



Introduction to Internet of Thing for everyone

Presented by:
Tee Chuangthevy
Director and Founder of Sensornode

Catalog

- 1 What is Internet of Things?**
- 2 History/Evolution of Internet of Things**
- 3 Current Status and Future Prospect**
- 4 Application**
- 5 IoT Technology Stack**

Let's start with understanding a few things:

Broadband Internet is becoming more widely available

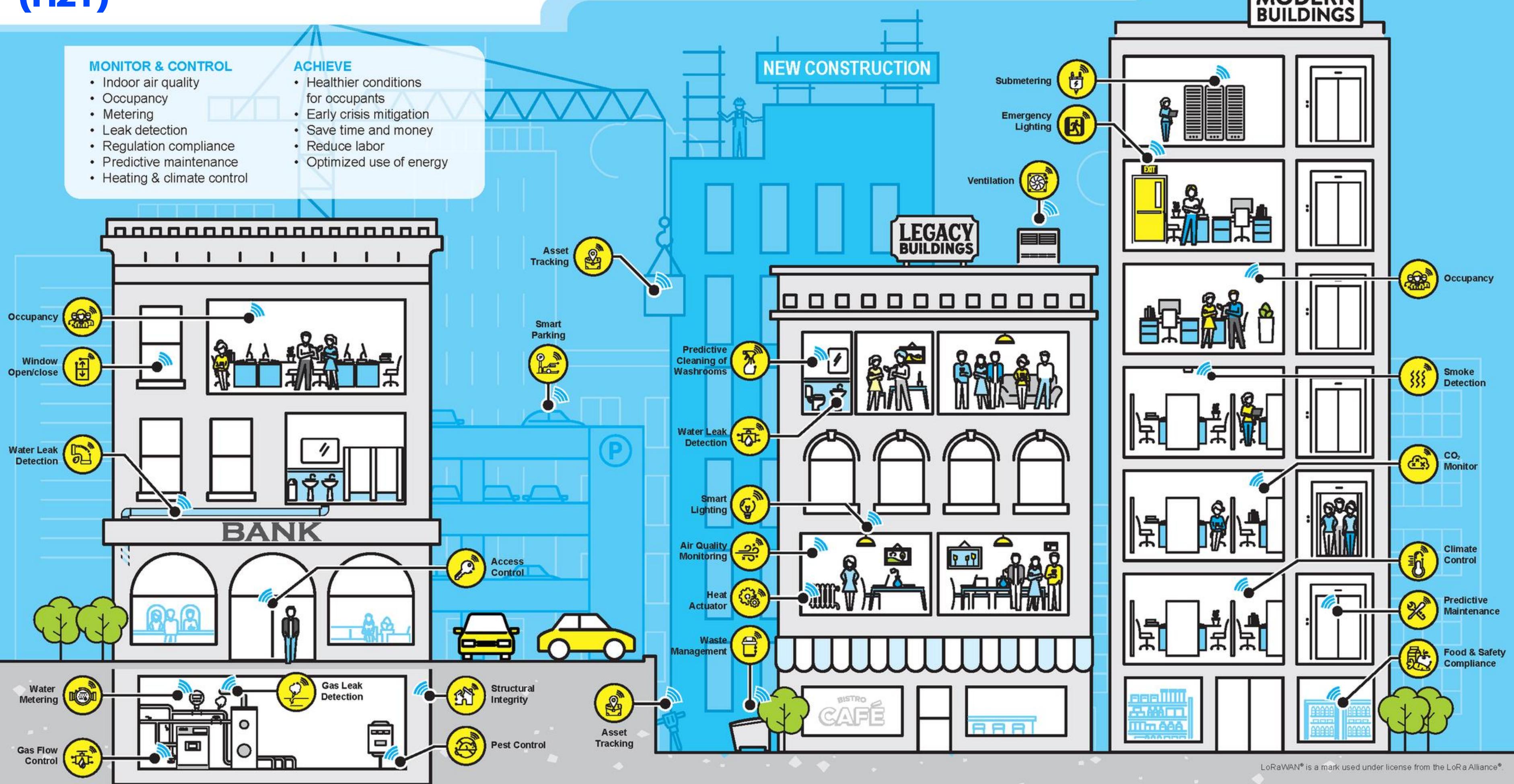
The cost of connection is constantly decrease

More device are being created with WiFi and sensor build-in

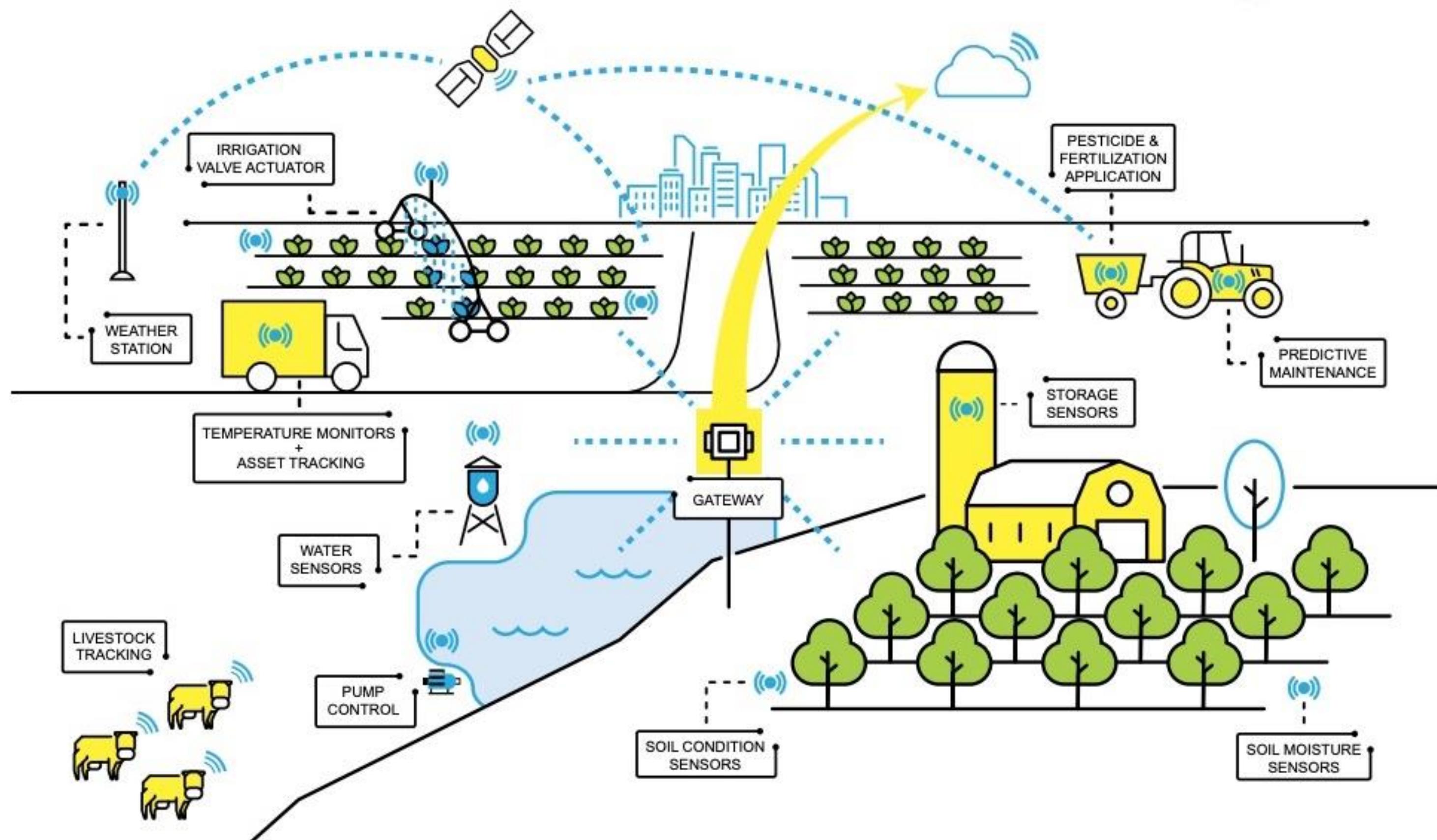
Technology costs are going on demand and connectivity is sky-rocketing

