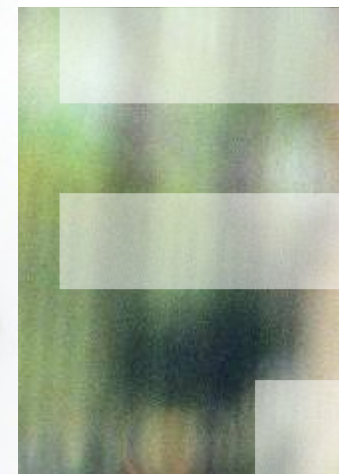
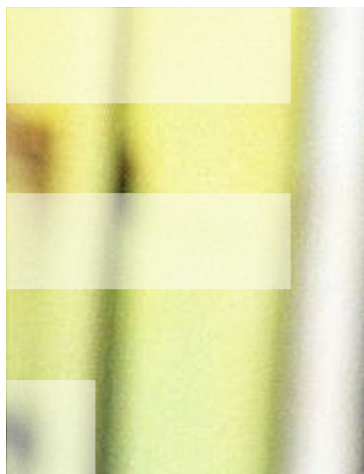


INTERNET OF THINGS - IOT



INTERNET OF THINGS



"In the coming years, planet earth will don an electronic skin....

It will use the Internet as a scaffold to support and transmit its sensations."

- Neil Gross 1999

INTERNET OF THINGS



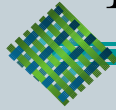
This skin is already being stitched together. It consists of millions of embedded electronic measuring devices: thermostats, pressure gauges, pollution detectors, cameras, microphones, glucose sensors, EKGs, electroencephalographs

These will probe and monitor cities and endangered species, the atmosphere, our ships, highways and fleets of trucks, our conversations, our bodies--even our dreams. -

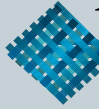
Contents



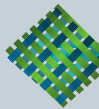
Introduction: Internet of Things (IoTs)



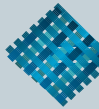
Applications



Trends & Issues



Conclusion



Internet Revolution

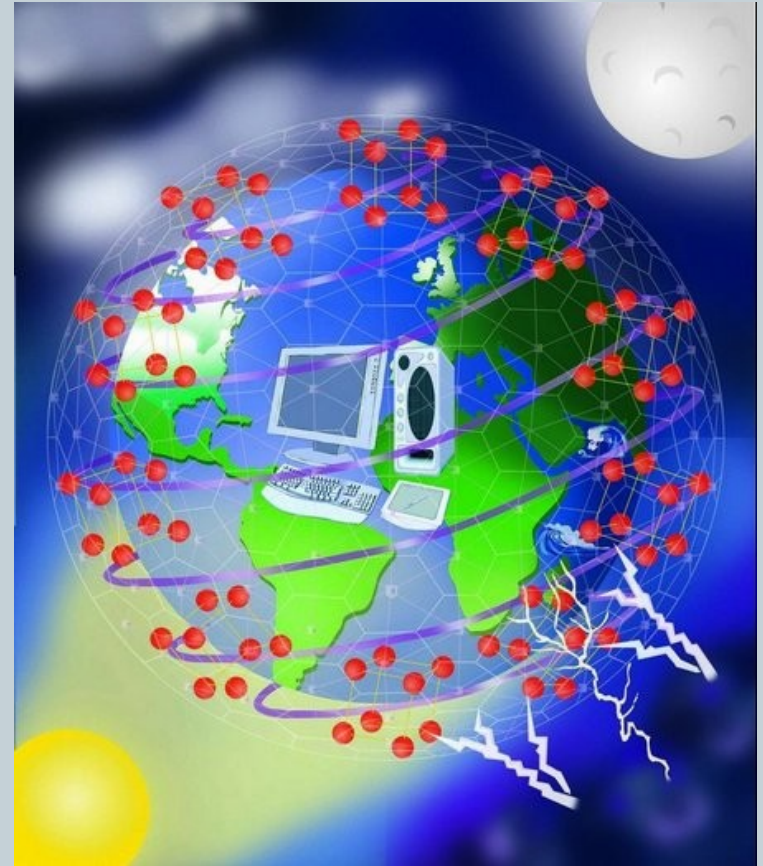


Internet of boffins	Internet of geeks	Internet of masses	Mobile Internet	Internet of things
				
