CT106-3-M-BIA - Building IoT Applications

CT127-3-M-ODL-BIA - Building IoT Applications

Topic 2: IoT Use cases

TOPIC LEARNING OUTCOMES

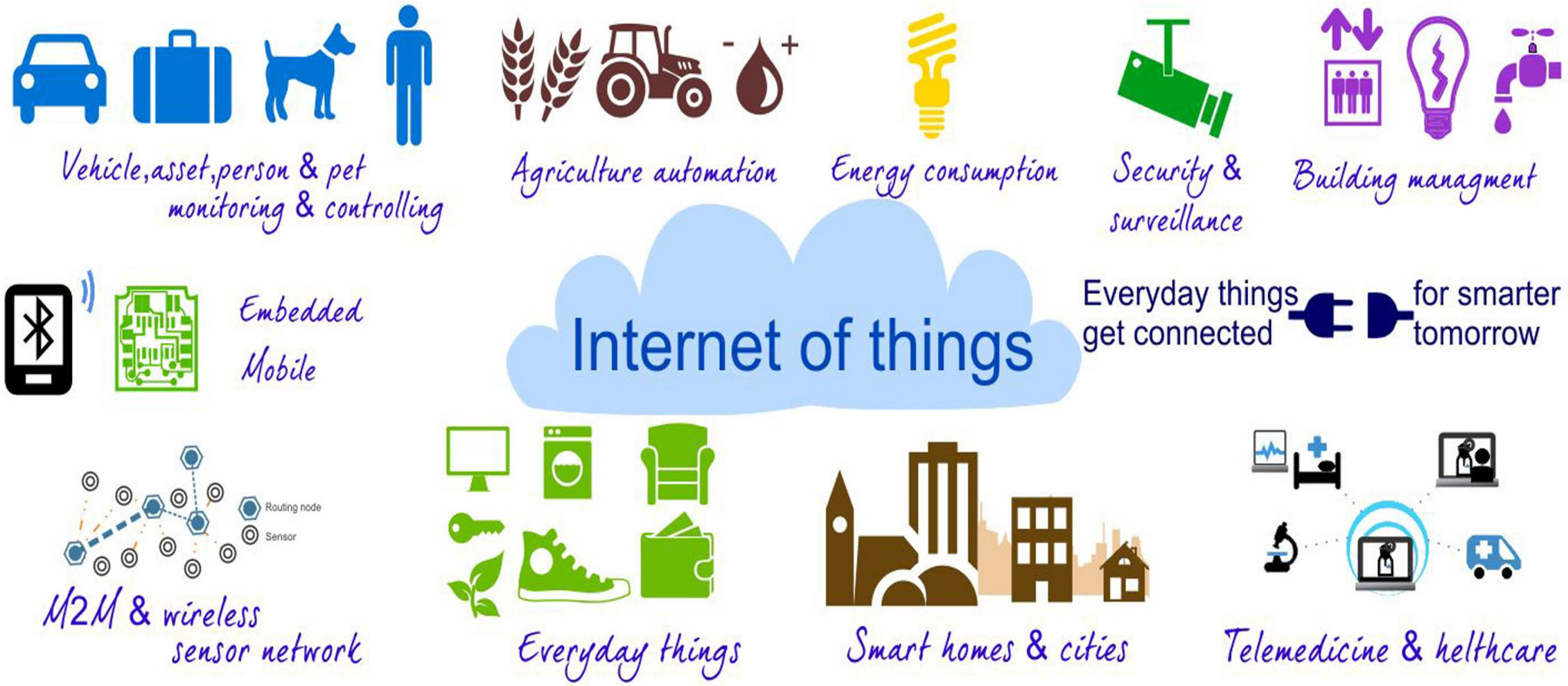
At the end of this topic, you should be able to:

- Understand the potential and scope of IoT applications
- Evaluate IoT solution requirements and constraints
- Address challenges and considerations in IoT applications
- develop an awareness of the ethical and societal implications associated with IoT applications.

