New Opportunities and Risks in a Hyper Connected World

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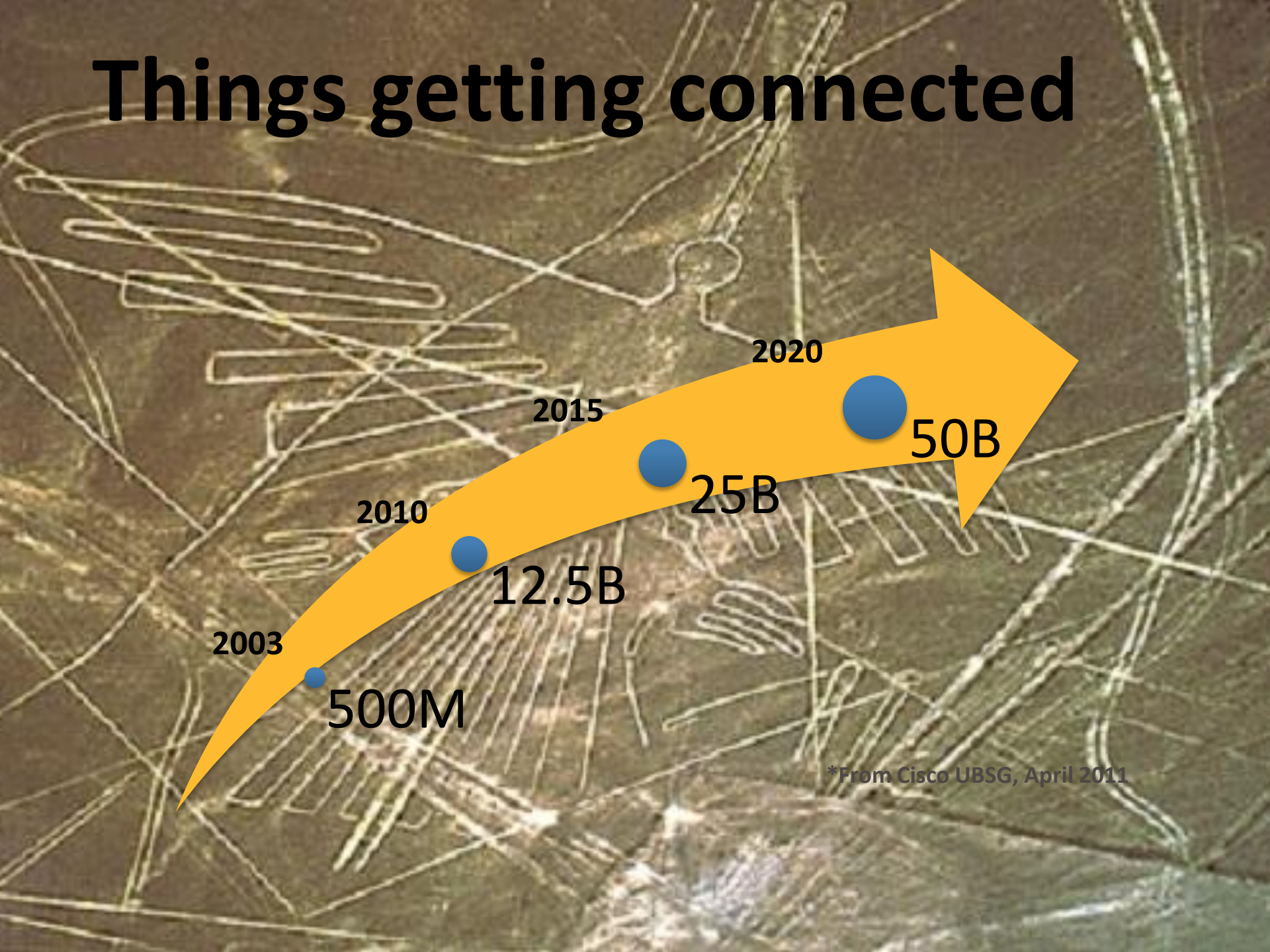
Digitalization

Symantec.