1969 - 1995	1995 - 2000	2000 - 2007	2007 - 2011	2012 & beyond

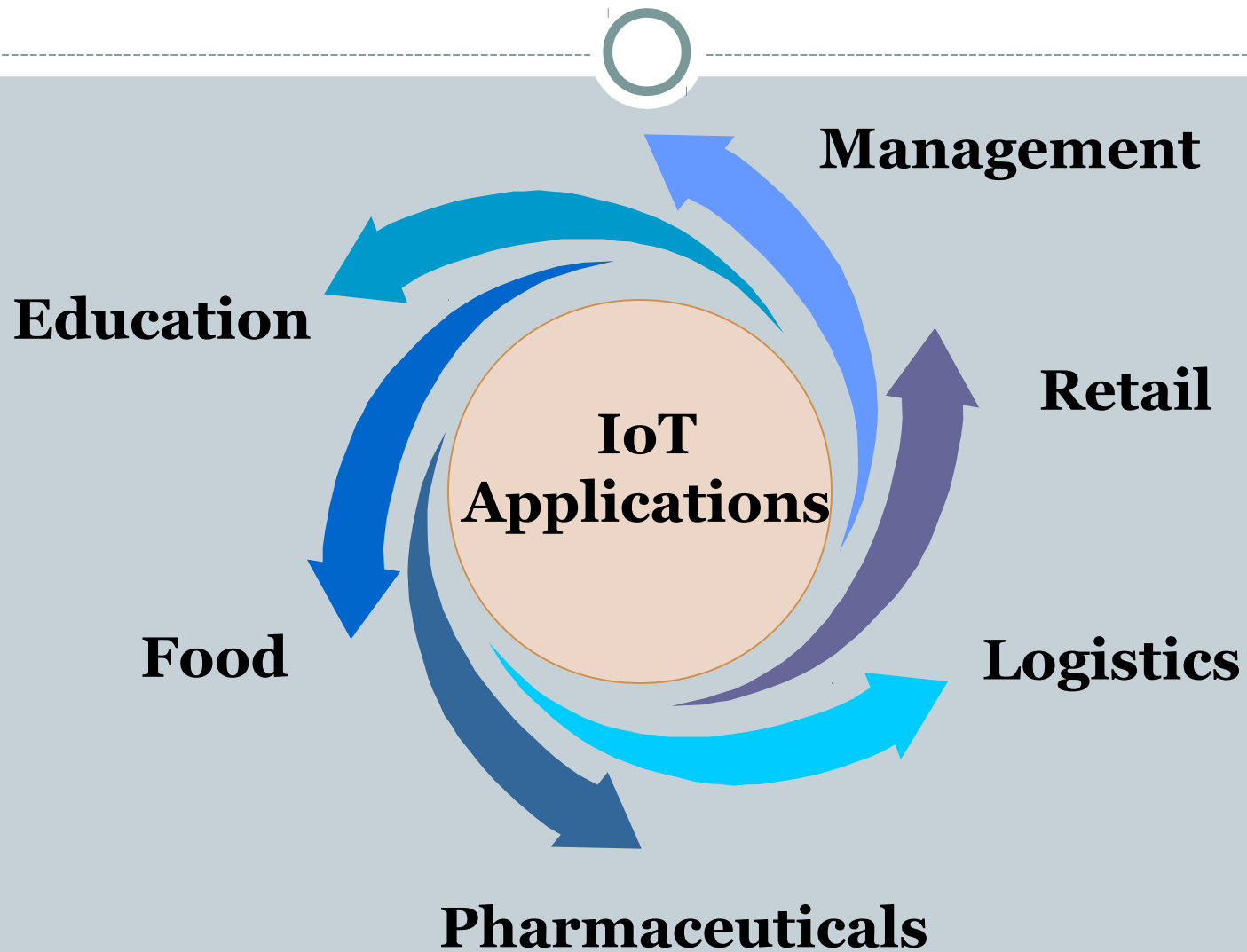
Internet Of Things - Definitions Used



