



Advanced Facility Maintenance Using Fujitsu AR Technology

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1. METAWATER's Introduction

METAWATER is one of the leading engineering companies in Japan with unique products and wide range of experience from product supply ,EPC up to O&M service incl. PFI Projects.

Profile

Capital	JPY 12 Bil.
Net Sales : FY2014	JPY 105 Bil. (consolidated)
Employees	2,000 (consolidated)
Location (JPN)	Tokyo(Head Office) , Hino , Nagoya , Chita
(Intl.)	North America , Europe , Vietnam , Cambodia

Ceramic Membrane



More than 30% of share
In MF/UF DWTP

Ozonizer



Top supplier
more than 170 installations

Sludge Incineration



More than 25% of share
More than 45% in large scale

PFI/BTO Business



More than 10 installations

Drinking Water Treatment

- ✓ Ceramic membrane Filtration system
- ✓ Ozone system
- ✓ Rapid sand filtration system



THMs monitor



UV system



PLC

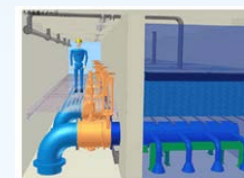


Environment-conscious
Switchboard



Wastewater & Sludge Treatment

- ✓ High Speed CSO filtration system
- ✓ Wastewater reclamation system
- ✓ Ceramic diffuser system (Bio.treat.)
- ✓ Sludge incineration / gasification system

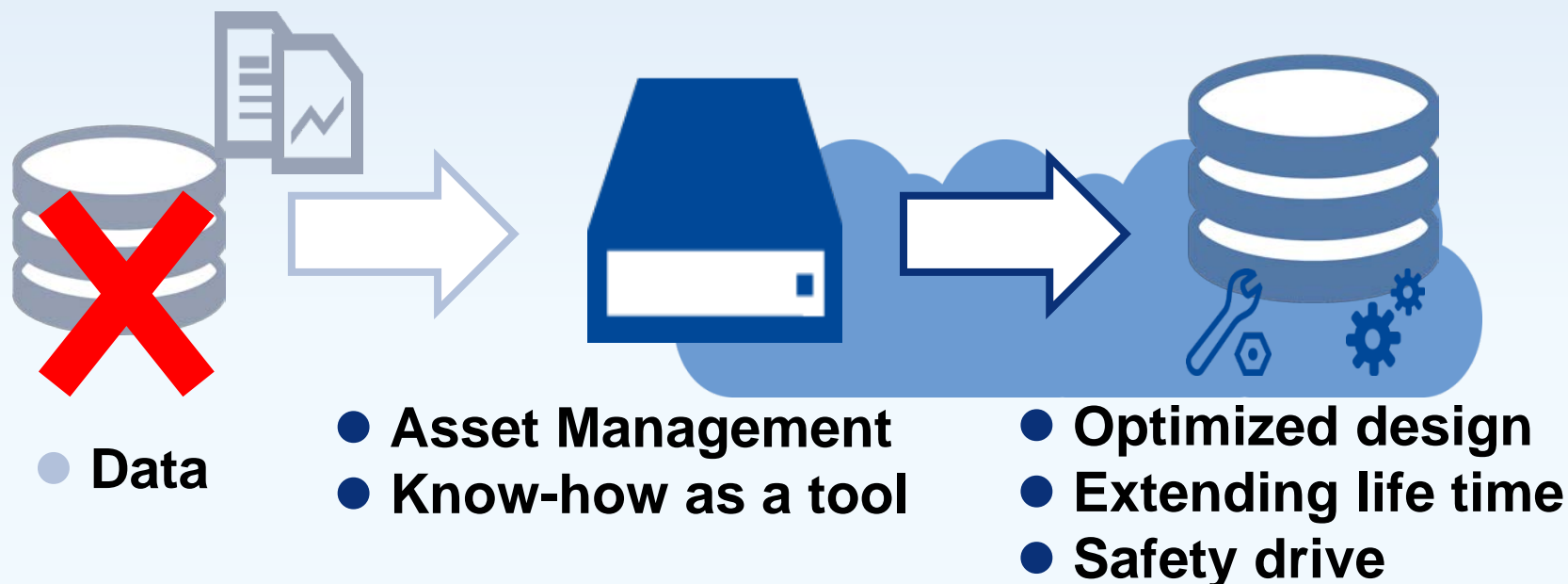


2. The state of Facility Maintenance Business of Water and Wastewater Industry in Japan

- Investment could not be sufficient
- “Optimization” and “Wide area management”
- Financial situation of “Massive renewal era” becomes more severe

