
The Internet of Things?


INTERNET OF THINGS

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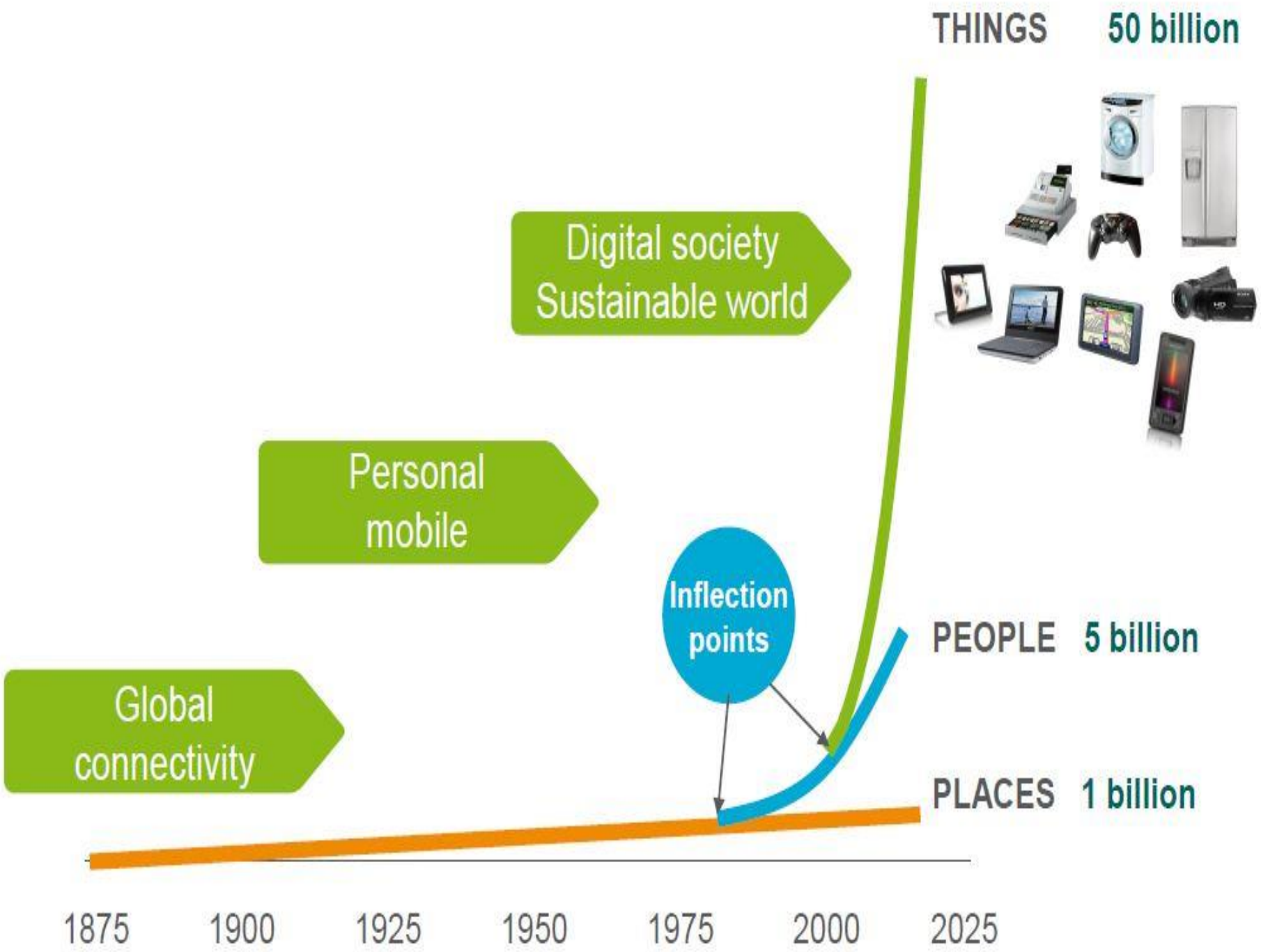
- Introduction/Overview
- The Internet of Things
- Applications of IoT
- Future of IoT

The Internet of Things

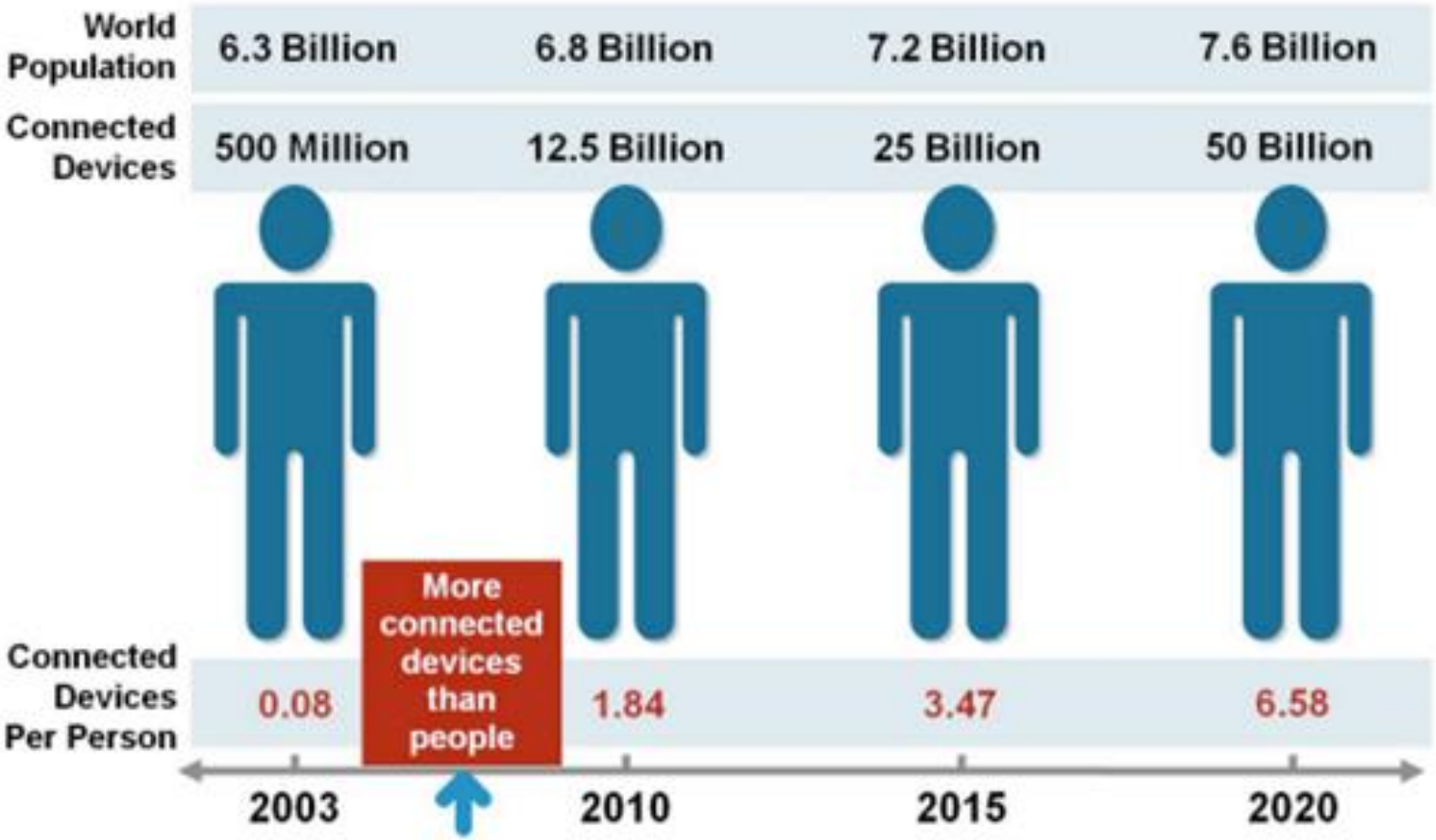
- The term Internet of Things was first used by Kevin Ashton in 1999.

