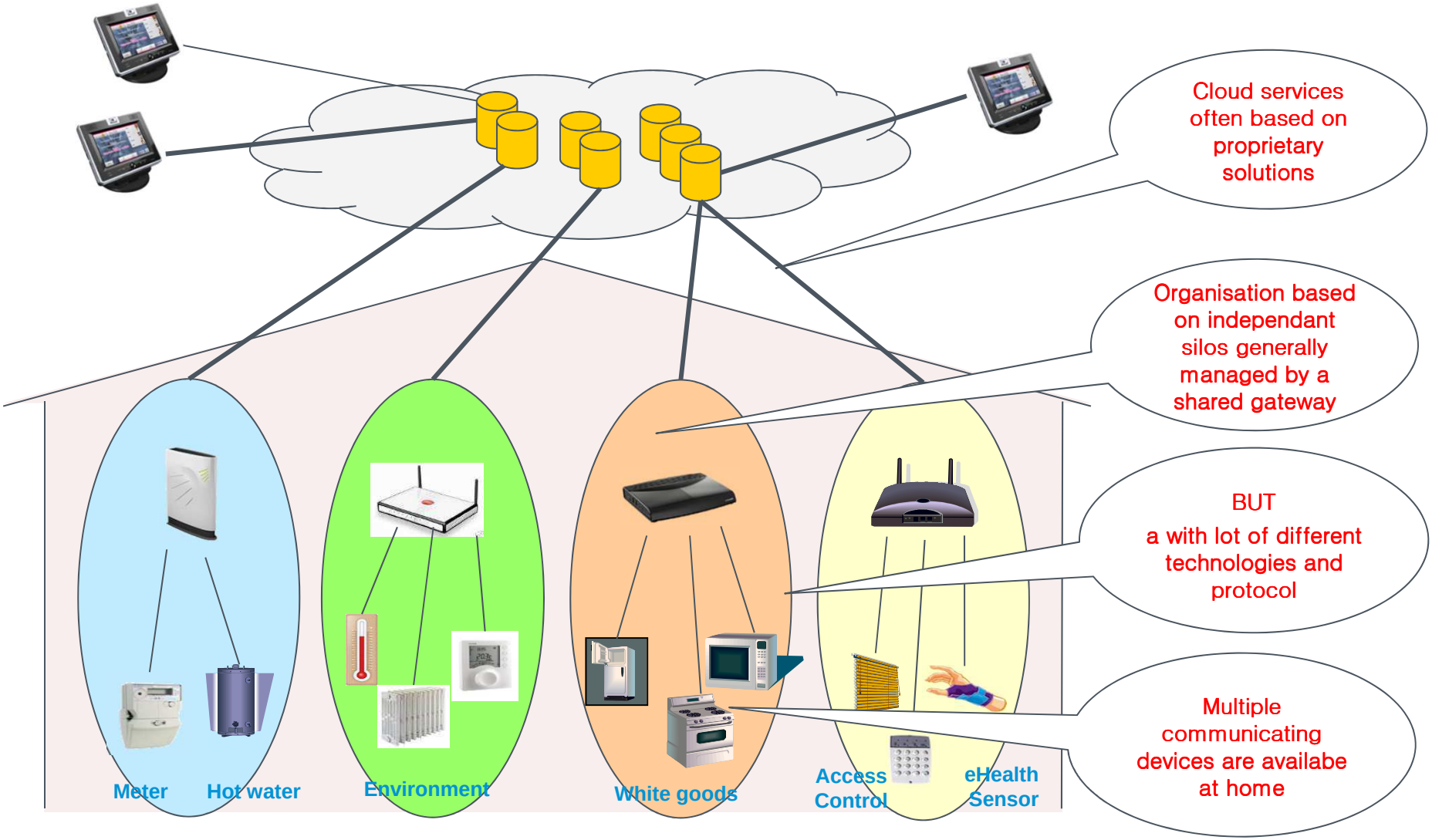
Office of the CTO

IoT/M2M, Beyond the Hype…



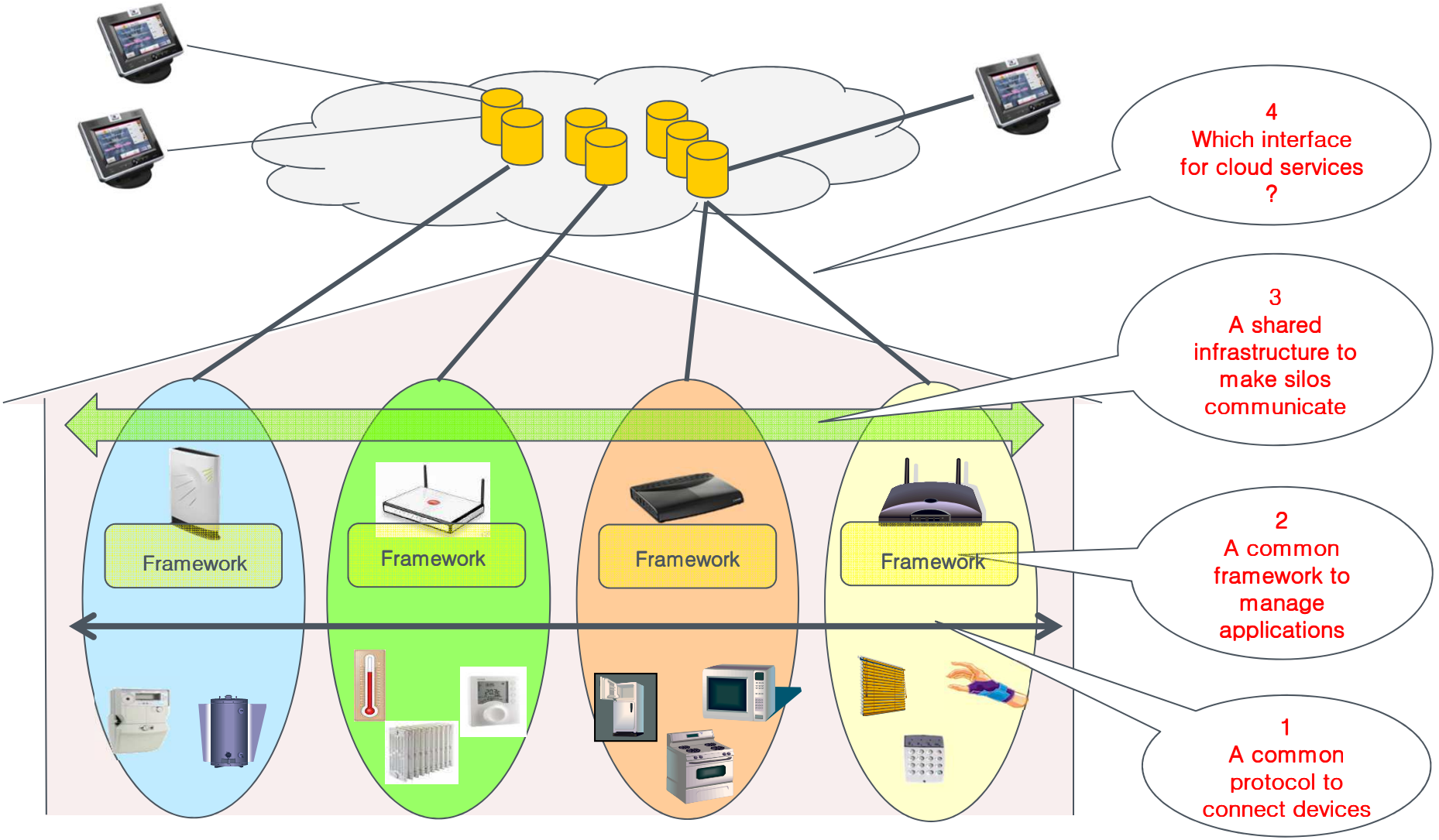
http://www.gartner.com/newsroom/id/2575515

TODAY STATUS



Wireless Technologies

THE 4 PILLARS FOR CONNECTED HOME



Main IoT/M2M protocols – Overview

Secure
Scalable
Plug'n play

Energy efficient

Mature
Robust
Open
Multi–Vendor

User Centric

TRENDS….

	DPWS	UPnP	DDS	CoAP	MQTT	XMPP	AMQP
Ecosystem (initial)	WS-*	Consumer	Intelligent systems	WSN/M2M	M2M	WebEx (IM)	Servers (e.g.
service	D2D	D2D	D2D	D2D/D2S	D2S	D2S	S2S
REQ/RSP	+	+		+		+	
Publish/Subscribe			Data Centric		+	+	+
TCP	+	+	*possible*	*possible*	+	+	+
UDP	+	+	+	+			+
Intermediate RGW need				+	+		
Scalability	-	-	-	?	+	+	
Security	+	+	-	DTLS	SSL/TLS	SSL/TLS	SASL
P2P			+	+		XEP-0174	+
Discovery	+	+	+	+	-		-
Multicast				+	+		
IP stacks	+	+	+	+	+	+	+
Non-IP stack				6LowPAN	MQTT-S		
WSN focus (LLN)				+	MQTT-S	XEP	
Energy saving				+	MQTT-S		
Widespread (Commercially deployed)	+	+	+	-	Facebook	+	+
Standard'/alliance	OASIS	UPnP Forum, DLNA	OMG	IPSO, ETSI M2M, IETF	OASIS	XMPP Standard Foundation, IETF	OASIS
Mobile OS		+	+		+	+	+
IOT	+	+	+	*plugfest*	*partial*		+
License	Open	Open	Open	Open	Open	Open	Open
open source stack available	+	+	+	+	+	+	+
QoS	+	+	+		3	+	+
Binary					+		+
XML		+	+	*Header compression*			
EXI/XML						+	
WSDL	+						

