

# Bring Digital Transformation to Russia

November, 2016  
NEC Corporation

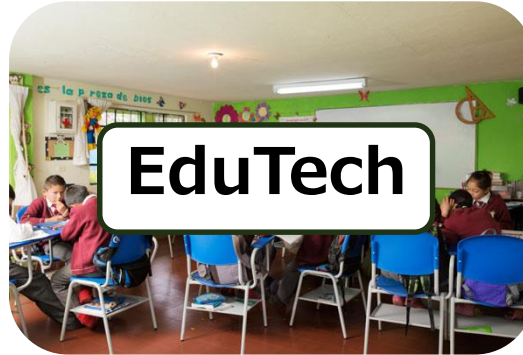


“X-Tech”

# You start to see many something-Tech



**FinTech**



**EduTech**



**GovTech**



**MedTech**



**SecuTech**

**AgriTech,  
RetailTech,  
MarTech,  
HRTech,  
LegalTech,**

...

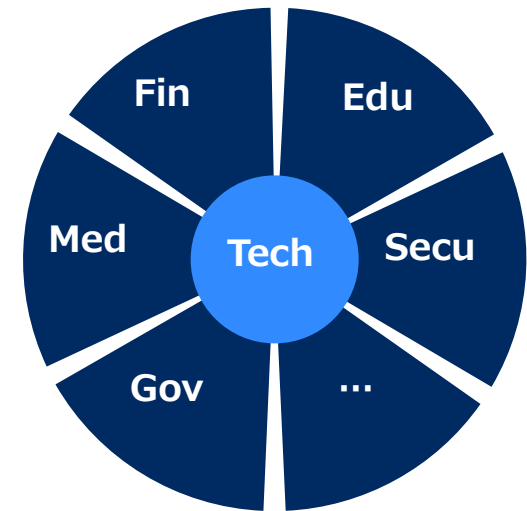
# Introducing “X-Tech”

“X-Tech” means,

- Applied to various, virtually all, industries,
- ICT industry play a pivotal role

“Tech” includes,

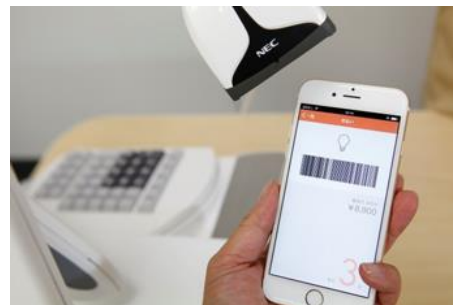
- Cloud/Edge Computing
- Big Data Analytics
- IoT (Internet of Things)
- AI (Artificial Intelligence)
- Smart Device
- **Security**



Not only “Deliver better services”, it has a bigger impact to “Re-define the industry architecture and the principle of competition”

# NEC Use Case – FinTech (Japan)

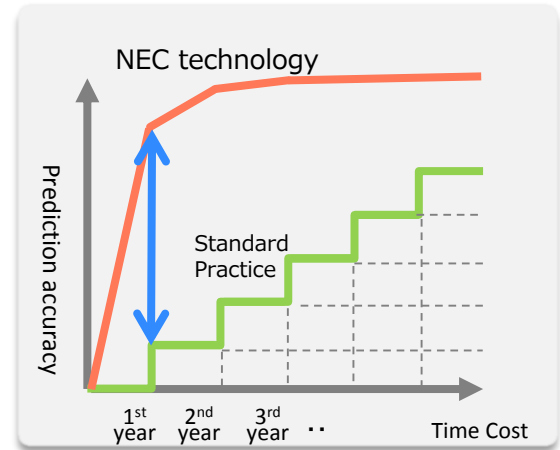
- Brees, a new FinTech company, was established as a JV by NEC and SMBC
- The first service will be launched in 2017
  - Paperless payment-collection service at the counter of convenience store



■ Convenience store in Japan is a “convenient” spot as a touch point between cyber world and physical world

# NEC Use Case – AgriTech (Portugal, Australia)

NEC achieved the successful pilot together with KAGOME



## - Proven values & findings -

- High accurate yield estimation
- Growers spraying routine
- Higher/Lower production comparison & Analysis
- Appropriate farming advice by farming simulation

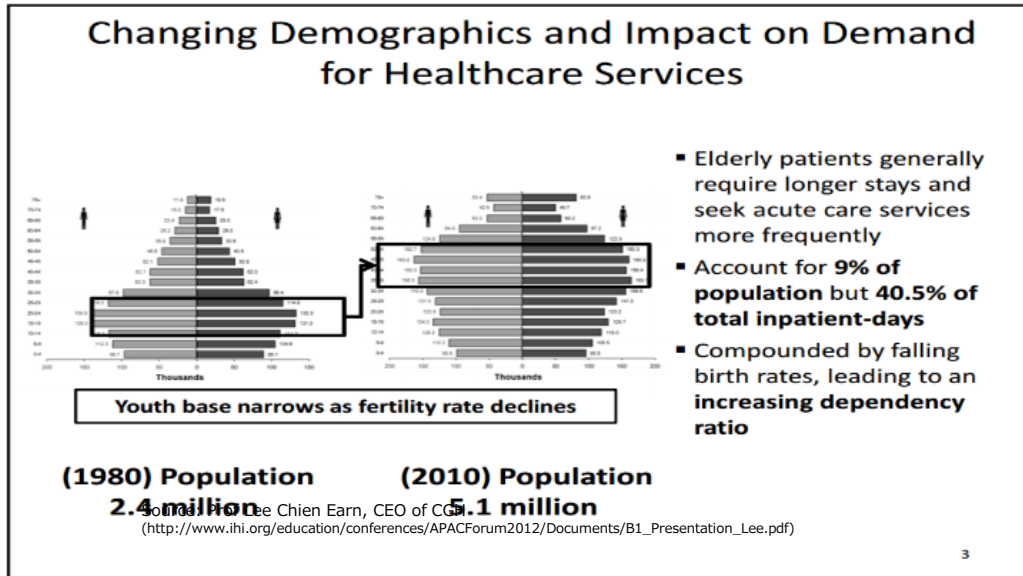


NEC Cloud  
Analysis platform



# NEC Use Case – MedTech (Singapore)

- Growing elderly population is causing hospital resource crunch issue
- NEC & CGH(Changi General Hospital) signed a Collaboration Agreement on 09 June 2016 to co-develop advanced ICT-based careflow solution
- Aiming to reduce Nurses (e.g. by 20% in 2030), optimize elderly patient care (e.g. manpower, bed), prediction of illness (e.g. potential of stroke)