- 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

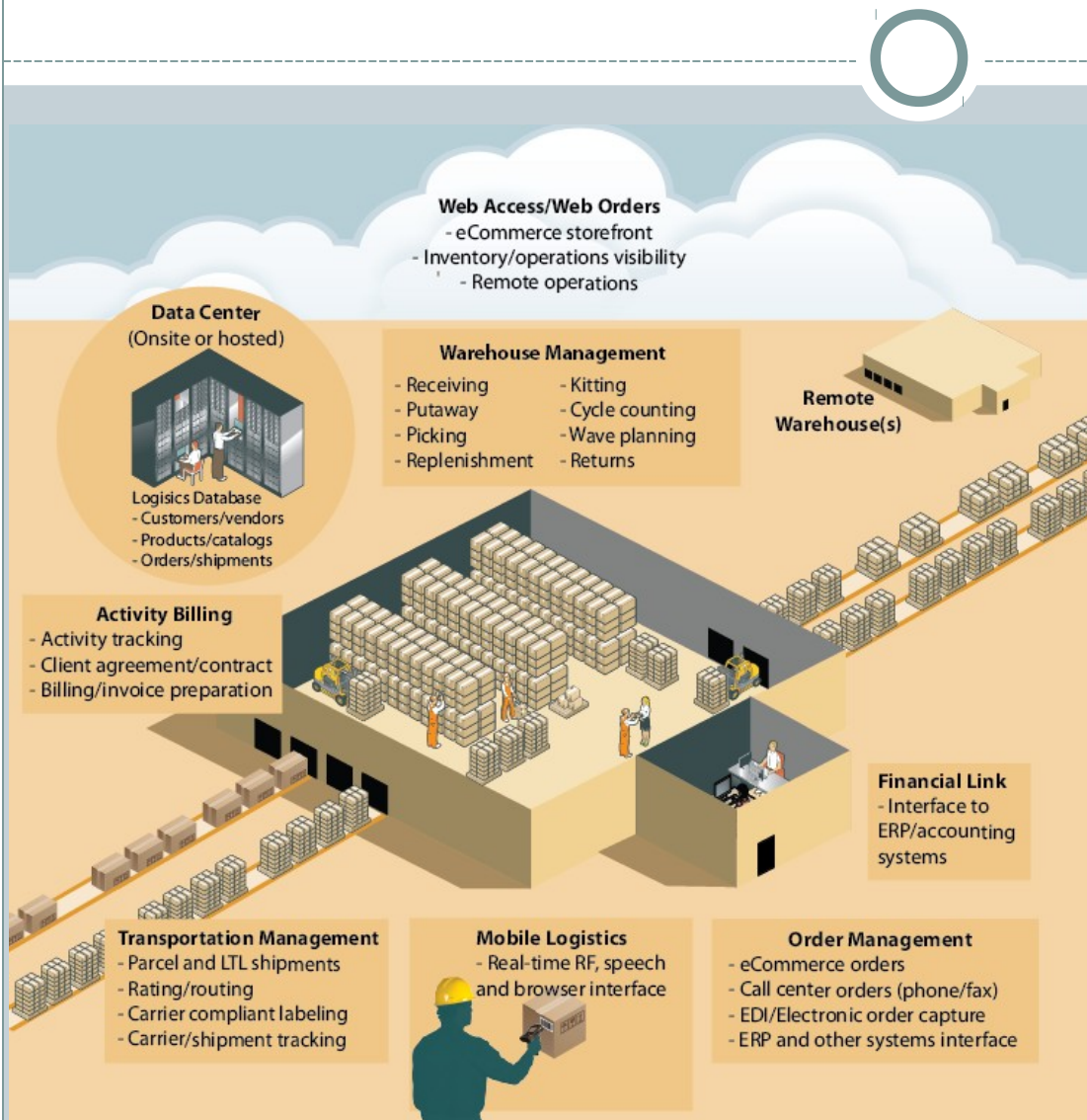


IoTs Applications



<http://www.youtube.com/watch?v=nDBup8KLEtk>