MULTIPLE ACTORS SHARING EFFORTS

MULTIPLE ACTORS SHARING EFFORTS

« One Protocol to Rule Them All? »

Source: Real-Time Innovations, Inc. (RTI)

eclipse

ZigBee
Control your world

INITIATIVE EEBUS

enocean alliance
No Wires. No Batteries. No Limits.

Energy@

ENELEC

LSEEN
LIANCE

OSGi Alliance

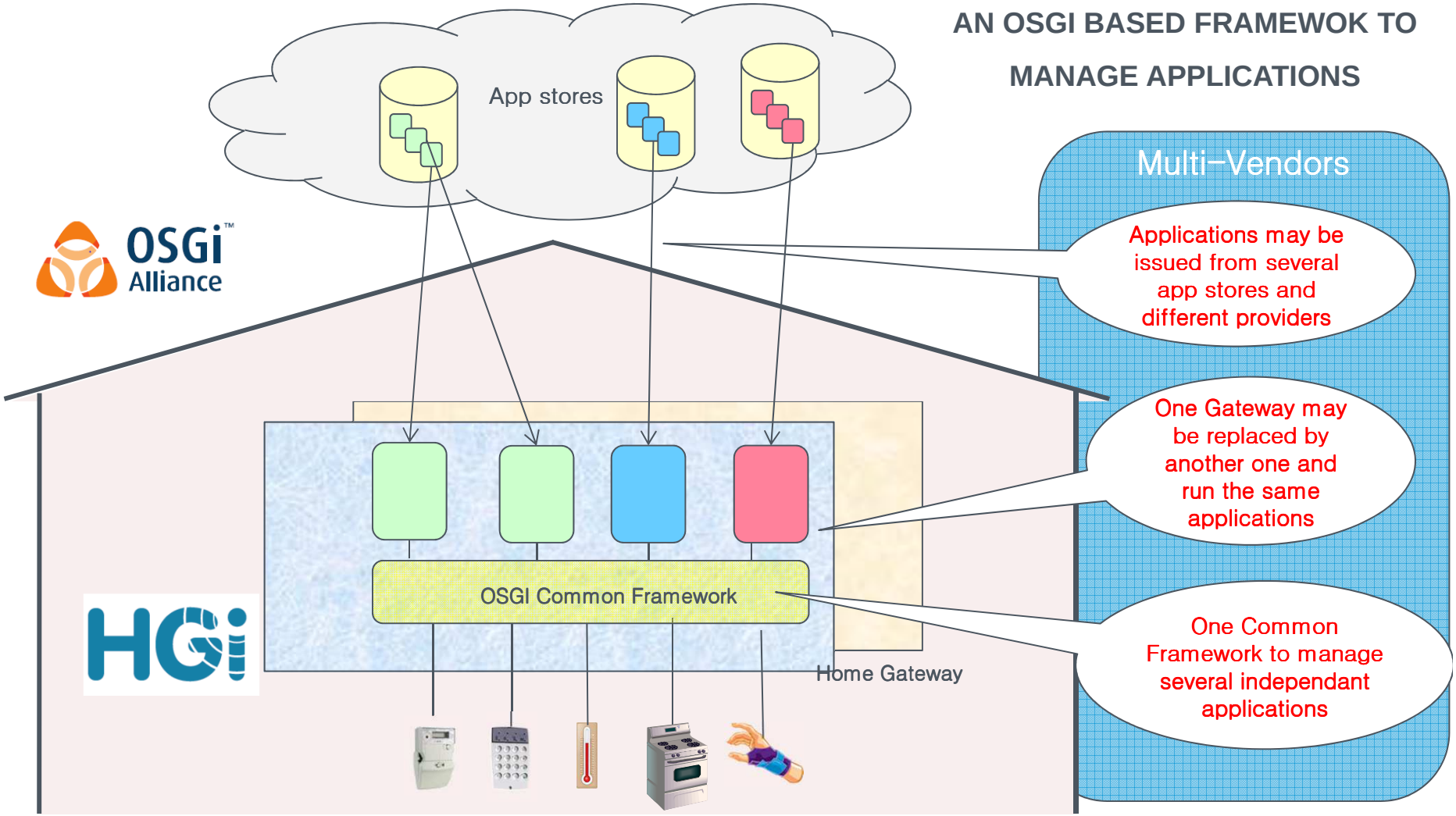
IEEE

ITU International Telecommunication Union

Towards A COMMON FRAMEWORK