Things getting connected

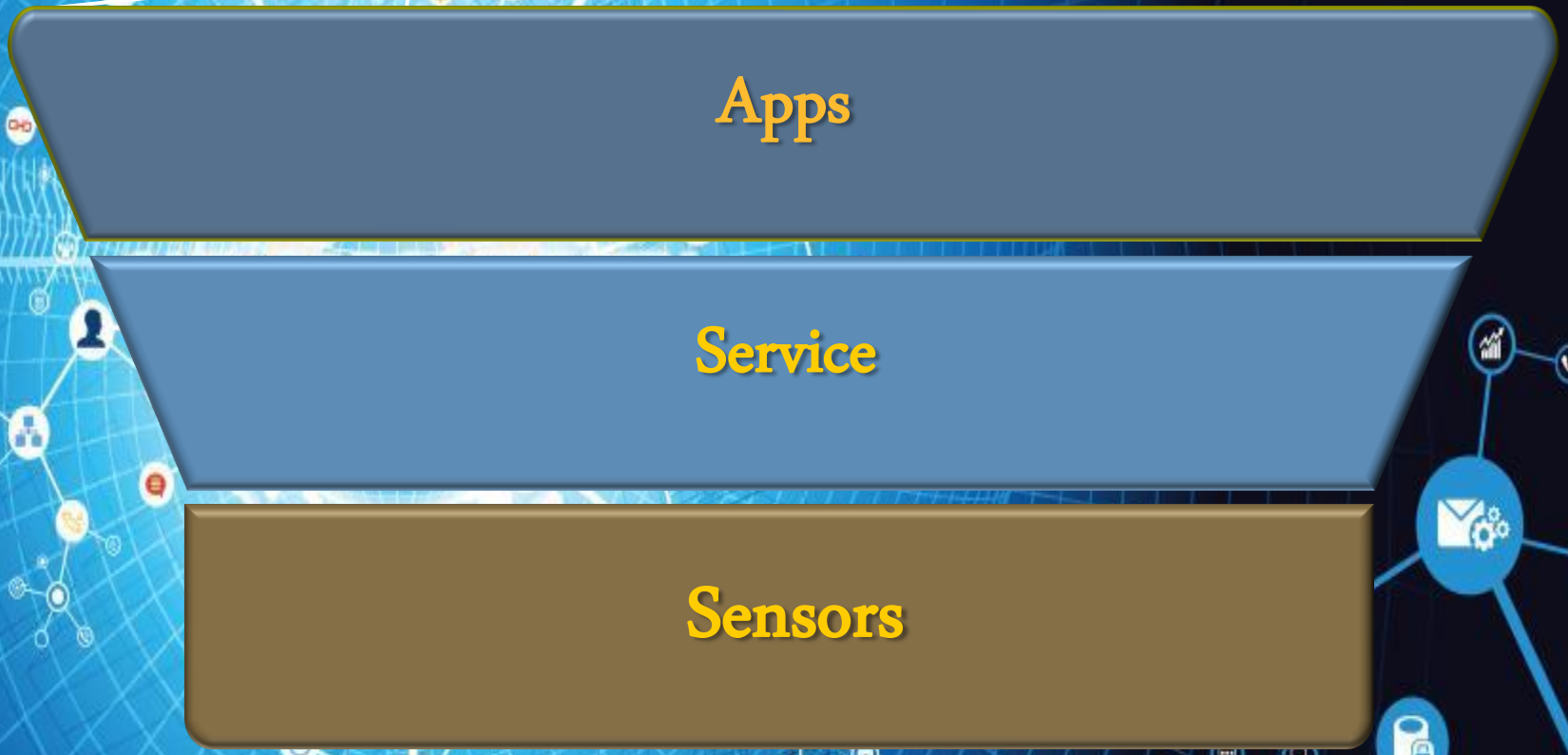


*From Cisco UBSG, April 2011

Symantec.