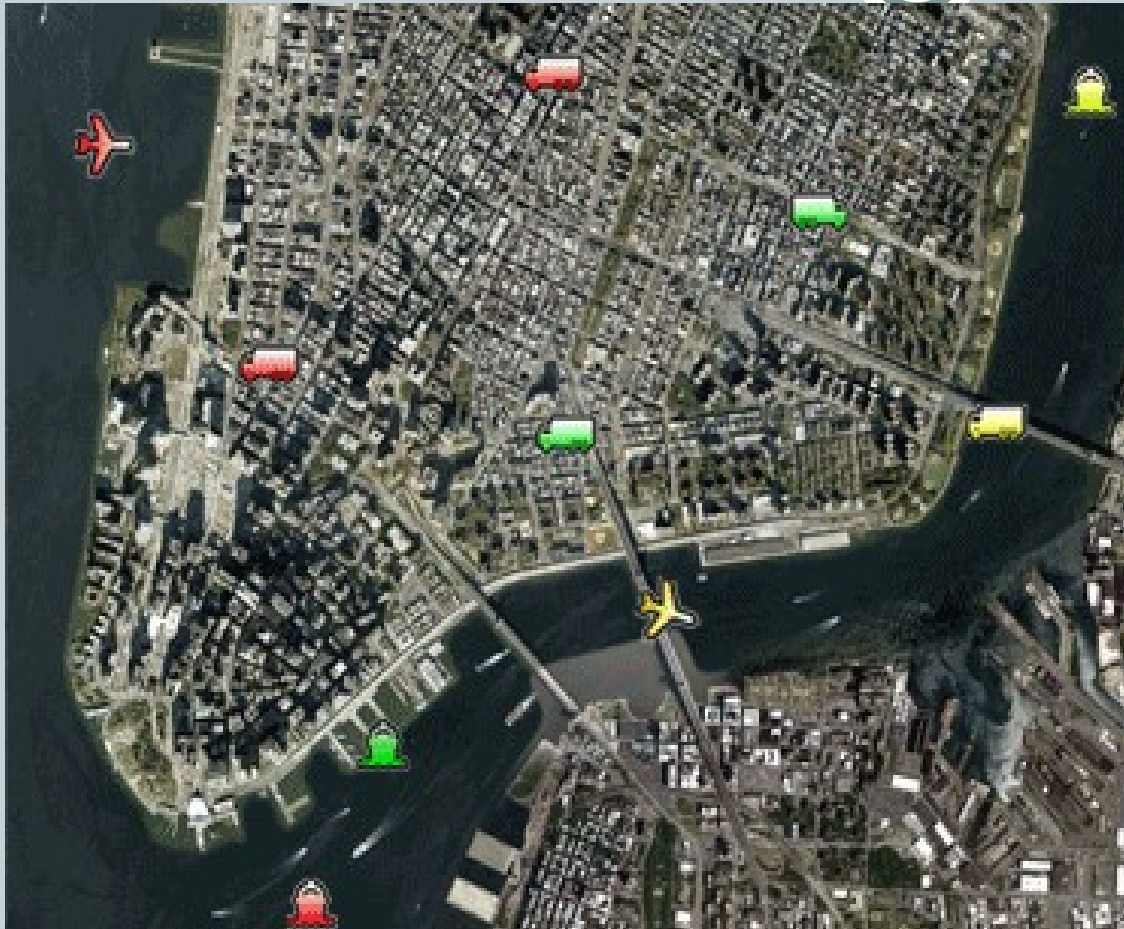
IoTs Applications



● Management:

- Data management
- Waste management
- Urban planning
- Production management
- ...