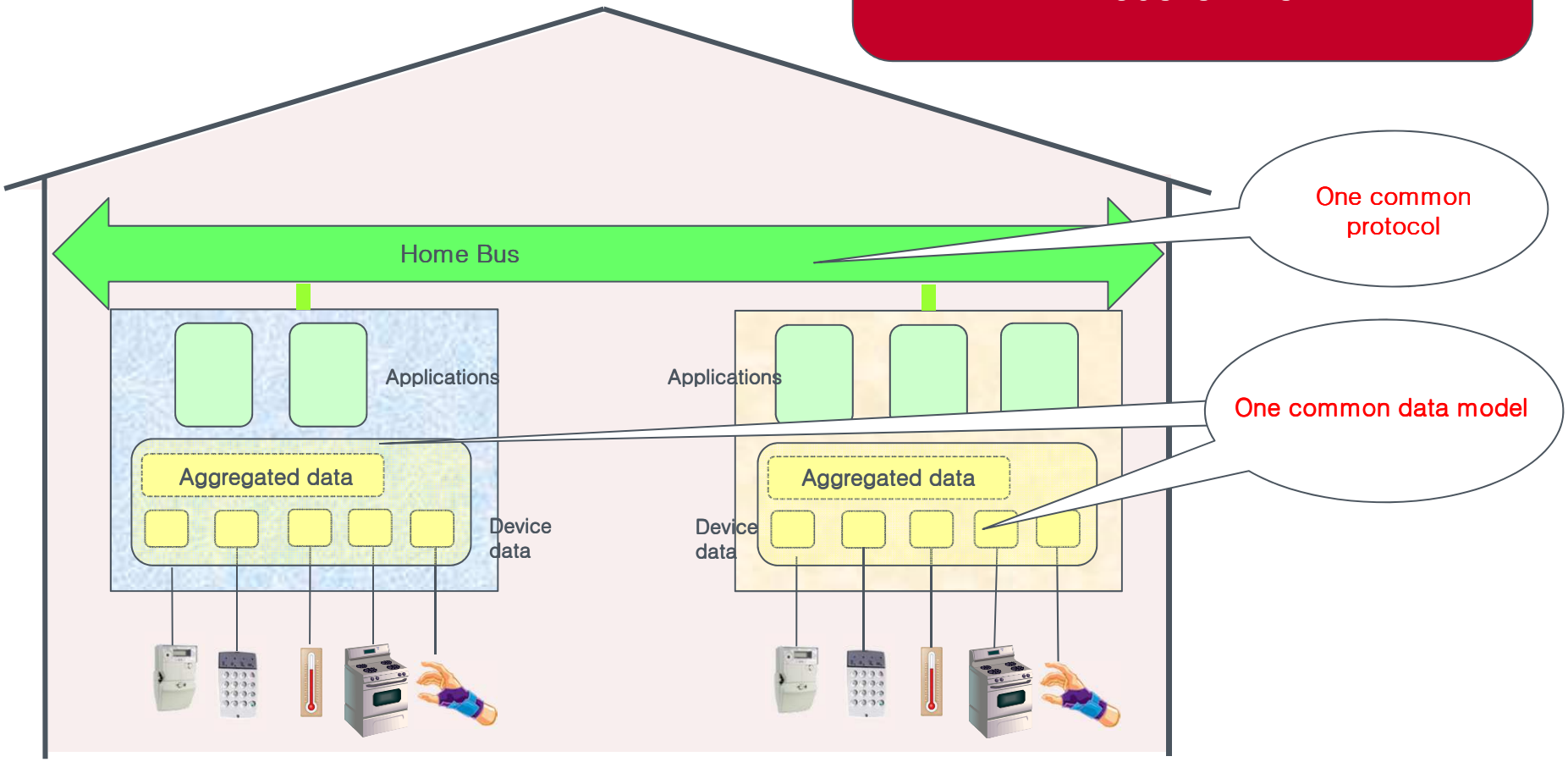
OPEN THE BOX PROJECT

AN OSGI BASED FRAMEWOK TO MANAGE APPLICATIONS



Towards A COMMON APPLICATION PROTOCOL

« AGORA BUS »
ALLOWS DATA EXCHANGE BETWEEN ECOSYSTEMS



IoT: Need for Governance Actions

Privacy & protection of personnal Data

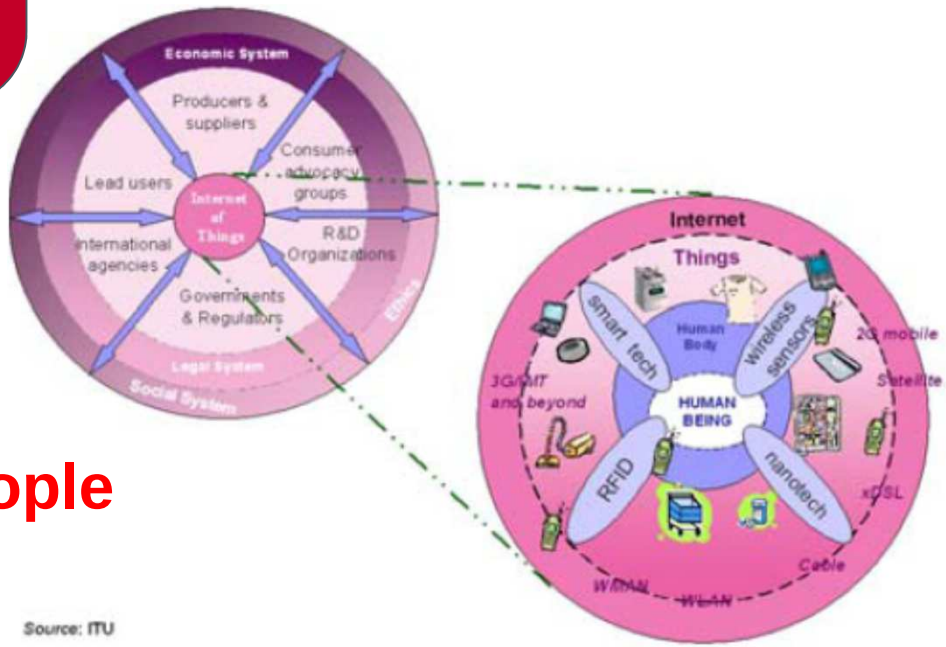
Trust, Acceptance & Security

Standardization

The Eye of SAURON (Tolkien)