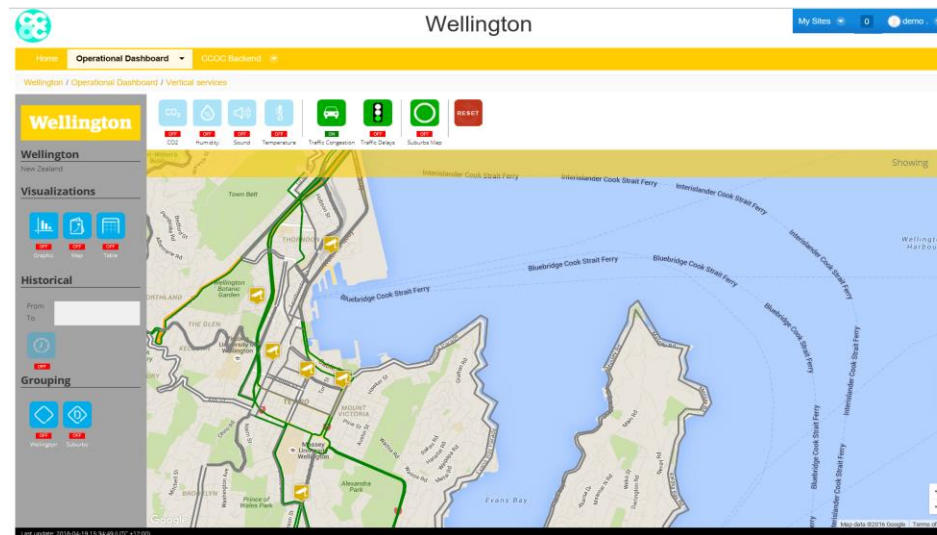
# NEC Use Case – GovTech (New Zealand)

MoU with the mayor of Wellington, NZ

Traffic measurement

Inter-Agency Collaboration

Environment monitoring



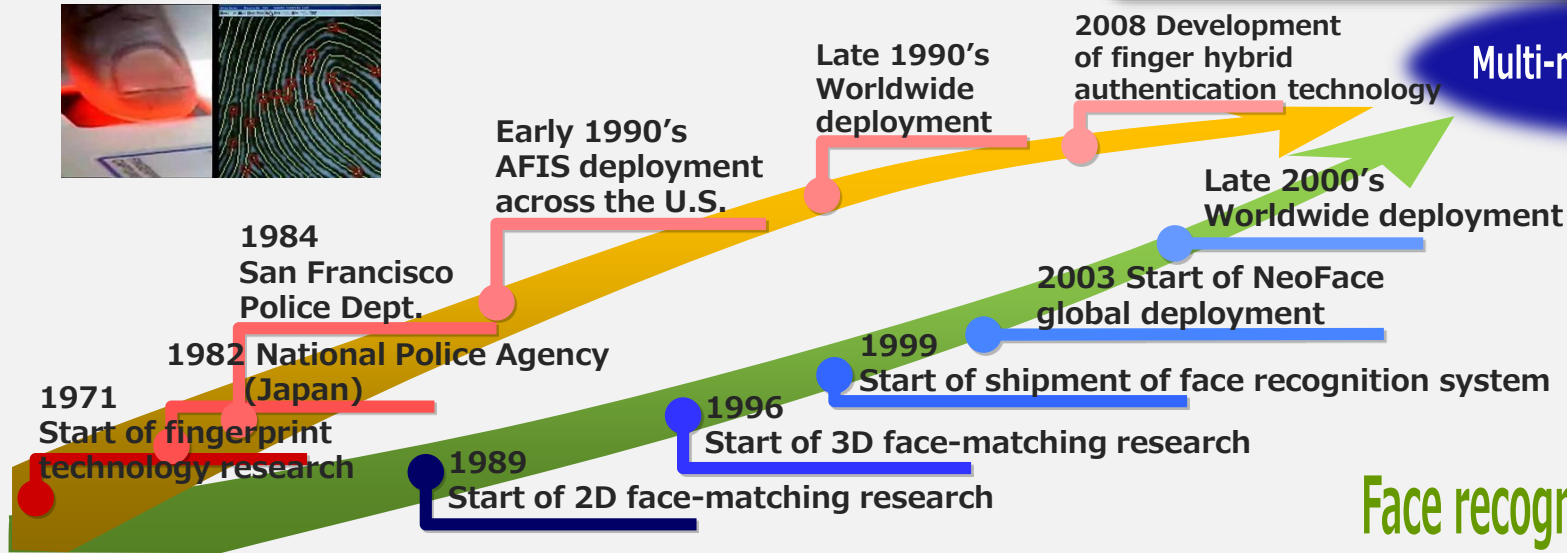
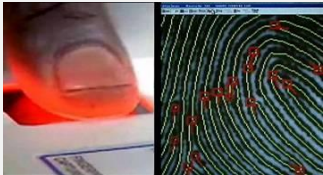


# Evolution of Biometrics Identification

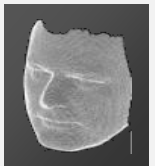
Biometrics identification technologies and applications have evolved into ...

- Fingerprint, Face, Vein, Iris, Ear, Walking form, ...
- Forensic, Civil, Commercial, ...

## Fingerprint identification



Face recognition



# IoT (Internet of Things)

# Which IoT?



# Industrial IoT - Types

## Sensors in Products (by manufacturers)

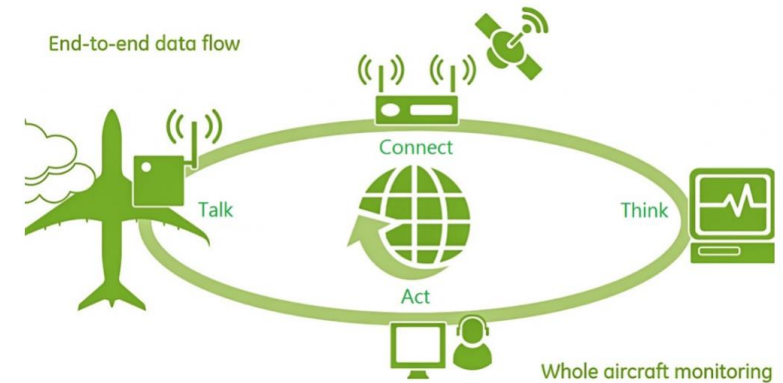
- Aircraft engine, Wind Turbine, ...

