



## Home, Smart Home : sustainable living for all

Politecnico di Milano  
April, 14 2016 – 16:45  
Sala Conferenze - DEIB

# 60 seconds to introduce CreAction Team

- CreAction Team provides consulting services to SMEs for business and technological innovation
  - Product design & strategy
  - Project management
  - Support and project management services for EU and nationally financed collaborative R&D projects
- Main sectors :
  - Energy and renewables resources
  - Smart-homes and smart buildings
  - E-health



## Your speaker today



**Cinzia Marzioni**  
**Founding Partner**

# TODAY'S OUTLINE

- What are smart homes?
- Where are smart homes now?
- The reality about smart homes from stakeholder point of view, plus
  - A brief technical view of standards and architectures
  - A brief review of products, services, available business models and ecosystems
- What are the main barriers to adoption?
- What are the main reasons for having a smart home?



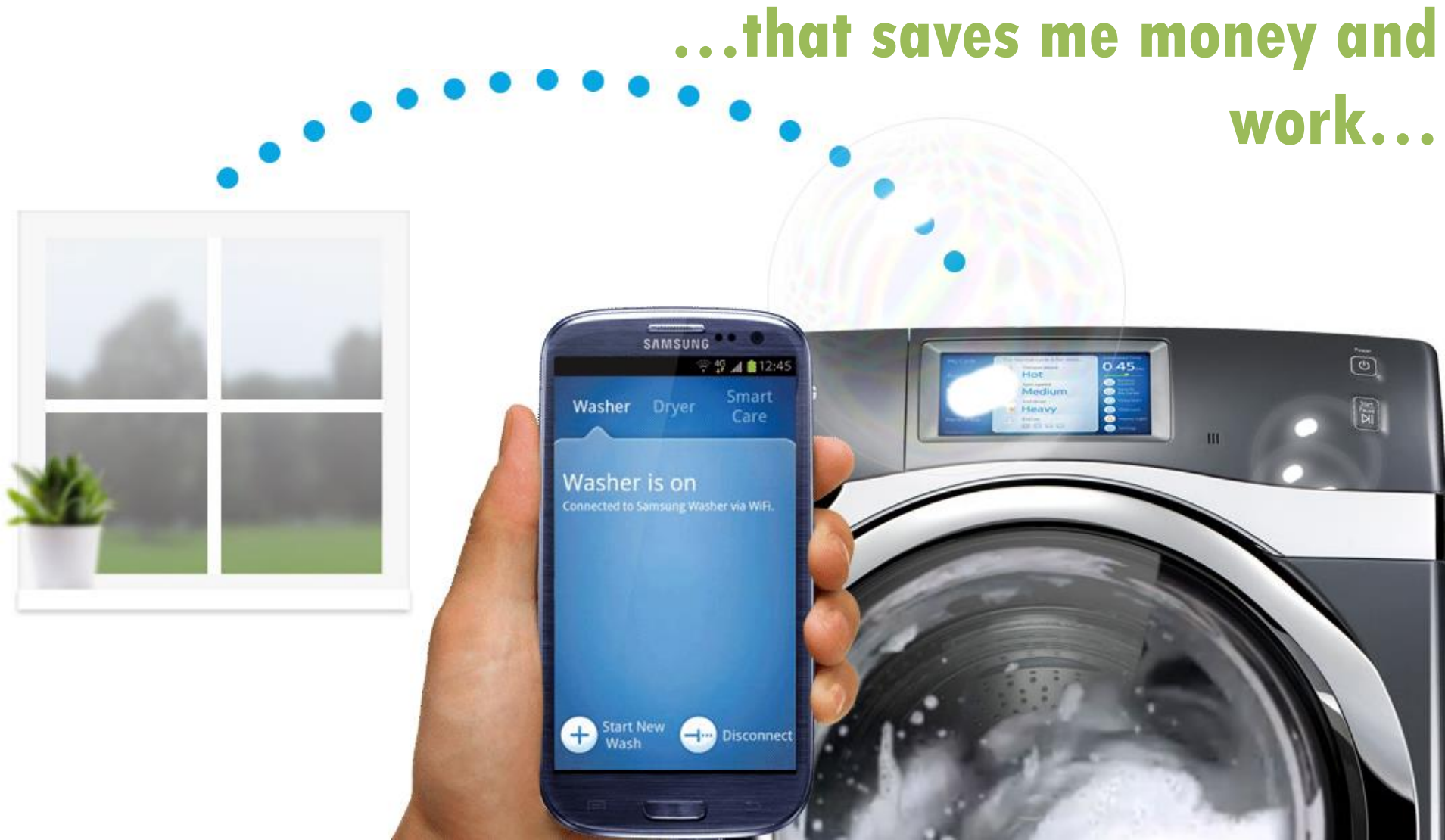


**A smart home is a home  
with a smart washing machine...**



**A smart home is a home  
with a smart washing machine ...**

**...that saves me money and  
work...**



Un petit pas pour l'homme,  
un bond pour sa femme.