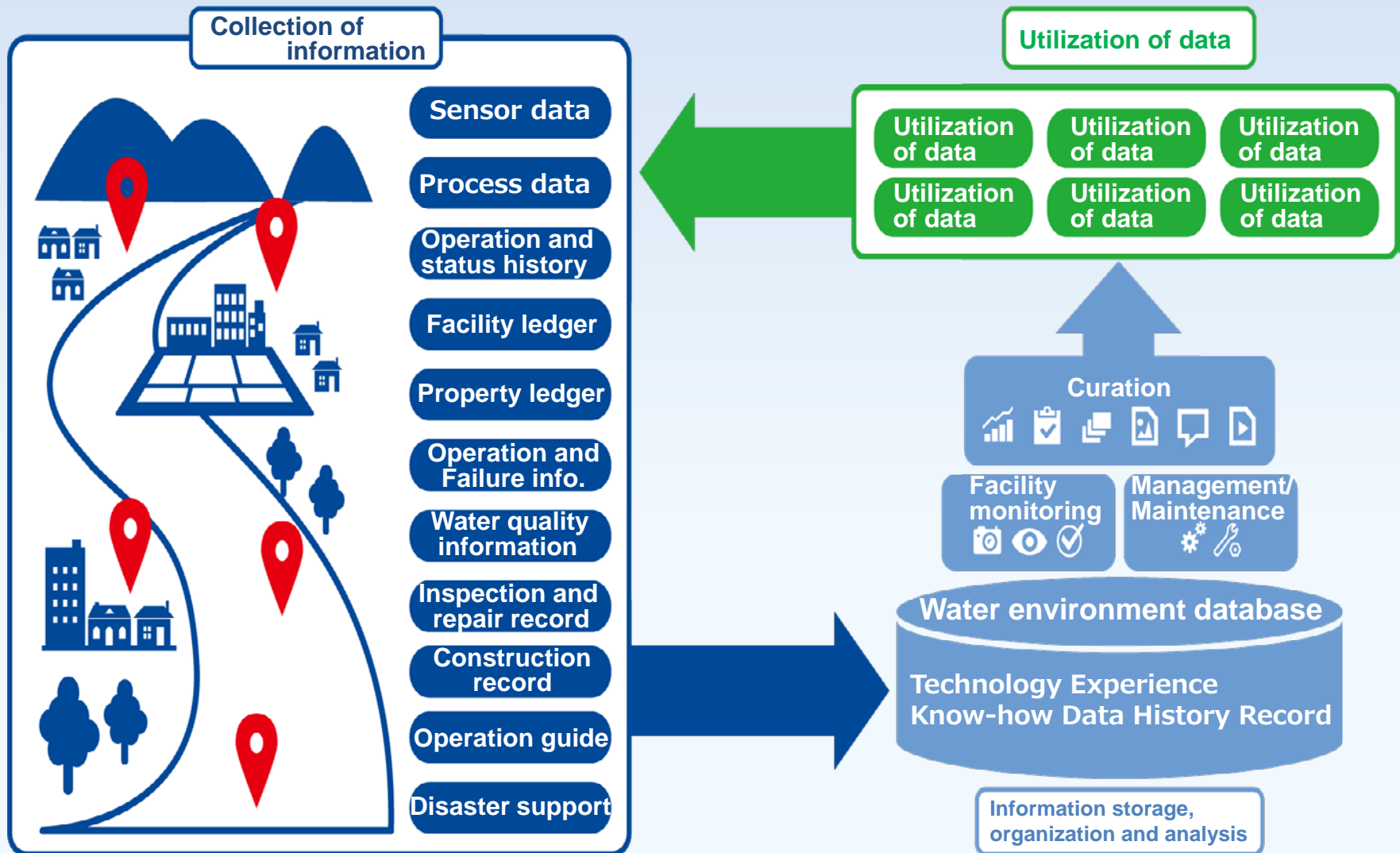
From results of survey for the maintenance