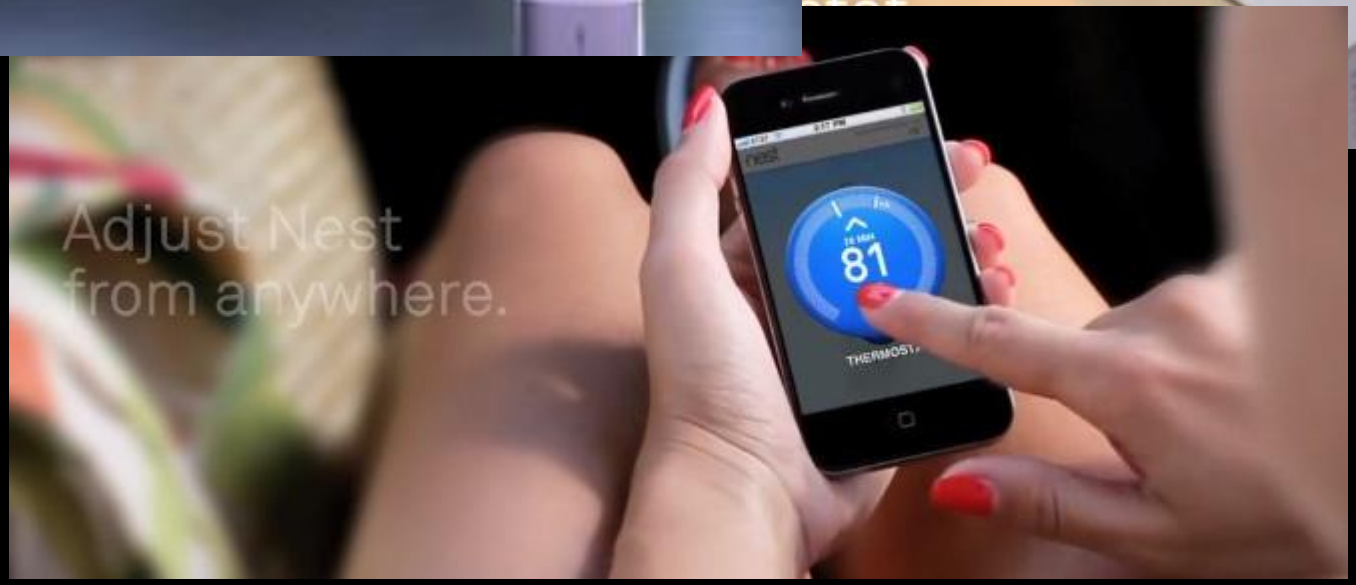

Risks
Opportunity

IoT Ecosystem

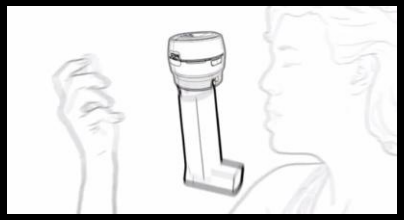



Introducing
amazondash


nest
70


Adjust Nest
from anywhere.
81

Propeller Health

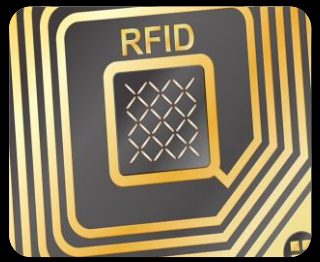


Smart Home
Access Everywhere

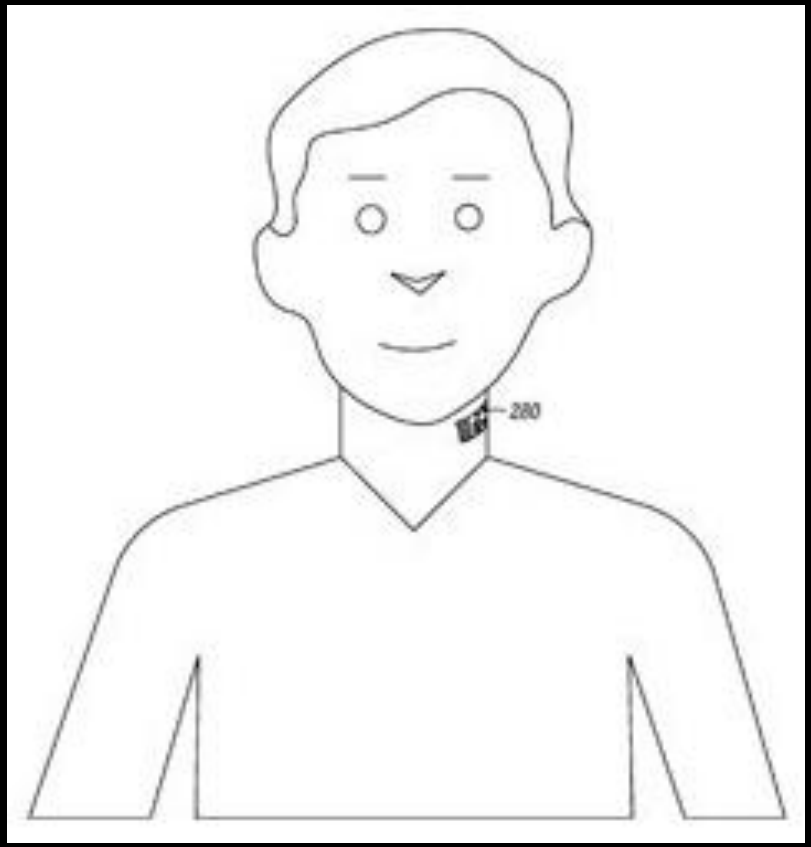
Huggies Tweets


16.2 MEGA PIXELS
12:03
Thu, 3 May


28:56
4.08mi
PACE
7:05
min/mi
twelve
thirty
five
TUE 27


RFID


Android Mini PC


280

IoT Vertical Market Trends

Auto

- Telematics
- In-vehicle entertainment
- Navigation
- Safety services
- Concierge services
- Remote diagnostics
- Personalized insurance

Industrials

- Supply chain management
- Geo-fencing
- Machine diagnostics
- Inventory control
- Industrial automation control
- Equipment monitoring

Retail & Finance

- Smart payments, cards
- Point of sale terminals
- ATM
- Vending machine monitoring
- Digital signage and electronic billboards

Healthcare

- Home healthcare and hospital patient monitoring
- Remote telemedicine & physician consultation
- Body sensor monitoring

Consumer

- Smart home appliances
- Connected home
- Video feed monitoring
- Parental Controls

IoT (Internet of Things)

Components

- Microprocessors
- Network Processors
- Microprocessors
- Microprocessors
- Disk Drives
- Network Processors
- Network Processors

Devices

- HVAC
- Transport
- Fire & Safety
- Lighting
- Security
- Access, etc
- Turbines
- Windmills
- Batteries
- Generators
- Motors, Drills
- Fuel Cells
- Cameras
- Power System
- Dishwashers
- TVs
- Washer/Dryers
- Game Consoles
- Alarms
- PDAs
- Implants, Surgical Equipment
- Pumps, Monitors
- Telemedicine
- ....
- Pumps, Valves, Vats, Conveyors, Pipelines
- Meters, Drives, Converting, Fabrication
- Assembly/Packaging, Vessels
- ....
- Automobiles
- Traffic Lights
- Planes
- Ships
- Tolls, etc.
- GPS
- Signs, etc.
- POS Terminals
- Tags
- Cash Registers
- Vending Machines
- Servers
- Storage
- PC, Routers
- Switches
- Tanks, Fighter Jets
- Battlefield Comms
- Homeland Security

Locations

- Office, Education, Retail, Hospitality, Airports, Stadiums
- Process, Clean Room, Campus
- Households
- Power Gen, Trans & Dist, Low Voltage, Power Quality, Energy Mgmt
- Solar Wind, Co-generation, Electrochemical
- Rigs, Derricks, Well Heads, Pumps, Pipelines
- Wiring, Network Access, Energy Mgmt
- Security/Alarms, Fire Safety, Environ Safety, Elderly, Children, Power Protection
- HVAC/Climate, Lighting, Appliance, Entertainment
- Hospital, ER, Mobile POC, Clinic, Labs, Doctor Office
- Implants, Home Monitoring Systems
- Drug Discovery, Diagnostics Labs
- Mining, Irrigation, Agricultural, Woodland
- Petro-Chem, Hydro Carbons, Food/Bev
- Metals, Paper, Rubber/Plastic, Metalworking, Assembly Test
- Pipelines, Material Handling
- Tolls, Traffic Mgmt, Navigation
- Consumer, Commercial, Construction
- Air, Rail, Marine
- Fuel Stations, Gaming, Cinemas, etc.
- Hotels, Restaurants, Bars etc.
- Supermarkets, Shopping Centers, etc.
- Services, E-Commerce, Data-Centers, Mobile Carriers, Fixed Carriers, ISPs
- IT/Data Center, Office, Private Nets
- Radar/Satellite, Military Security
- Weapons, Vehicles, Ships, Aircraft, Gear
- Human, Animal, Postal, Food Health, Packaging
- Equipment & Personnel Police, Fire, Regulatory