...and can be  
used by  
everyone...



# Being connected is better!



## What is smart home ?





# Where are smart homes now?





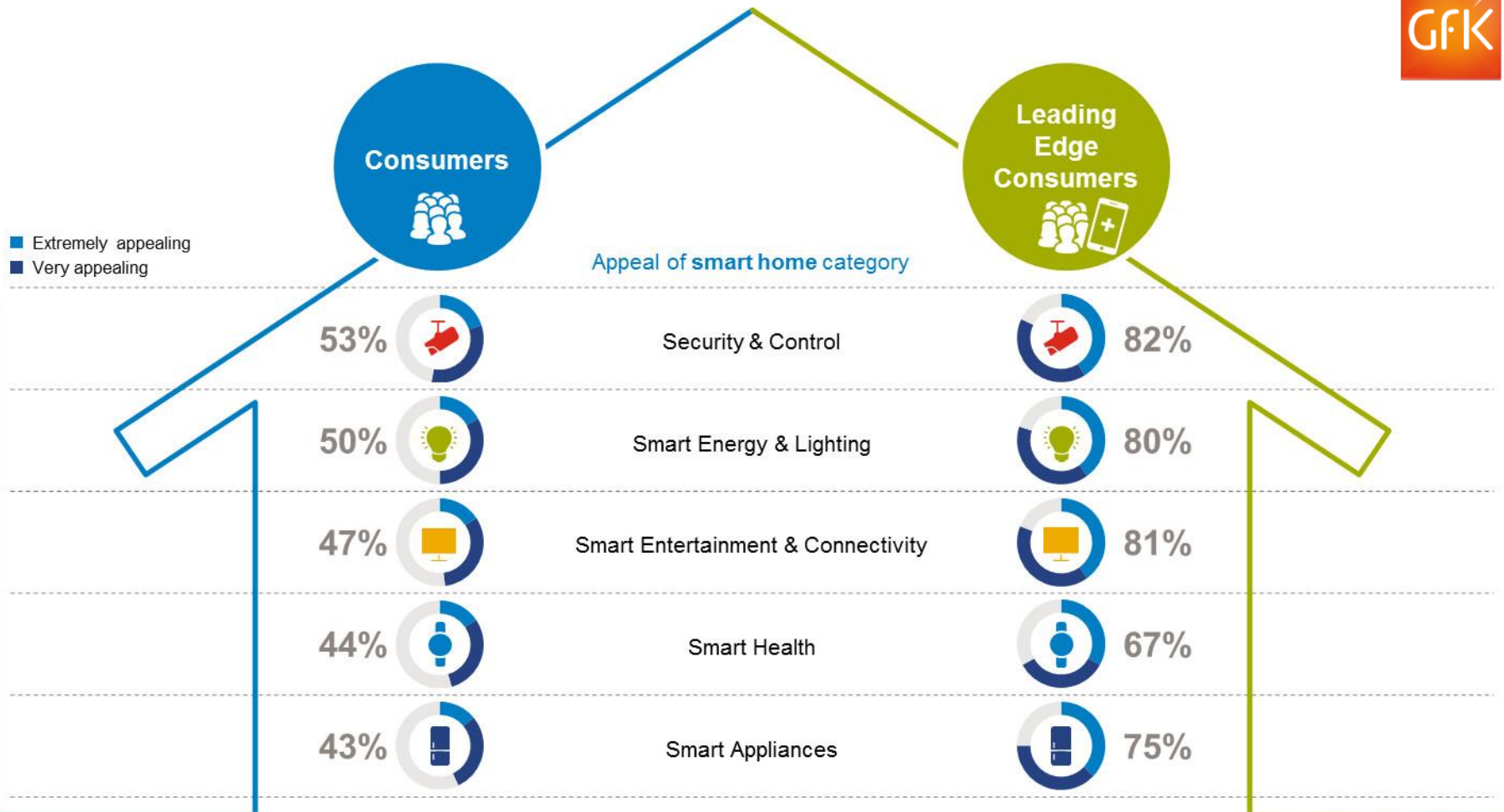


**...smart  
homes are at  
the  
beginning of  
mass  
adoption**



# The promises:

*The dwelling of the future will make you calmer, safer, richer and healthier – and they already exist*



© GfK April 12, 2016 CES presentation | Smart home: a global perspective | Insights from GfK smart home study



# Bosco Verticale on Time Magazine

July 1, 2014 news

13 / 13

The Smart Home Is Beautiful



## THE BREATHING HOME

MILAN

In traffic-heavy, mountain-ringed Milan, the toxic smog is so bad that some reports have pegged the city as the pollution capital of Europe. But that may start to change, thanks in part to the Bosco Verticale, a two-tower



Bosco Verticale was featured in Time Magazine issue 7-14 July 2014 in an article by Charlotte Alter about the smart homes of the future.