Contents & Structure

- Scope of IoT applications
- IoT solution requirements
- IoT solution constraints
- challenges and considerations
- ethical and societal implications

IoT Applications



Benefits of IoT

The internet of things offers a number of benefits to organizations, enabling them to:

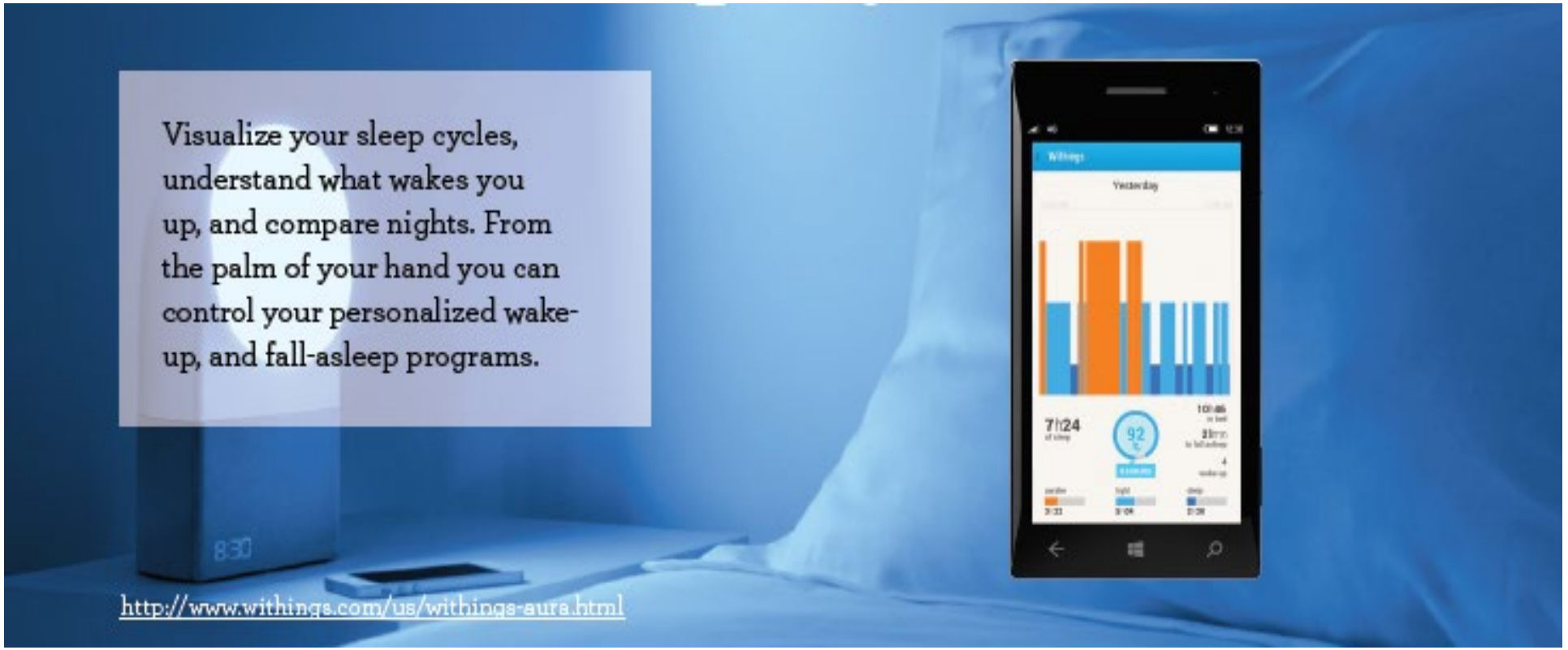
- monitor their overall business processes;
- improve the customer experience;
- save time and money;
- enhance employee productivity;
- integrate and adapt business models;
- make better business decisions; and
- generate more revenue.

In the field of agriculture

- This is the biggest achievement of drone technology as they are now able to serve farmers for many purposes.
- Drone can help farmers to save their money as well as crops by keeping an eye of failing plants.
- They can study the large sized farm lands along with proper monitoring of irrigation systems.
- Farmers can now hope for all information updates quickly and drones can also help them to spray fertilizers, pesticides and water for crops at right times.