IoTs Applications



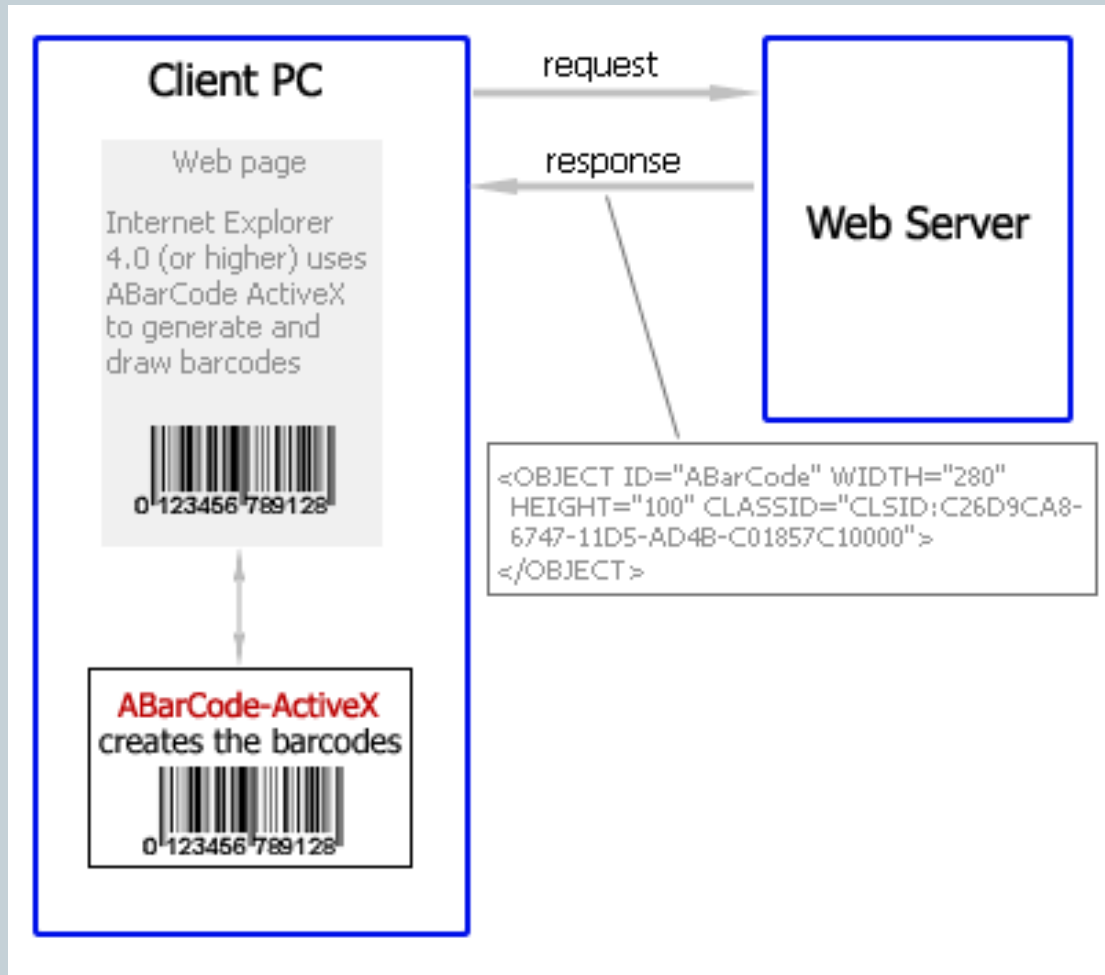
● Logistics:

- Warehouse, management
 - Inventory control
- Port management
 - ETAs, ETDs
 - Ships, boats, containers, etc.
- Executable code
- ...

IoTs Applications

● Retail:

- Intelligent shopping
- Bar code in retail
- Electronic tags
- ...