...

**the reality!**







**How can I use all  
of these things  
together?**



# Which standards are the best for my products?



THREAD  
GROUP

OPEN  
INTERCONNECT  
CONSORTIUM™

ALLSEEN  
ALLIANCE

INSTANT



LONMARK  
SCHWEIZ



Samsung  
Smart Home

works with  
nest

HOMEPLUG  
POWERLINE ALLIANCE

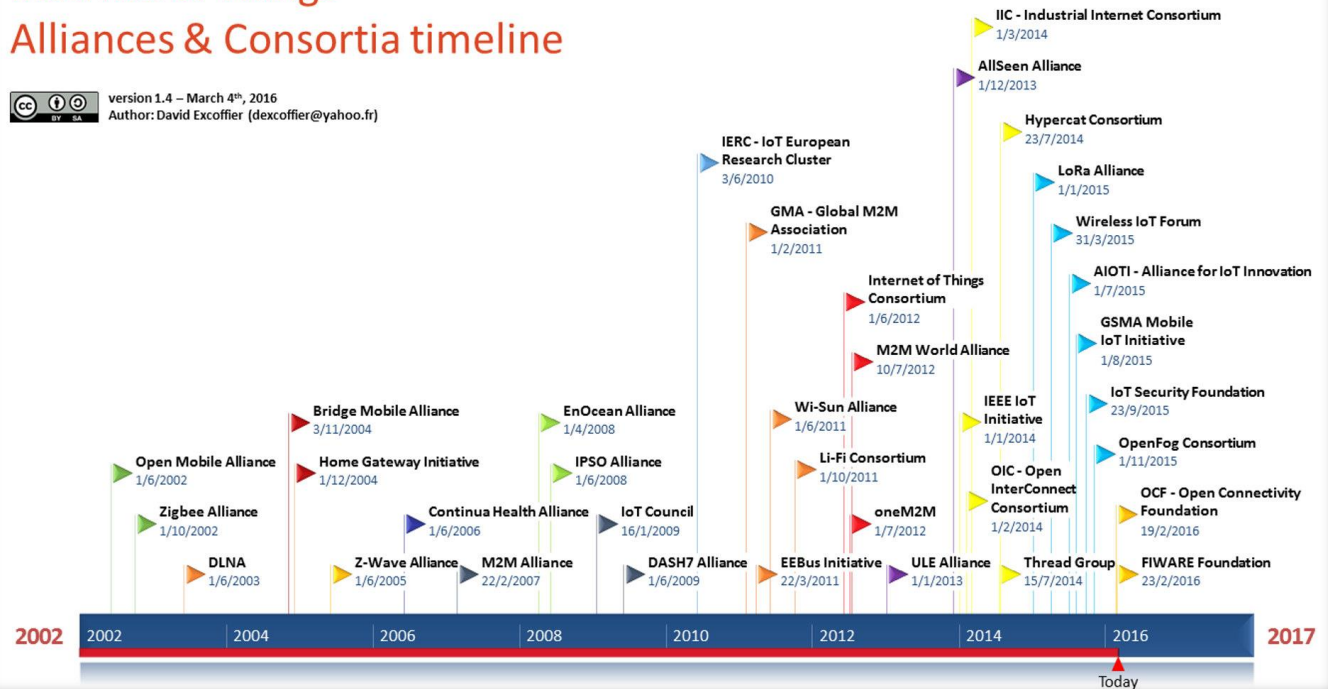