## Sensors in Assets (by operators)

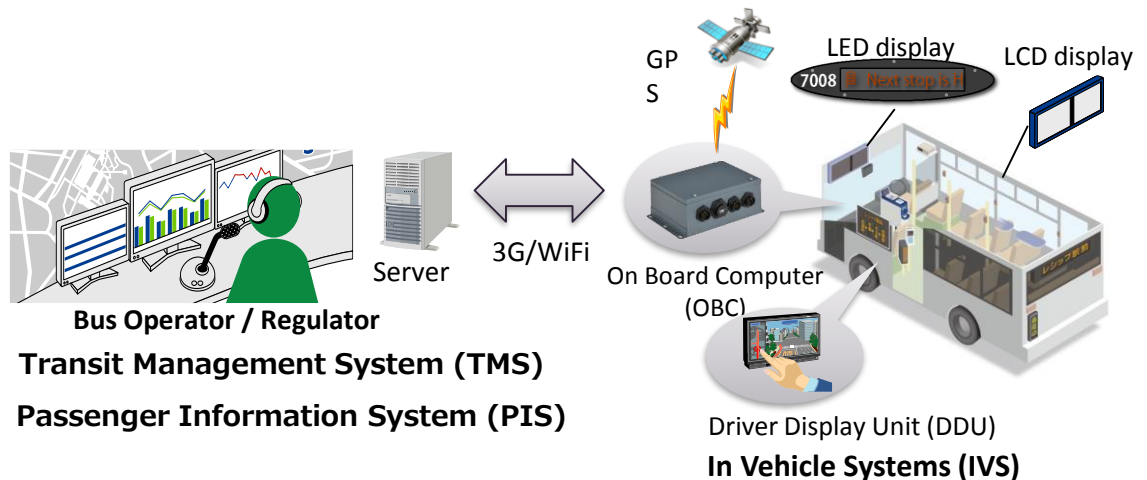
- Fleet Management, ...

## Manufacturing Process

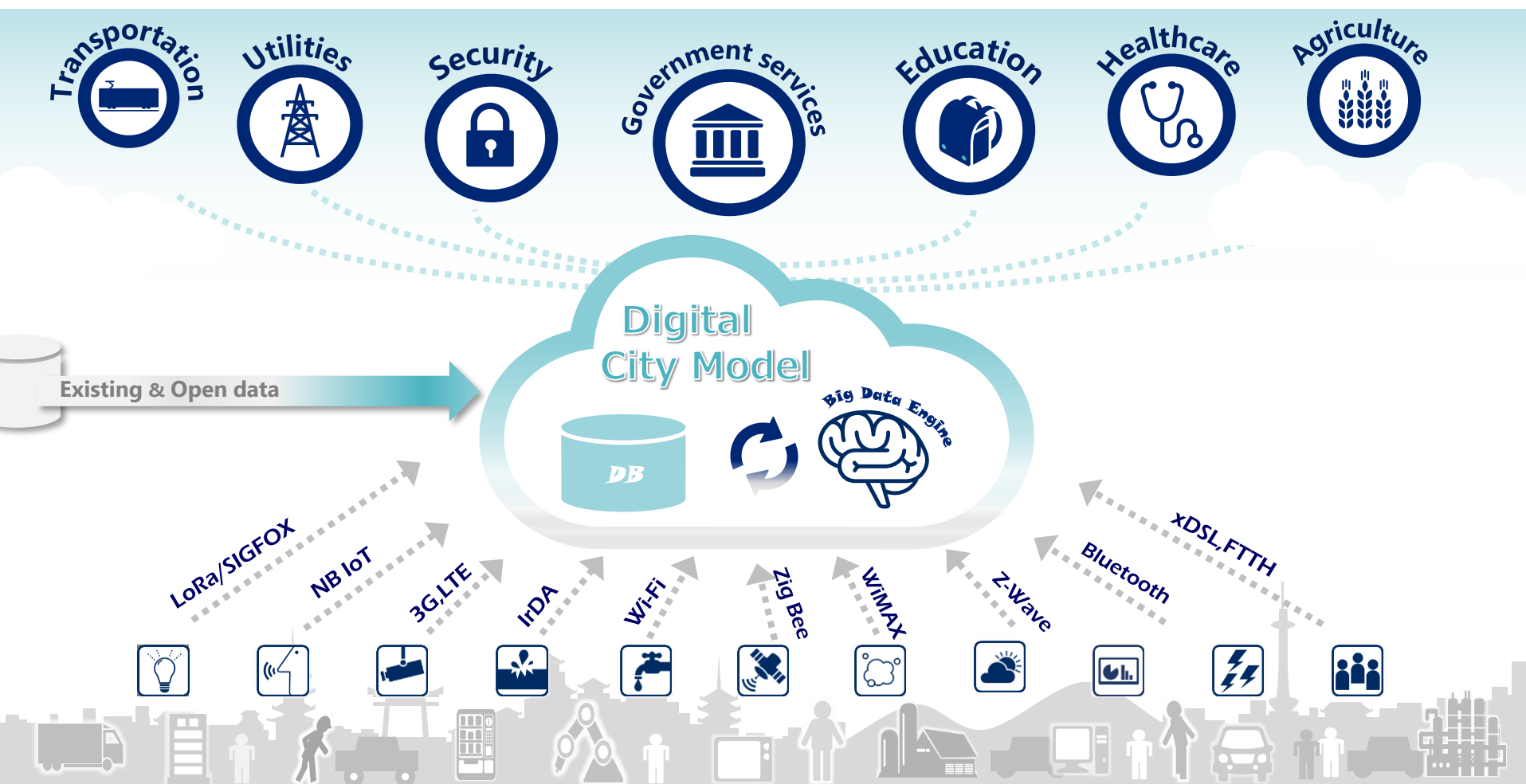
- “Industry 4.0”



Source : GE



# Smart City based on Social IoT



## Nascent IoT

- Closed ecosystem
- Purpose oriented
- Commercial network
- External security

### Smart City

- Open, Local
- Public service
- Private business

## True IoT

- Open, Global
- Unknown purpose
- “The Internet”
- Built-in Security

## (Ref.) “The Internet”

- Originally academic, non-commercial network
- Connect computers, then people and things
- Innovative services have been created based on the existence of “The Internet”, namely Over The Top, Free Rider or BYOB(Bring Your Own Broadband) style