- 86.5% of municipality perform inspection and/or inspection tour
- 45.5% of maintenance is likely to leave no records for inspection
- 83.8% of municipality do not predict future deterioration

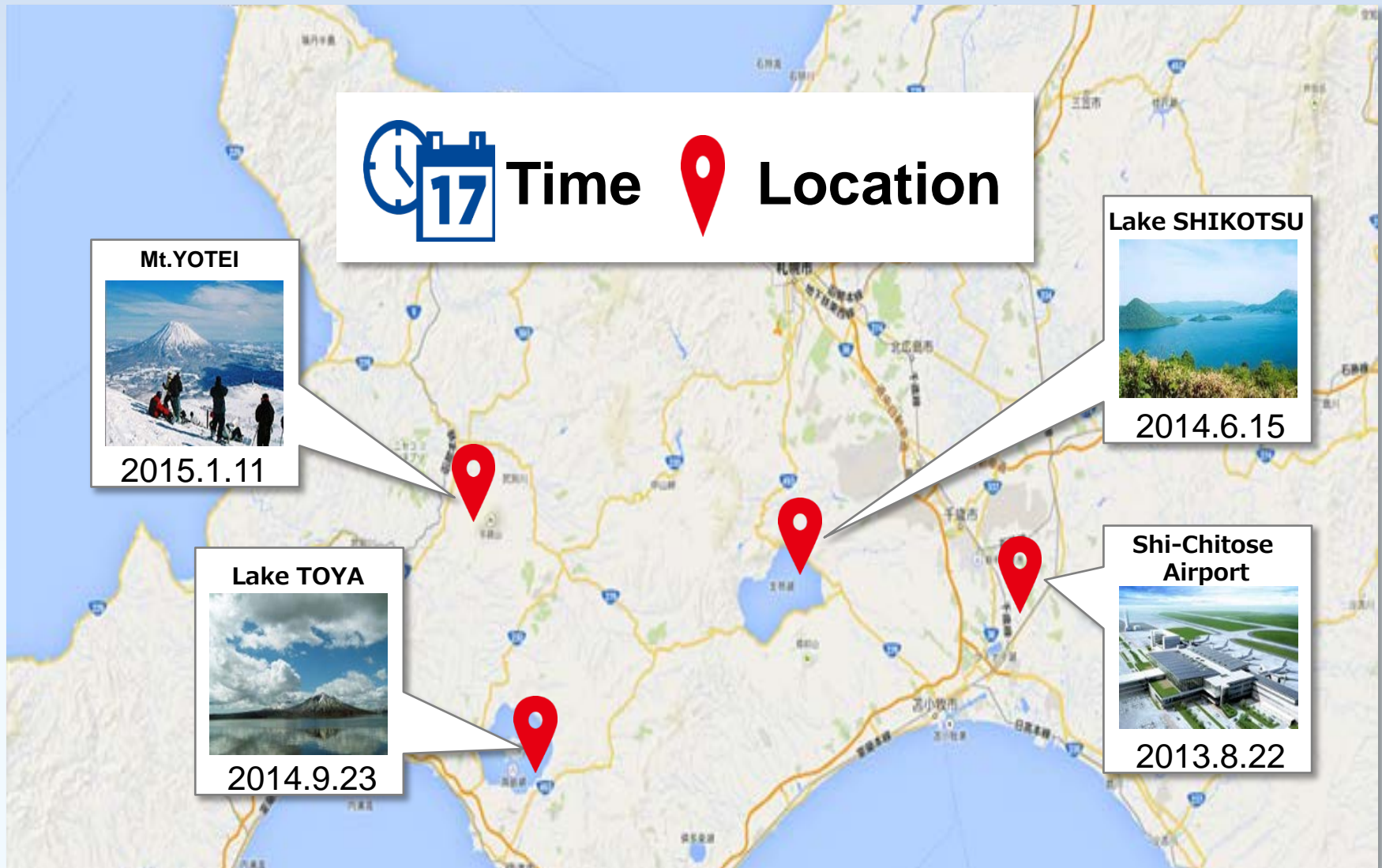


We need to come up with mechanism to store/record data in right format naturally and automatically as possible

