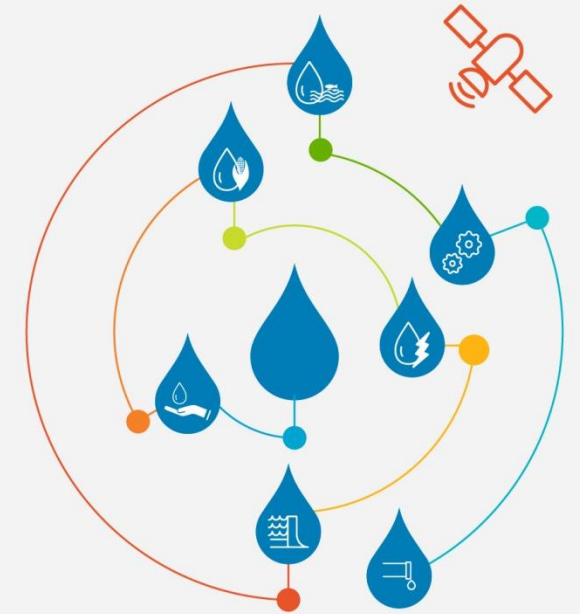


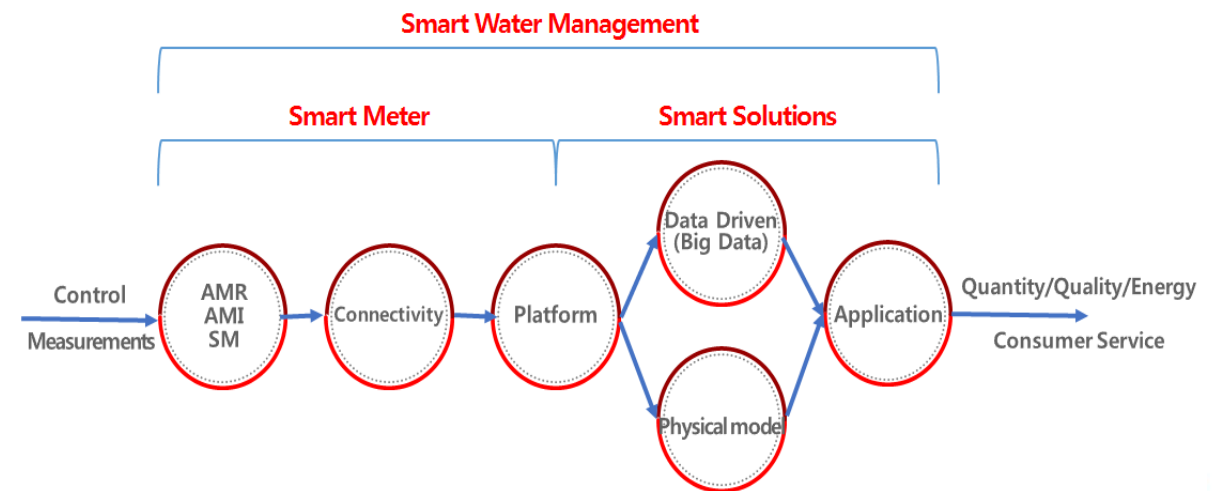
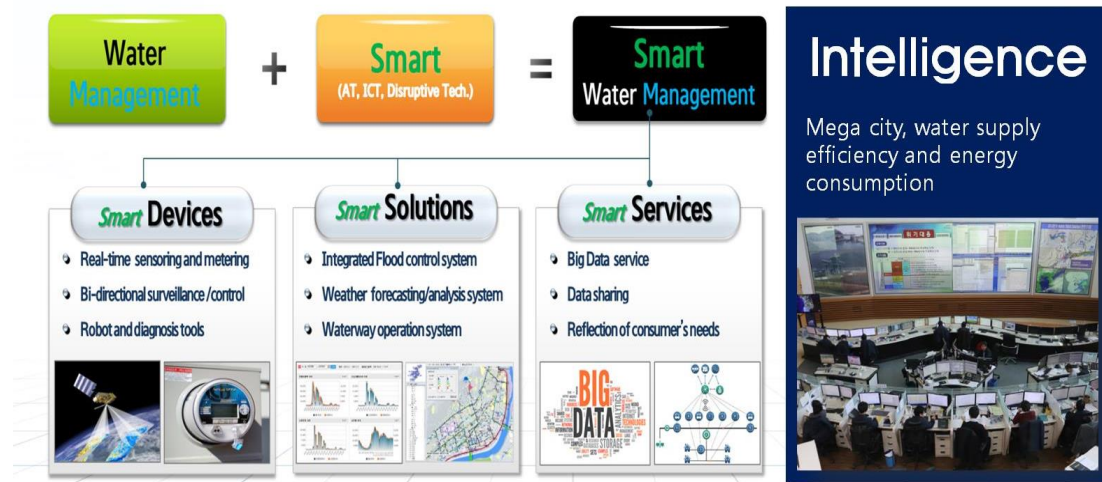
K-water's Appropriate SWM Application Procedure and Cases