In the field of agriculture

Smart Sleep system

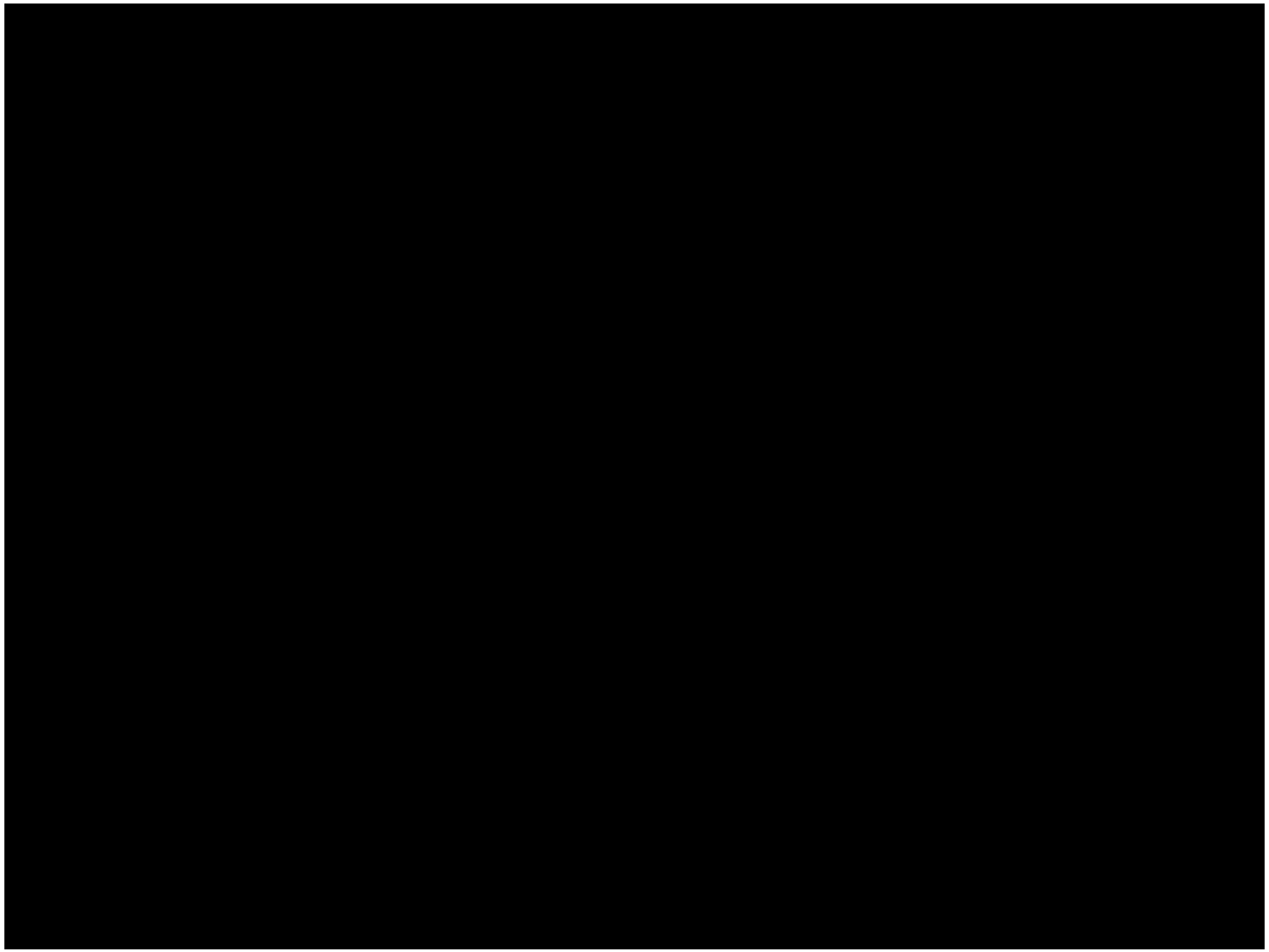


How Well do I sleep?