WBC (Water Business Cloud)'s Concept

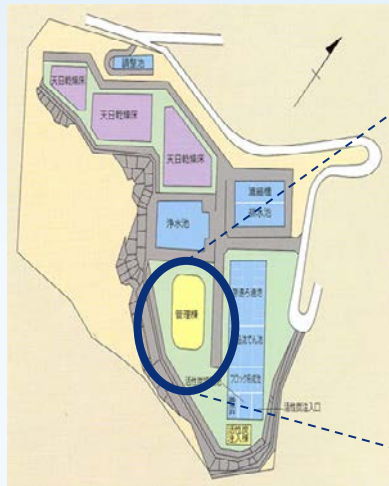


3. What data is necessary for the equipment maintenance?



What is important is precise location

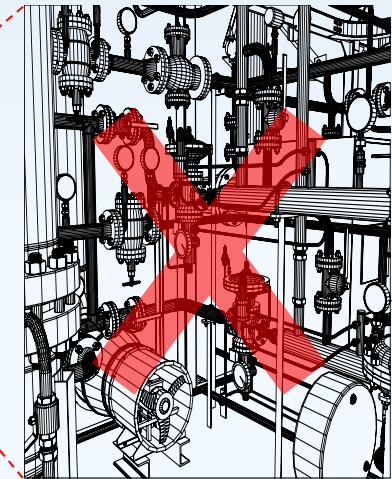
A precise location which cannot be identified by GPS needs to be pointed out



Identifiable



Identifiable



Parts are not identified

Connecting virtual and real world is a key point

4. How to add the precise location to the data

CAN (Curation Address Number)

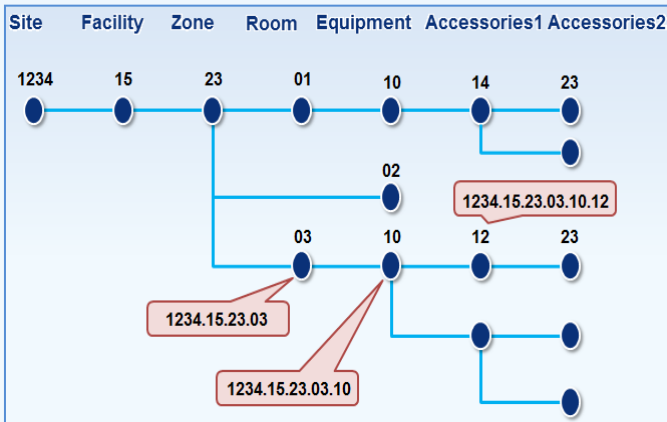
<Facility> 12345 <Equipment> 35 <Accessories> 44