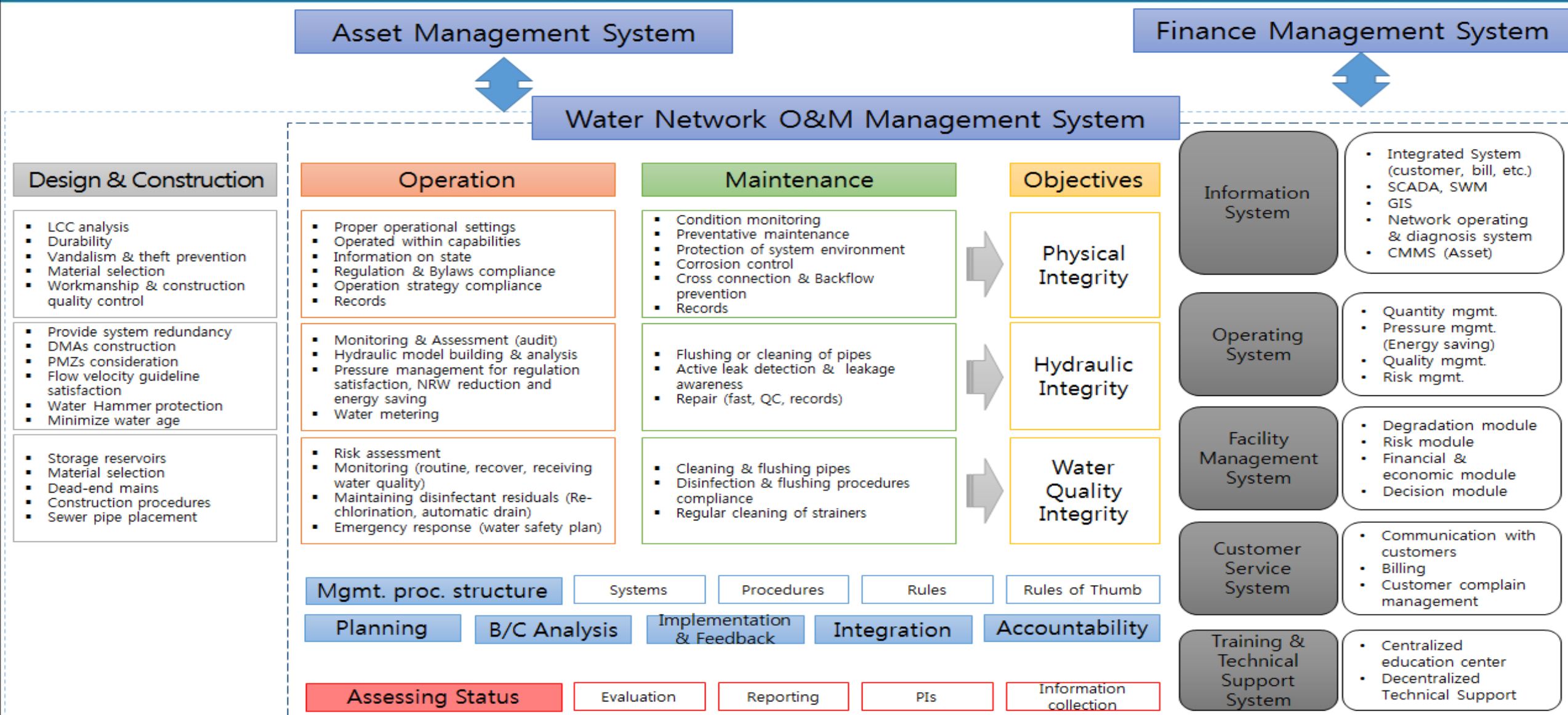
Eunher Shin
K-water

SWM Issues

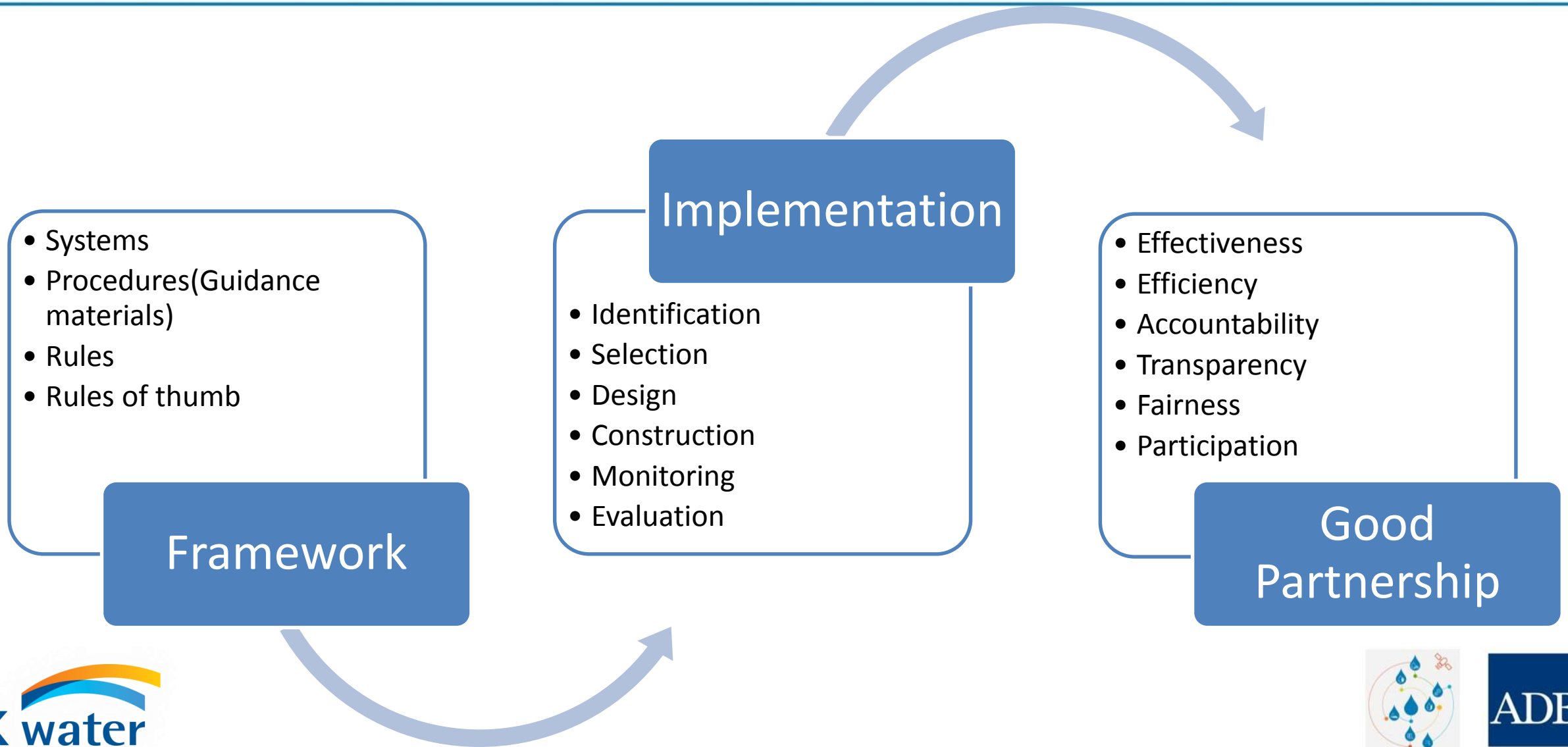
- ◆ How can we maintain the smart meters?
- ◆ What kinds of smart solutions should be developed?
- ◆ What kinds of objectives are appropriate for SWM?
- ◆ How can we implement SWM in developed and developing countries?