Internet of Things

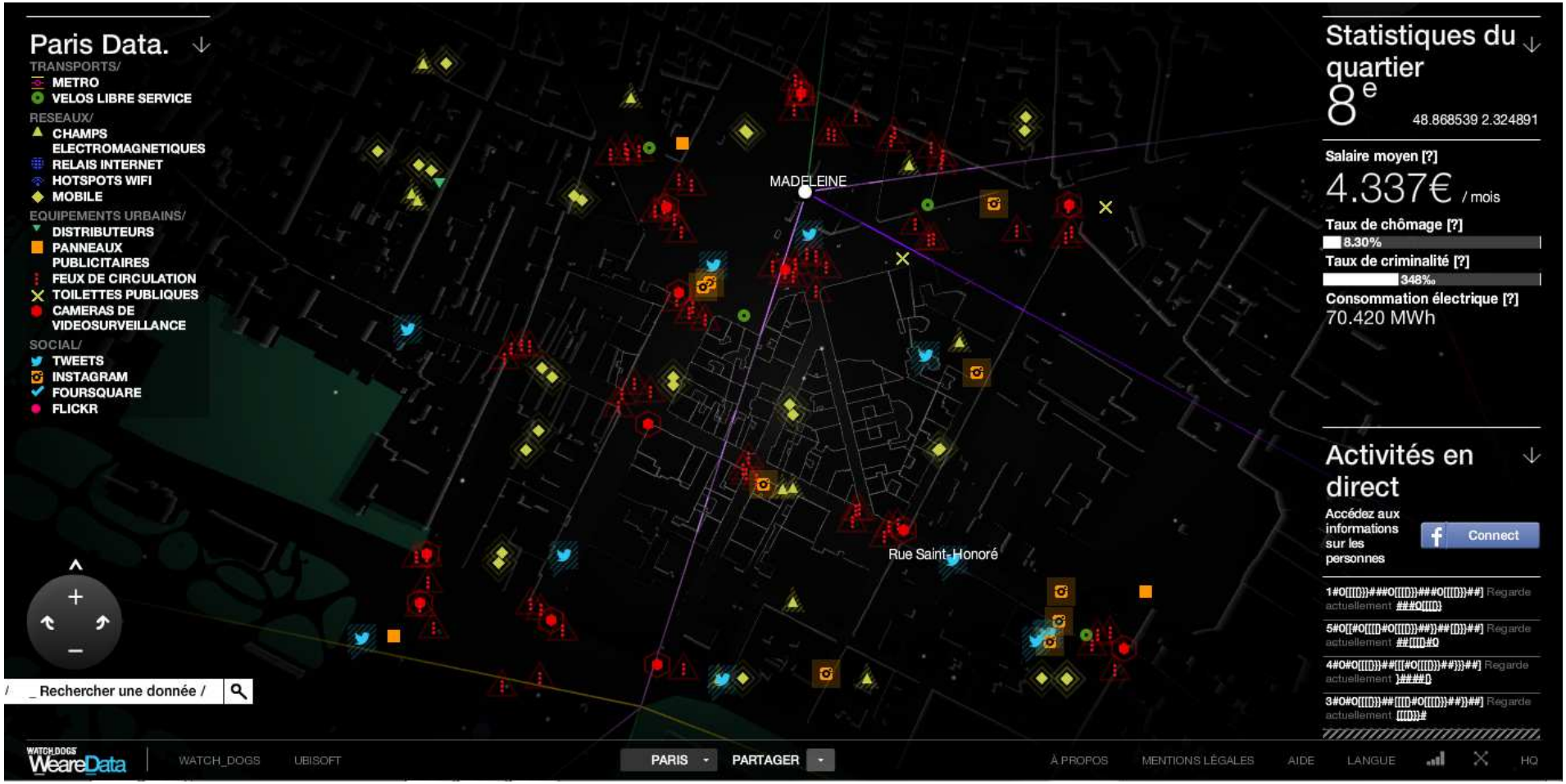
Internet of Things **for People**