All of these things are creating a “perfect storm” for the IoT

People connecting with things (H2T)



Things connecting with things (T2T)



Various name, One concept

For over a decade after the introduction of the term Internet-of-Things, different organizations and working groups have been providing various definitions.

- M2M (Machine to Machine)
- "Internet of Everything" (Cisco Systems)
- "World Size Web" (Bruce Schneier)
- "Skynet" (Terminator movie)
- Cloud of Things
- Web of Things

► All these terms are very relevant (and in most cases overlapping) to IoT. Nevertheless, they also have differences from IoT.

History/Evolution of IoT

1

Early Beginnings (1980s-1990s)

The first internet-connected **toaster** (1989) was created by John Romkey, showing the potential for internet-controlled devices.

2

The Term "IoT" Coined (1999)

RFID tags were used in supply chain management, primarily developed by Kevin Ashton at MIT, highlighting early IoT concepts.

3

Advent of RFID and Sensor Technology (2000s)

Wireless sensor networks in agriculture, pioneered by various research institutions, enabled precision farming by monitoring soil moisture and weather conditions.

4

Widespread Adoption (2010s)

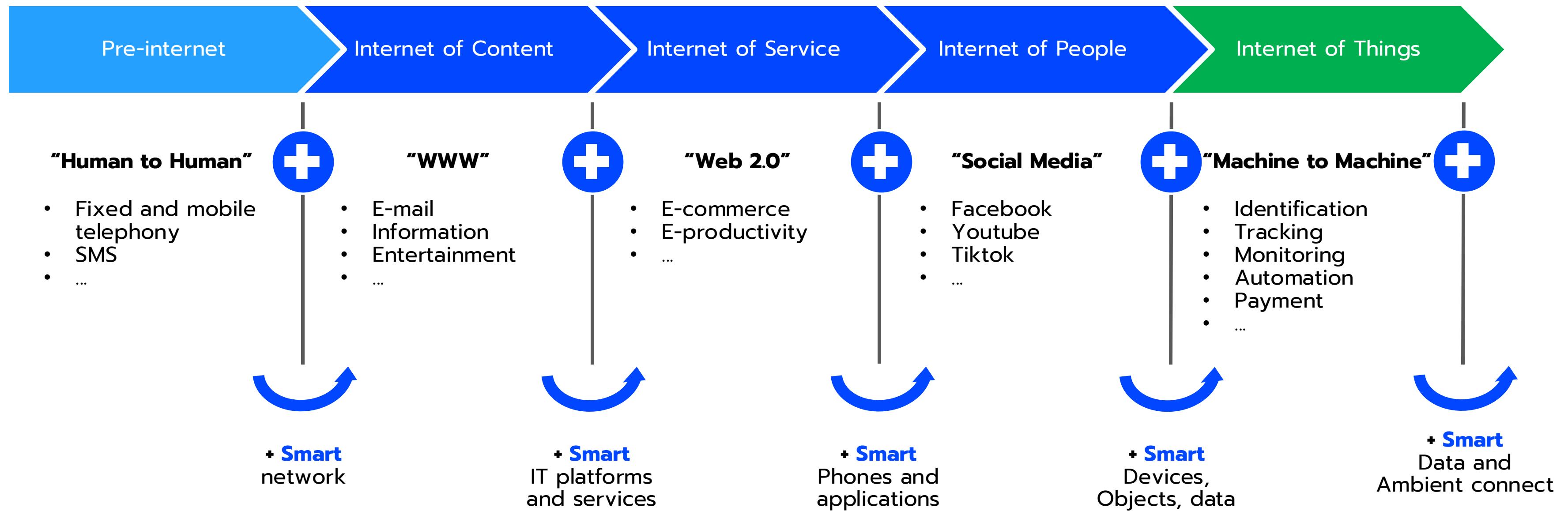
Smart home systems like Nest, founded by Tony Fadell and Matt Rogers, where thermostats, lights, and security systems are controlled via smartphones.

5

Modern IoT Ecosystem (2020s and Beyond)

Smart cities, with projects by companies like Cisco and Siemens, where traffic lights, waste management, and energy grids are interconnected to optimize efficiency and reduce costs using AI and real-time data.