- Refers to uniquely identifiable objects (things) and their **virtual representations** in an Internet-like structure

Internet of people


THINGS 50 billion
Digital society
Sustainable world
Personal
mobile
Global
connectivity
Inflection
points
PEOPLE 5 billion
PLACES 1 billion
1875
1900
1925
1950
1975
2000
2025

Internet Usage and Population Statistics

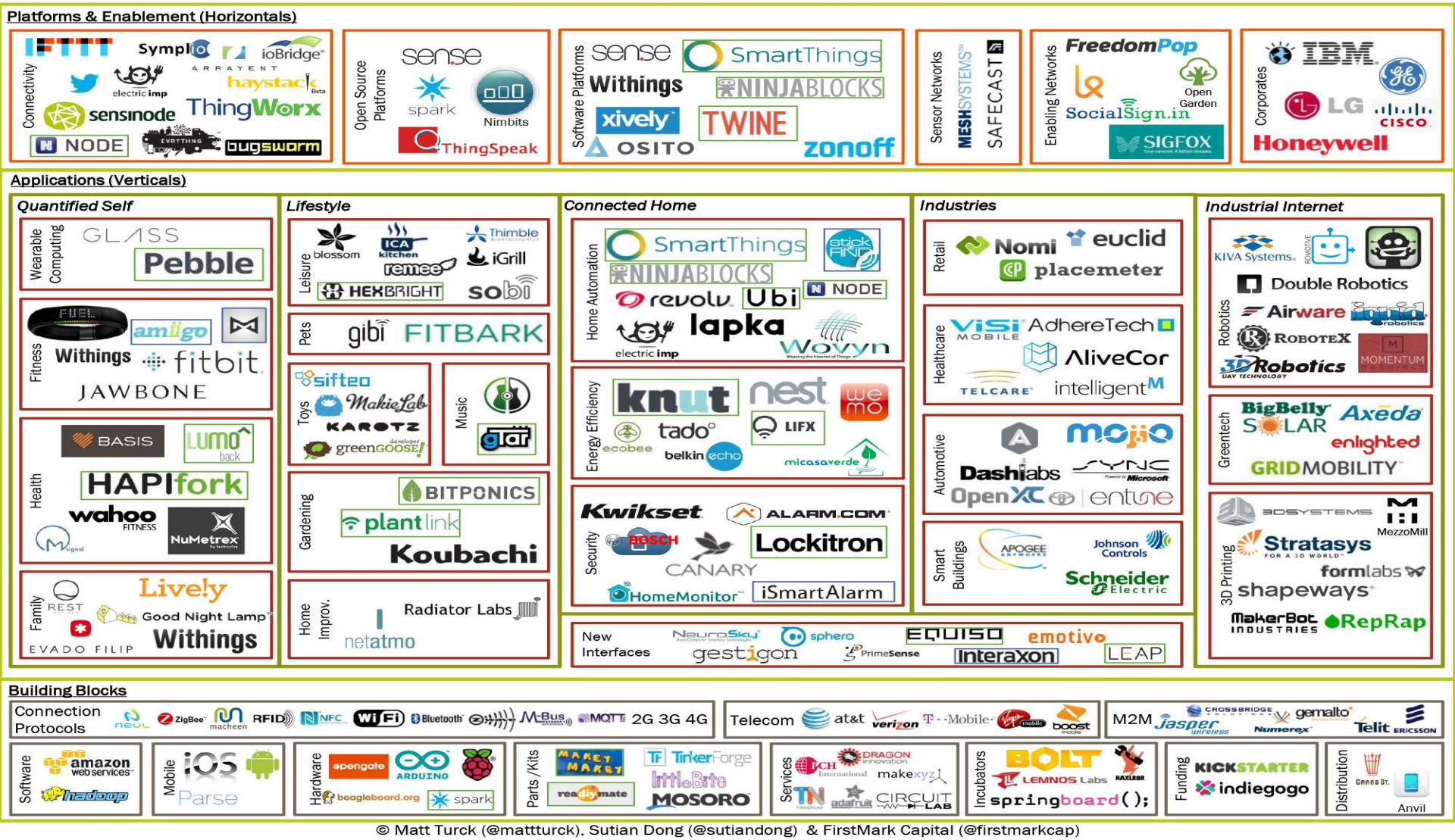


Source: Cisco IBSG, April 2011