DLNA

HomeGrid  
FORUM

# Internet of Things Alliances & Consortia timeline

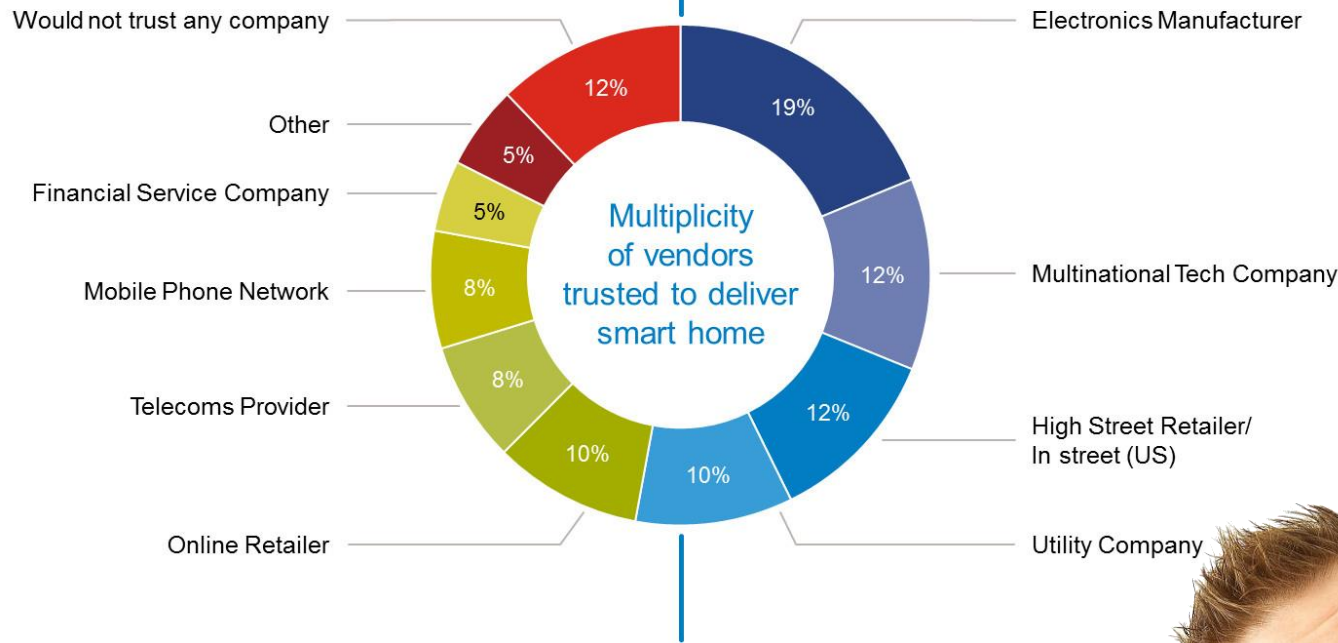


version 1.4 – March 4<sup>th</sup>, 2016  
Author: David Excoffier (dexcoffier@yahoo.fr)



# Are we stronger together?




















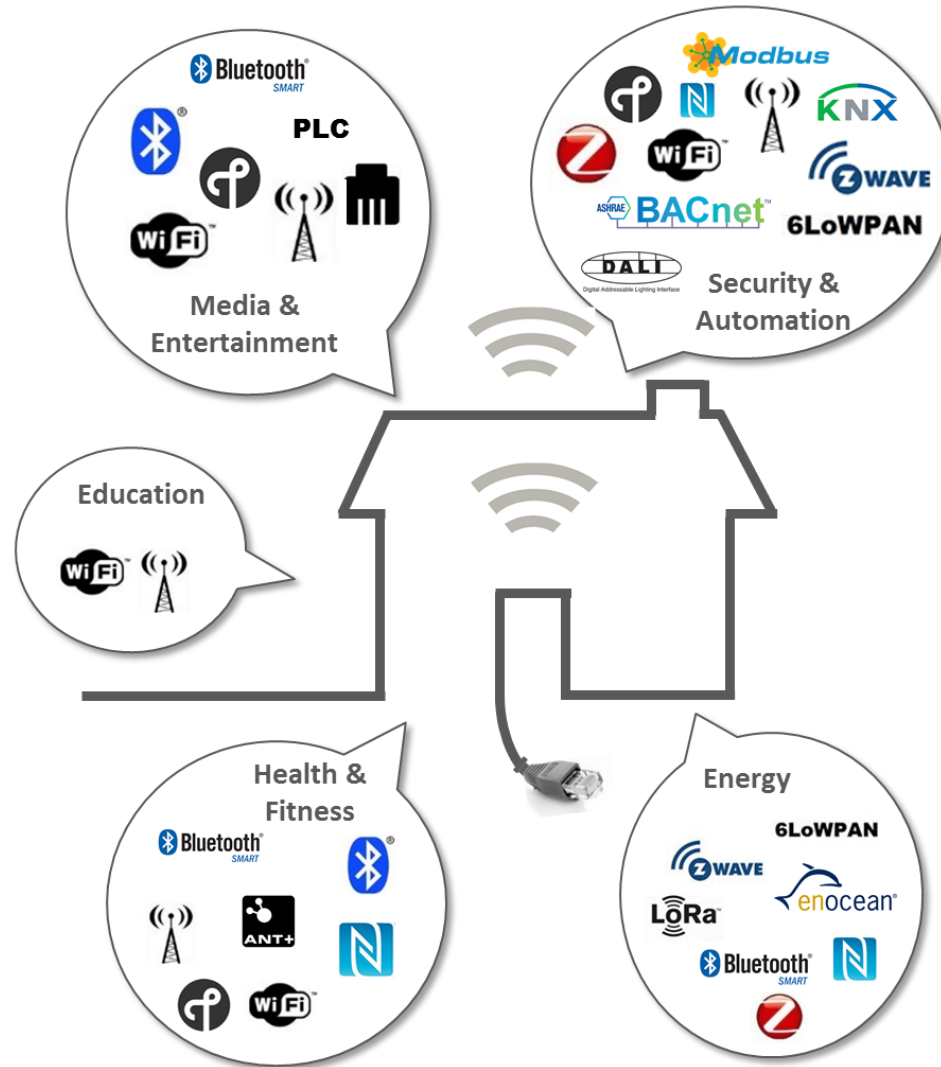
**I talk with end  
users, but I need  
help**