Data



<CAN structure>



Precise
Location



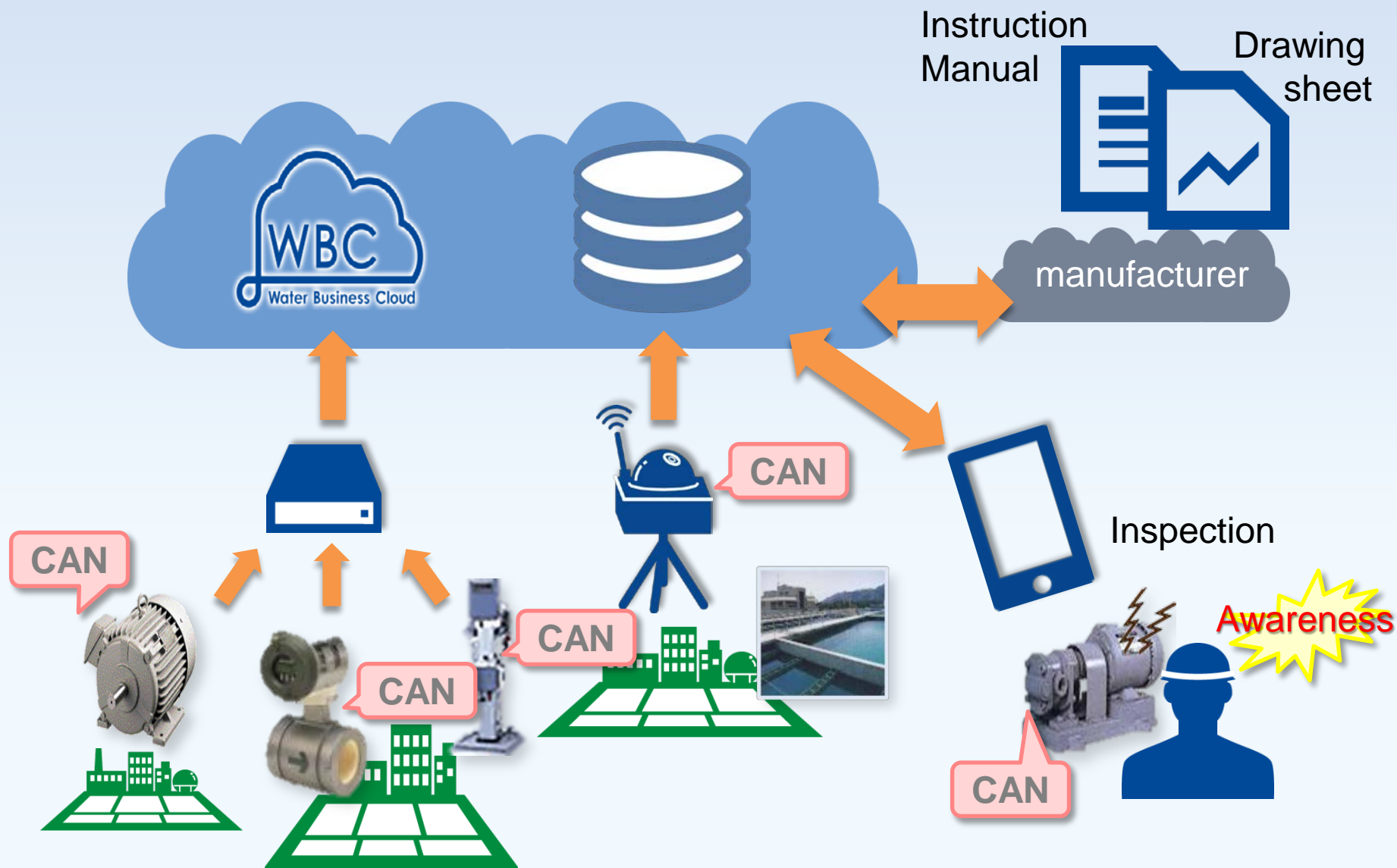
CAN Code

12345.35.44

CAN enables to connect two worlds, (virtual & real)