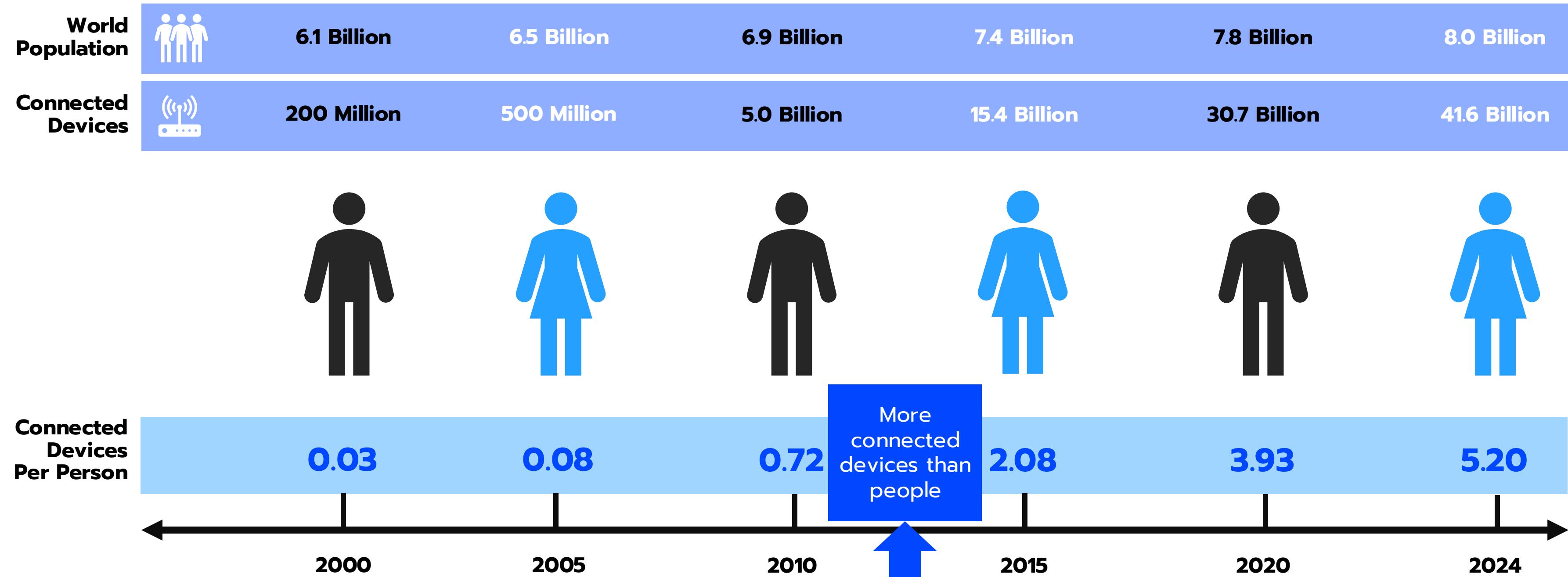
History/Evolution of IoT





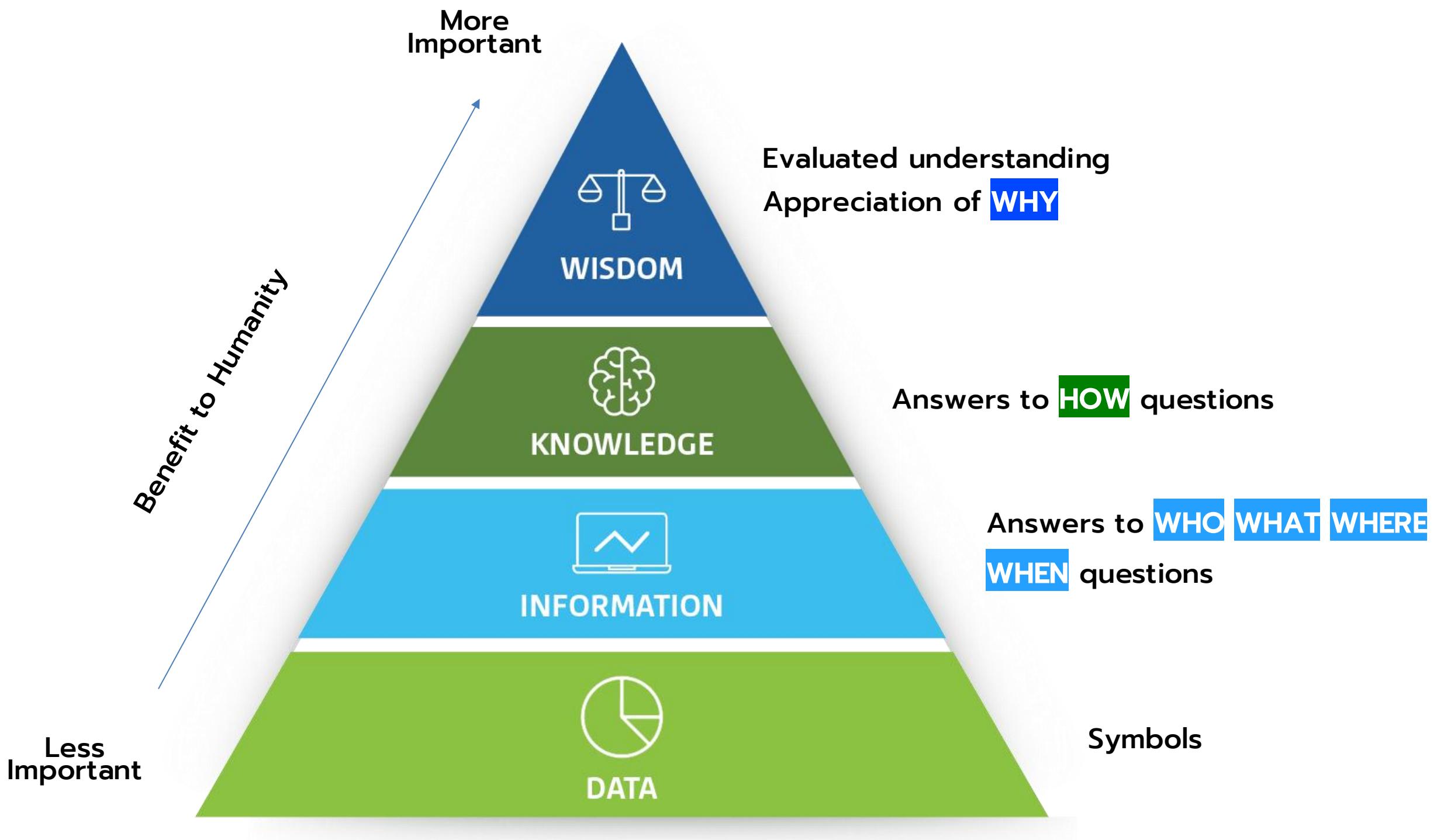
Current status and future prospect of Internet of Things

“Things” VS. “People”



United Nations World Population Prospects
International Data Corporation (IDC)
World Bank

Data and Information



From IoT point of view

Data

Raw and unprocessed data obtained from IOT devices

Information

Inferred/summarized from data by **filtering, processing, categorizing, condensing, and contextualizing** data