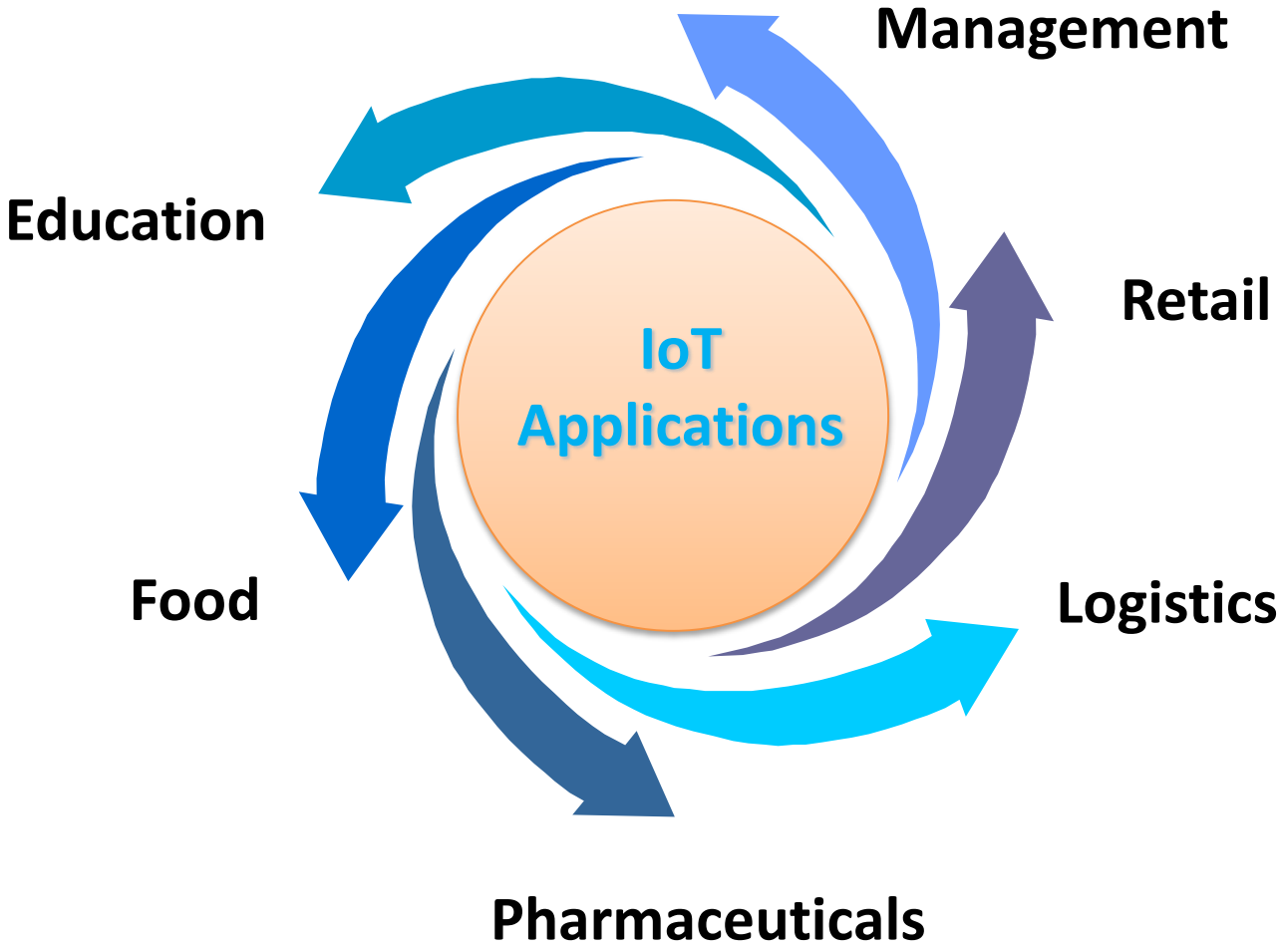
Video Demo

Internet of devices

Companies in IOT space



Applications of IoT



Consumer & Home

Smart Infrastructure

Security & Surveillance

Healthcare

Network

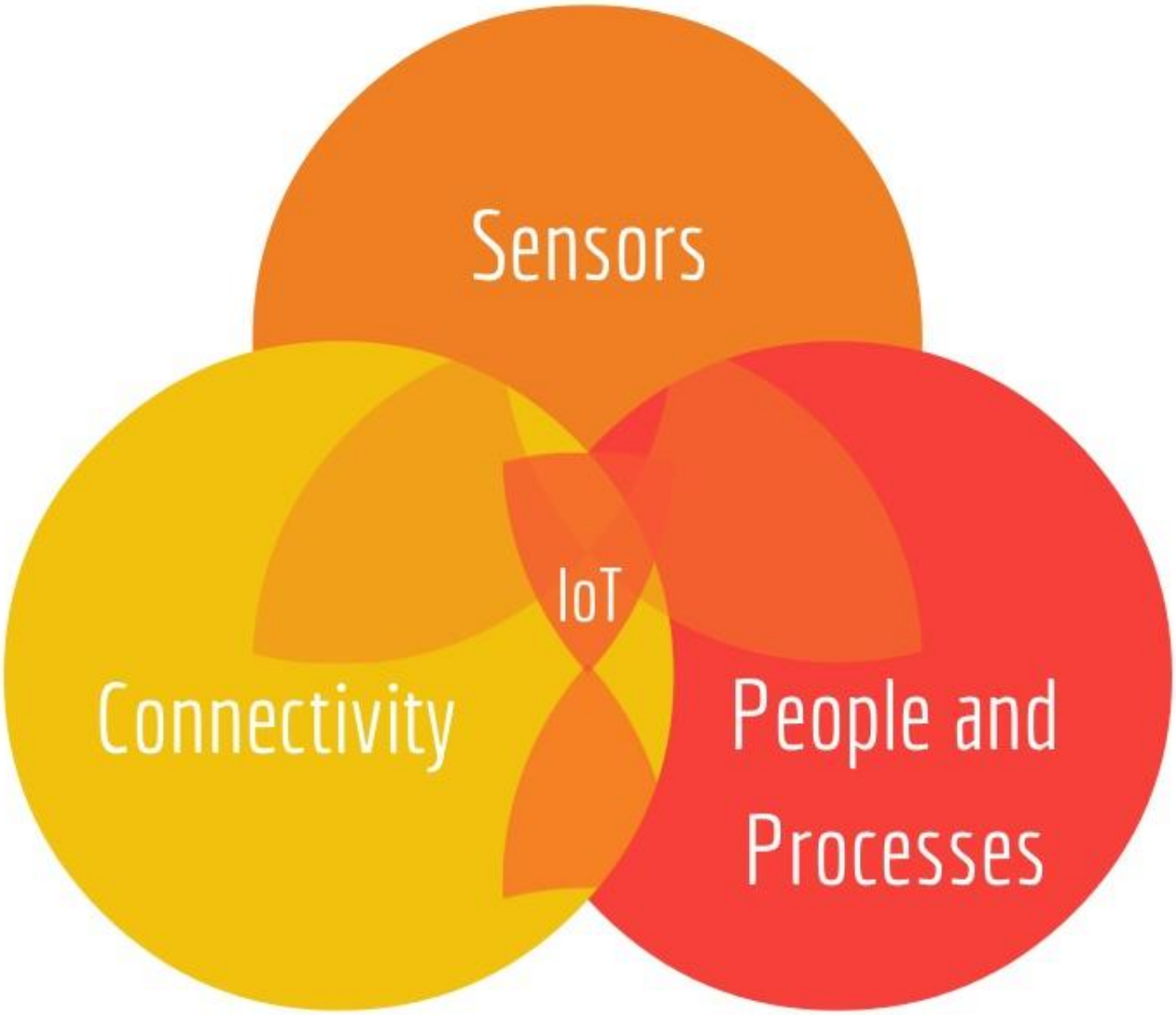
Transportation

Retail

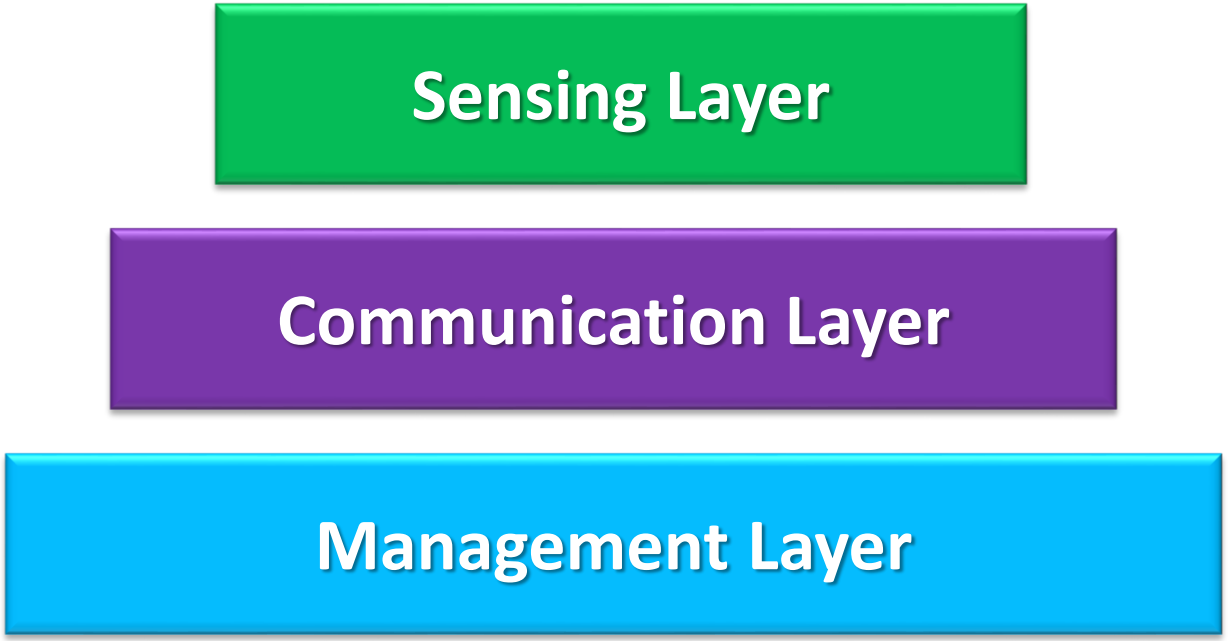
Industrial

Others

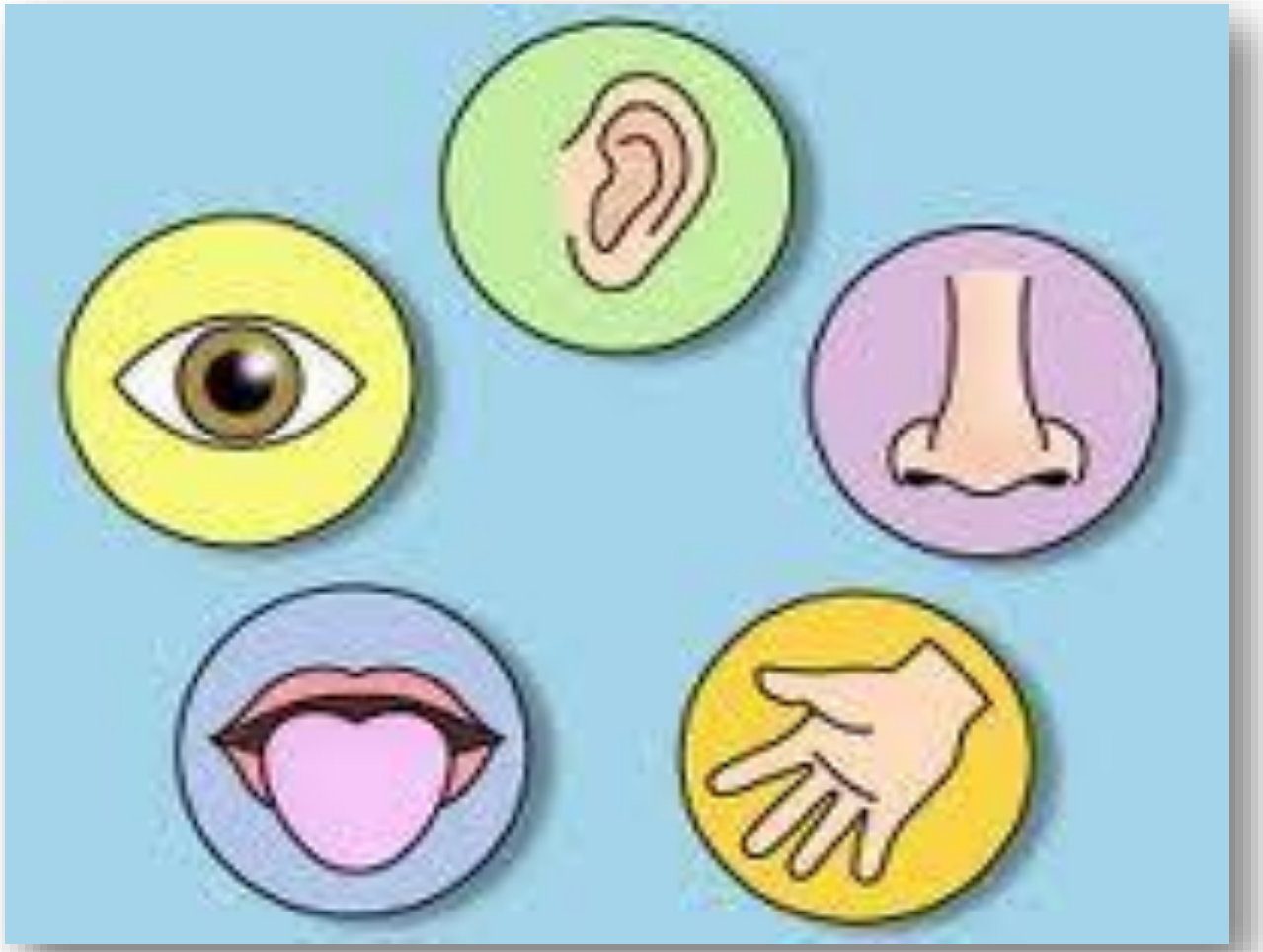
The Internet of Things is a combination of:



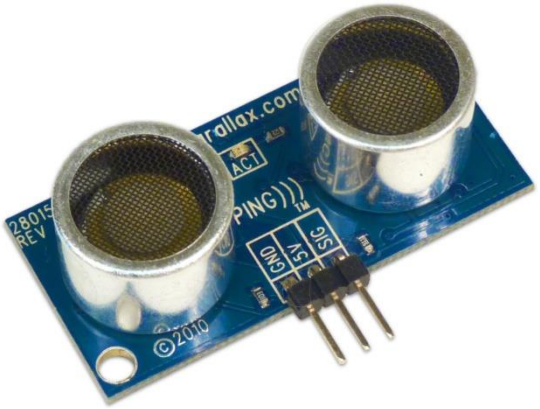
Technical Perspective



Sense

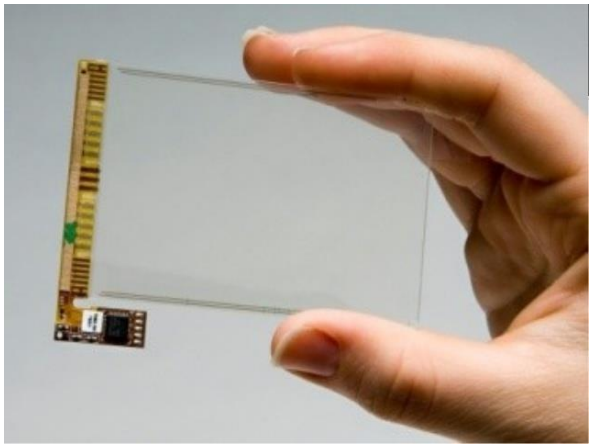


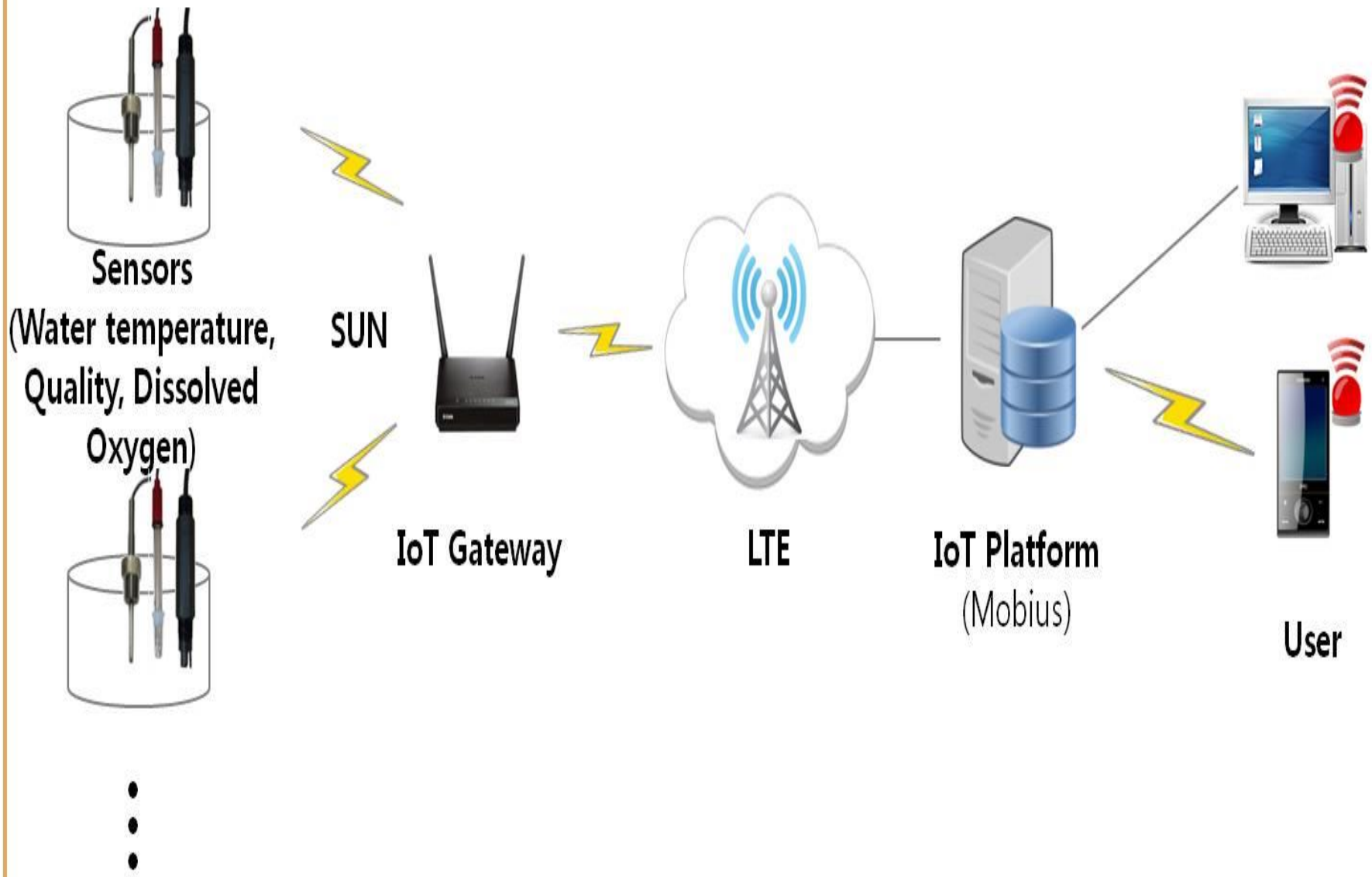
sensors


ACT
PING)))
SIG
5V
GND
©2010

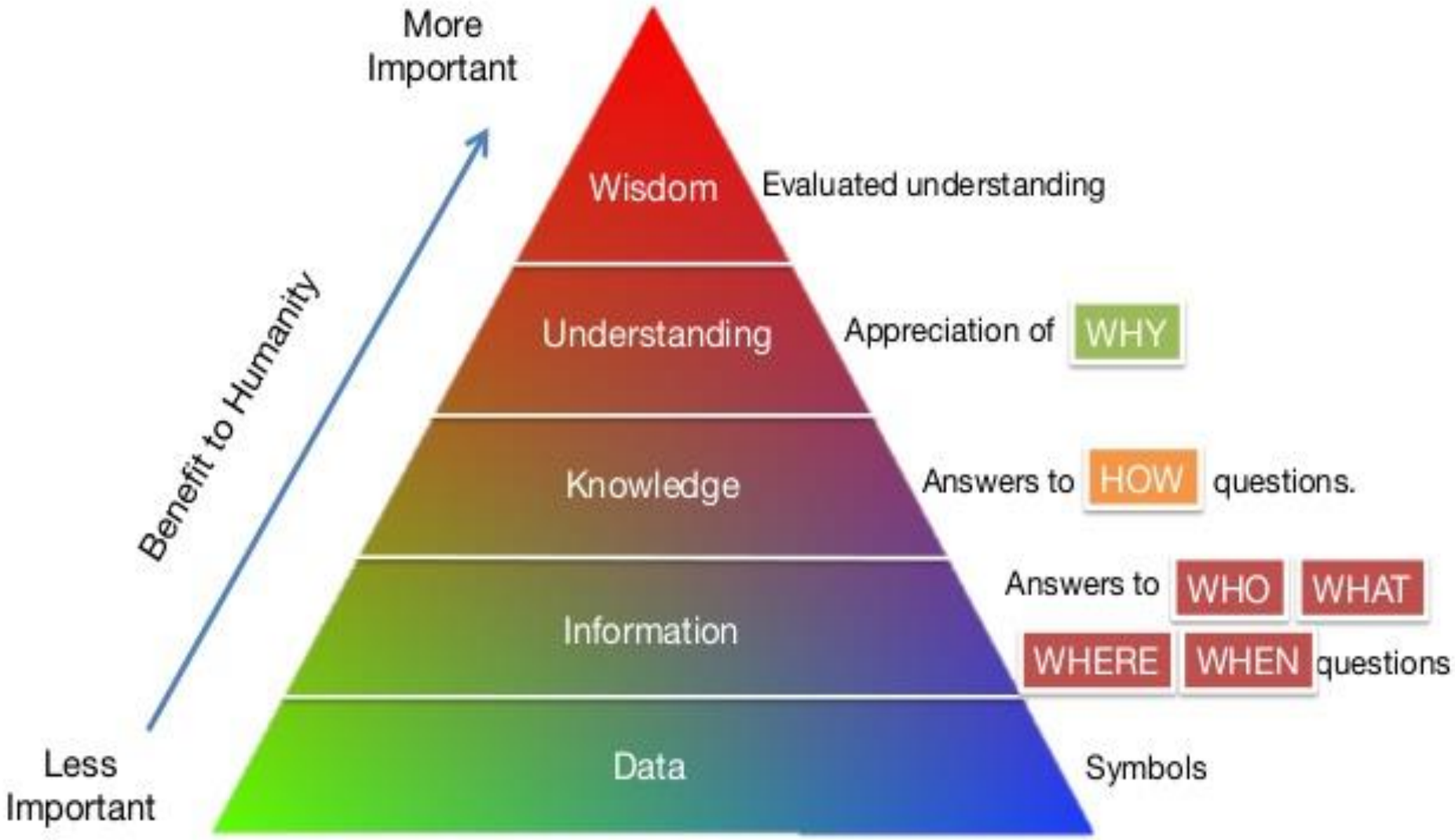

FC-28
土壤湿度传感器


1209023899
1 S
2 GND
3 VCC



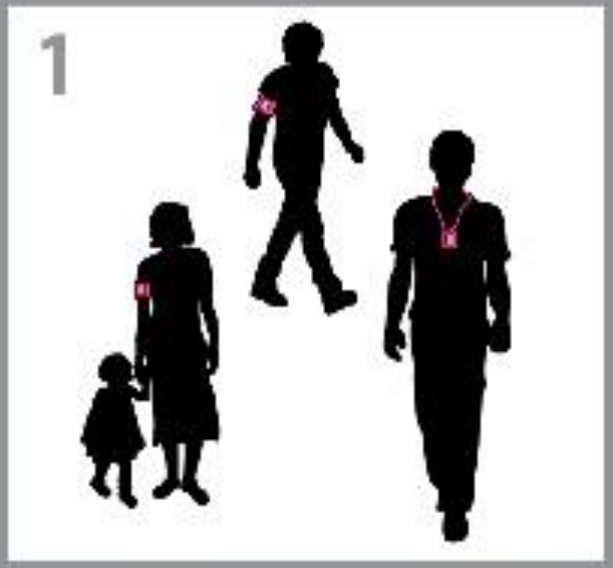