O&M Management System



O&M Framework, Implementation and Good Partnership

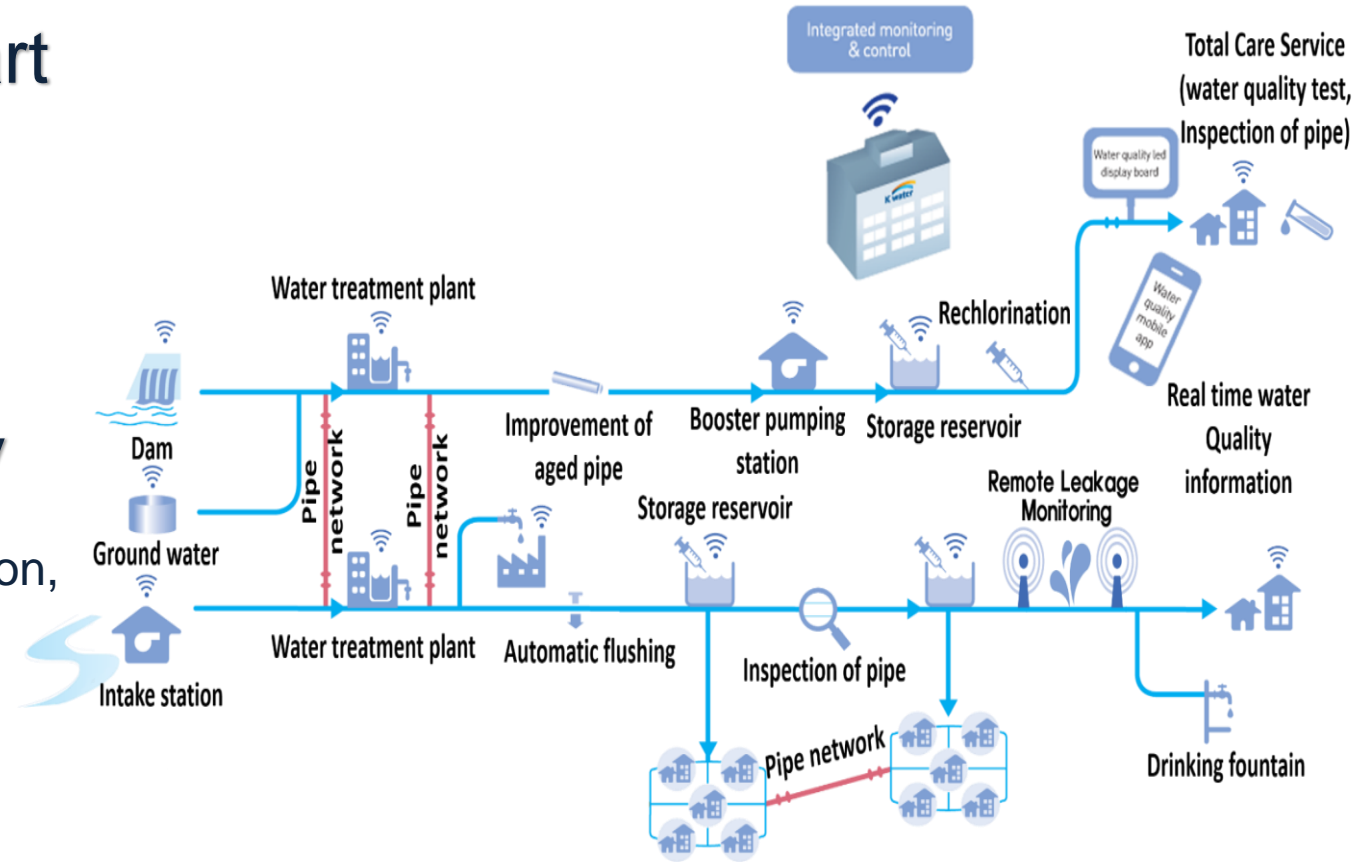


SWM in Paju, Korea

◆ Implementing wholesale smart water management city(SWC)