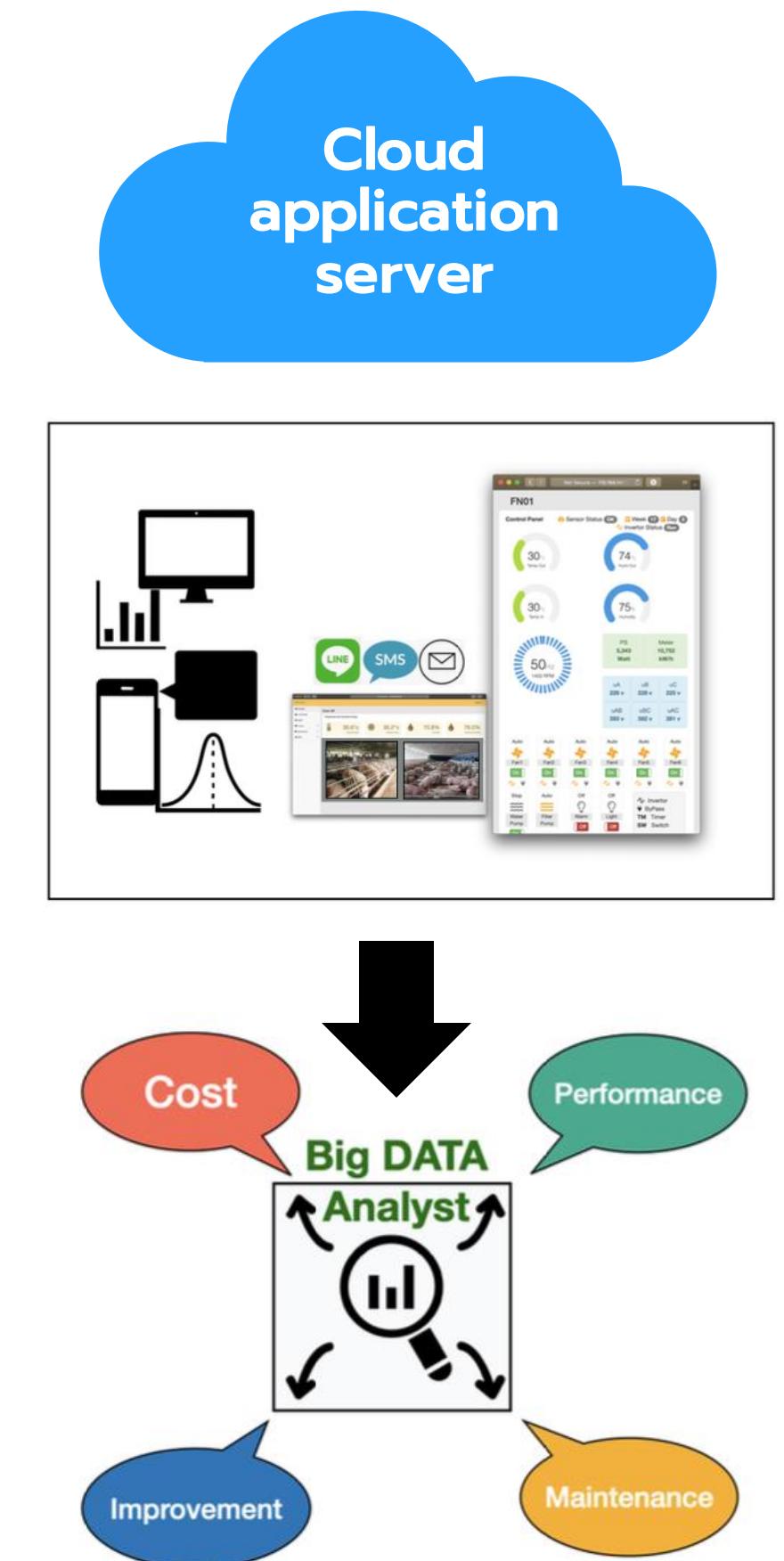
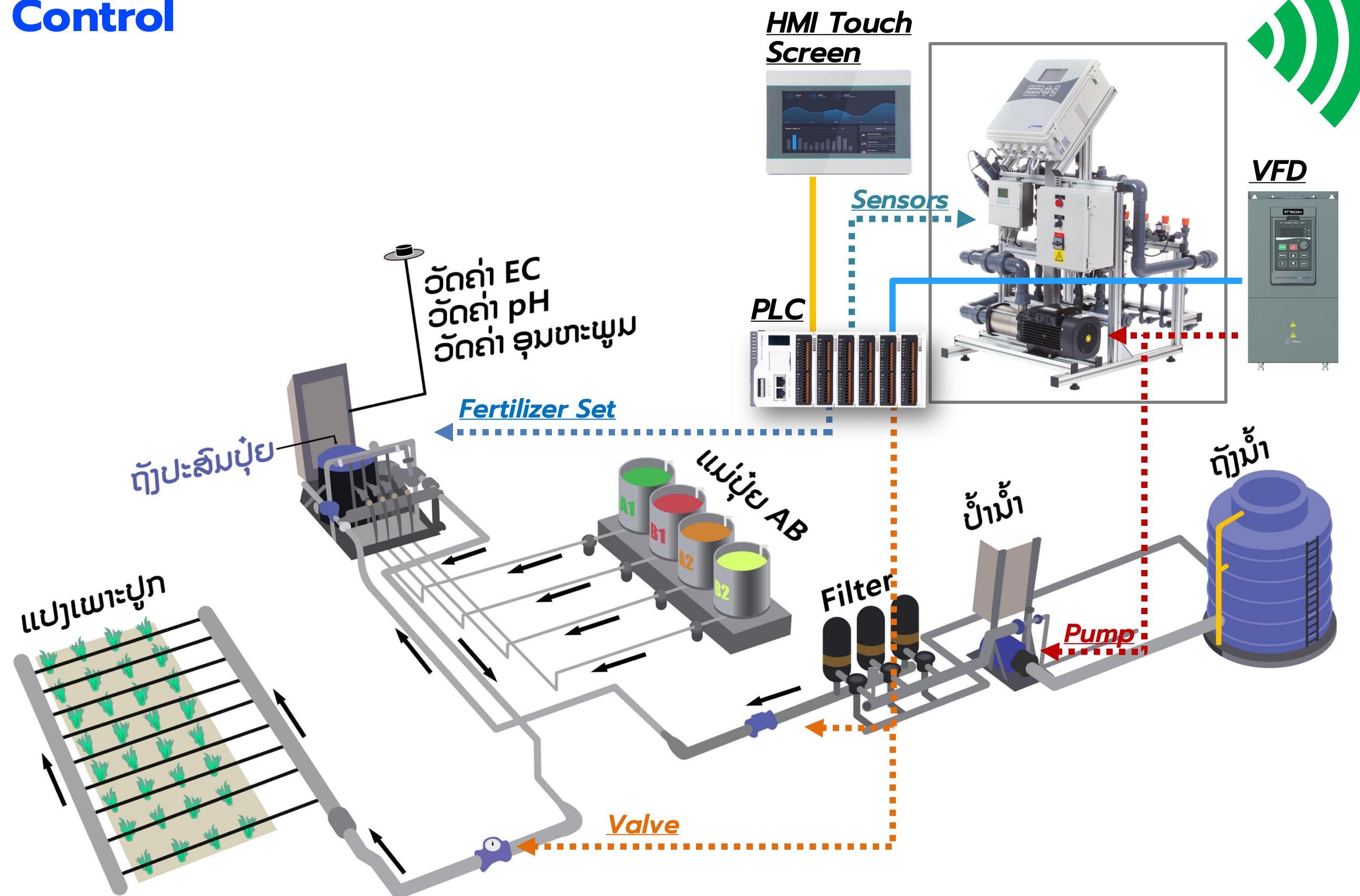
Knowledge

Inferred from information by **structuring/organizing** information and is put into action to achieve specific objectives.