Sensors
(Water temperature, Quality, Dissolved Oxygen)
SUN
IoT Gateway
LTE
IoT Platform
(Mobius)
User

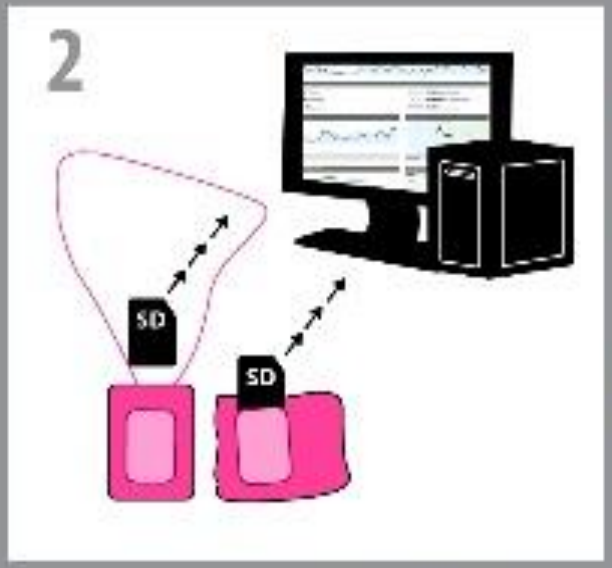
Internet of Things



The more data that is created, the better understanding and wisdom people can obtain.

Sharing and Reusing – “Free or Paid”





