

# Internet of Things (IoT)

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“The Internet of Things (IoT) is the interconnection of uniquely identifiable embedded computing devices within the existing Internet infrastructure.”

[-http://en.wikipedia.org/wiki/Internet\\_of\\_Things](http://en.wikipedia.org/wiki/Internet_of_Things)

“Internet of Things คือแนวคิดที่เชื่อมต่อคอมพิวเตอร์  
ให้คุยกันตัวเองโดยไม่ต้องผ่านคน โดยมีเป้าหมายคือ  
ช่วยกันทำงานเพื่อให้คนสะดวกสบายขึ้น โดยที่คนไม่  
ต้องเข้าไปยุ่งหรือสั่งการเลย”

[-http://www.thairath.co.th/content/393132](http://www.thairath.co.th/content/393132)

# What is IoT?

Smart City?

Smart Parking?

Smart Agriculture?

Forest Fire Detection?

Air Pollution?

Health?

Smart World?

Intelligent Shopping?

Smart CSMJU?

Smart Roads?

Smart Logistic?

Smart Home?

Smart Lighting?

Waste Management?

Water Quality?

# Case Study



A day in the life of the Internet of Things

<https://www.youtube.com/watch?v=fFqEx--b7hU>



Life Simplified with Connected Devices

<https://www.youtube.com/watch?v=NjYTzvAVozo>



# Farm Forward

<https://www.youtube.com/watch?v=jEh5-zZ9jUg>



# Smart CSMJU

- Smart Light@RestRoom
- Smart Water@RestRoom
- Smart Teacher Room
- Smart Projector
- Smart Pathway
- Smart MailBox
- Smart Class Room
- Smart Information

# Libelium Smart World

## Air Pollution

Control of CO<sub>2</sub> emissions of factories, pollution emitted by cars and toxic gases generated in farms.

## Forest Fire Detection

Monitoring of combustion gases and preemptive fire conditions to define alert zones.

## Wine Quality Enhancing

Monitoring soil moisture and trunk diameter in vineyards to control the amount of sugar in grapes and grapevine health.

## Offspring Care

Control of growing conditions of the offspring in animal farms to ensure its survival and health.

## Sportsmen Care

Vital signs monitoring in high performance centers and fields.

## Structural Health

Monitoring of vibrations and material conditions in buildings, bridges and historical monuments.

## Quality of Shipment Conditions

Monitoring of vibrations, strokes, container openings or cold chain maintenance for insurance purposes.

## Smartphones Detection

Detect iPhone and Android devices and in general any device which works with Wifi or Bluetooth interfaces.

## Perimeter Access Control

Access control to restricted areas and detection of people in non-authorized areas.

## Radiation Levels

Distributed measurement of radiation levels in nuclear power stations surroundings to generate leakage alerts.

## Electromagnetic Levels

Measurement of the energy radiated by cell stations and WiFi routers.

## Traffic Congestion

Monitoring of vehicles and pedestrian affluence to optimize driving and walking routes.

## Smart Roads

Warning messages and diversion according to climate conditions and unexpected events like accidents or traffic jams.

## Smart Lighting

Intelligent and weather adaptive lighting in street lights.

## Intelligent Shopping

Getting advices in the point of sale according to customer habits, preferences, presence of allergic components for the or expiring dates.

## Noise Urban Maps

Sound monitoring in bar areas and centric zones in real time.

## Water Leakages

Detection of liquid presence outside tanks and pressure variations along pipes.

## Vehicle Auto-diagnosis

Information collection from CanBus send real time alarms to emergency or provide advice to drivers.

## Item Location

Search of individual items in big surface like warehouses or harbours.

## Waste Management

Detection of rubbish levels in containers to optimize the trash collection routes.

## Smart Parking

Monitoring of parking spaces availability in the city.

## Golf Courses

Selective irrigation in dry zones to reduce the water resources required in the green.

## Water Quality

Study of water suitability in rivers and the sea for fauna and eligibility for drinkable use.