# Protocols : one size does not fit all

## Technologies

	Bluetooth Classic & LE
	Zigbee
	WiFi
	NFC
<b>PLC</b>	PLC
	Z-Wave
	Ethernet
	Cellular
	LoRaWAN
<b>6LoWPAN</b>	6LoWPAN
	Bacnet
	EnOcean
	KNX
	Dali
	Modbus
	Thread
	ANT+



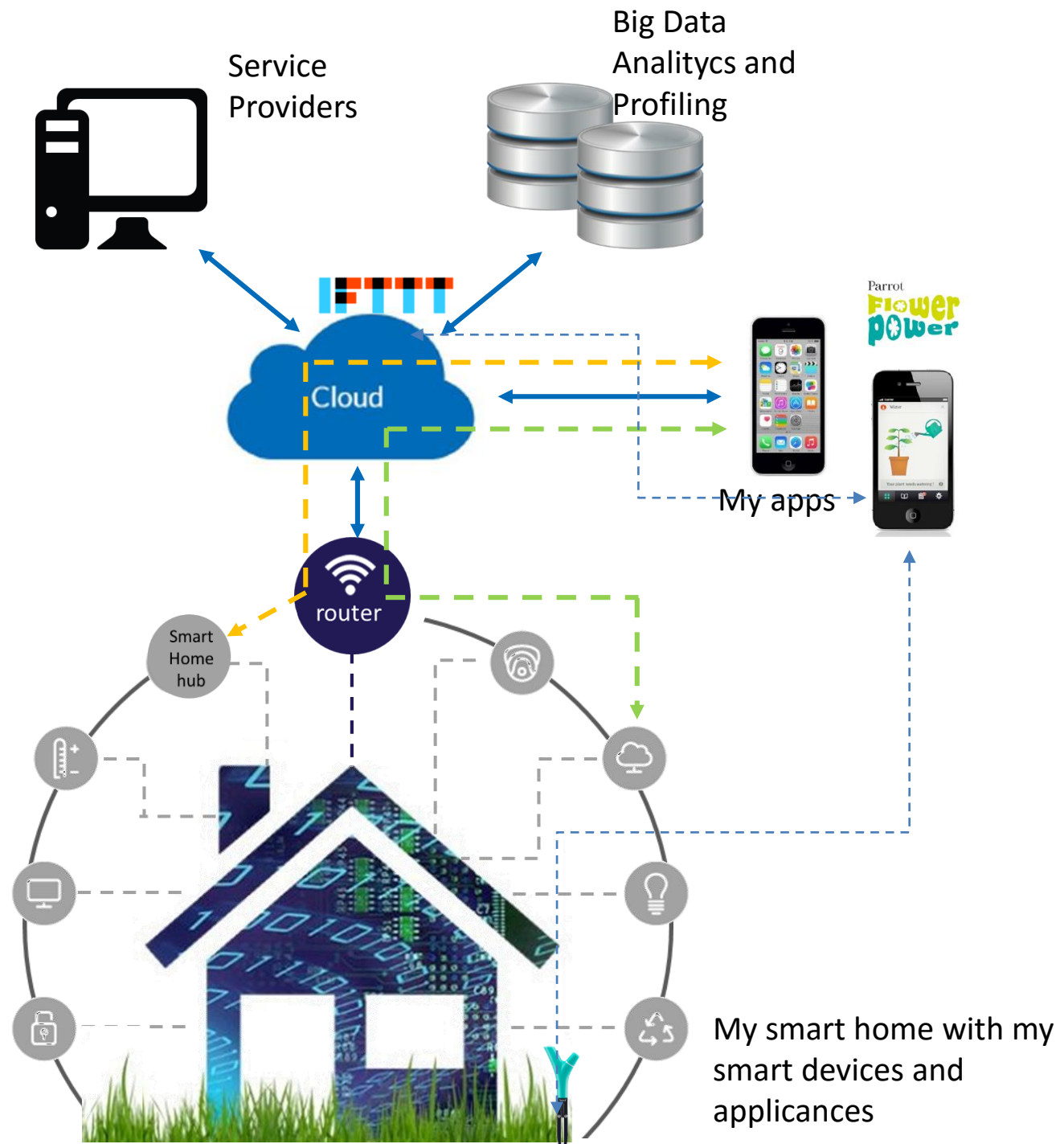
# Topology :