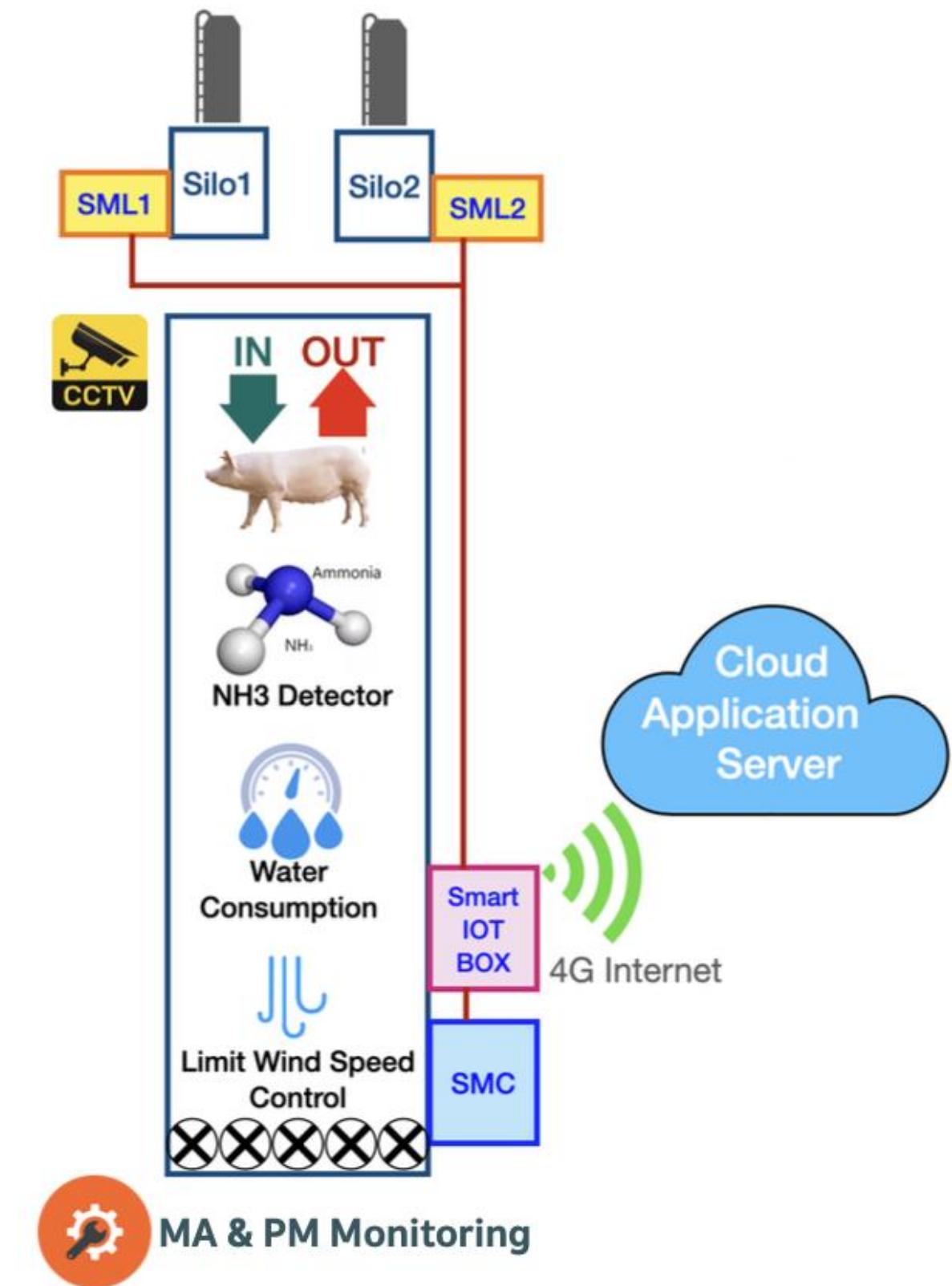
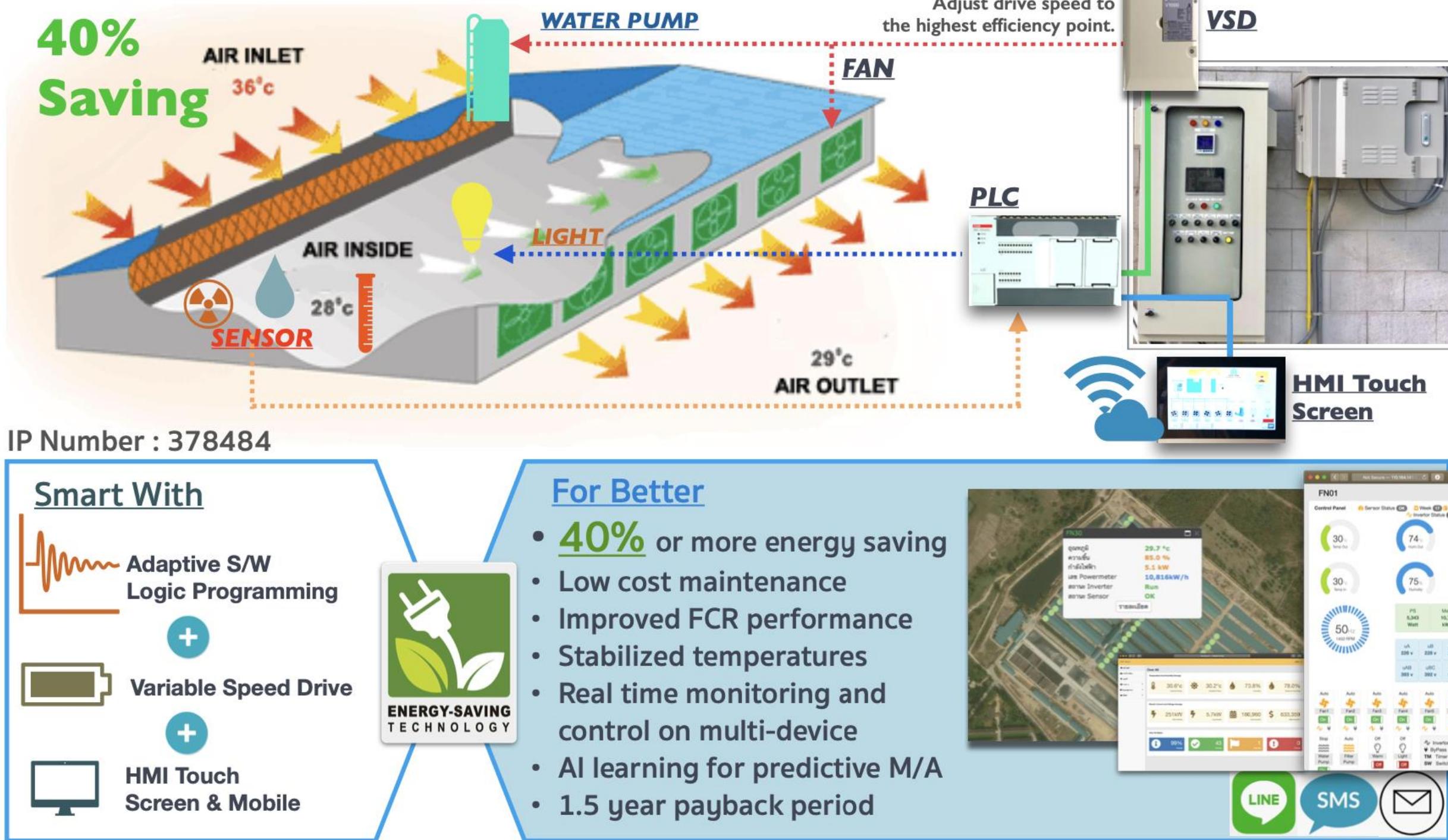