IoTs Applications



- **Pharmaceuticals :**
 - Intelligent tags for drugs
 - Drug usage tracking
 - Pharma. Product websites
- > Enable the emergency treatment to be given faster and more correct



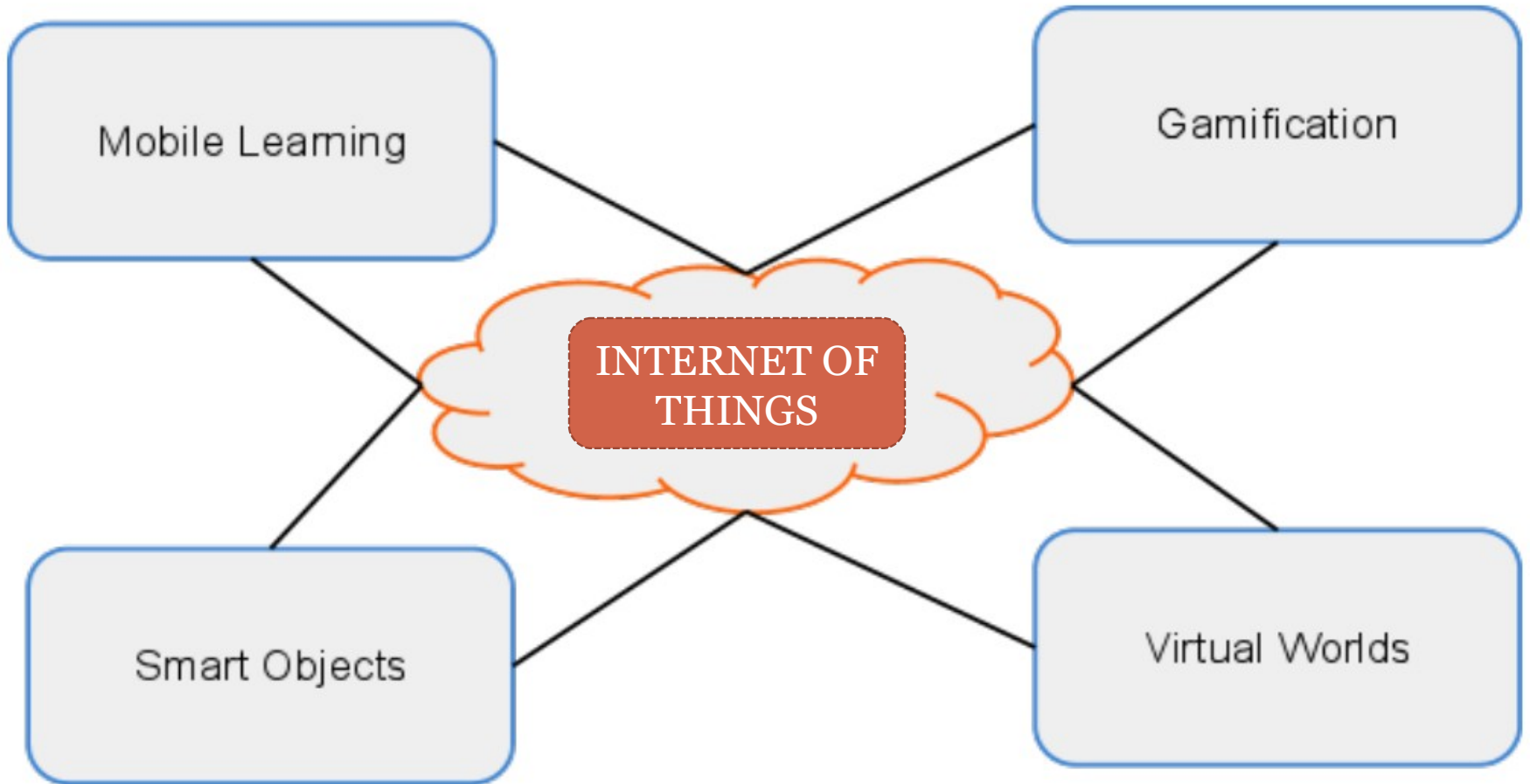
IoTs Applications



● Food:

- Control geographical origin
 - Food production management
 - Nutrition calculations
- Prevent overproduction and shortage
- Control food quality, health and safety.