◆ Gaining consumer's credibility

- * real-time water quality monitoring, re-chlorination, automatic flushing device, etc.
- * providing real-time water quality information



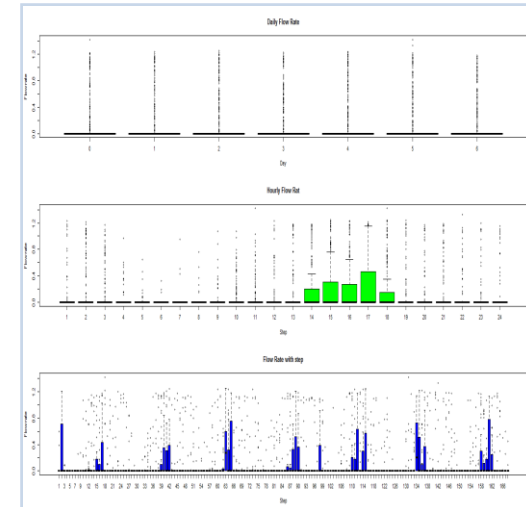
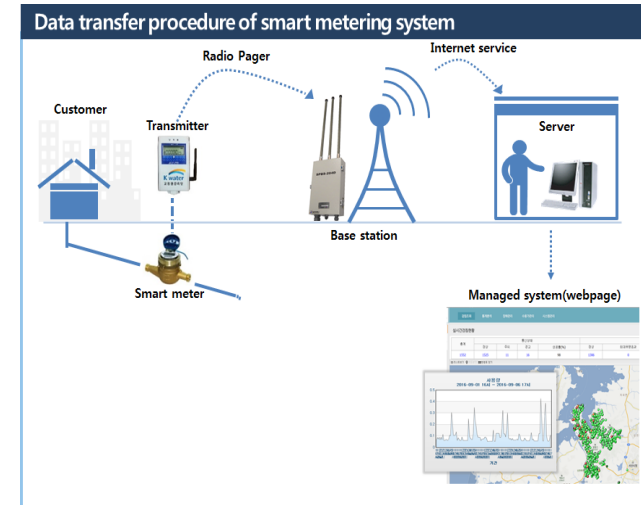
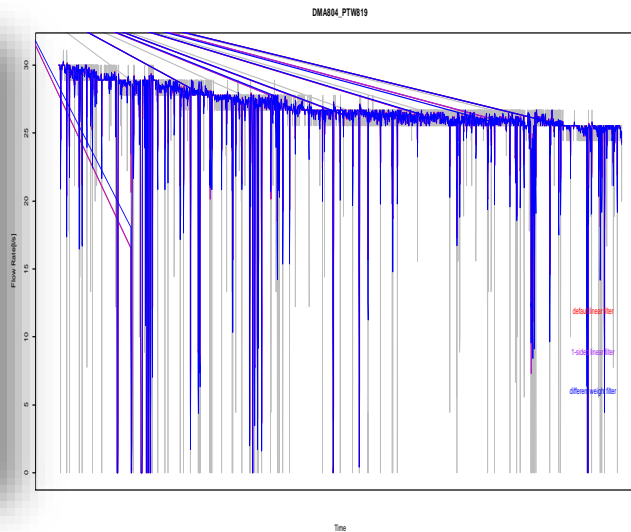
SWM in Dhaka, Bangladesh