Application IoT for Agriculture sector

Smart Fertilizer and Irrigation Control



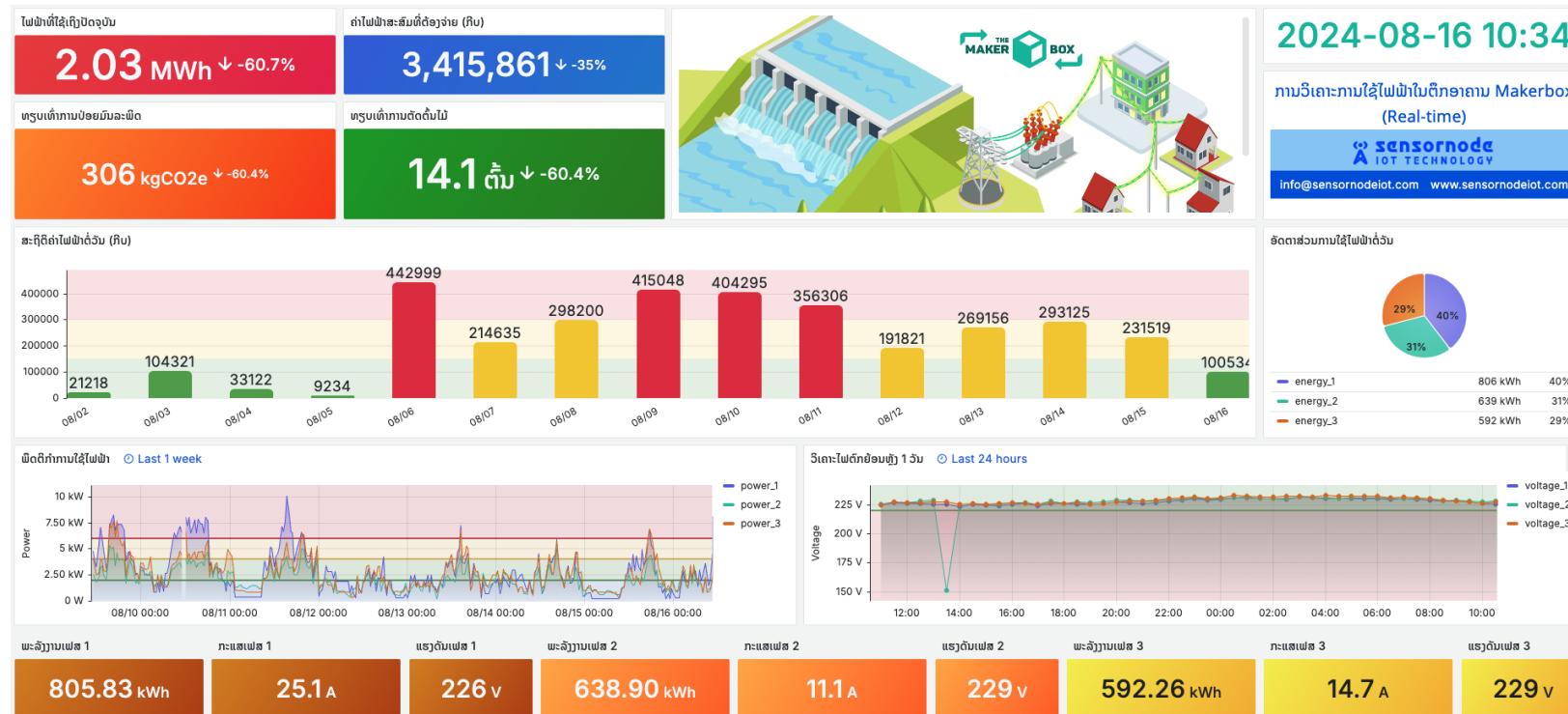
EVAP Smart Climate Control





Application IoT for Energy/Power sector

Smart Energy(Power) Audit

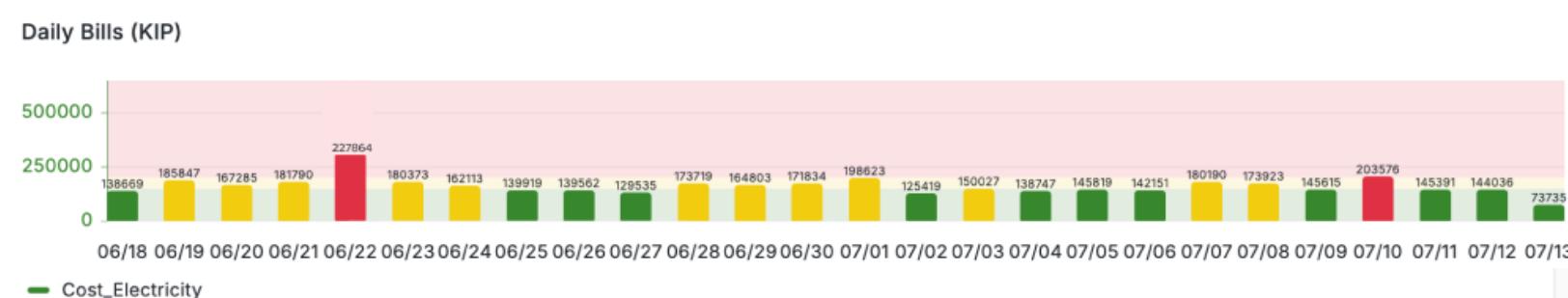


Energy dashboard provides a detailed real-time analysis of energy usage, costs, and environmental impact, facilitating an effective energy audit.



Environmentally friendly and maintain a low carbon footprint contributing to a greener planet.

Demonstrating a dedication to environmental conservation, tree planting initiatives, sustainability certifications



Keep track of daily expenditures with the precise billing system, allowing you to stay on top of your energy costs effortlessly.

CHALLENGE

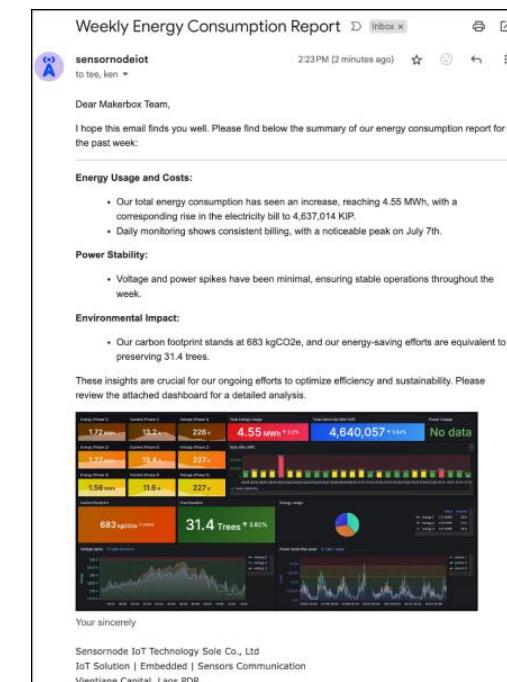
Businesses, smart cities, and industrial stakeholders need a reliable and scalable communication network that can collect and transmit energy data from various devices and locations.

The DCP must be: 1) Secure; 2) Affordable cost; 3) Easy to deploy and maintain

However, many currently available solutions are onsite walk-in and manual record by human, which results in excessive costs, and difficulties in decision-making.



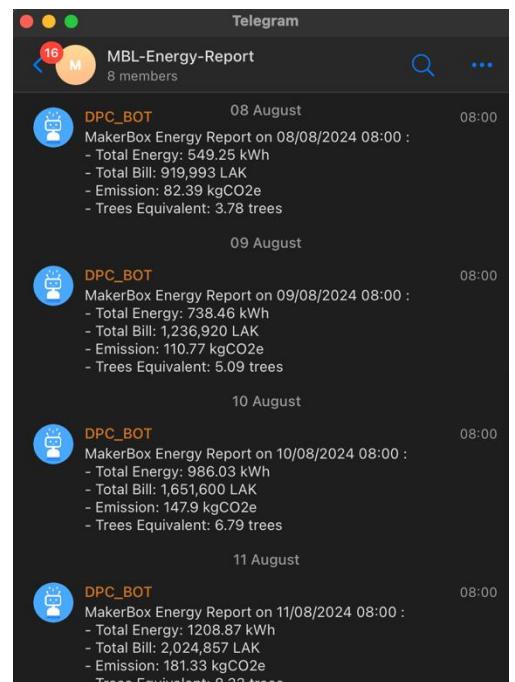
PDF Report



Email Report



Chatbot Report



Get insight report on energy audit, result of before and after compression



Application IoT for Manufacturing Factory

OEE Monitoring System

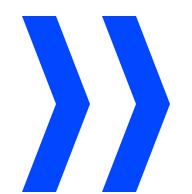
Rotation speed

Energy consumption

Vibration

Produced units

Temperature



OEE

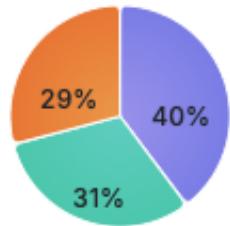
6530 Kw

↓ (-54%)