IoTs in Education



IoTs in Education



- **School Administration**
 - Attendance Management
 - Voting System
 - Automatic Feedback Loops
- **Instructional technology**
 - Media
 - Infor-ma-tion management
 - Foreign language learning

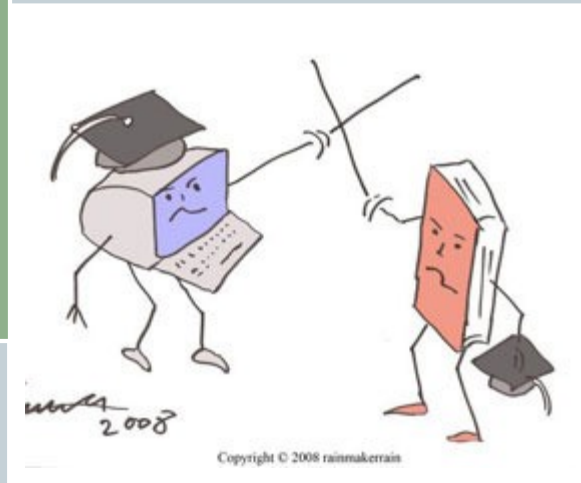


IoTs in Education



Opportunities

- Flexible time
- Social
- New Contexts
- BIG Changes



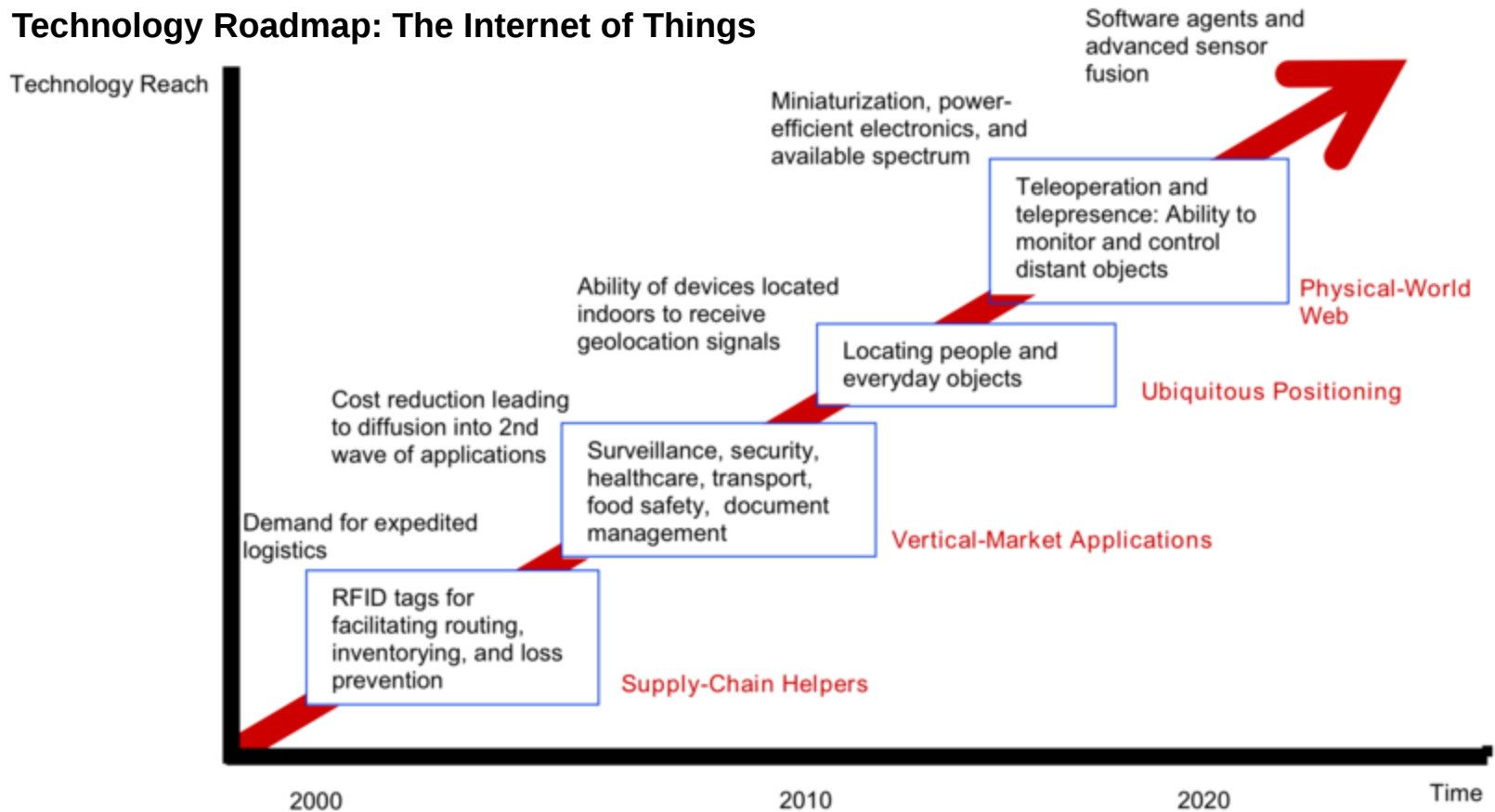
Challenges

- BIG Changes
- Computer skill
- Security/
Firewalls
- Privacy
- Complexity

Trends of IoTs



Technology Roadmap: The Internet of Things



Source: SRI Consulting Business Intelligence

Complimentary Trends of IoTs



- “Maker” culture
- DIY Manufacturing
- Nano-technologies
- Sematic Web
- Artificial Intelligence

Outlook to the Future of IoTs



● Issues

○ Society: People, security, privacy

- A policy for people in the Internet of Things:
- Legislation

○ Environmental aspects

- Resource efficiency
- Pollution and disaster avoidance

○ Technological

- Architecture (edge devices, servers, discovery services, security, etc.)

- Governance, naming, identity, interfaces

Challenges in the Future of IoTs



IoT will inherit the drawbacks of the current internet on an infinitely larger, but more invisible scale

- 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
- Balancing

Challenges in the Future of IoTs cont.



- Transition to IPv6 – Internet protocol v6