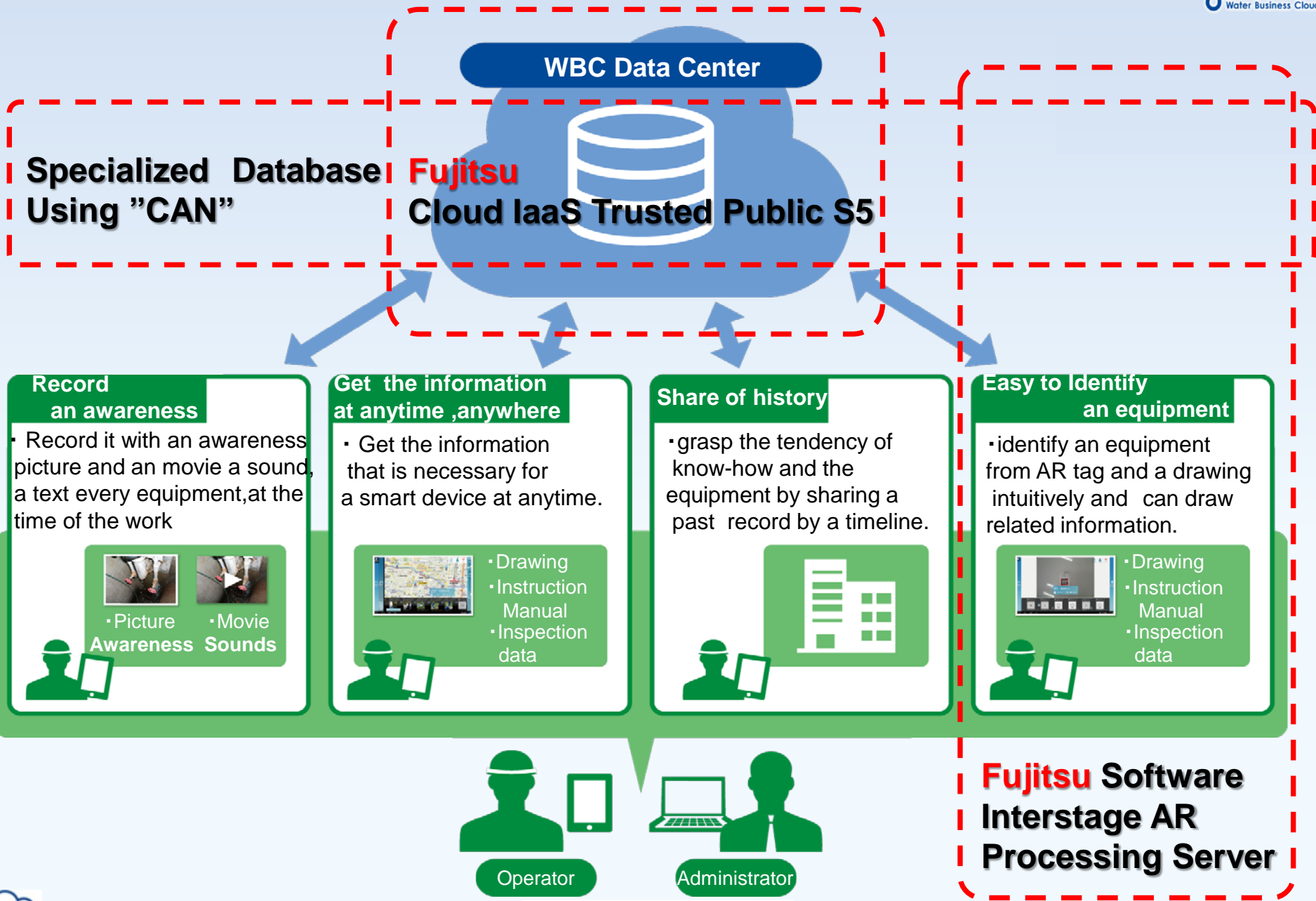
5. A new platform which add time and location automatically