# What IoT brings ...

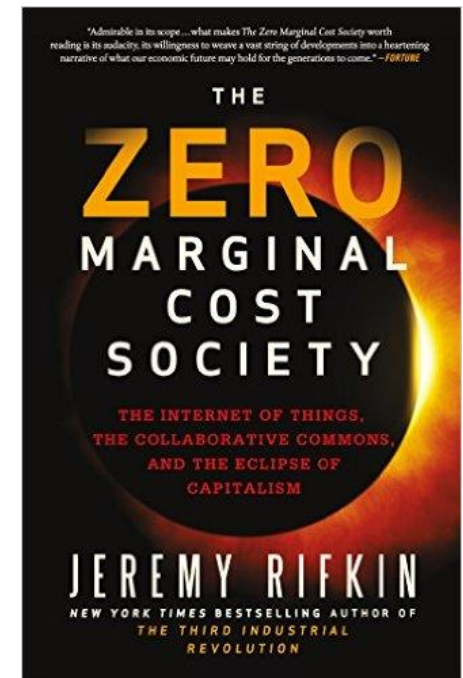
“The Internet of Things is the first general purpose technology platform in history that can potentially take large parts of the economy to near zero marginal costs” (*The Zero Marginal Cost Society*, Jeremy Rifkin)

## The nature of IoT infrastructure:

- Open Architecture
- Distributed

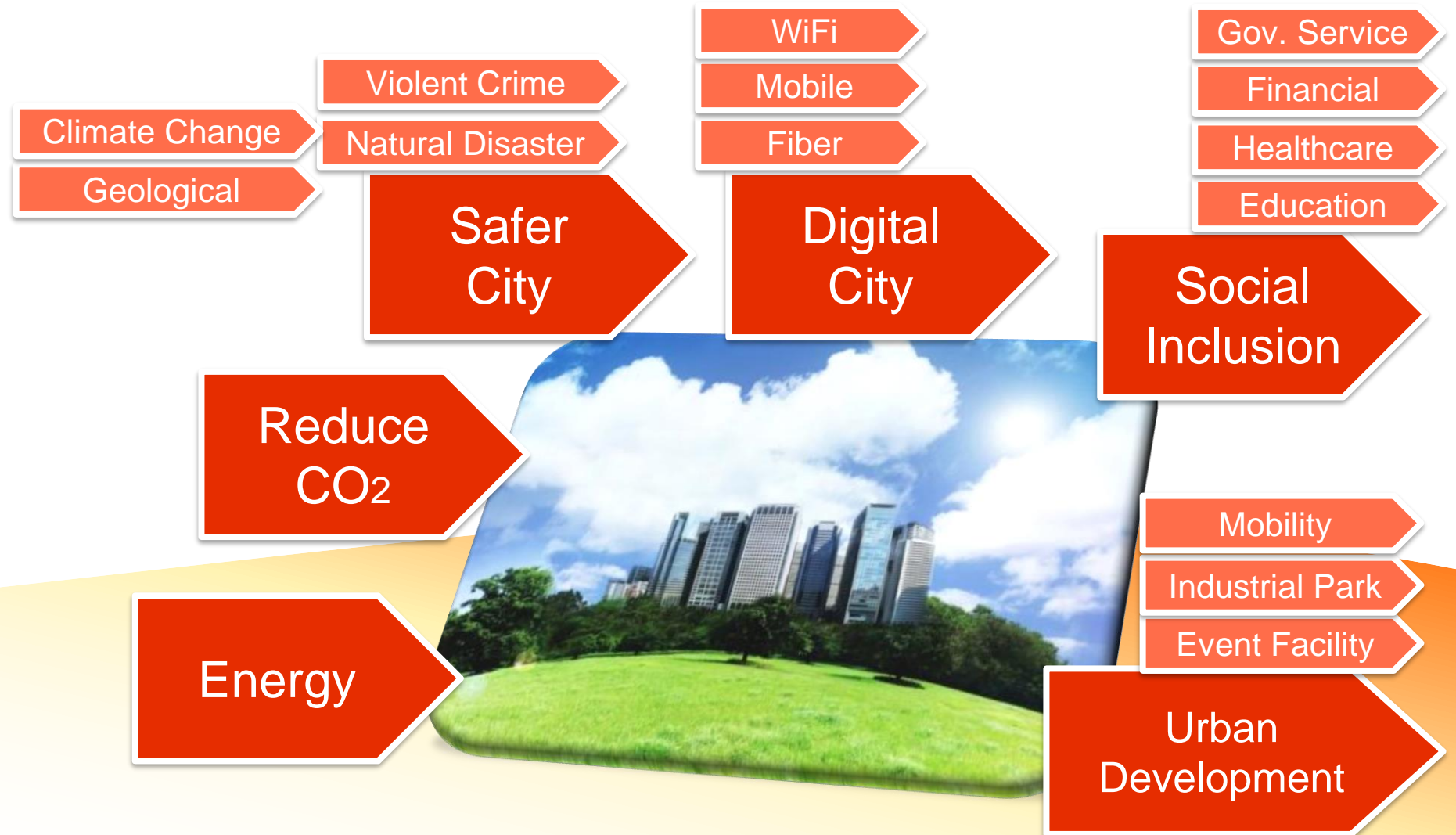
## Along with ...

- 3D Printing
- Open Source Software
- Renewable Energy Source



# Smart City Portfolio

# Smart City by Agenda





# NEC Use cases



# Sustainable Business Model

Common and tough challenge in every Smart City initiative

Technically we should consider ...

## 1. **Investment (sensor, data, network, ...) Sharing**

- Share the goal and roadmap, apply obligations in the contract, ...
- Start from co-location

## 2. **Citizen Participation**

- Citizen can be contributors rather than pure source of problems
- Creatively motivate them