Application Groups

- Commercial/ Institutional
- Industrial
- Home Automation
- Supply/Demand
- Alternative
- Oil/Gas
- Infrastructure
- Awareness & Safety
- Convenience & Entertainment
- Care
- In Home
- Research
- Resource Automation
- Fluid Processes
- Converting /Discrete
- Distribution
- Trans Systems
- Vehicles
- Non-Vehicular
- Specialty
- Hospitality
- Stores
- Public
- Enterprise
- Surveillance
- Equipment
- Tracking
- Emergency

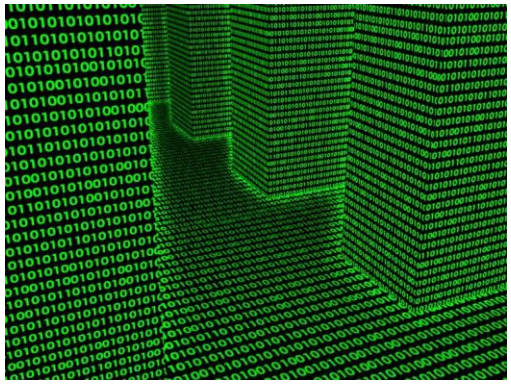
Service Sectors

- BUILDINGS
- ENERGY
- CONSUMER & HOME
- HEALTHCARE & LIFE SCIENCE
- INDUSTRIAL
- TRANSPORTATION
- RETAIL
- IT & NETWORKS
- SECURITY/PUBLIC SAFETY

Trends Related to the Internet of Things

IPv6, 100 addresses for every atom on face of the earth

There are millions of **sensors**, of which are smaller, cheaper, faster… and there are billions of them

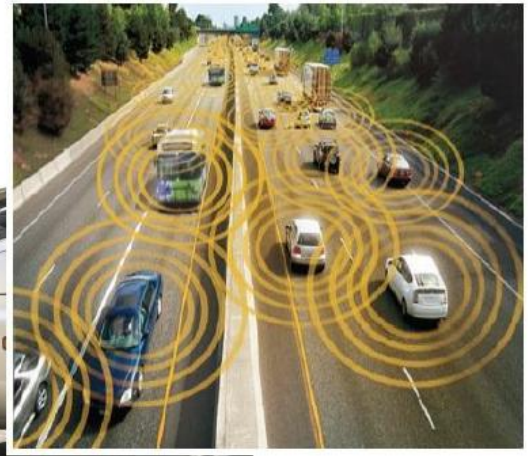


Big data and analytics extracting insights from collected information

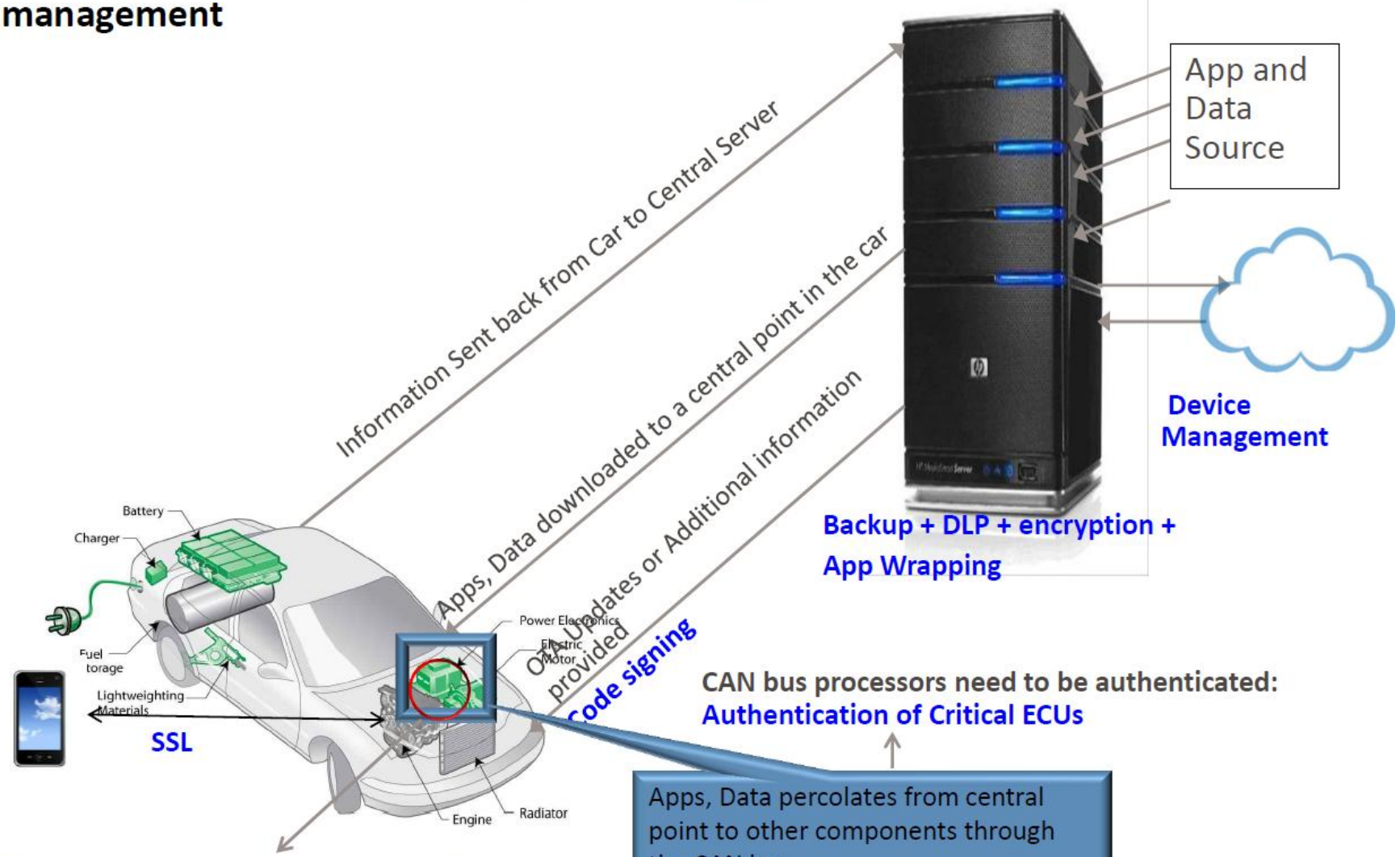
Security and **management** of all 'things' is essential to ensuring the data collected can be trusted