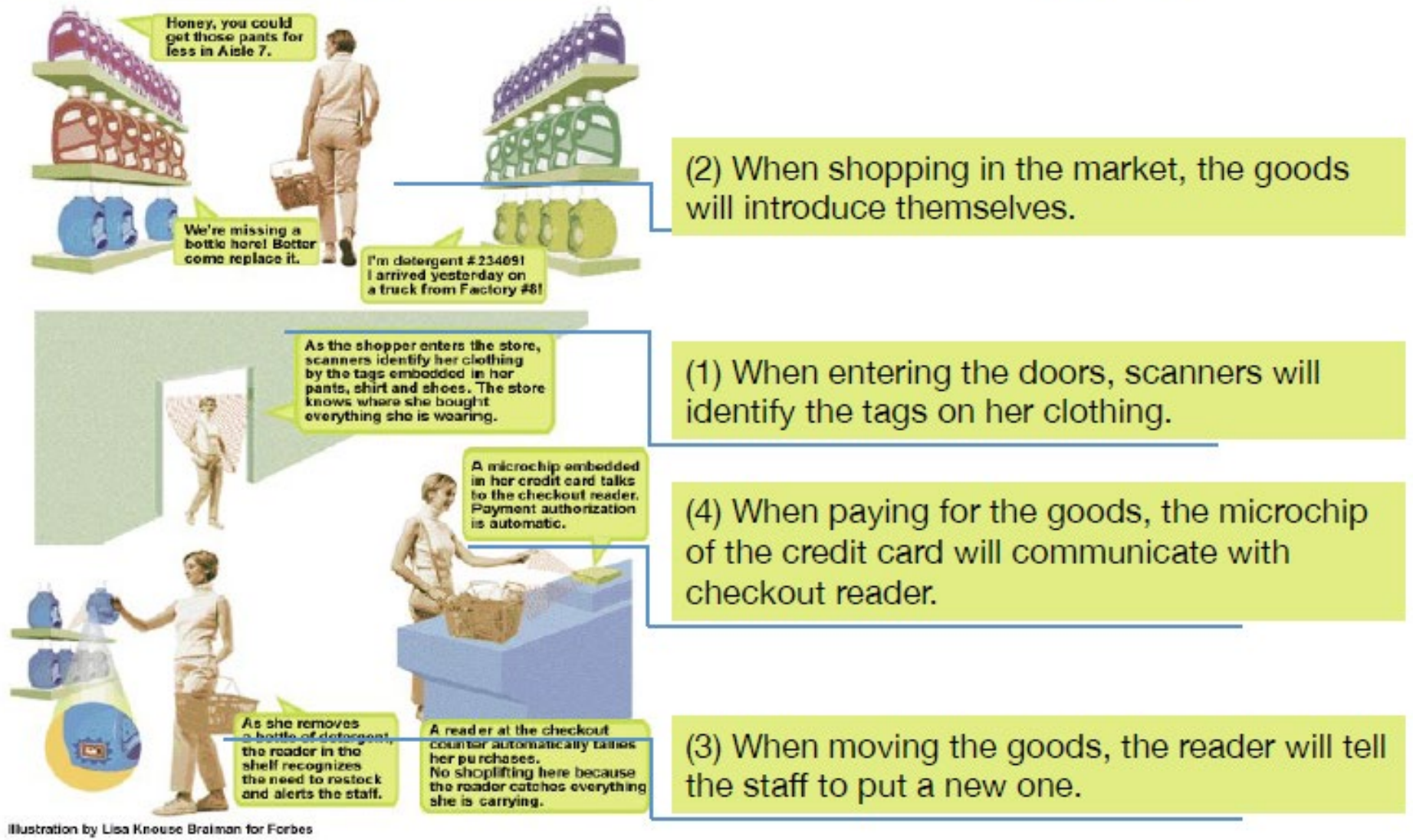
Can be implemented for search and rescue operations

- Drones these days are equipped with thermal sensors so they are able to locate the position of lost persons.
- They are also able to work in dark and inside a challenging terrain.
- The search and rescue operations were suffering a lot from long time due to lack of technology but now drones can make everything possible within few minutes.
- They can be used for deployment as well as for search and rescue missions at critical battle times.
- They are capable enough to drop supplies at unreachable locations.

search and rescue operations



IOT Application Scenario - Shopping



(2) When shopping in the market, the goods will introduce themselves.

(1) When entering the doors, scanners will identify the tags on her clothing.