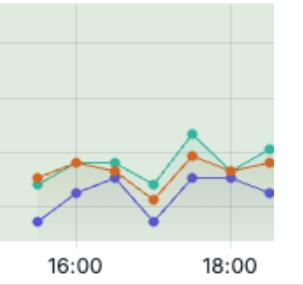
Availability



Quality



Performance



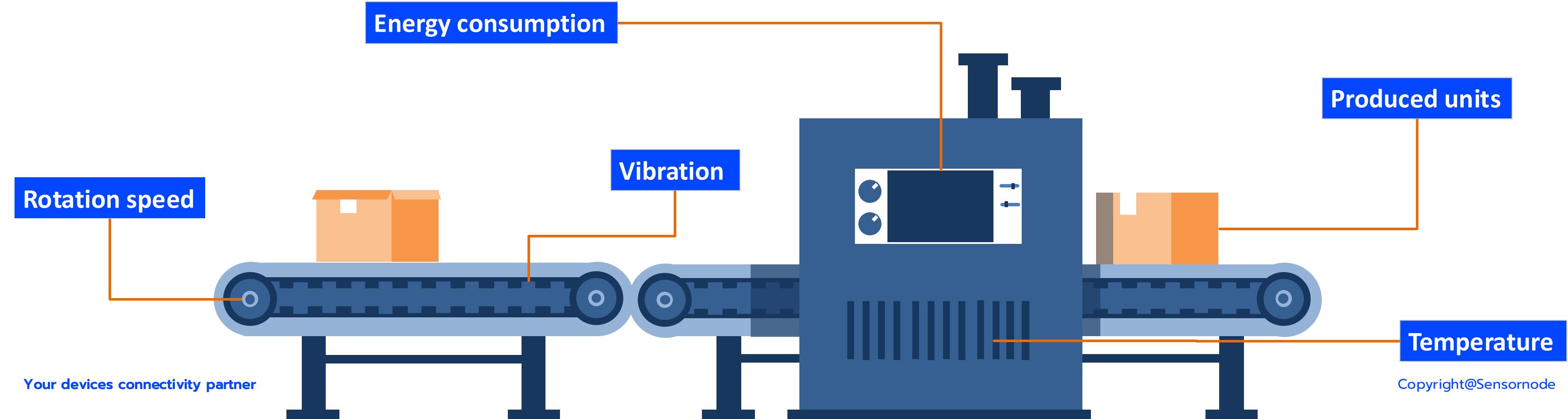
Energy consumption

Rotation speed

Vibration

Produced units

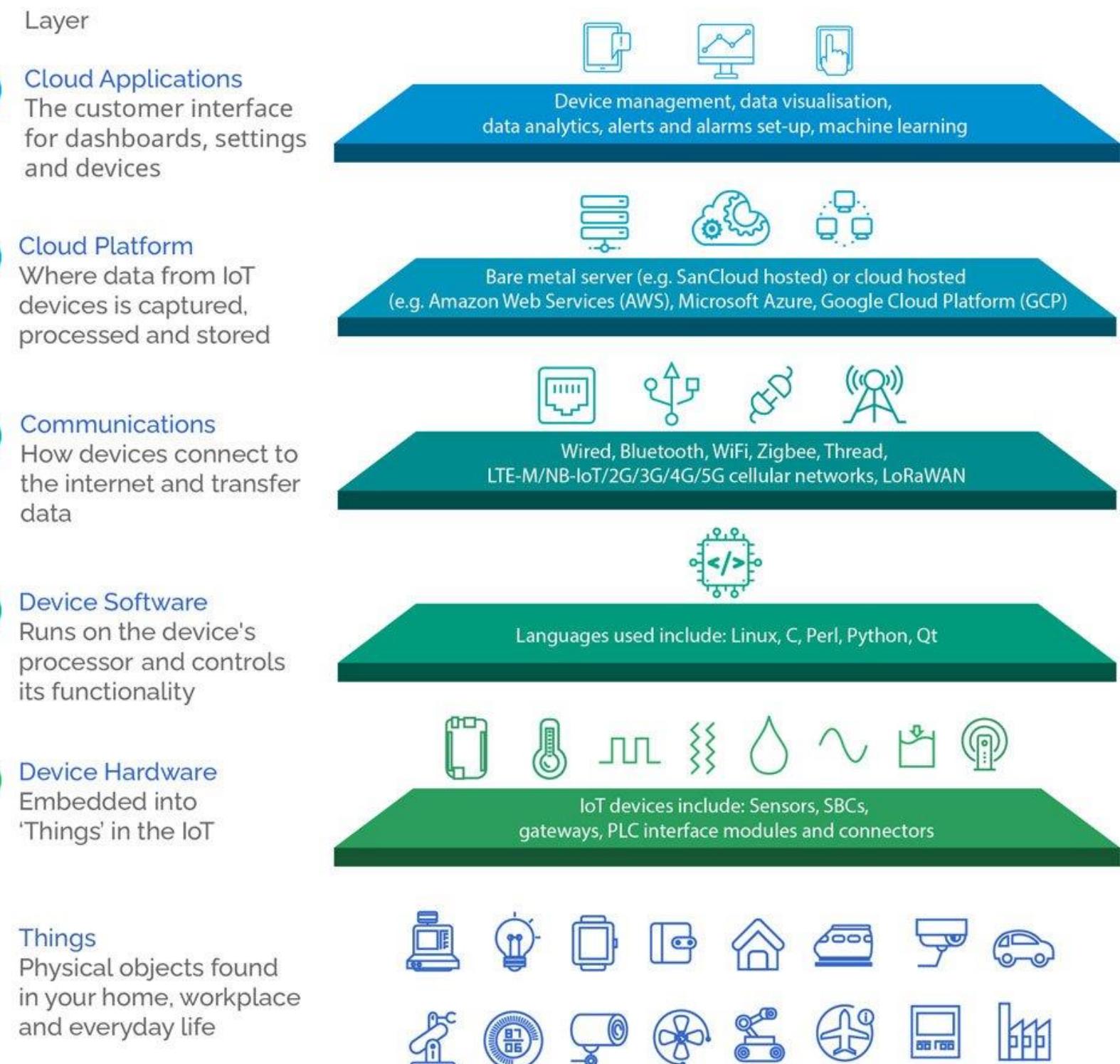
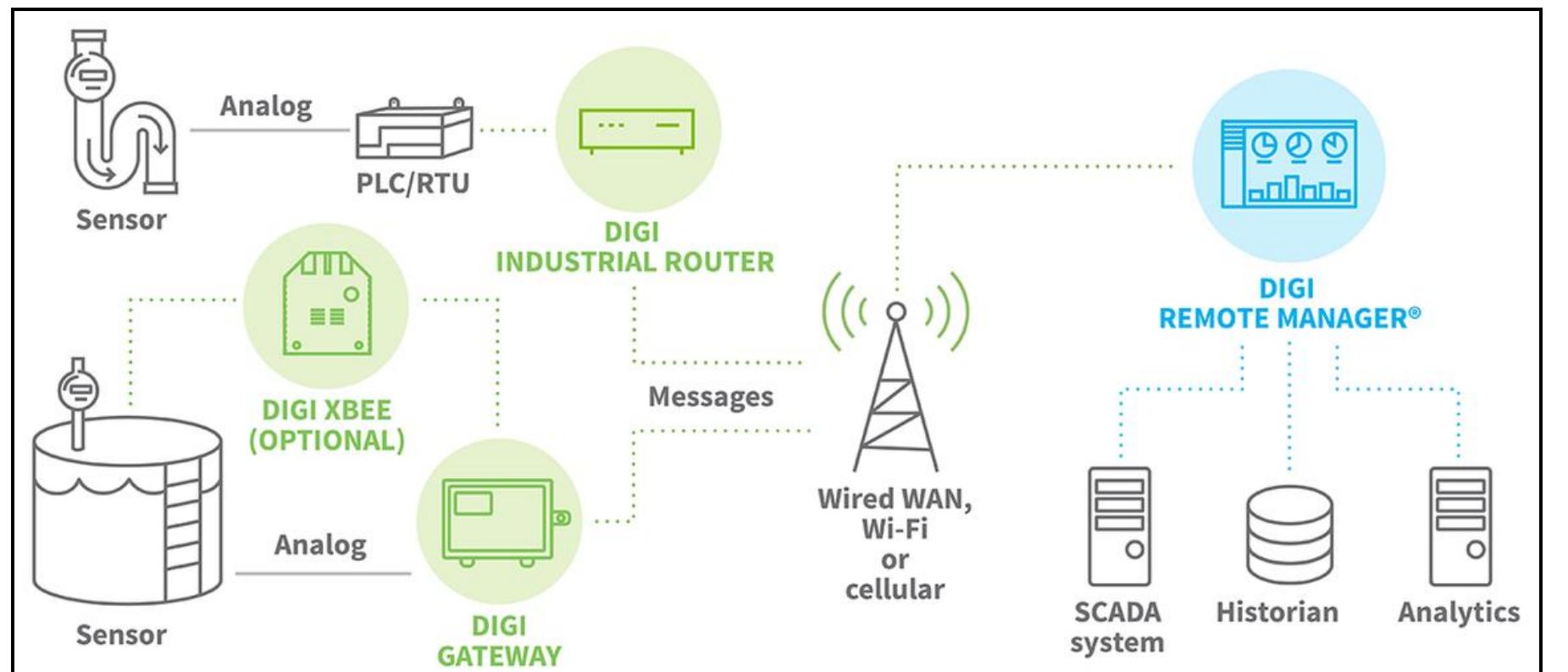
Temperature