RIoT

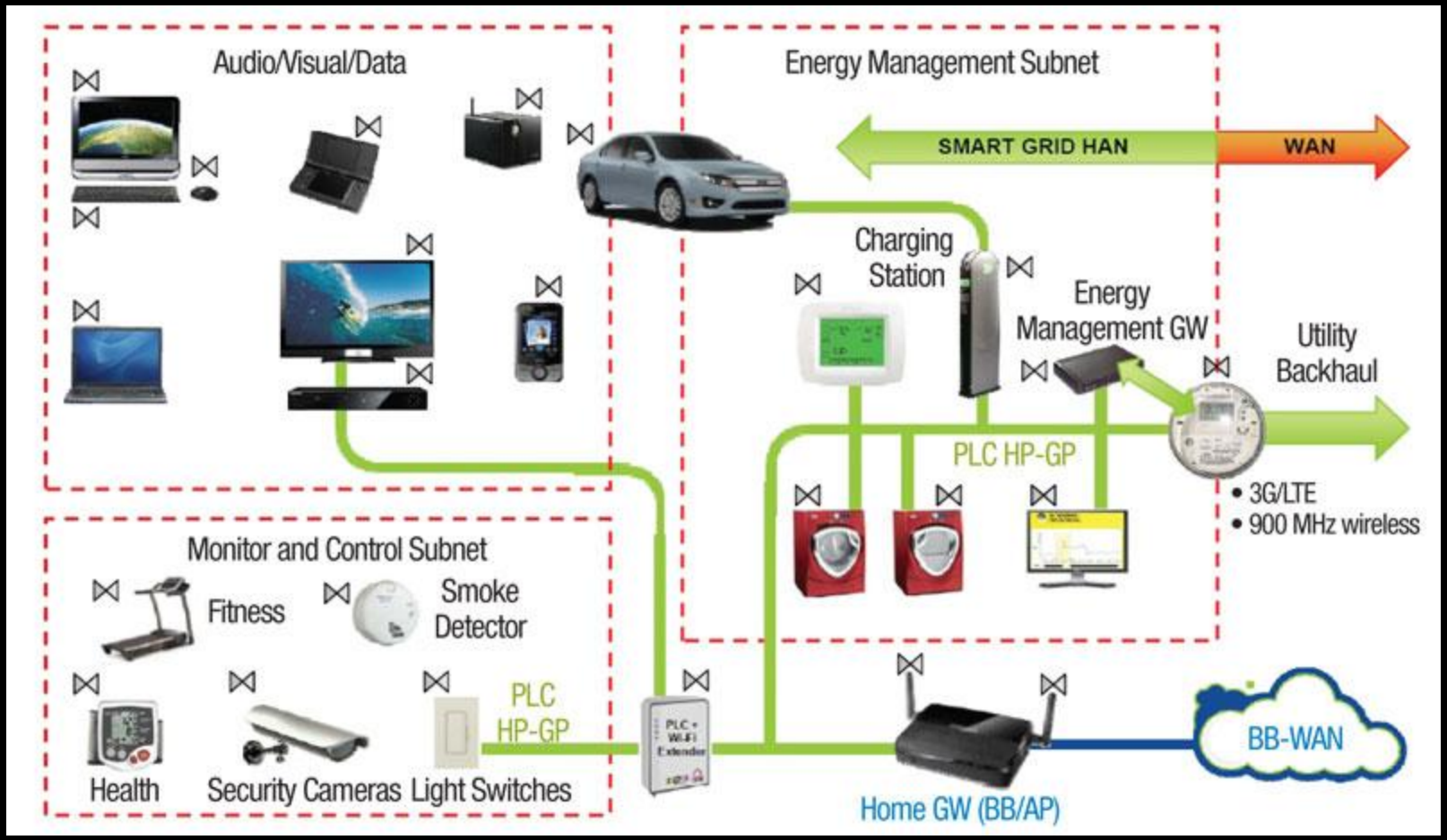
Complex system needs comprehensive security