COLLECT SHARE LEARN

IoT Applications - Examples


IoT
for Agriculture

Start & Growth

Monitoring

Crop monitoring

Animal monitoring

Building & equipment monitoring

Miscellaneous

Research

Smart data

Applications

Actions

Mapping

Spreading

Analytics

Variable-Rate Fertility

Diagnosis of diseases

Water stress

Crop yield

Soil erosion

wild game damage

Yamahaprecisionagriculture.com/

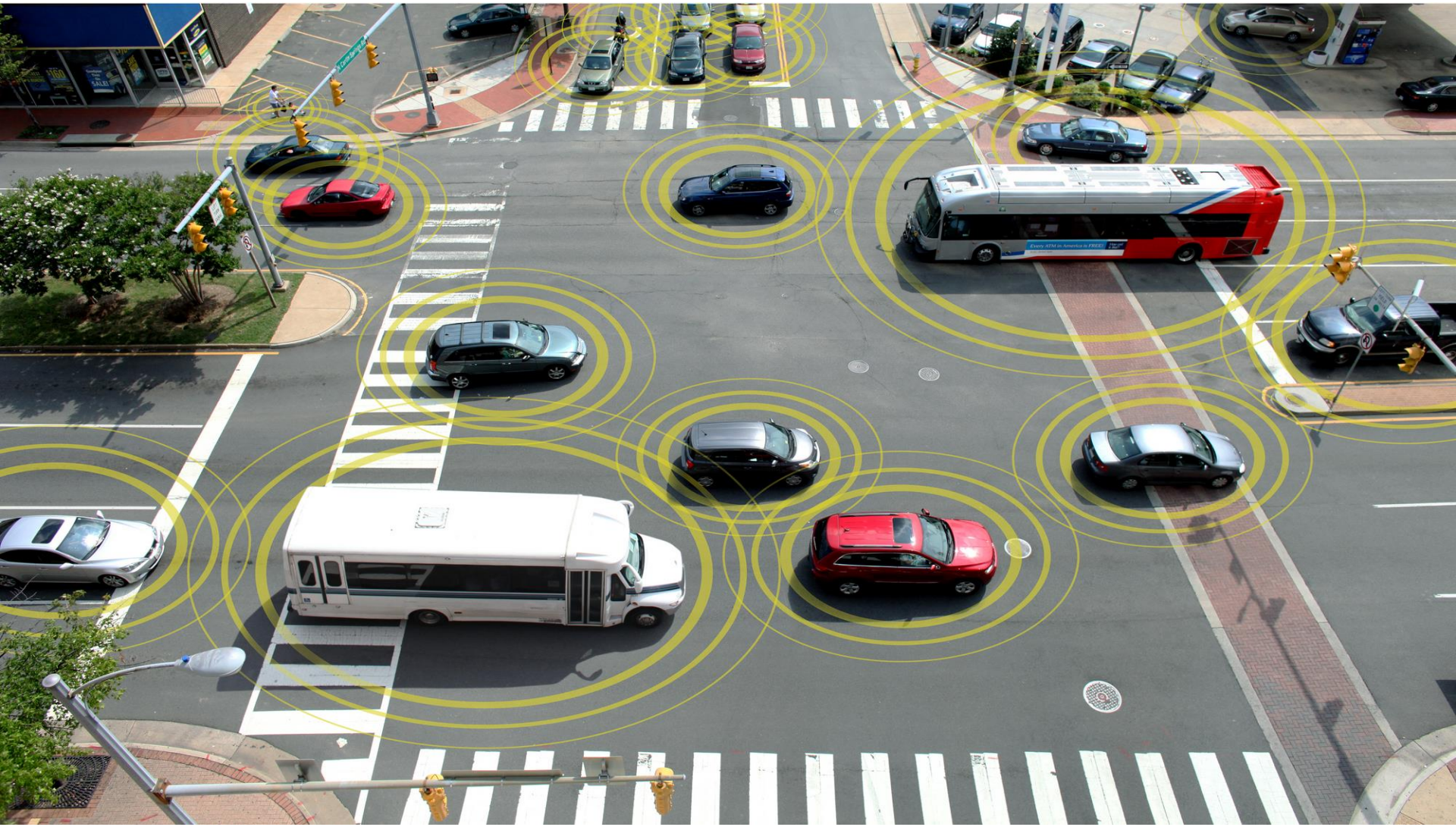
What is the Smart Home

- Network interconnected
- Internet with high speed broadband
- Highly Automated
- Light control
- Climate control
- Improve comfort
- Ensure security

Smart home products

- Automate home Appliances
- Saves Energy bills
- Easily & Affordably secure your home
- Avoid water leakages and automate water levels on Over Head tanks
- Protect your children