(4) When paying for the goods, the microchip of the credit card will communicate with checkout reader.

(3) When moving the goods, the reader will tell the staff to put a new one.

Smart Weather Station

The Netatmo Weather Station allows you to use indoor temperature, relative humidity and CO_2 readings to live in a healthier home.

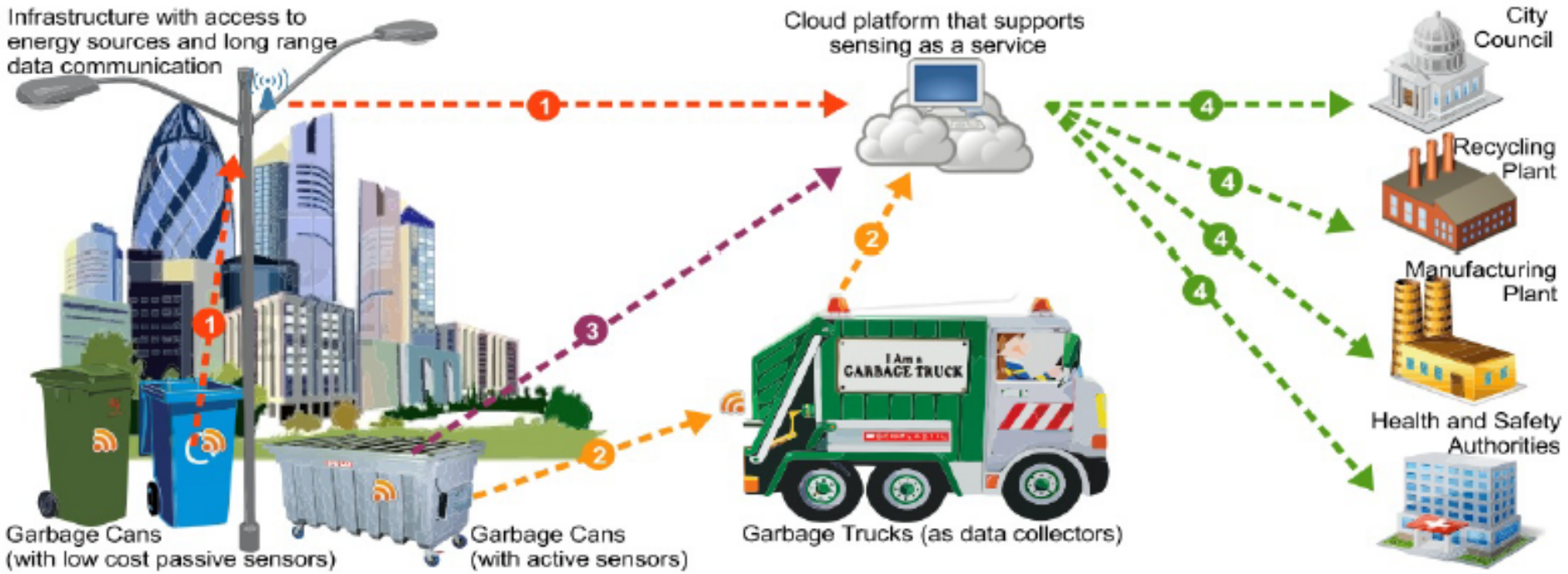
http://www.netatmo.com/en-US/product/weather-station/