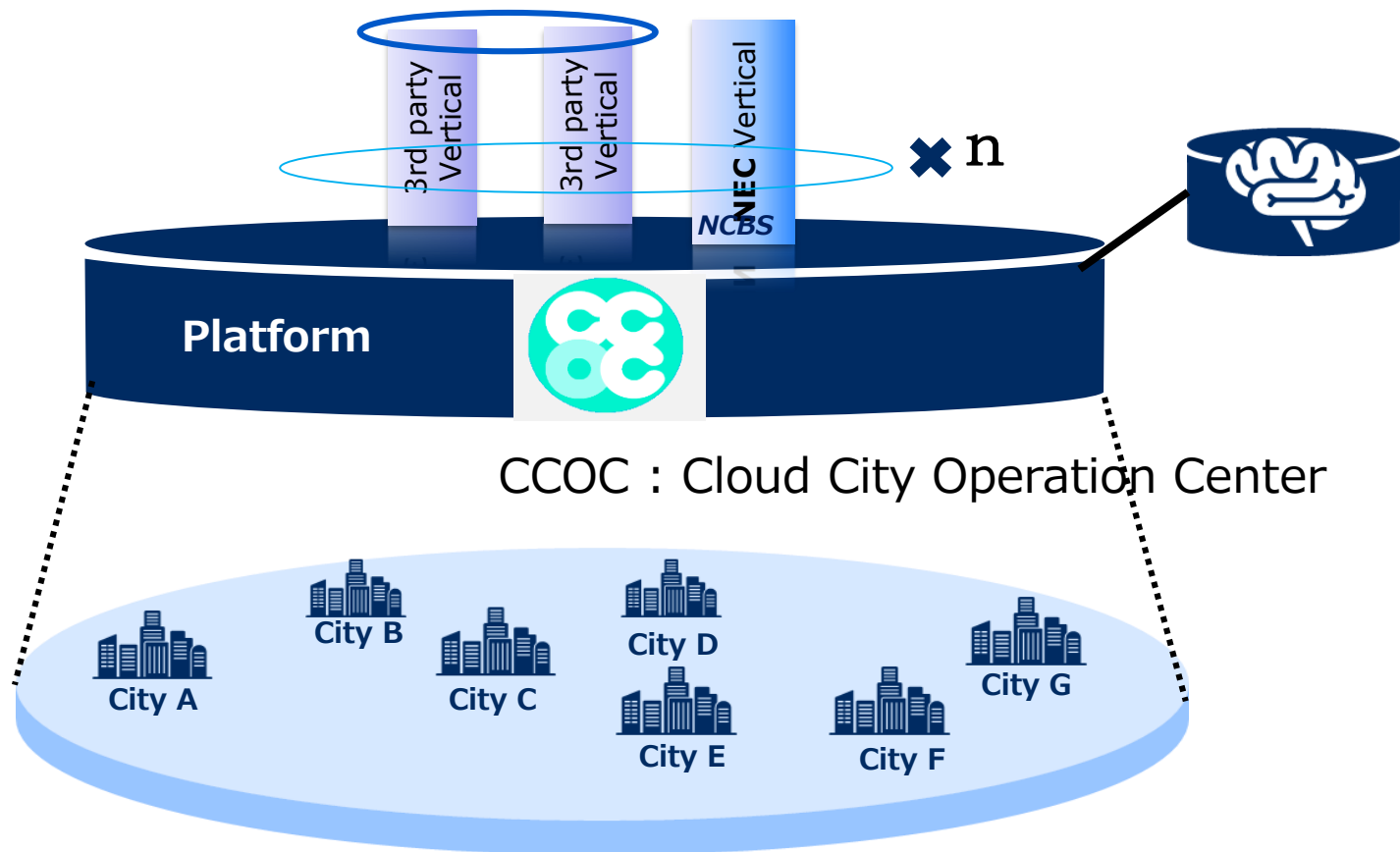
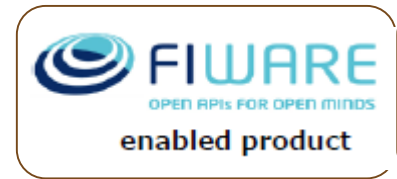
## 3. **Leverage mass market technologies**

- Utilize existing assets originally built for a specific purpose
- Deploy innovative technology for disruptive improvement
- Smart phone has become commodity and can serve many purposes

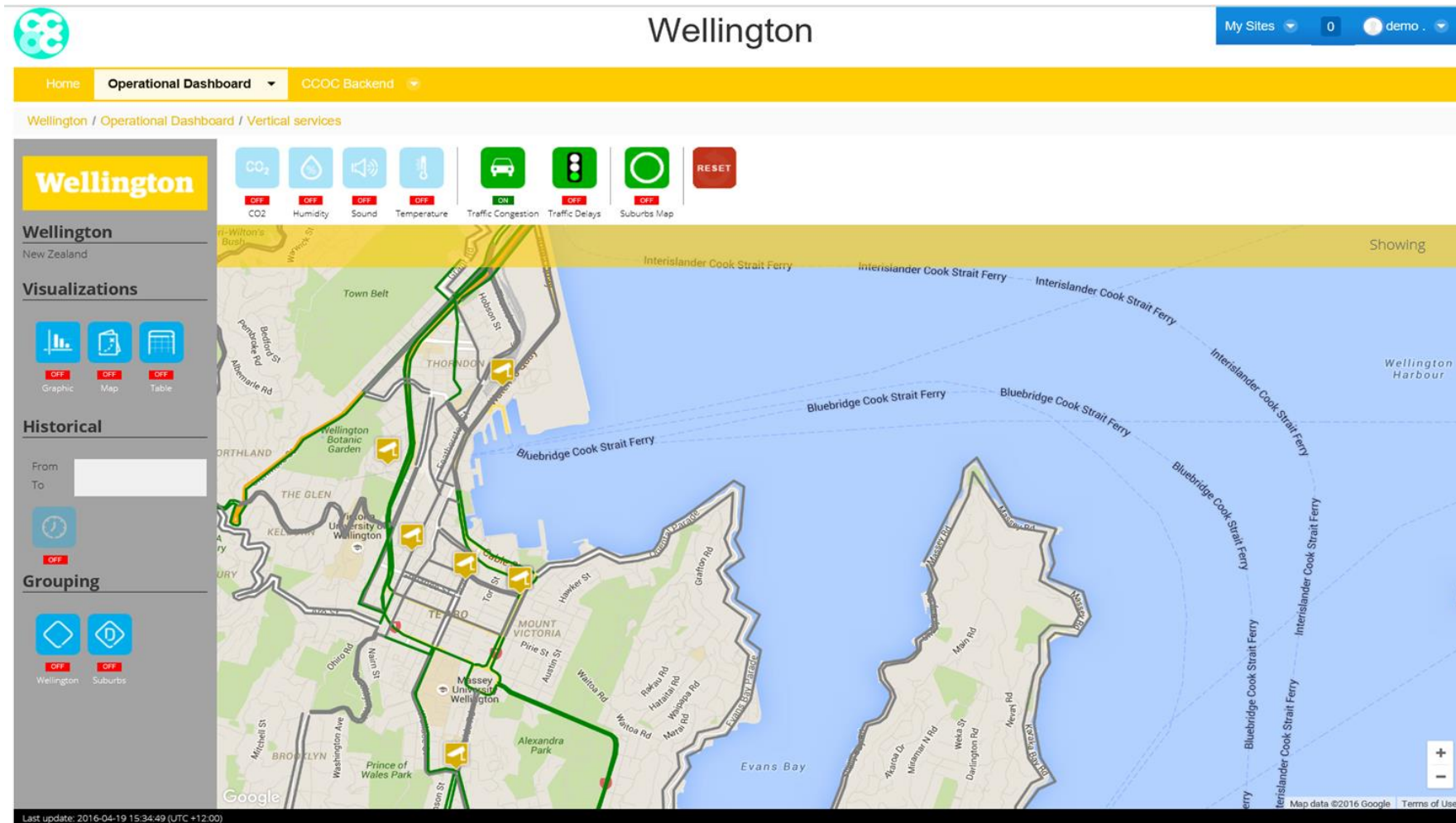
Combine the advantages of Public and Private investment