◆ Evaluating feasibility of RF method and compare it to GSM method

- * Analyzing RF signal acquisition ratio and range
- * Smart meter maintenance

◆ Implementing data-driven analysis

- * Exploratory data analysis, data quality assessment



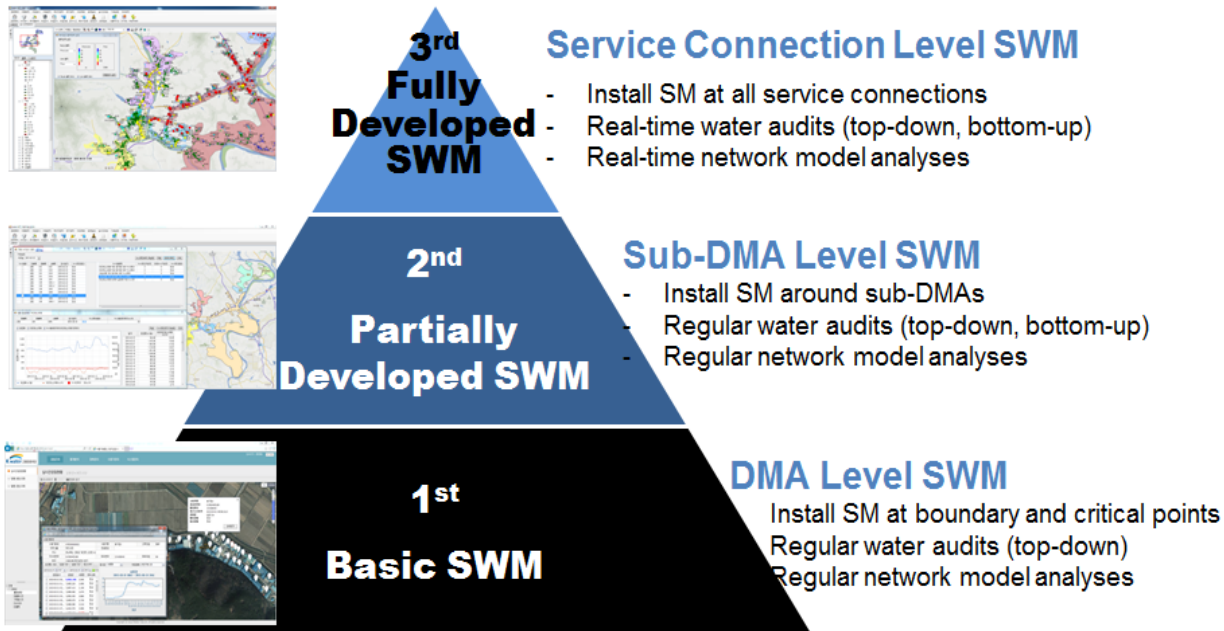
SWM in Colombo, Sri Lanka

◆ Establishing virtual DMA (Level 1) for water audit

- * Monitoring the boundaries, large consumers and low pressure areas
- * Water audit is performed regularly, DMA hydraulic condition is evaluated using smart solution

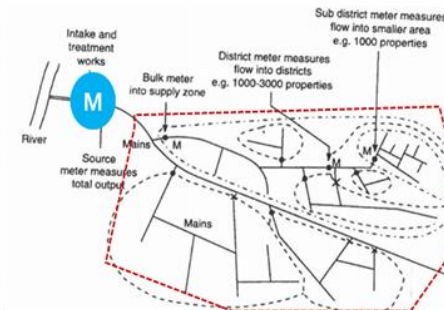
◆ Analyze priorities' demand pattern

3 Stages of SWM Implementation for DMAs



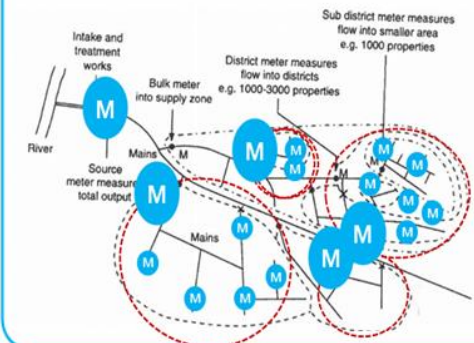
As-Is

- Flow rate & pressure mgmt. by 1 DMA (1 FlowTM + general meter for customer)
- 500 ~ 1500 customer/DMA
- Monitoring Only 1 MNF
- NRW mgmt. by month



To-Be

- 1 DMA + 3~5 SDMA (1 FlowTM + 3~5 SM + SM for every customer)
- about 300 customer/SDMA
- Hourly base monitoring by SDMA
- Daily base NRW mgmt.



