

Internet of Things: 50 Billions Devices Jam

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July 2015

- IoT = Internet of Everything
- M2M
- Next information revolution

- 1% of physical world is connected to Internet
- Huge potential

- Potentials

- innovative business process
- operational efficiency
- new customer services

What is IoT

- Network of Physical Objects
- embedded systems with electronics, software, sensors
- enable objects to exchange data with manufacturer, operator, other devices through network infrastructure

- allow remote control
- direct integration computer + physical world
- Result: automation in all fields

Applications

- Media
- Environmental monitoring
- Infrastructure management
- Manufacturing
- Energy management
- Medical and health care systems
- Building and home automation
- Transportation

A bit of history

- The term "Internet of Things" is coined by Kevin Ashton 1999.
- Early example, 1982, Coke machine at Carnegie Mellon University was connected to internet: report its inventory and temperature

Applications (cont.)

- Media IoT + Big Data
 - = target advertisement to customized content
- Infrastructure management
 - monitoring structural condition, scheduling maintenance
- Waste management
- Safety management

- Example: German Airport Problems

Applications (cont.)

- Manufacturing
 - monitoring product demand
 - real-time manufacturing production
 - manage supply chain network

Large Scale examples

- Smart city
- Songdo, South Korea
- Santander, Spain
 - 10,000 sensors: parking search, environmental monitoring etc.
- San Francisco Bay area
- wireless sensors data network
- New York waterways

Detailed examples

- Padova Smart City Project, Italy
- wearable: Pedometer data

LUMIA SENSORCORE SAMPLE

steps

22 July 2015

6531

walking steps 6531
running steps 0

5000
2500
00 06 12 18 24

MSN Health & Fitness 10:27

today

10 Drinks You Should Never Drink
GH GOOD HOUSEKEEPING

0 / 5,000 Steps

Diet Tracker Cardio Tracker

Foods Workouts GPS Tracker

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STEPS analysis today

DAY 7 DAYS 30 DAYS

Date	Running Steps	Walking Steps
Jul 18	~5,500	~1,500
Jul 19	~1,500	~1,500
Jul 20	~7,500	~1,500
Jul 21	~4,500	~1,500
Jul 22	~6,500	~1,500
Jul 23	~1,500	~1,500
Jul 24	~1,500	~1,500

July 18 - July 24

You hit 3 goals in this time period

Steps 29,186
Calories Burned 1,063

Berlin Brandenburg International Airport

- 600 million euros project
- schedule to be opened in June 2012, now expected to be completed in 2017
- “Just months before the scheduled June 2012 opening, the terminal was a mess. Careless workers stepped on and shattered glass being installed by other companies. Heavy equipment rolled across the terminal floor, scratching expensive tiles. Tempers flared; small contractors complained they weren’t getting paid and threatened to walk off the job.”

Technology roadmap

- 50-100 Trillion objects,
- each person carries 1000-5000 trackable objects
- computer manage and inventory objects and people
- transform daily life
- bottom up, convergence of data from IoT into applications, web-of-things

Impact

- Civic engagement
 - Privacy, autonomy and control
 - technology <> just tools
 - technology = active agent
-
- IoT = Human augmentation (Tim O Reilly)
 - data-driven decision making

Impact (cont.)

- Security
 - cyber attack in Physical world
 - spy on people in their own homes
- Increase in electronics waster 10x

Trending

- Cisco IoT Grand Challenge
- IoT World Forum in Dubai

References

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