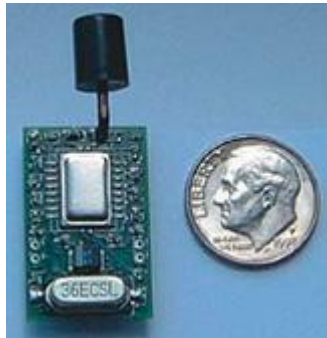


# Smart Objects and Ambient Intelligence

Prepare for a world that links people, places and objects



# Smart Objects and Ambient Intelligence

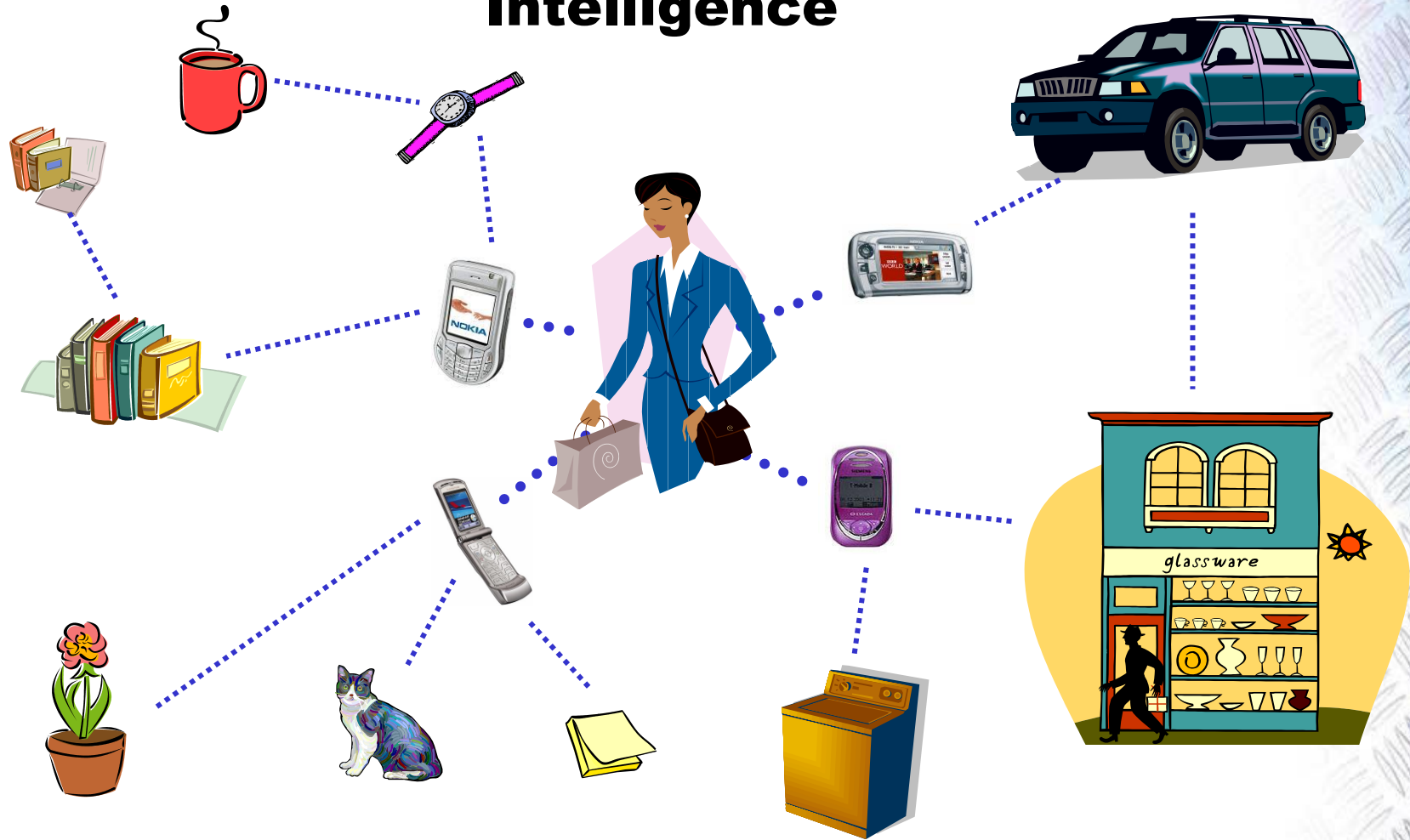
## What is it?