Solving End to End for Auto requires security, data tools and device management

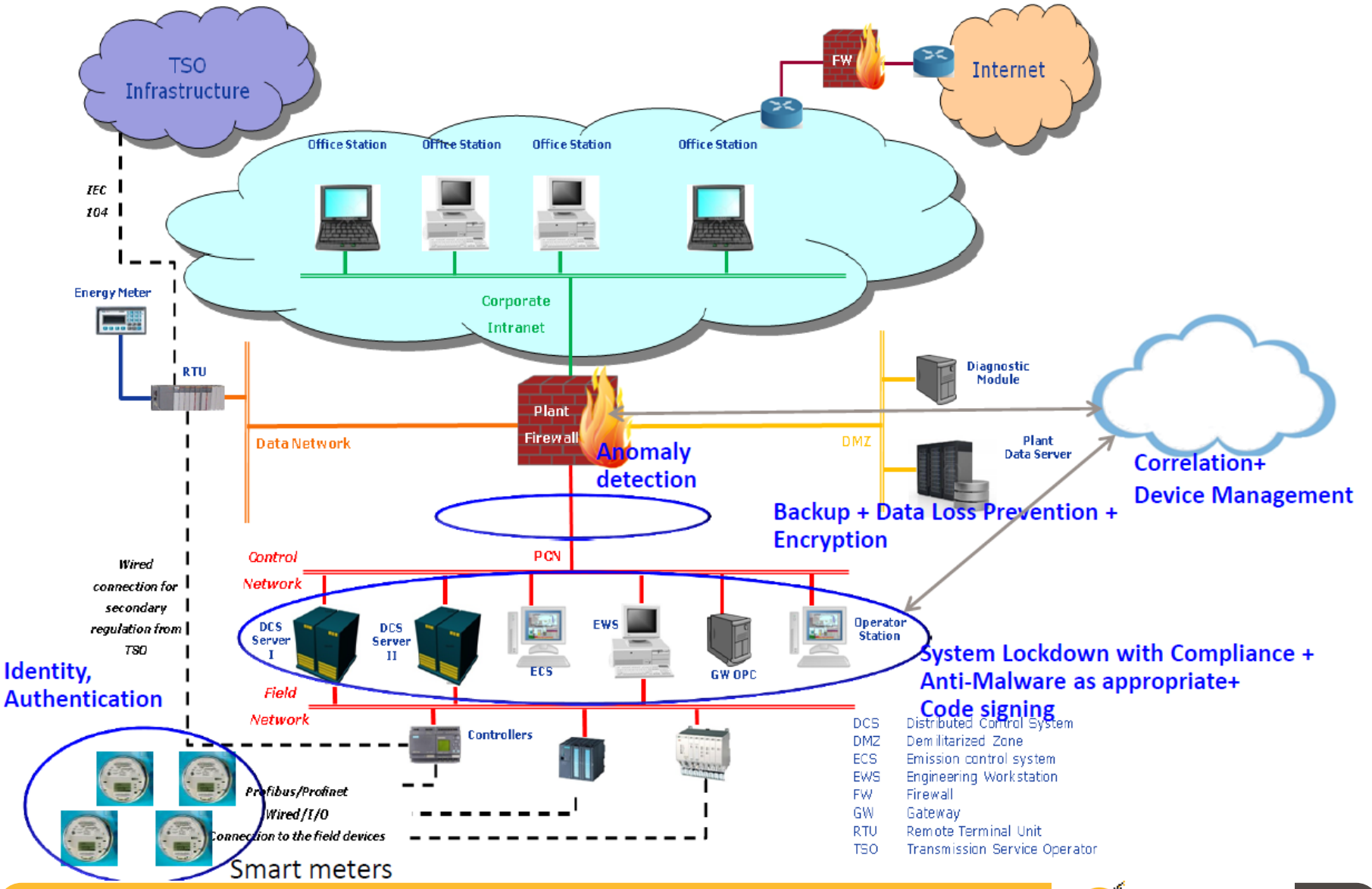


Internet Of Vulnerability

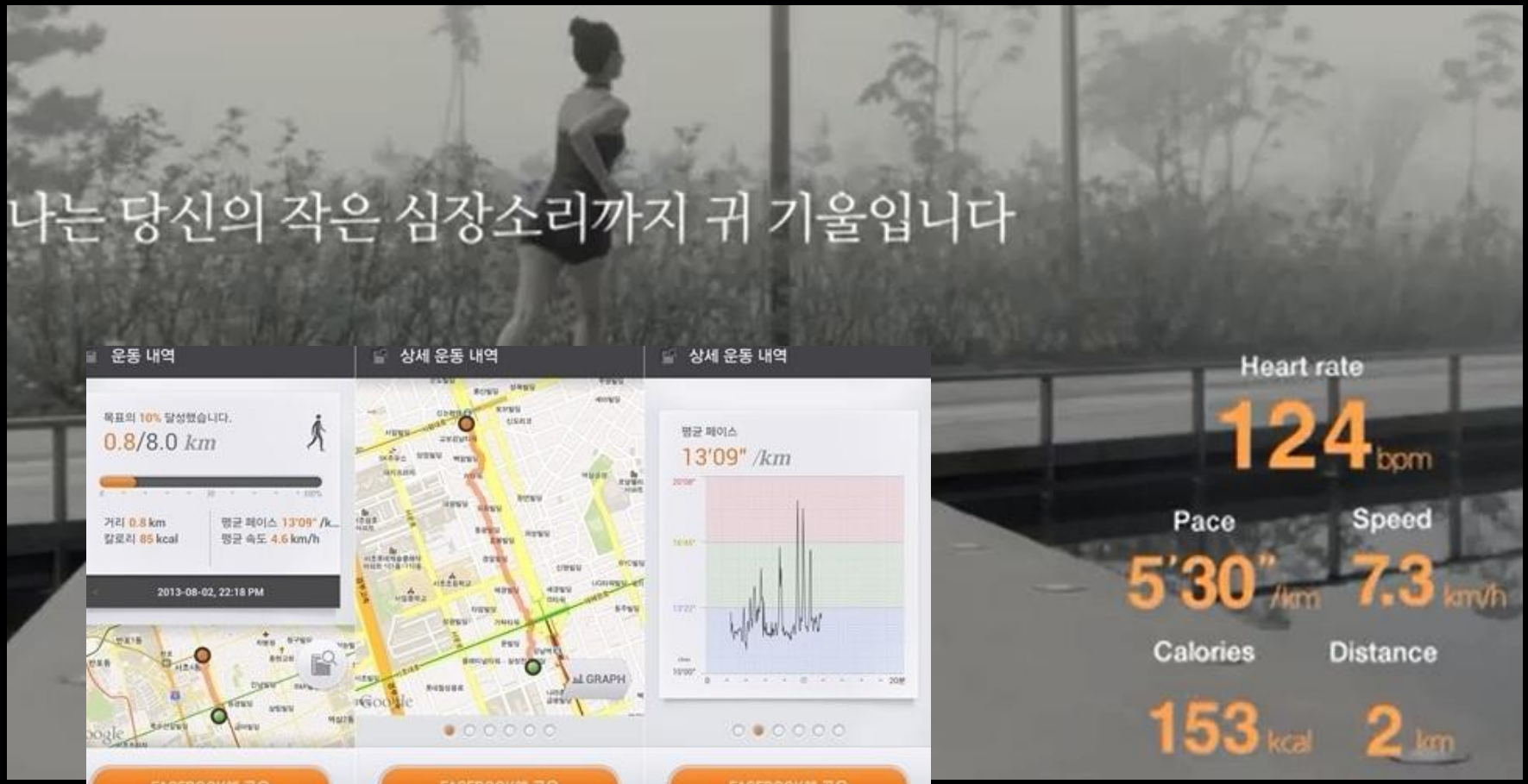