Gateways

Hubs

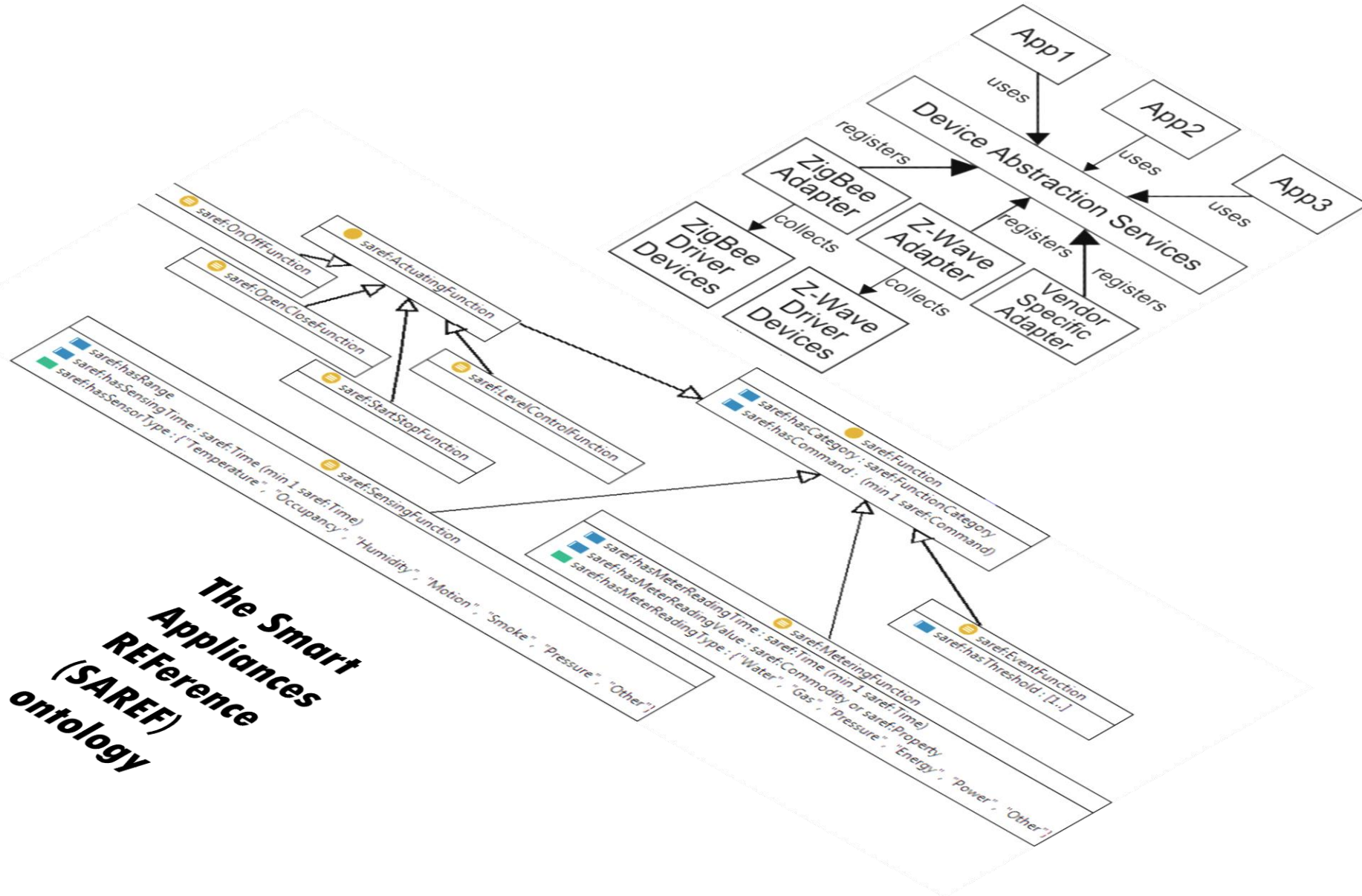
All-cloud

Direct-Pairing





# Smart Home, the final frontier...



# Last week in my mailbox

NESPRESSO.Club

Codice Cliente N°  Login ►

Siamo lieti di presentarti *Prodigio&milk*, la prima macchina da caffè Nespresso con *Aeroccino* integrato, connessa tramite Bluetooth alla nostra app.



PRODIGIO&milk

Le sue caratteristiche utili e innovative ti permetteranno di preparare deliziose ricette.

ORA ANCHE DAL TUO SMARTPHONE  
PUOI PREPARARE UN CAFFÈ PERFETTO.