Smart Garbage Cans

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

http://www.bigbelly.com/solutions/stations/smartbelly/

Efficient Waste Management in Smart Cities Supported by the Sensing-as-a-Service

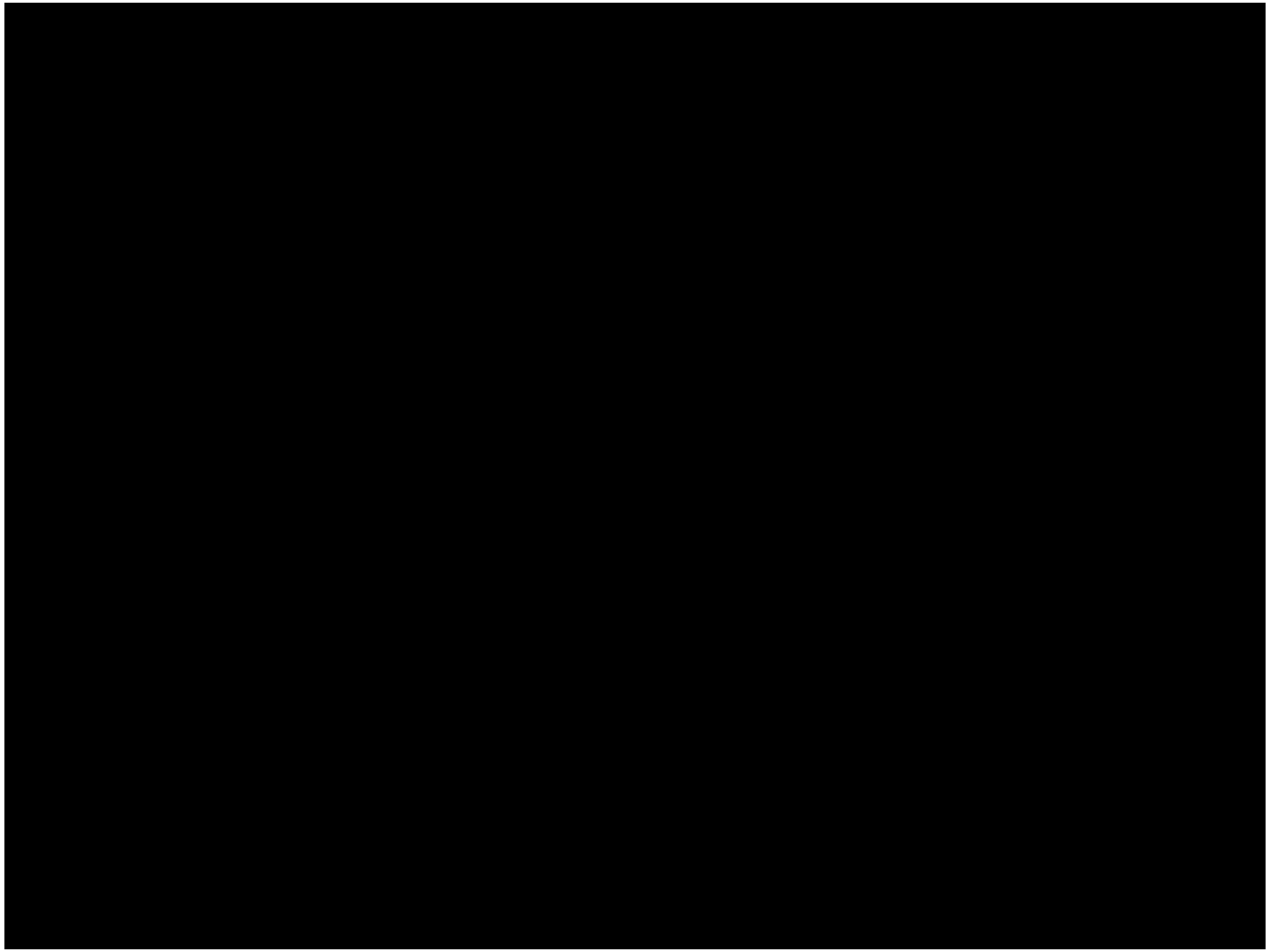


[Source: "Sensing as a Service Model for Smart Cities Supported by Internet of Things", Charith Perera et. al., Transactions on Emerging Telecommunications Technology, 2014]