MONITORING AND CONTROLLING TRAFFIC



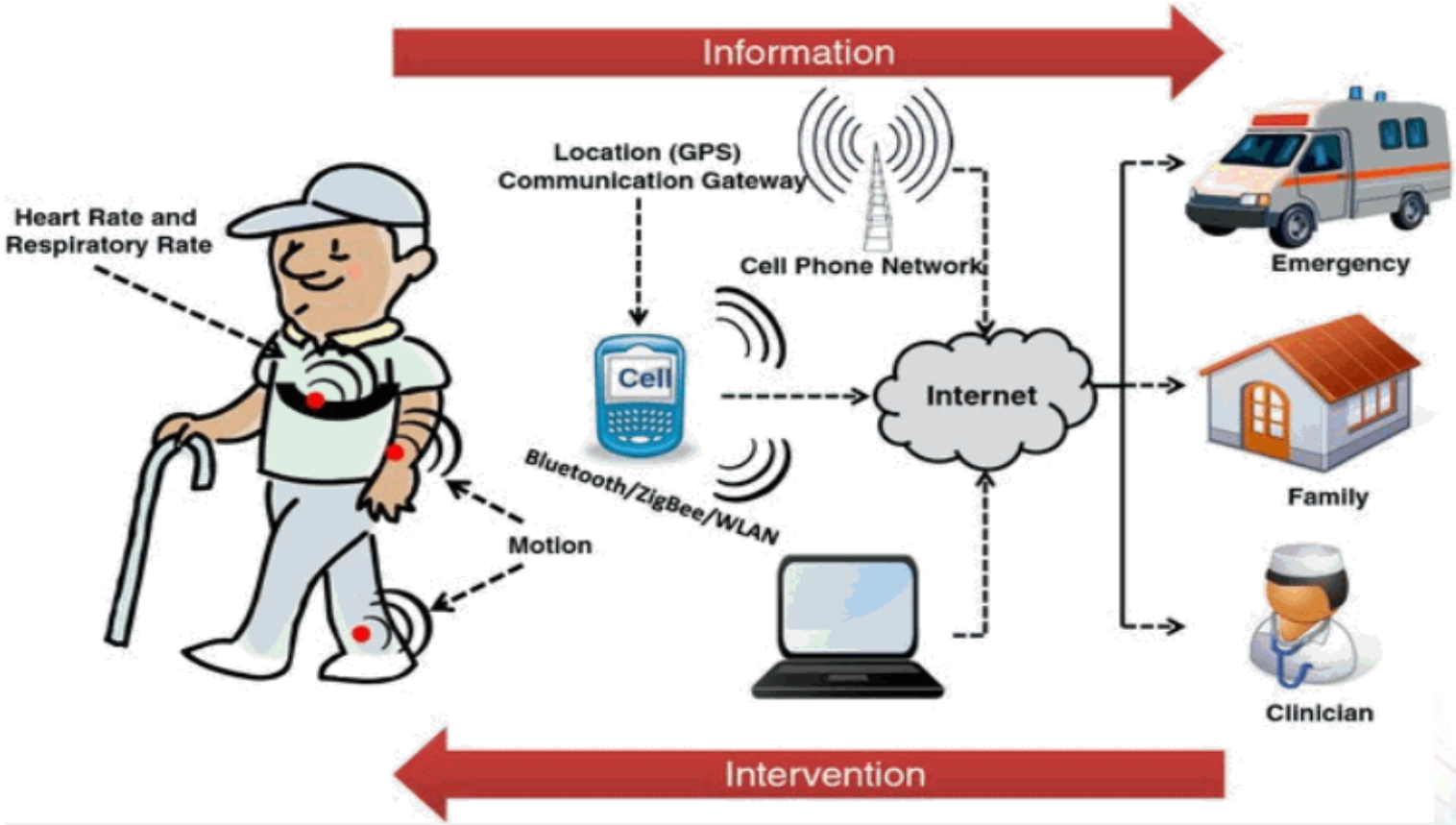
TESLA CONNECTED CAR

Game changer in Cold chain storage

Smart Building

Health monitoring

fitbit®



IoT in Remote Health Monitoring

Blood glucose level monitoring

CAREGIVING IS GOING TO TAKE A NEW TURN

ICONMOBILE group

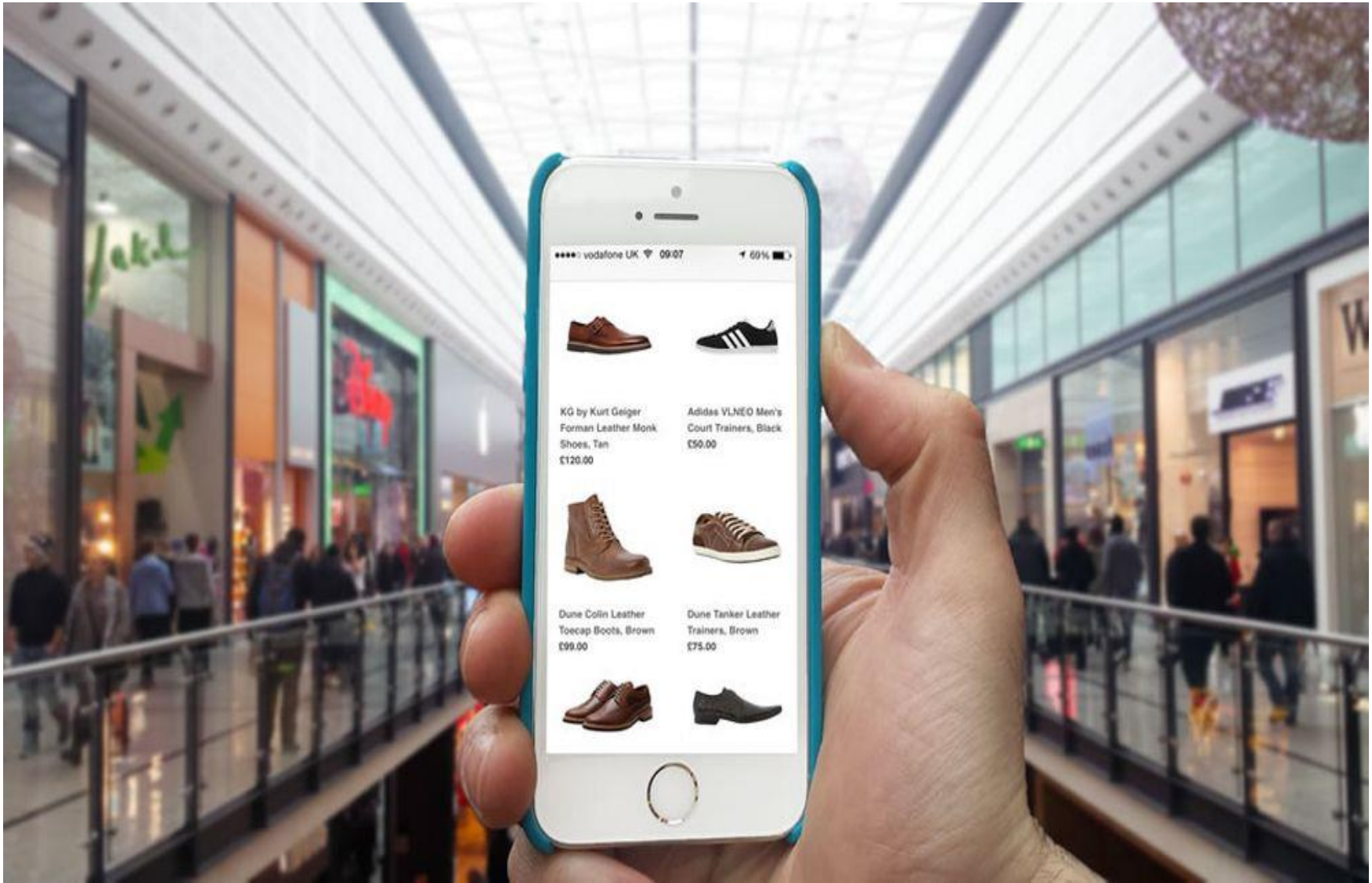
Oral-B - World's 1st connected toothbrush

Oral-B's product innovation was initiated and pushed forward by iconmobile:

- brush hardware prototyped by iconmobile
- P&G process speed accelerated - to market in 18 months
- Over 7 billion media impressions since announced Mobile World Congress 2014
- Available in app store April 2014
- Available in 50 markets and available on iOs and android in 100 markets by summer 2015.

early prototype

Better Shopping Experience



Smart Propane Tank

This super smart propane tank gauge connects to an app on your mobile device so no matter where you are, you'll always know when it's time to refuel.

Smart glucose monitor

Available on the App Store

GET IT ON Google play


TRENDS
Indoor Humidity
67%
Canary is in low alert mode

Bluetooth-Enabled Insoles

Shares navigation, directions and orientation.

Smart Garbage Cans

BigBelly alerts when it needs to be emptied so smarter collection decisions can be made.

SMART RING
智慧戒指

BT 4.0

- Sync the state of smart phone
- Remote control
- Track your phone

Finger Gesture

- Different gesture corresponding different operation
- Be customized using APP

Fashion

- Waterproof
- UV detector
- Social network

Health Monitor

- Pedometer
- Cardiac Monitor

Smartphone as Your "Sensing Assistant"

Sensors:

- Camera – "Eyes"