- **A smart object**
  - Holds its own information about id, history, owner etc
  - Knows its own location
  - Possibly equipped with a sensor for temperature, chemical substance detecting, sounds etc
  - Can communicate with other objects and reach internet
  - Have some understanding about current context
  
- **Ambient Intelligence** appears when we are surrounded by these kinds of objects. Everyday objects, like pens, bags or even shoes, as well as objects within the industry
  
- **Bill Gates:** “Networking makes dumb devices smart”



# Smart Objects and Ambient Intelligence

## Wireless Is the Glue for Ambient Intelligence



# Smart Objects and Ambient Intelligence

## What development can we expect?

- **Will first emerge in households**

- The intelligent home
- System designed for keeping an eye on elderly people living alone
- Entertainment systems
- Alarm systems



by [ci.sveningsson](#)

- **Will grow more slowly within industry**

- Environmental watching
- Item & people tracking
- New business opportunities and extended offers



by [bensons](#)

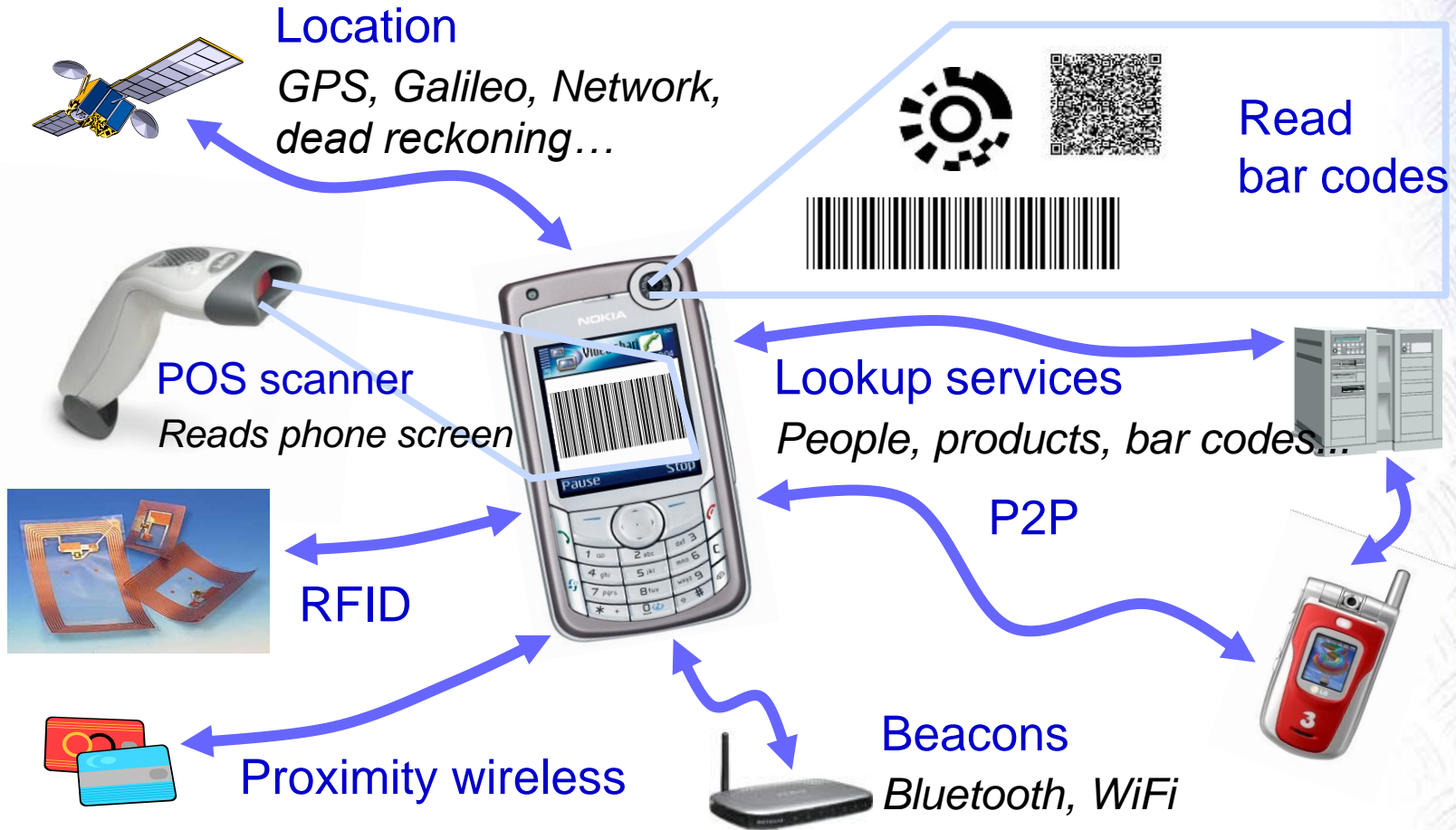
- The mobile phone is the bridge and mediator to these objects