Mechanism to automatically store data



【PV】

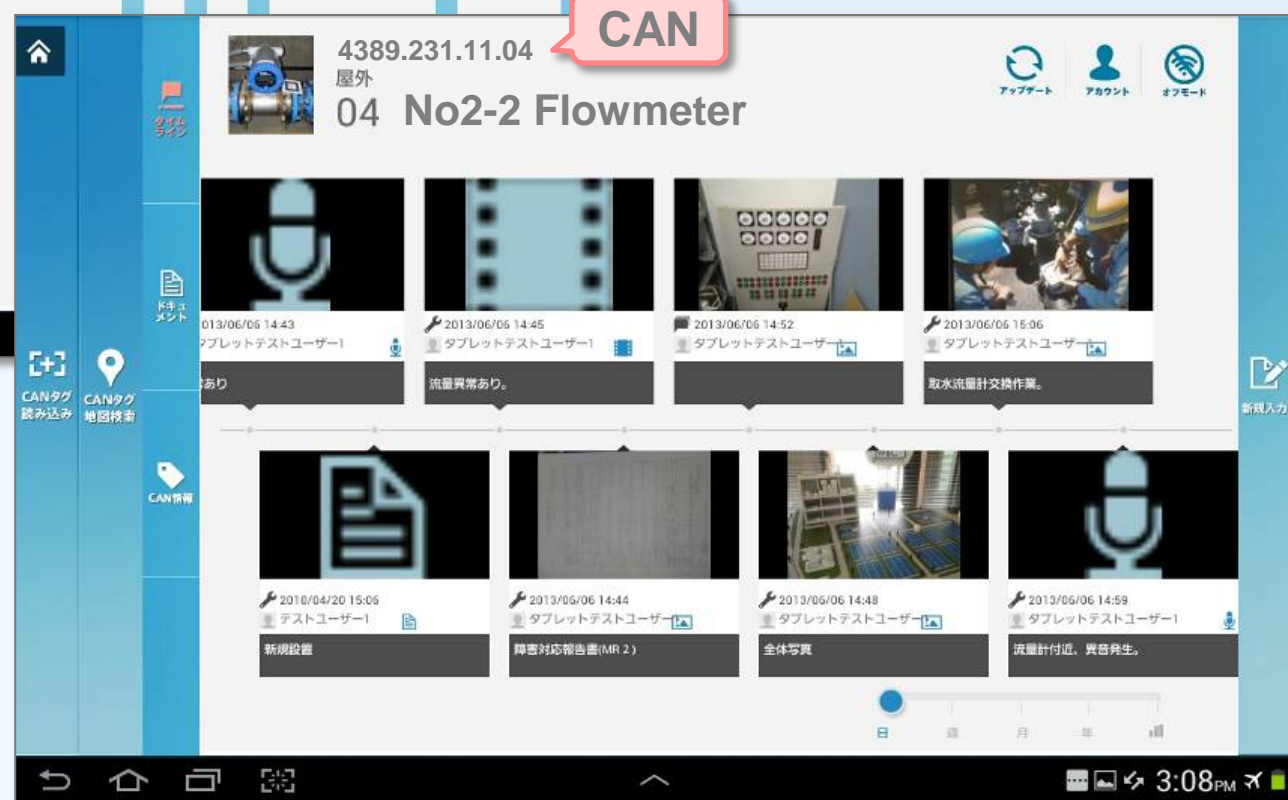
Smart Field Viewer with Fujitsu Technology







Equipment



Contents display by AR (Augmented Reality)

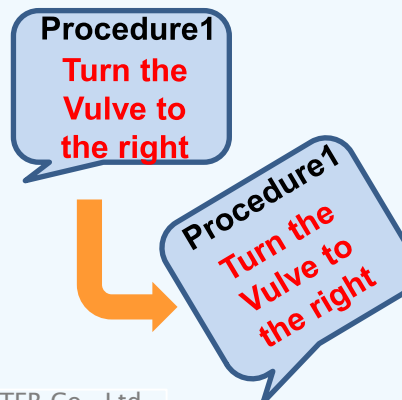


1 Marker recognition

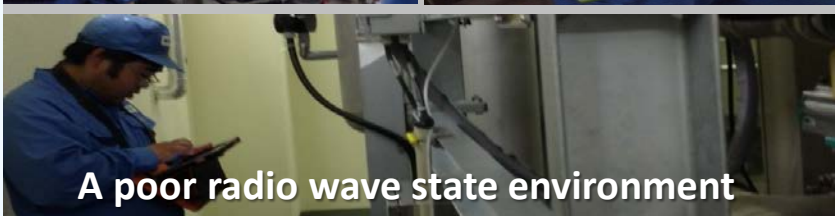


- Obtain ID from the pattern inside.
- Obtain relative position Shape.