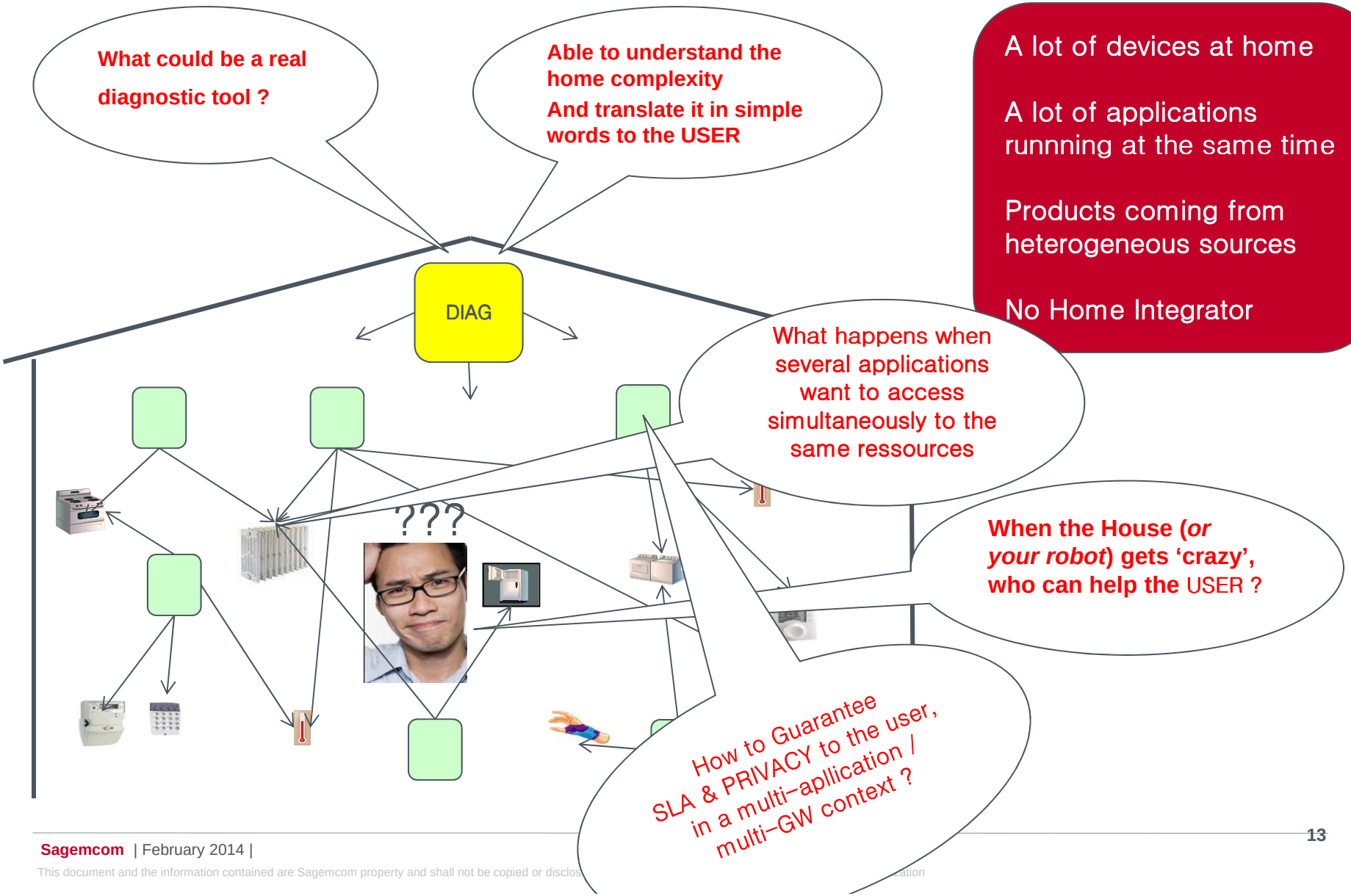
Source: ITU

Ubisoft – « *Watch-Dogs: We are Data* »