# Smart City Platform concept

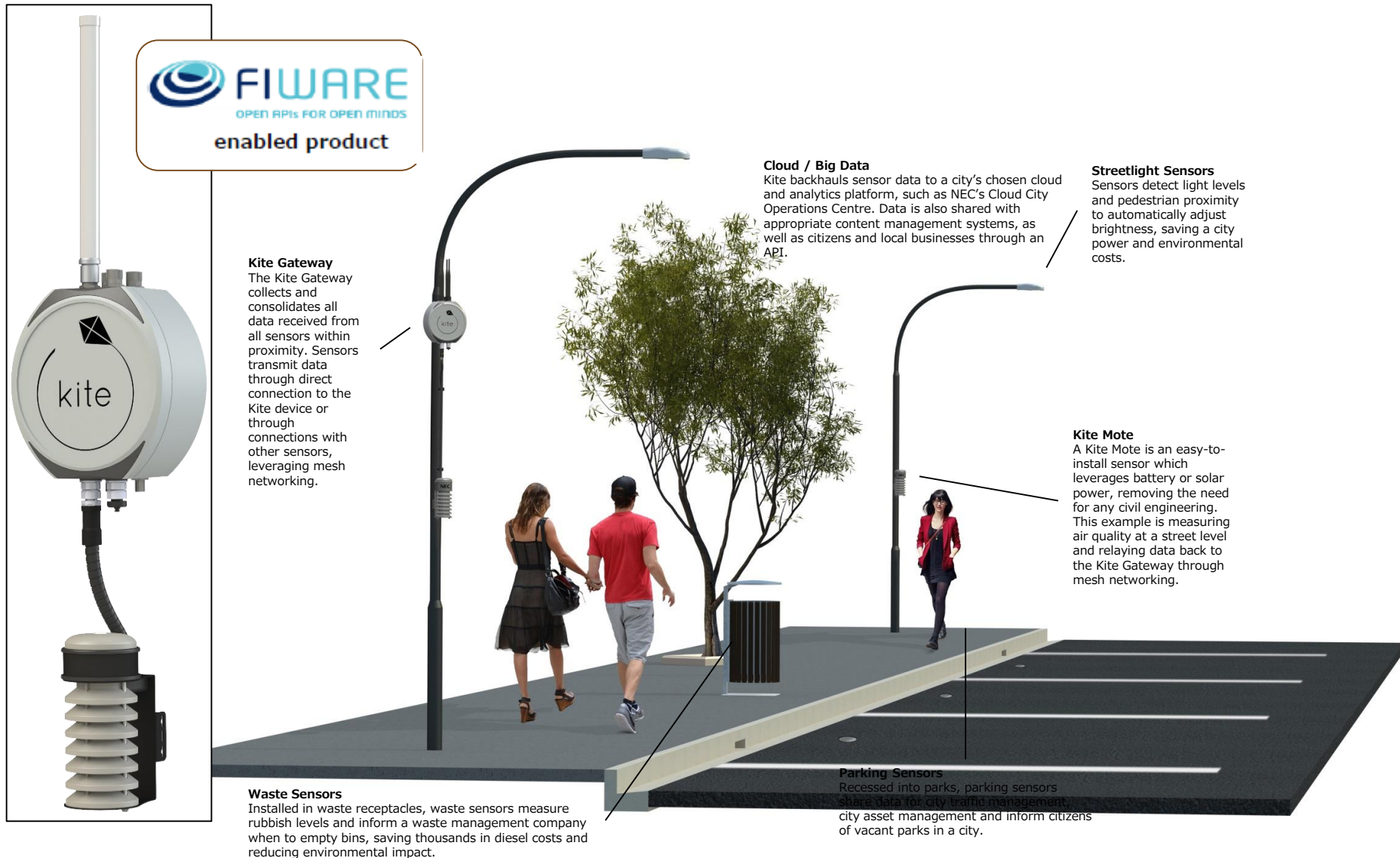
- Open innovation platform for local developers
- Add new cities with a minimum incremental cost
- Gain new insights through Big Data analysis