2 Contents display control



A content corresponding to ID is deformed and adjusted depend on the location



7. Effect of “Smart Field Service”



**Store unified management
information as know-how.**



**Share the created knowledge
in all around the fields.**

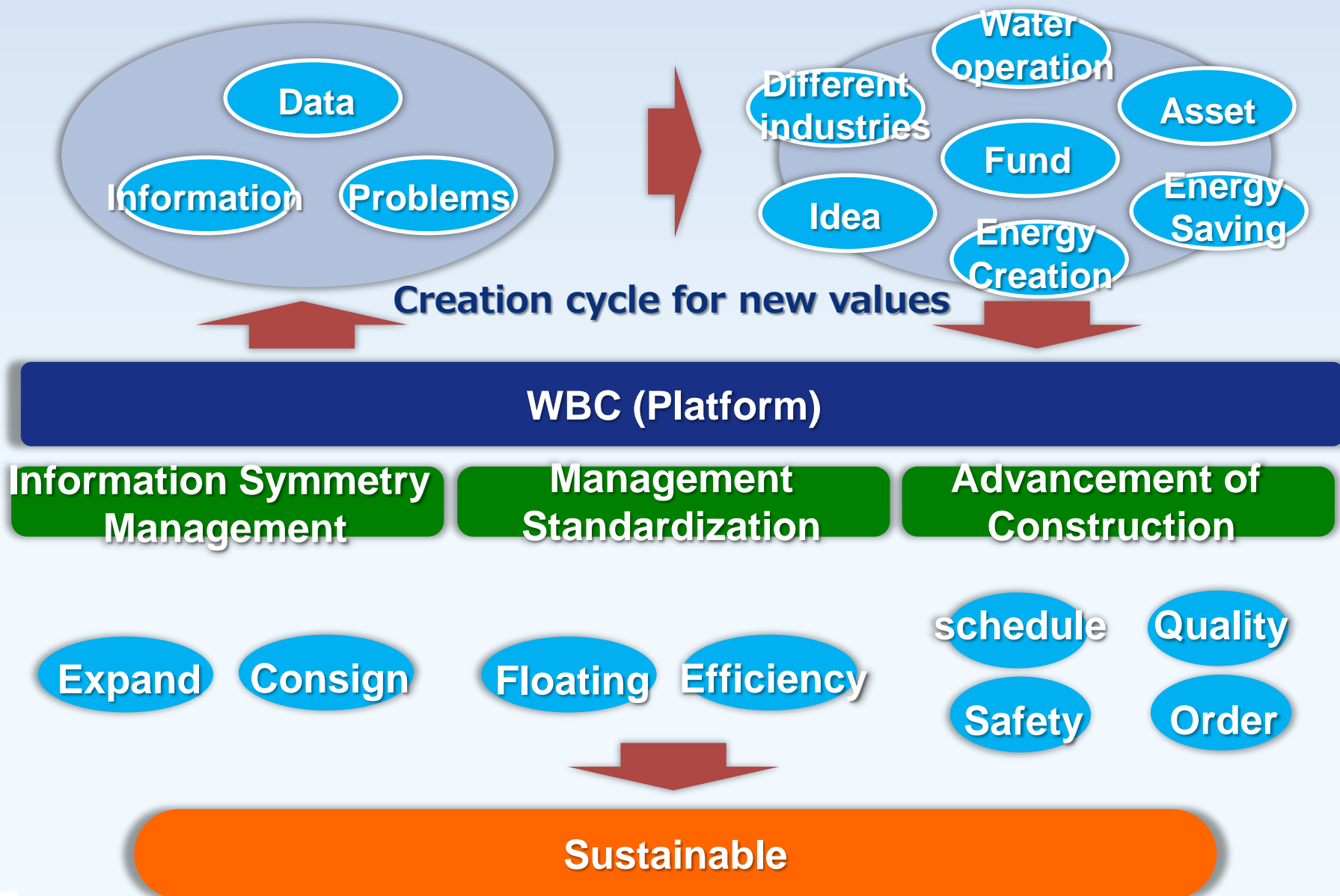


- Increase of
outsourced operations
Financial difficulties
Decreasing birthrate and
aging of the population

Difficulties for guarantee
for specialized skills
Because of the regular
reassignment of staff

8. Future Plans

Future plans - WBC is aiming for





... , after smart.

<http://www.water-biz-c.com/>