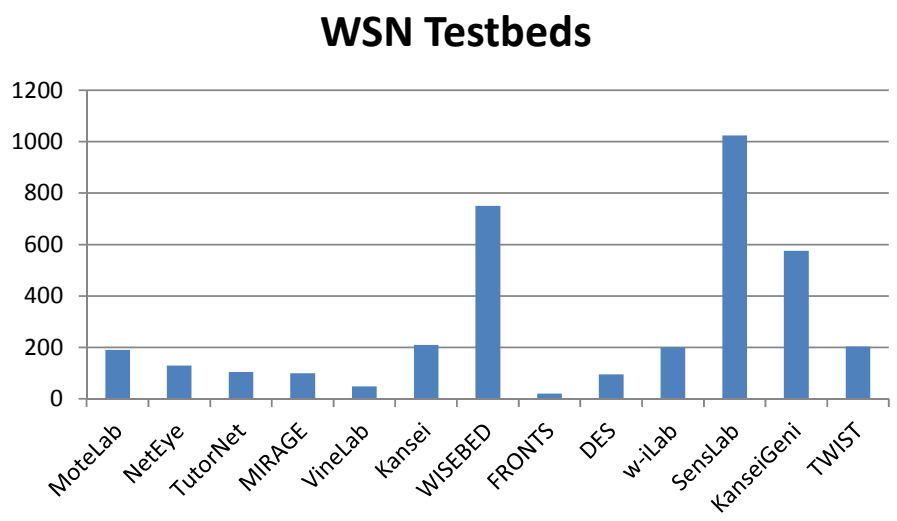
http://wearedata.watchdogs.com/

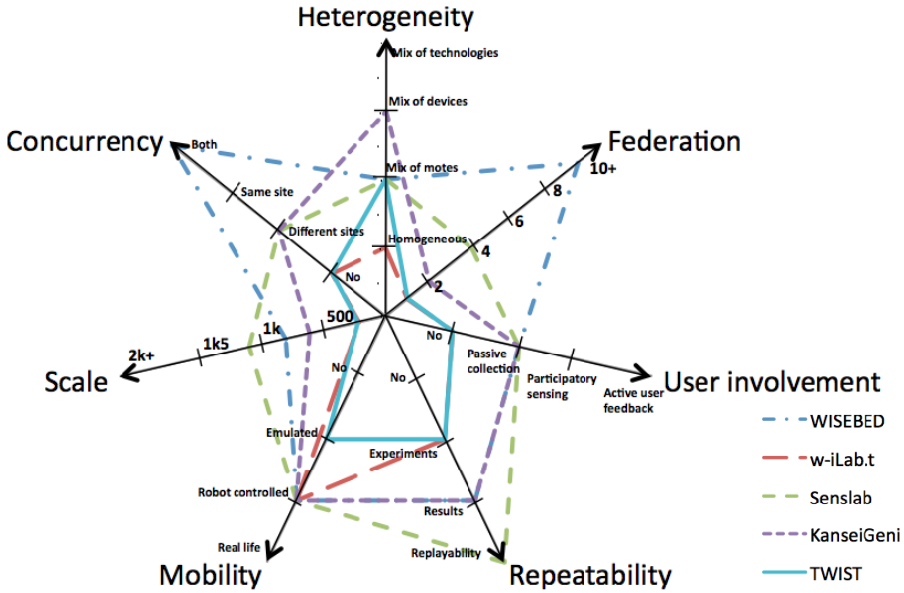


IoT for People: Societal & Ease of Use!