- Audio – "Ears"
- Accelerometer – "Speed"
- GPS – "Location"
- Gyroscope – "Movement"
- Compass – "Direction"
- Proximity – "Closeness"
- Ambient light – "Eyes"
- Others…

Crowdsourcing Via Crowdsensing

Context

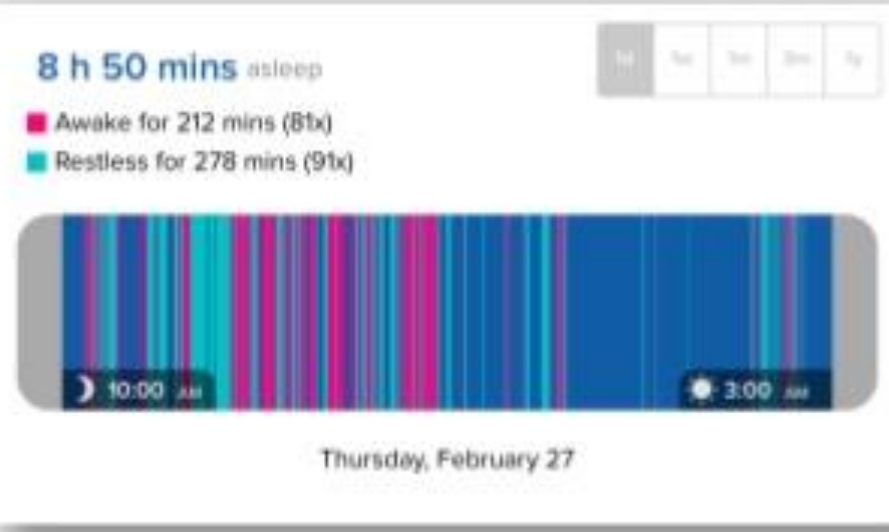
1. **Spatial** – Location / Speed Orientation
2. **Temporal** – Time / Duration
3. **Environmental** – Temperature / Light / Noise Level
4. **User Characterization** – Activity (Mobility Pattern) / Social (Friends, Interactions)
5. **Resource Availability** – Storage / Memory / Computational / Battery


HOW MANY STEPS
HAVE YOU
WALKED TODAY?

How Well Do I Sleep?

Sleep

You went to bed at	Time to fall asleep	Times awakened	You were in bed for	Actual sleep time
11:00PM	0min	20	6hrs 40min	6hrs 6min



Sleep Stats

fitbit flex
Wireless Activity + Sleep Wristband

I Want To Know More About Myself

Can Internet of Things (IOT) Help Us To Know More About Ourselves?

Benefits of Lifelogging

It will take quite some time for people to feel comfortable with 'always connected' devices that can discreetly take photos or videos.

One question is if the benefits outweigh the negatives.

Benefits of Lifelogging - Security

A huge amount of crimes are being filmed these days by passer's by with cell phones. No need for security cameras when everyone in a building has a smart phone with a camera.

Challenges and Issues

Privacy – will be a huge issue when implementing IoT

Identity - Online Fragmentation of Identity

Efficiency – speed - person loses identity and is an IP address

Decisions – do not delegate too much of our decision making and freedom of choice to things and machines


Thank you