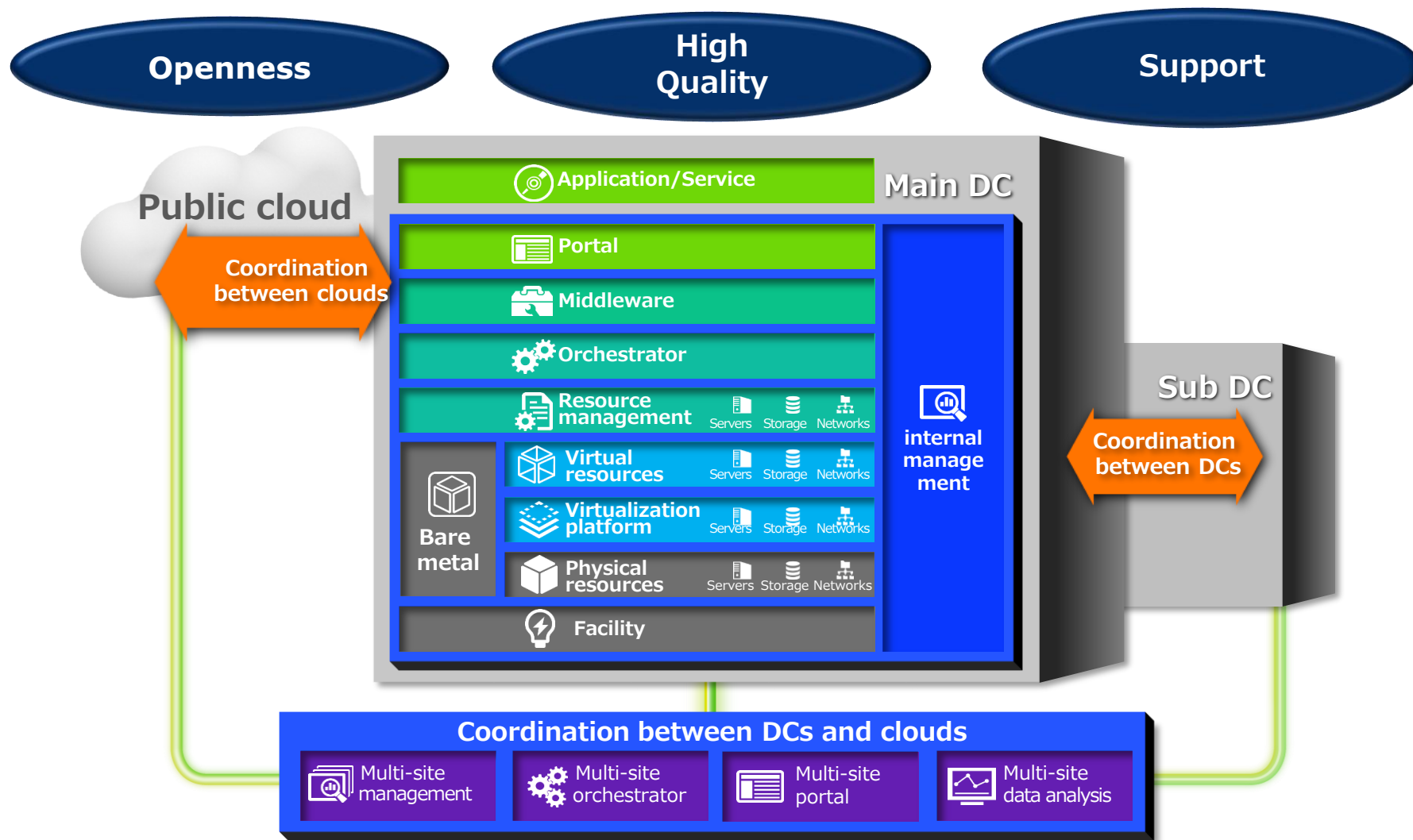


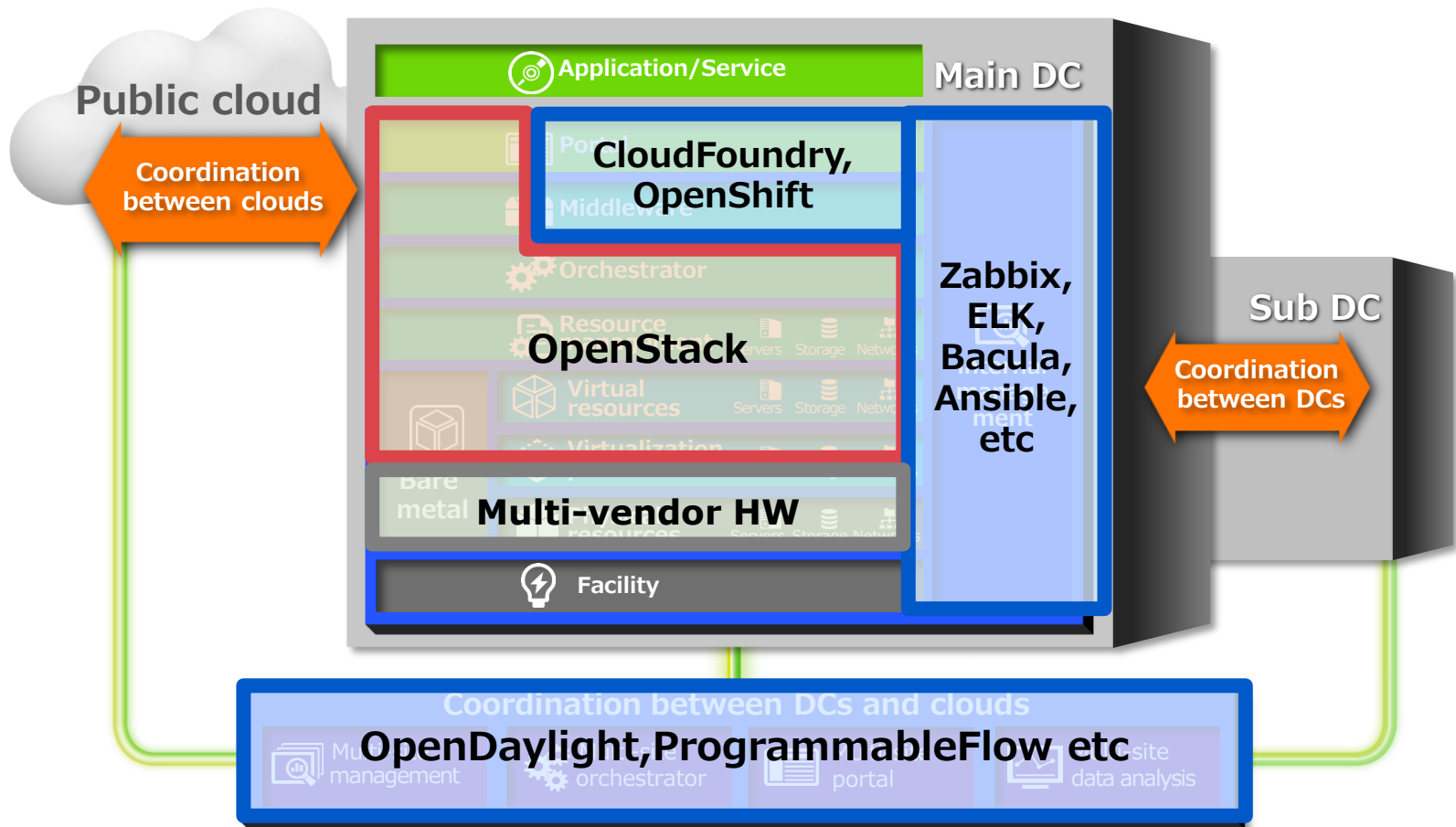
# IoT Gateway for Public Space (Pre-production model)