LET'S MAKE SURE.

# Smart Objects and Ambient Intelligence

## Mobile phone is the bridge and mediator

LET'S MAKE SURE



# Smart Objects and Ambient Intelligence

## Scenario 1, in the house

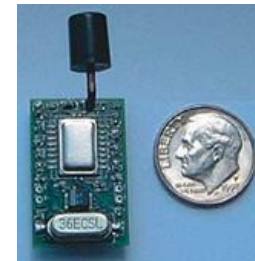
We stick sensors throughout the house to keep watch on things like water pipes, garage doors and electrical devices.



When a sensor detects flooding, for example, the system can respond by interrupting the main water supply line.

if a device is inadvertently left on It can alert homeowners.

The tags/sensors have a battery life of three to five years.

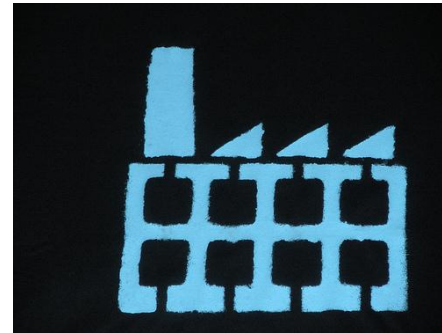


LET'S MAKE SURE.

# Smart Objects and Ambient Intelligence

## Scenario 2, at the factory

Exactly as scenario 1 but now the sensors are spread out in the factory and will for instance detect exceeded temperature limits, chemical substances or unwanted vibrations.



by [androidmedium](#)



by [pulsodigital01](#)

## Scenario 3, in the office

All PC's (mobiles or some other items) are tagged with sensors to keep their own identity, current location, owner etc. Connected with each other are they together keeping track of which items are in the network Whenever some item is missing, disconnected or moved to far an alert is sent to the owner

# Smart Objects and Ambient Intelligence

## When will it happen?

- **All technology needed is already available**
  - A few early applications are on the market
  
- **Missing components are**
  - Infrastructure and standards
  - Security solutions
  - Software and killer applications



Probably 5-10 years before major industrial solutions working  
Somewhat earlier for household applications

# Smart Objects and Ambient Intelligence

LET'S MAKE SURE

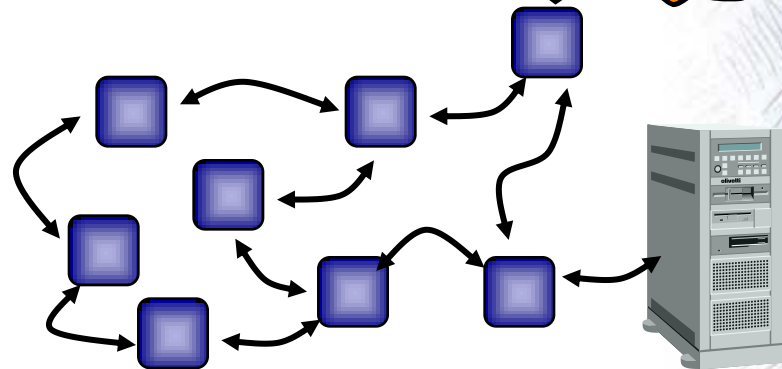
## Summing up

What should objects know?

Identity, location, owner, history, safety, environment...

Key Technologies:

RFID, GPS, PDAs, smart phones, 3G, WIMAX, and much more...



Applications:

- Item & People tracking
- Mobile Commerce & Microcommerce
- Risk-based insurance
- Traffic routing

Challenges:

- Infrastructure
- Standards
- Security and privacy risks