Source: RTC magazine

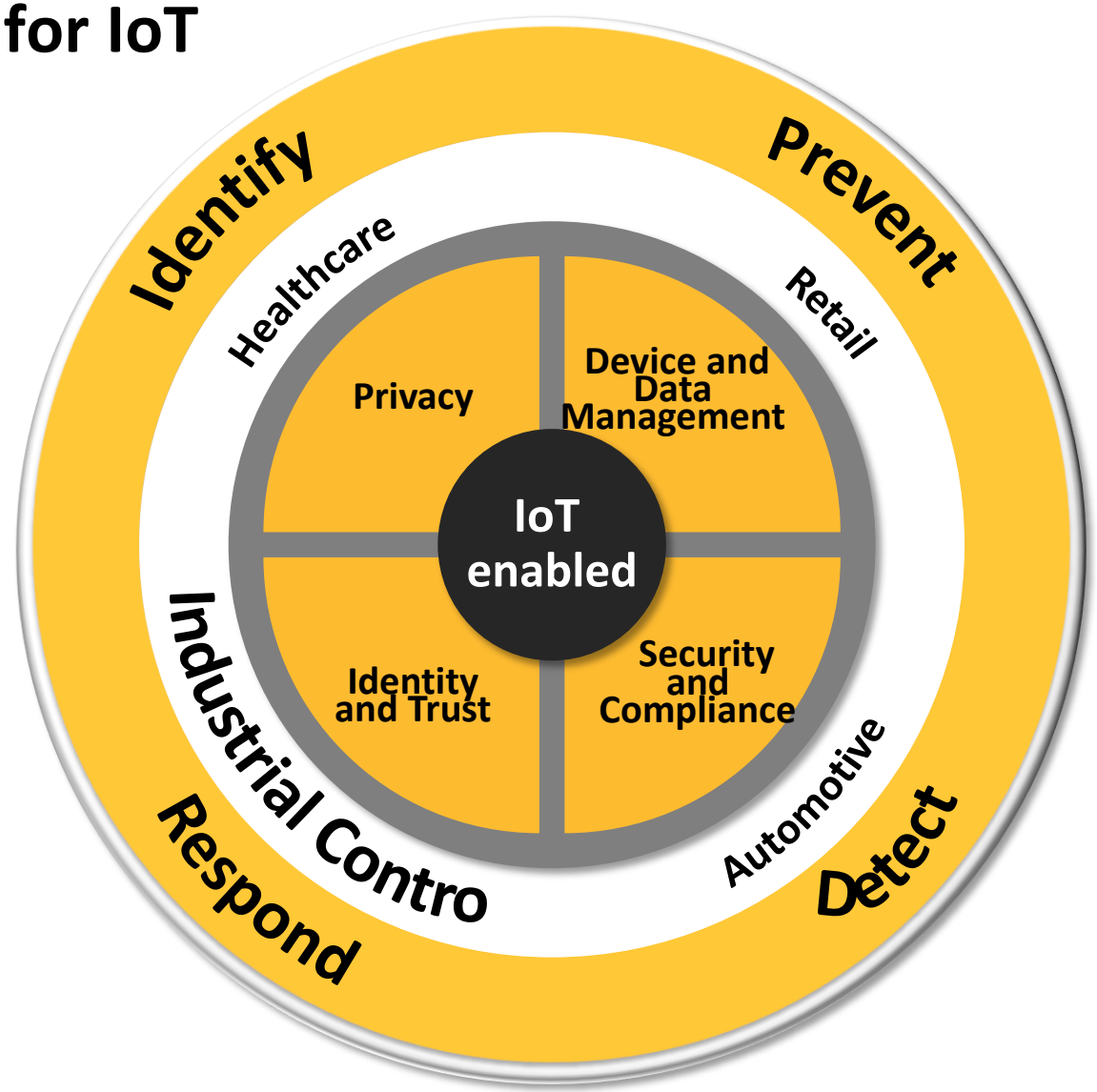
Solving End to End for Industrial requires security, compliance, identity and device management