# OSS based Datacenter

# Typical Cloud Infrastructure Architecture

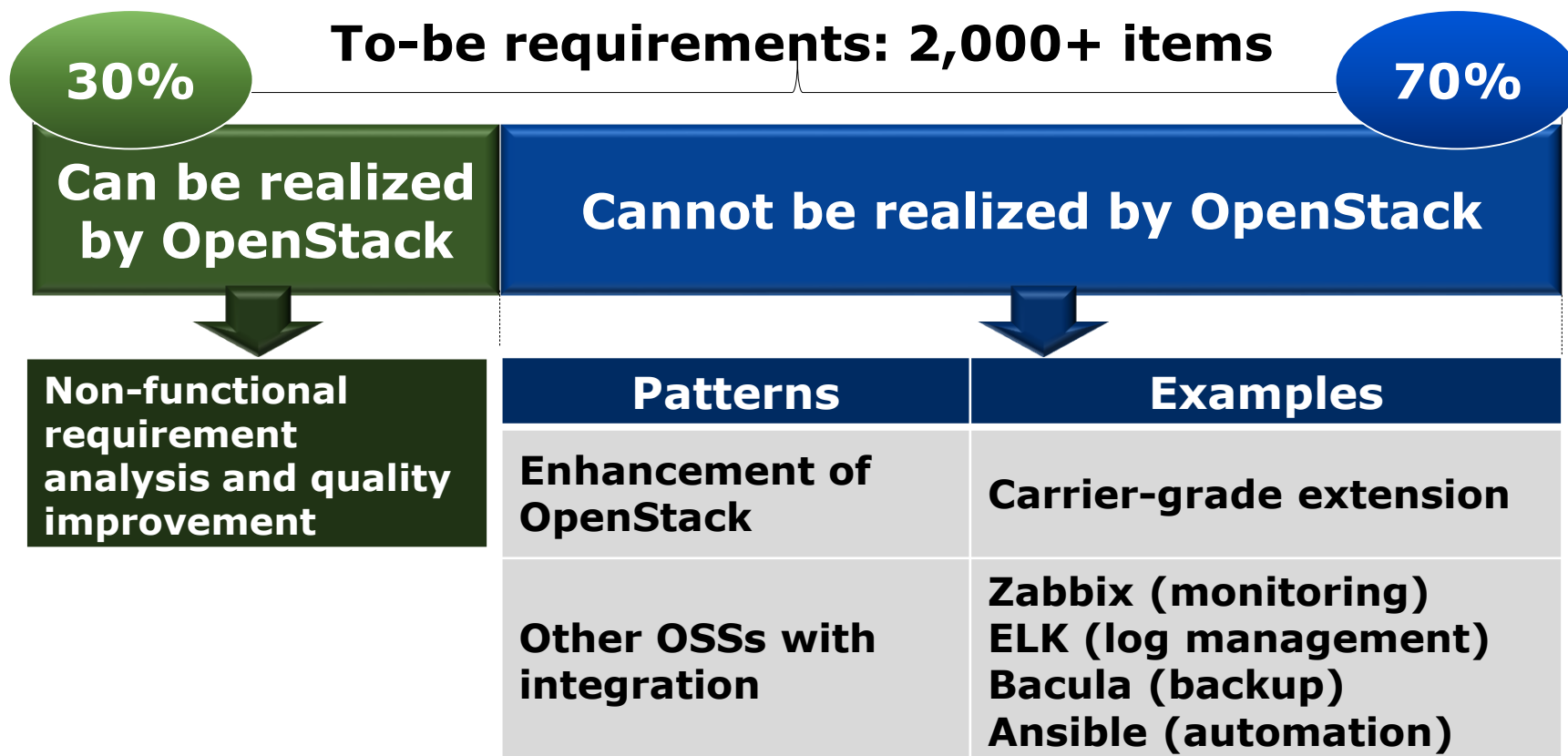




# OpenStack and beyond

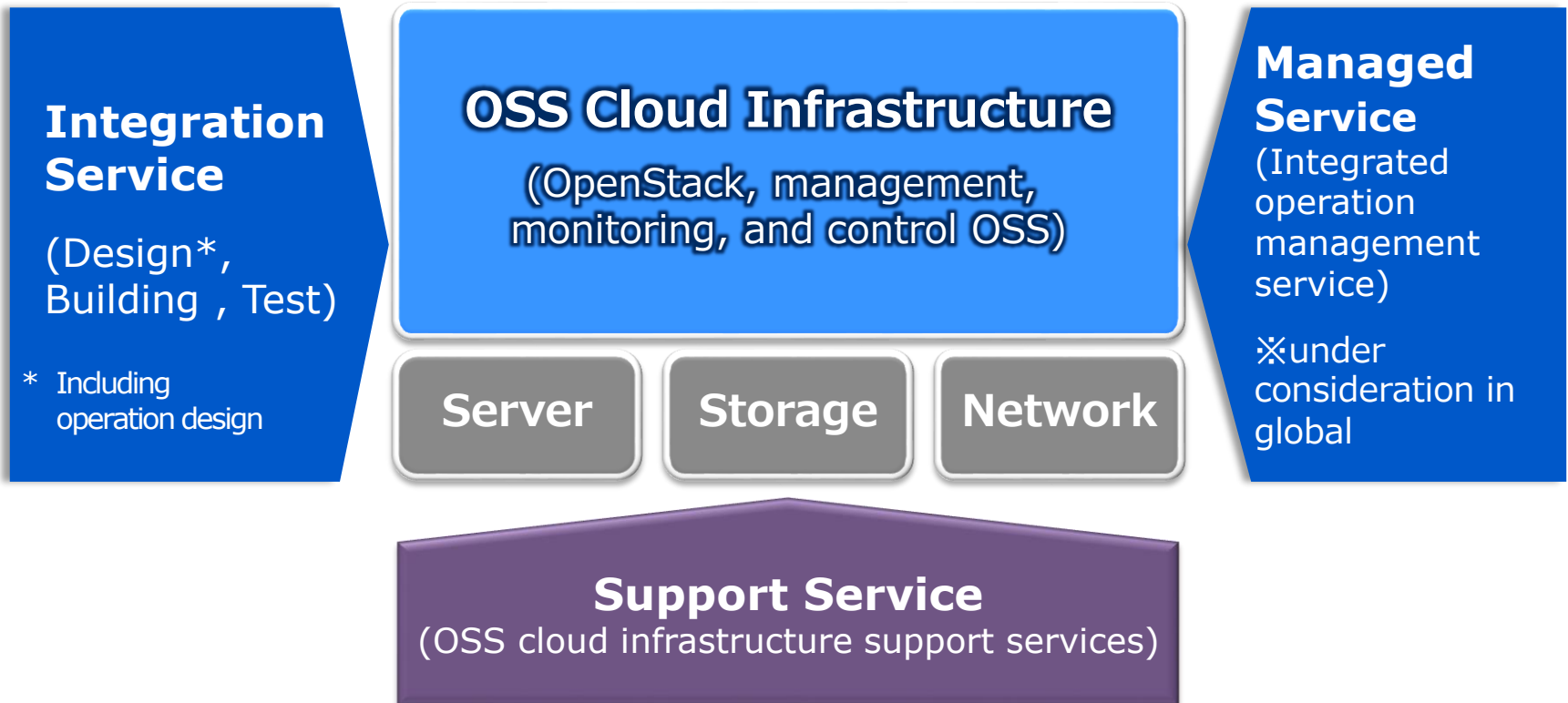
**Approximately 30%** of all software requirements are functions that **be realized by OpenStack**.

In addition to quality improvement, enhancement of OpenStack and integration with other OSSs through SI are implemented





# How to build OSS Cloud Infrastructure



 **Orchestrating** a brighter world

**NEC**