Drone and Engineering applications

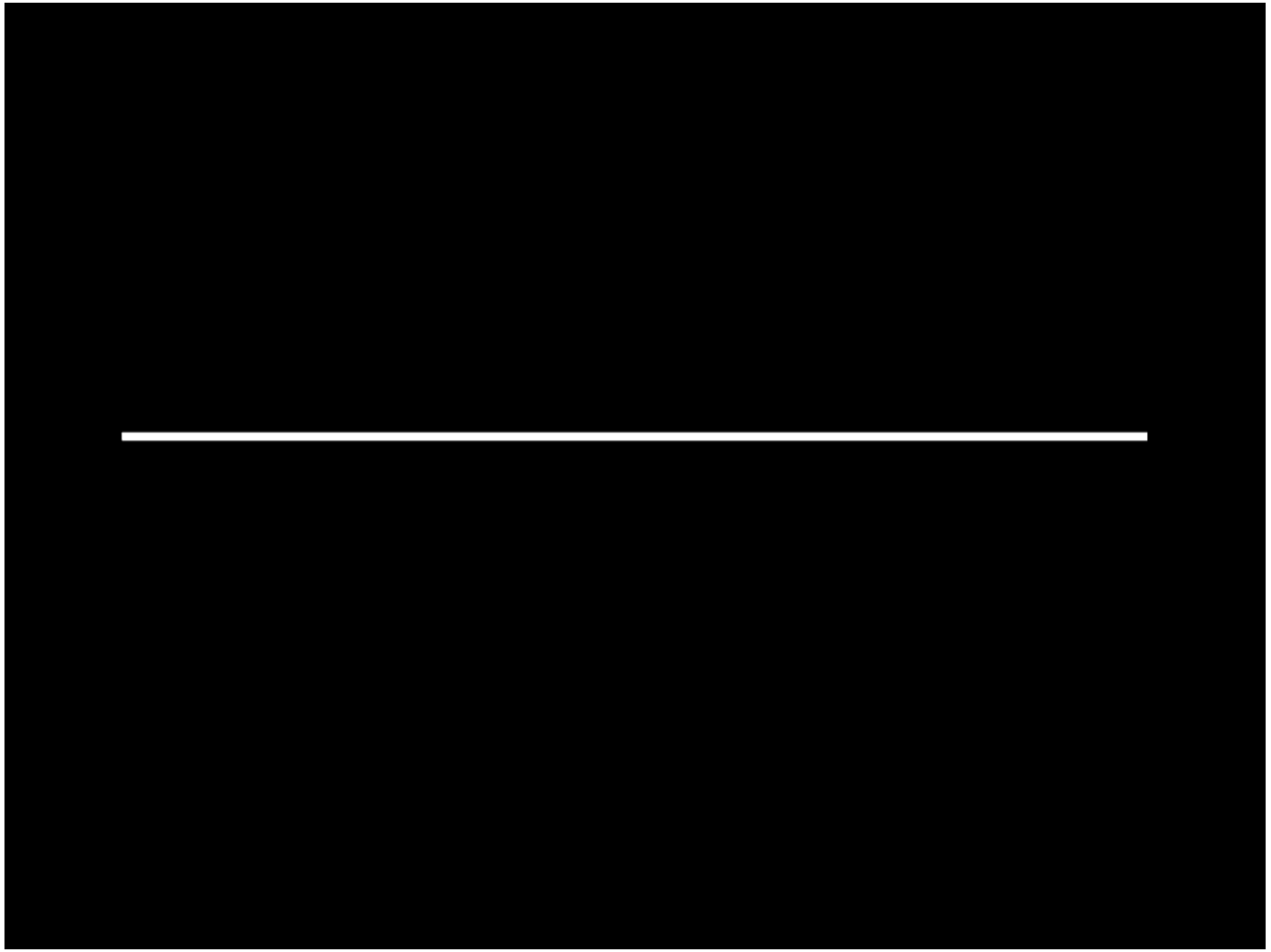
- Most of the engineering firms these days are utilizing drone technology to monitor their in depth projects like transmission cables, oil pipelines and maintenance inspections.
- There are so many tasks that a drone can complete.