connected  
≠  
value

**That's smart ???**



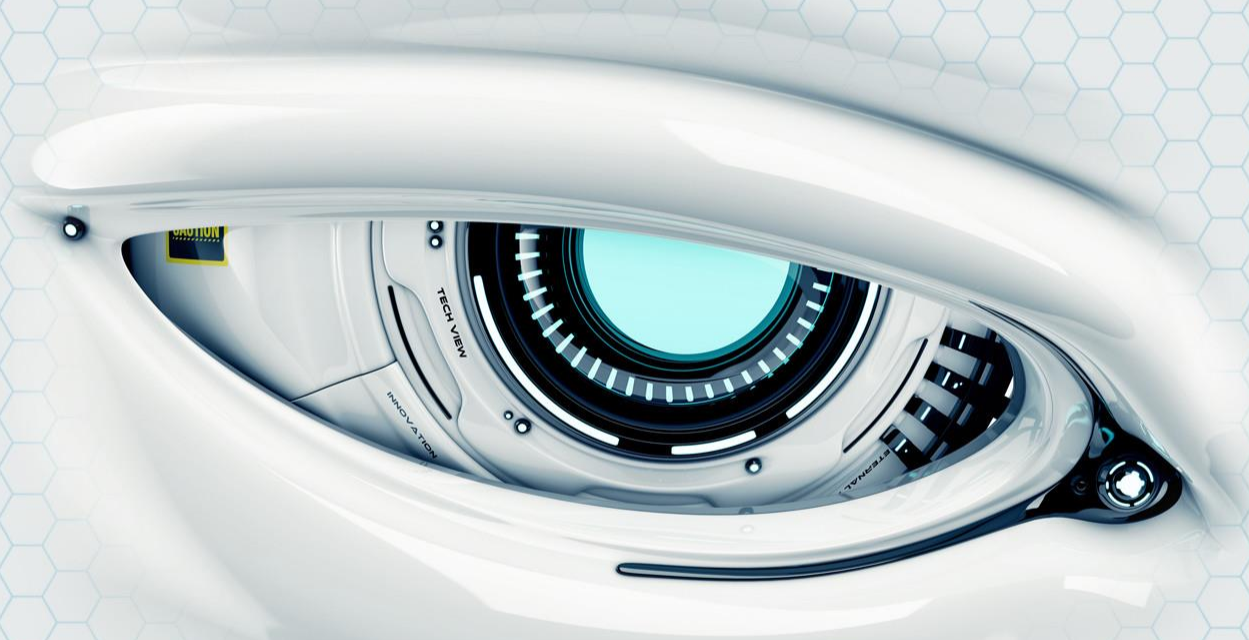
**...maybe NOT!**





# Security and ambient intelligence

**Analytics:**  
**Video**  
**Audio**  
**Spatial**



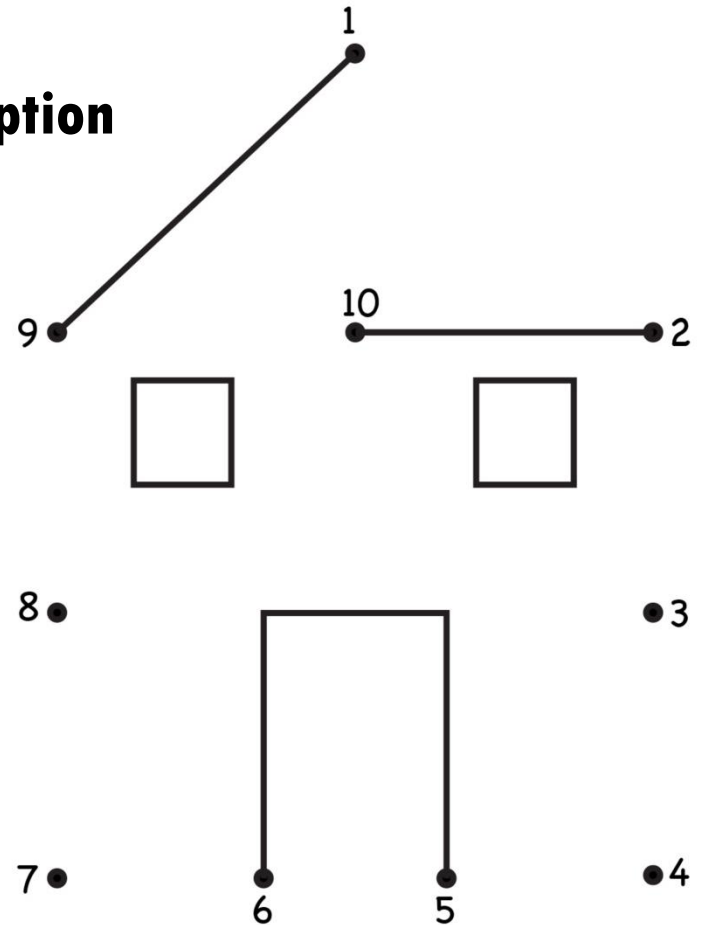
**Comfort and energy saving**

**And much more...**



# Connecting the dots : smart home business models

- **Consumer Hardware Sales**
- **Pay-as-you-go and Pay monthly subscription based services**
- **Product as a service**
- **Cost Savings Share**
- **Regulatory based models**
- **Service Bundle**
- **Alternative Models**





# Is the customer satisfied?



# Looking for disruptive innovation

**Big frameworks**

+



**Open Innovation + Startups**





# Three main barriers to the spread of smart homes





# Knowledge of products

23  
%



# Security concerns

- **Larger attack surface**
- **IoT first generation protocols have poor security**
- **Wireless accesses also give easy access to hackers**
- **Poor security management**