Privacy


나는 당신의 작은 심장소리까지 귀 기울입니다
운동 내역
목표의 10% 달성했습니다.
0.8/8.0 km
거리 0.8 km
칼로리 85 kcal
평균 페이스 13'09" /k...
평균 속도 4.6 km/h
2013-08-02, 22:18 PM
FACEBOOK에 공유
상세 운동 내역
GRAPH
FACEBOOK에 공유
상세 운동 내역
평균 페이스
13'09" /km
FACEBOOK에 공유
상세 운동 내역
평균 속도
4.6 km/h
상세 운동 내역
고도
57.1 m
상세 운동 내역
평균 리듬
100.0 spm
Heart rate
124 bpm
Pace
5'30" /km
Speed
7.3 km/h
Calories
153 kcal
Distance
2 km

Security, Management, Identity and Privacy are key enablers for IoT



Multi-layer Problem Multiple Technology Layers

Devices

Mobile, Embedded

Device Applications

Data

Data center needs to be protected

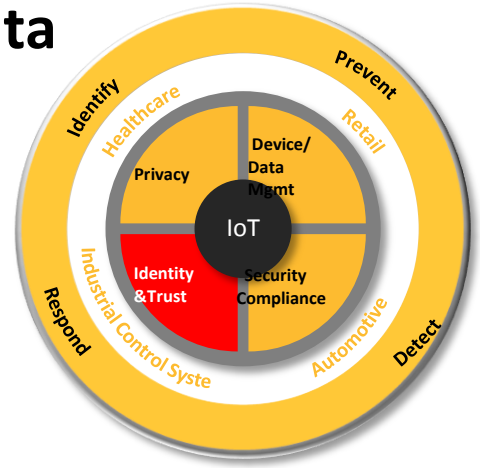
Critical data should not be extracted or lost

Network Level

Segregate embedded & corporate

Detect deviations

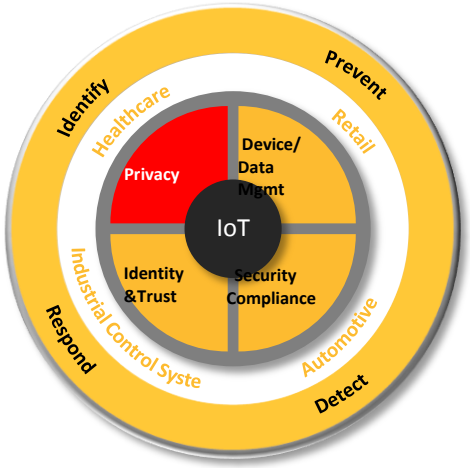
Trust and Identity key to ensuring devices and data can be relied upon



- When a device is contacted for the first time (a user, another device), can it be identified
- Can a device be trusted?
- Can we ensure code, information coming from the device has not been altered in transit
- Can we trust the data that is generated by the device
- Trust and Identity mechanisms are needed, like
  - Certificate as a root of trust: MPKI
  - Code signing
  - Secure communication between device and server eg: SSL
  - Ensuring that a device is reporting its true status: Anomaly Detection in Industrial Control Systems

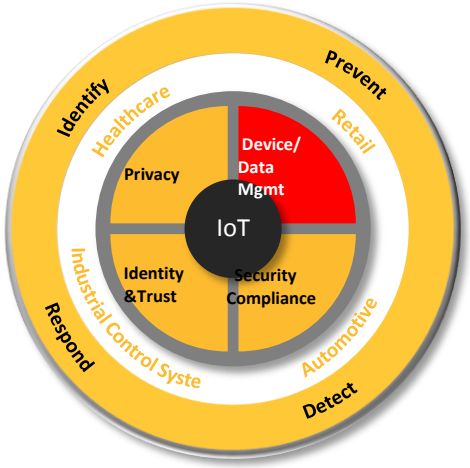
Restricting access to the data and to the devices and preventing data leakage key to privacy

- Privacy violation risks:
  - "Things" (vehicle, power meter, wearable fitness devices, and etc.) are pervasively collecting massive amounts of data
  - Collected data is uploaded to the cloud and service providers
  - Need to ensure that only authorized parties are allowed access to data
- Privacy protections are required, including:
  - Access control : Example: 2 Factor Authentication
  - Data encryption
  - Data Loss Prevention
  - Obfuscation



Management of devices , data and applications important for overall IoT market

- Data Management:
  - Huge amount of data generated means data needs to be handled carefully
  - Backup, archiving, search all key issues but processing of data real-time also needed
  - Ensuring data is safely stored another key issues
- Device and application management
  - How devices are managed important to ensuring a secure embedded network
  - As embedded devices become application platforms, apps need to be handled as well
- Solutions are required, including:
  - Backup, archiving, e-discovery, Information Fabric
  - Device and Application Management



Summary

Awareness

Understand usage

Build formal programs

Networks and devices

Staff training

Risk exposure

Security

Management

Identity

Privacy

Visibility

Confidence

Symantec leadership

Breadth of solutions

Trusted and experienced

Symantec

Thank you!