- Establishing a common set of standards between companies, educational systems, and nations.
 - The same type of cabling,
 - The same applications or programming
 - The same protocol or set of rules that will apply to all
- Developing energy sources for millions -even billions - of sensors.
 - Wind
 - Solar,

Outlook to the Future of IoTs



● **Innovative Development**

- Ubiquitous network society
- Embedded intelligence & networking of embedded intelligence:
 - ambient monitoring in schools, buildings, environmental monitoring, home automation, personalization, localization, positioning, etc.
- Healthcare management; Food traceability
- Transportation
- ...

Live Examples



- Logistic & Transportation:

ShipAIS: <http://www.shipais.com/>

- Learning & Gamification:



What are Cubelets?



ROBOT CONSTRUCTION KIT



CUBELETS IS A ROBOT CONSTRUCTION KIT

News

- Modular Robotics ...<http://t.co/1EFwkmQb>
Sun, 14 Oct 2012 14:08:21
- [@Kathy2012FL](#) We'll have some KT06 kits in stock again on Monday or Tuesday, and it looks like <http://t.co/xn1fRCKw> has some in stock now...
Sat, 13 Oct 2012 03:27:45
- Uploaded a YouTube video <http://t.co/Ef3bclLz> Cubelets

Conclusion



“A world where ‘things’ can automatically communicate to computers and each other, providing services for the benefit of human kind”
Ian Smith (President AIM UK)



THANK YOU