Drone and Engineering applications

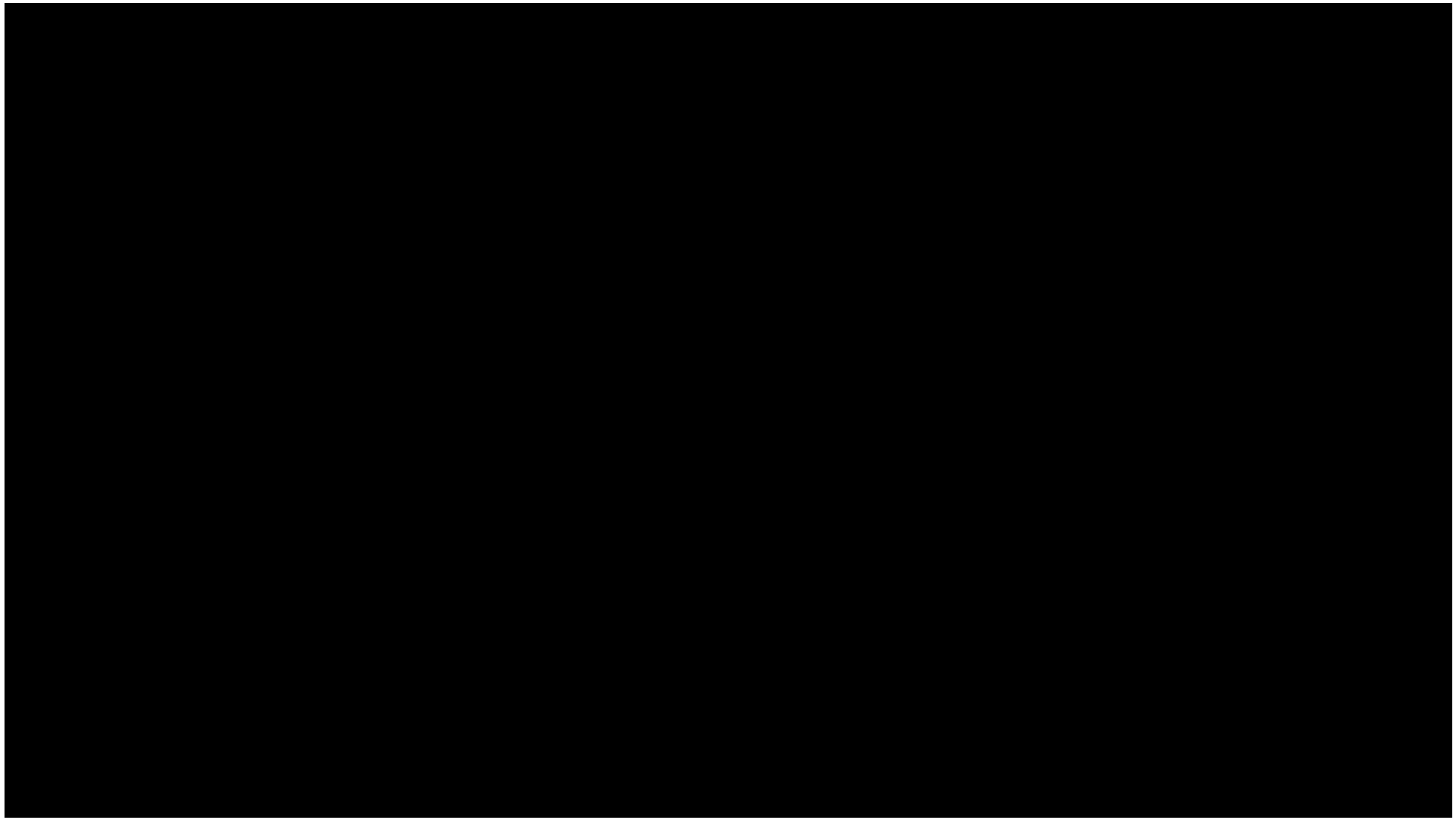


The magic of AI neural TTS and holograms at Microsoft Inspire 2019

Vehicles Of The Future - Future Transportation System 2050



New Technologies That Will Blow Your Mind



NEW TECHNOLOGY 2019 ♥ NEW TECHNOLOGIES THAT WILL BLOW YOUR MIND (2019)

Future aircraft
This could change travel forever

Review Questions

1. Explain briefly what are the Internet of Things (IoT) benefits.
2. Explain one of the following IoT application scenarios.
   - Smart Shopping
   - Smart Agriculture
   - Smart Sleep System
   - Smart Weather Station
   - Smartest Garbage Collection
   - Search and Rescue Operation
   - Drone and Applications

Summary / Recap of Main Points

During this lesson, the following topics were covered:

- Scope of IoT applications
- IoT solution requirements
- IoT solution constraints
- challenges and considerations
- ethical and societal implications

What To Expect Next Week

In Class

Preparation for Class