**24  
%**

**And...**



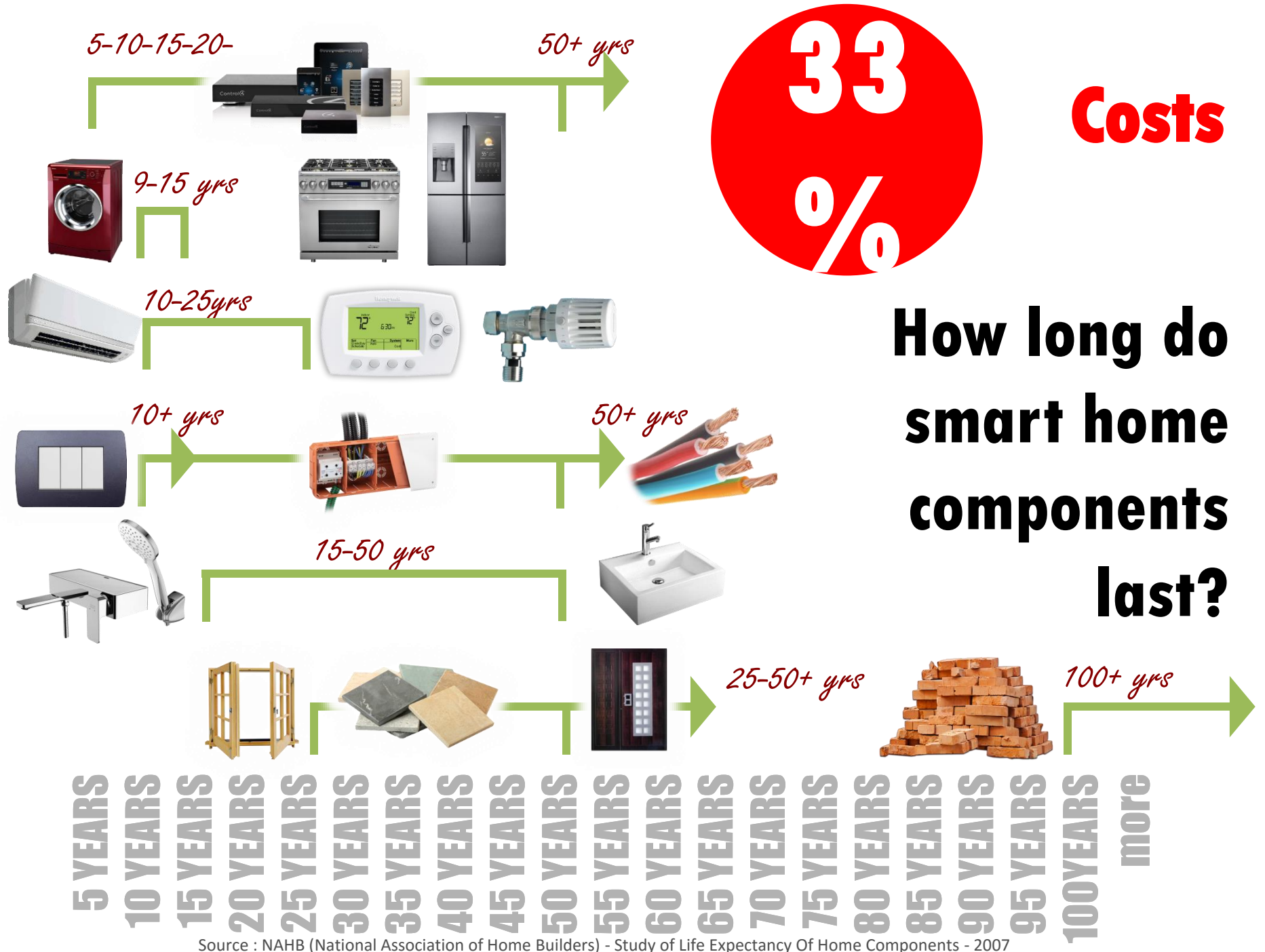
# Privacy concerns

- **Data is becoming today's currency**
- **Are you happy with what it buys?**

24  
%







**Plus a last water  
jump...**



IAAF World Championships  
**BEIJING 2015**

国际田联世界田径锦标赛

**...the digital divide!**



**It can be  
frustrating**



**Why should I  
keep using it?**





**It takes a  
certain faith to  
keep using a  
new  
technology**





# The home as the centre of social life...



**... a safe refuge  
for all**





**We are smart also in a time  
of crisis**





**In an increasingly populated and wealthier world of cities,...**





**...a smart home is not a luxury  
for the few, but a service for the  
many**





**...a smart home is not a luxury  
for the few, but a service for the  
many**





**...a smart home is not a luxury  
for the few, but a service for the  
many**







# 1930

TRIENNALE di MILANO  
IV Esposizione delle  
Arti Decorative e  
Industriali

casa elettrica





**«The machine  
will work when  
all the relevant  
people are  
convinced.»**

**Bruno Latour  
Sociologist of  
science**

# Grazie !

**CreAction**  
Team

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