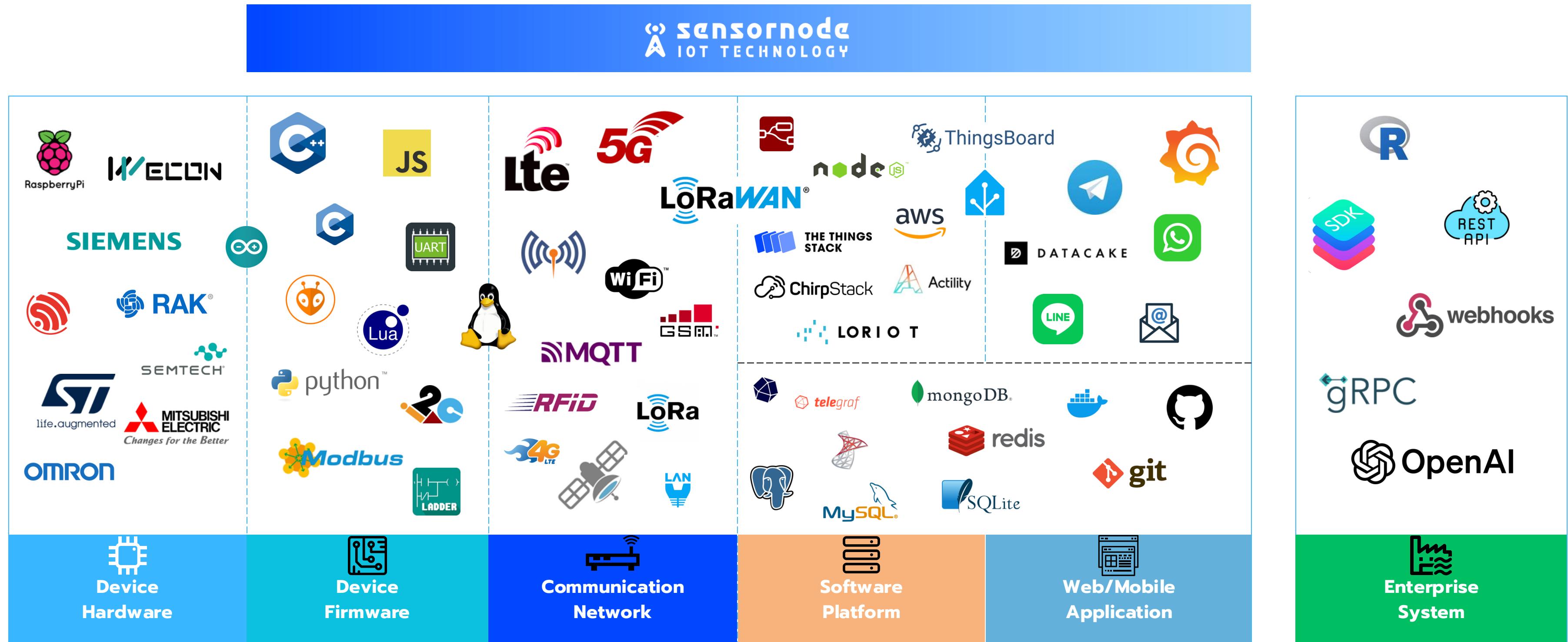
Technology Stack for IoT Development

IoT infrastructure and Layers



Sensornode Service Provider

From Layer 2 - 5



Key take-away

- Know your customer requirement
- Get your own tech stack (1, 2,)
- Devices
- PLC/HMI/IOT Gateway
- Firmware
- Communication
- Protocol
- LoRa/LoRaWAN
- MQTT/TCP
- Modbus/I2C/UART
- LTE/4G/5G/WiFi
- Cloud platform
- Cloud application/server
- Network server
- Industrial automation
- Data Acquisition and Publication

**Join the
Community**

COMPANY CONTACT INFO

ບໍລິສັດ ແຈ້ນເຊື້ອນໄຫວ ໄອໂທທີ ຕັກໂນໂລຢີ ຈຳກັດຜູ້ງວ

Sensornode IoT Technology Sole Co., Ltd

ເຮືອນແກທີ 263 ຫນ່ວຍ 19 ບ້ານນອງບອນ, ເມືອງໄຊເສດຖາ, ນະຄອນຫຼວງວຽງຈັນ

Unit 19 No. 263 Nongborn Villange, Saysettha District, Vientiane Capital, Lao PDR

www.sensornodeiot.com, info@sensornodeiot.com

Tee, Director and Founder

tee@sensornodeiot.com

85620 96323247



IOT Laos Community

THANK YOU!!