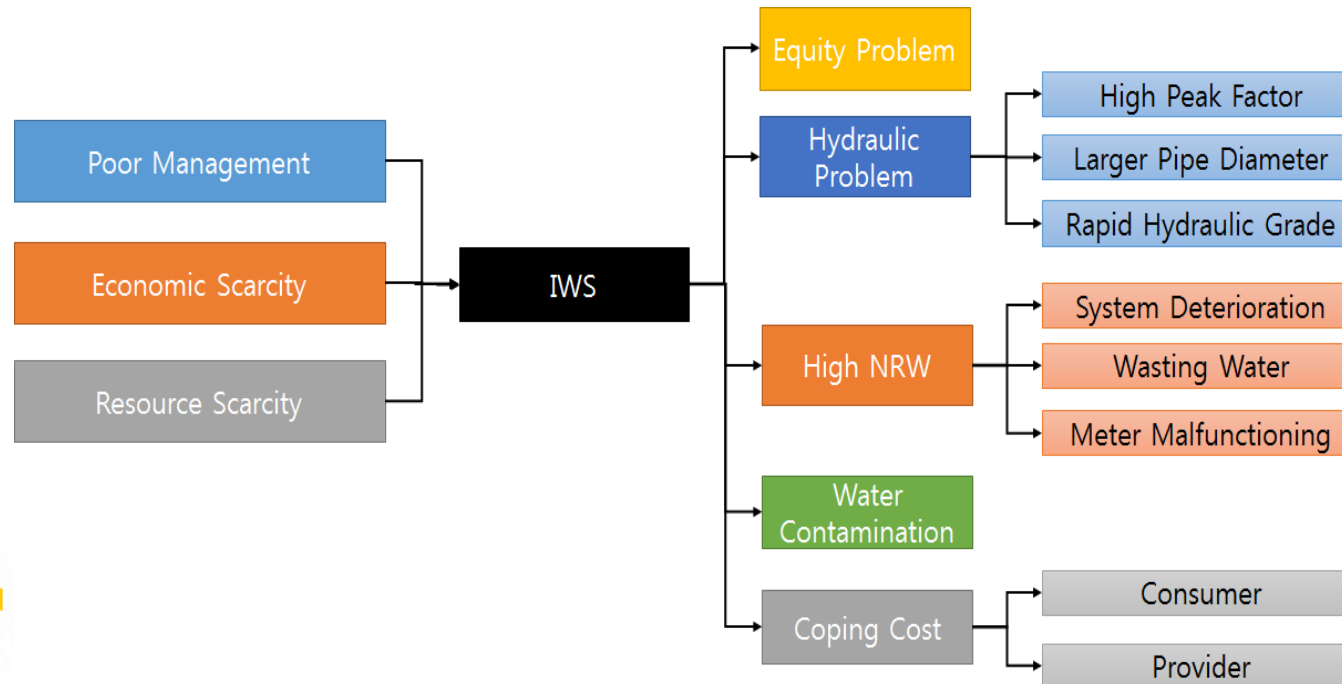
SWM in Chennai, India

◆ Evaluating current serious intermittent water supply problems

* Equity, high peak factor, rapid hydraulic grade change

◆ Establishing virtual Sub-DMA (Level 1) for water audit

* Developing the sub-DMA based on field diagnosis and hydraulic modeling



Conclusions

- ◆ There are various issues such as SM maintenance, smart solution, SWM implementation
- ◆ With SWM, water utilities can operate system more efficiently, but it don't guarantee for water utilities to operate system more easily
- ◆ SWM can be implemented in developed and developing countries
- ◆ The objectives and designs of SWM should be suggested with considering current system state

Thank you!