Need for Field experiments / Feedback commercial deployments





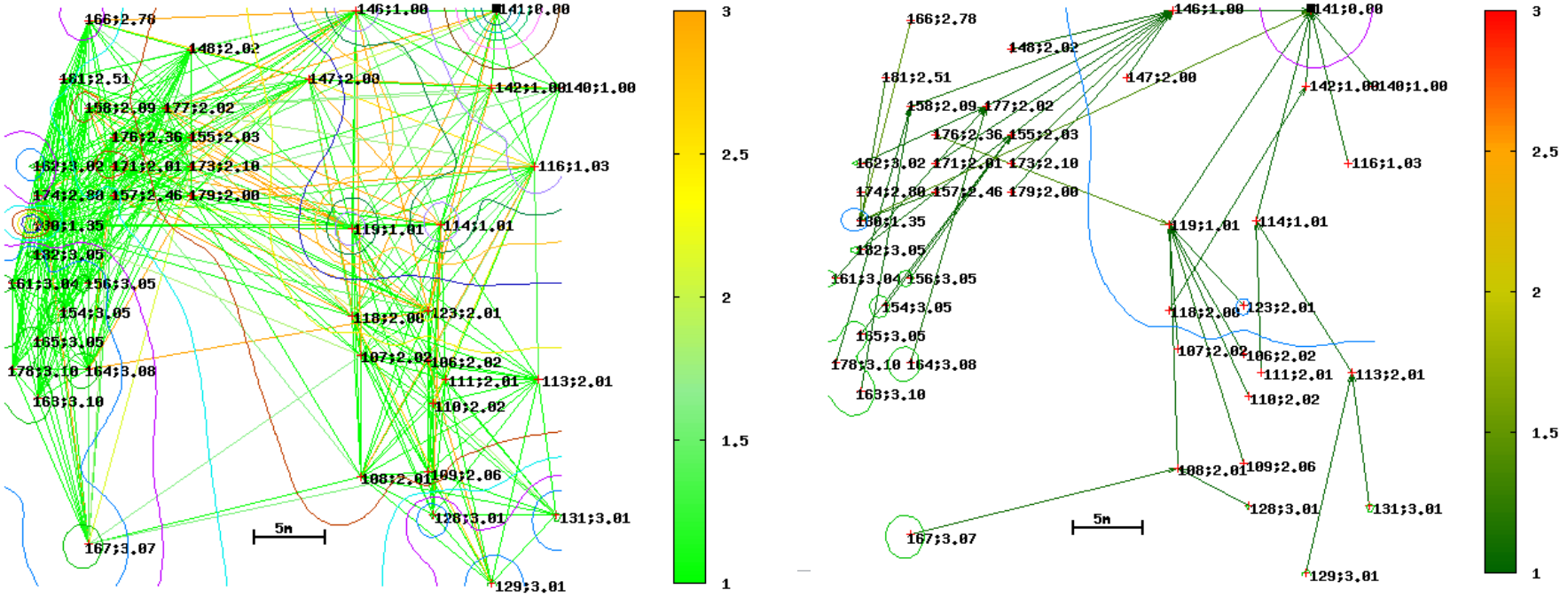
- Difficult to make 'Apple to Apple' comparisons & draw relevant conclusions
- Need Larger Scale & More open Deployments
- Need More Sharing & Tracking of results within the 'Community'
  - ➔ Open Communities & Open Innovation!

Source: « A survey on Facilities for Experimental Internet of Things Research », A.Gluhak et al., IEEE Comm.Mag.#49, 2011

Berkeley initiative BSAC http://www-bsac.eecs.berkeley.edu/

- http://openwsn.berkeley.edu/
- http://wsn.eecs.berkeley.edu/connectivity/

Open source implementations/Connectivity data repositary/IETF ROLL/RPL test



Georgia Tech

Problem. Solved.

Center for the Development & Applications of Internet of Things Technologies
(CDAIT)
« Imagination Accelerated »

GSMA Connected living Tracker

ICT 30 – 2015: Internet of Things and Platforms for Connected Smart Objects

Specific Challenge: The evolution of the Internet of Things embedded in Smart Environments and Platforms forming a web of "everythings" has been identified as one of the next big concepts to support societal changes and economic growth at an annual rate estimated at 20%.

The overall challenge is to deliver an Internet of Things (IoT) extended into a *web of **platforms for connected devices and objects.*** They support ***smart environments, businesses, services and persons with dynamic and adaptive configuration capabilities.***

The biggest challenge will be to overcome the fragmentation of vertically-oriented closed systems, architectures and application areas and move towards open systems and platforms that support multiple applications. The challenge for Europe is to capture the benefits from developing consumer-oriented platforms that require a strong cooperation between the telecom, hardware, software and service industries, to create and master innovative Internet Ecosystems.

This topic cuts across several LEIT-ICT challenges (smart systems integration, cyber-physical systems, smart networks, big data) and brings together different generic ICT technologies (nano-electronics, wireless networks, low-power computing, adaptive and cognitive systems) and their stakeholder constituencies. Their applicability across multiple application domains (e.g. ehealth, energy, food chain, intelligent transport and systems, environmental monitoring and logistics) bridges the gap to applications-specific developments under the H2020 Societal Challenges.

USER CENTRIC

SERVICES

SIMPLICITY

HOME

LET'S WORK TOGETHER!

PROTOCOLS

TRUST

CONNECTIVITY

PRIVACY

KEY ENABLERS

Effervescence

OPEN E2E COOPERATION

Maturation

EMPOWERED USER

Today

Thank You !

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