

Smart Water and IoT+



Content



Huawei& Sanchuan Cooperation



Smart Water Operation



eLTE-IoT Communication Capability



E2E Smart Water Solution



Case Share

Huawei & Sanchuan Cooperation



170+

Countries/Regions



83

Ranking in G500



180 k

Employees



80 k

R&D Engineers



36

Joint Innovation Centers



14

R&D Centers



the first listing water meter company



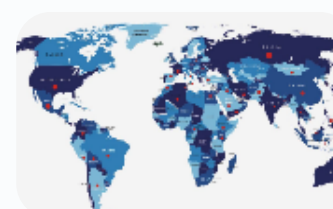
National Enterprise Certificate Center



Post-Doctoral Working Center



world-largest water meter production base

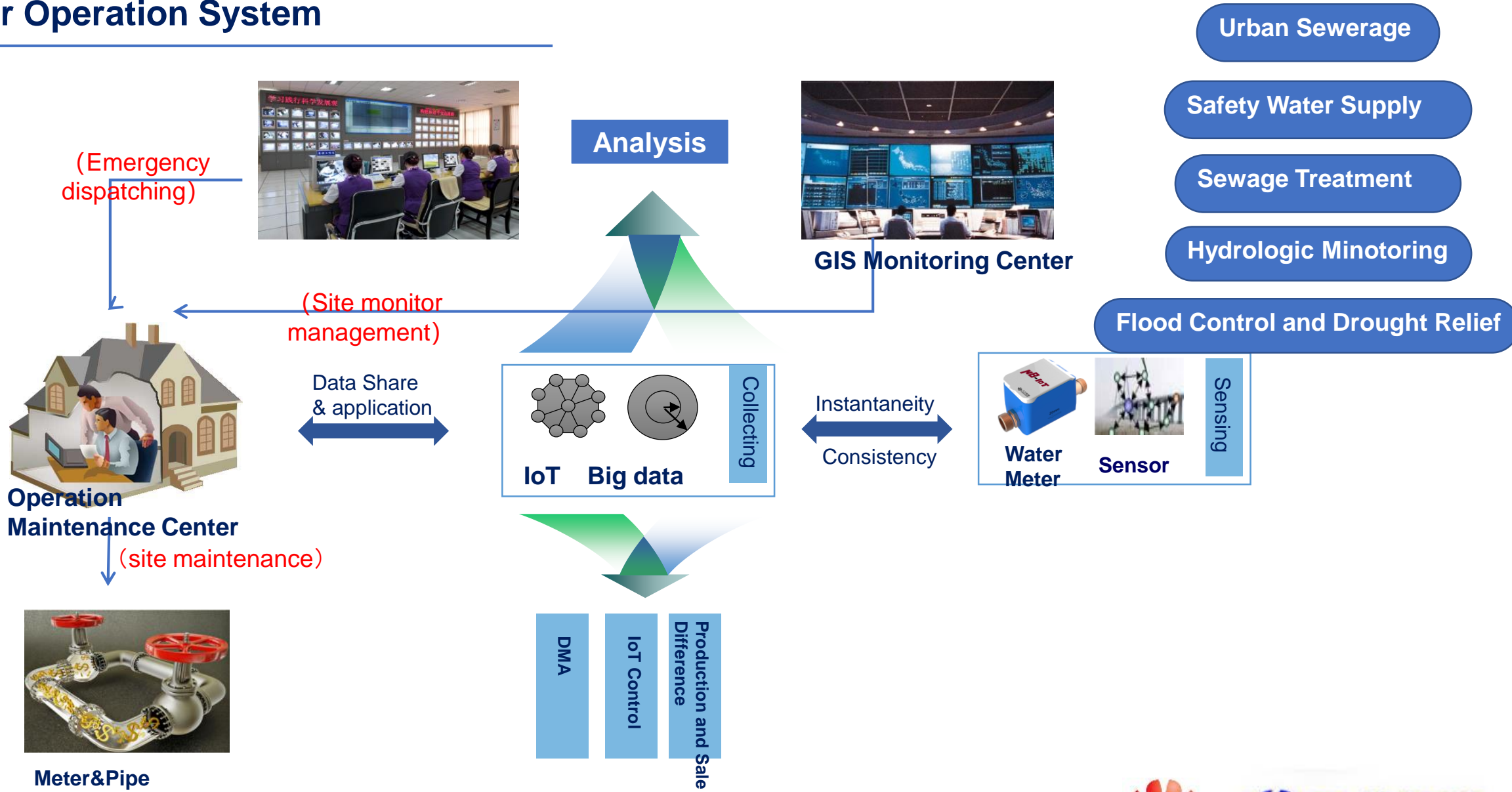


30+ overseas market;
40% water company customers in China

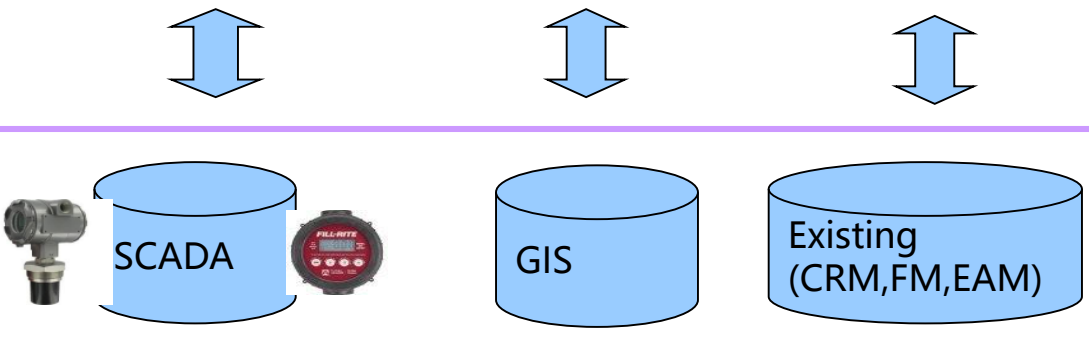
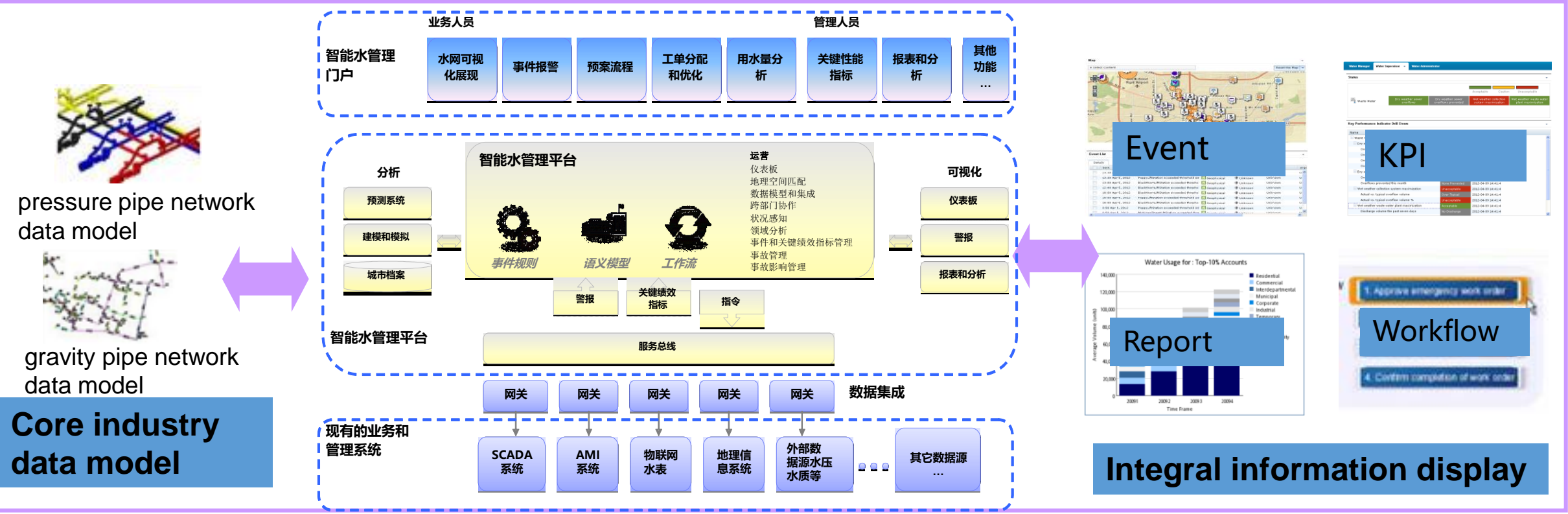


Jointer Venture with Elster(Honeywell)

Water Operation System



Solution Framework



Advanced system integration

Smart Water Meter



1. Prepaid function



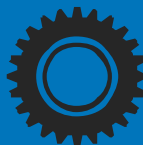
Client shall pay first and then use water, solved the charges difficult problem for the water company effectively;

When warning volume, the valve will close automatically to remind the users to pay; then the user can use the "User card" to swipe card, and the valve will be opened.



2. Alarm functions

3. Protection functions



When the meter encounters magnetic interference, or battery is low, or meter powered off, the valve will close automatically to prevent accidental or manual outage.

The meter can set three stage water price. The water company can setting price according to their own demand by this software to manage the client water use.



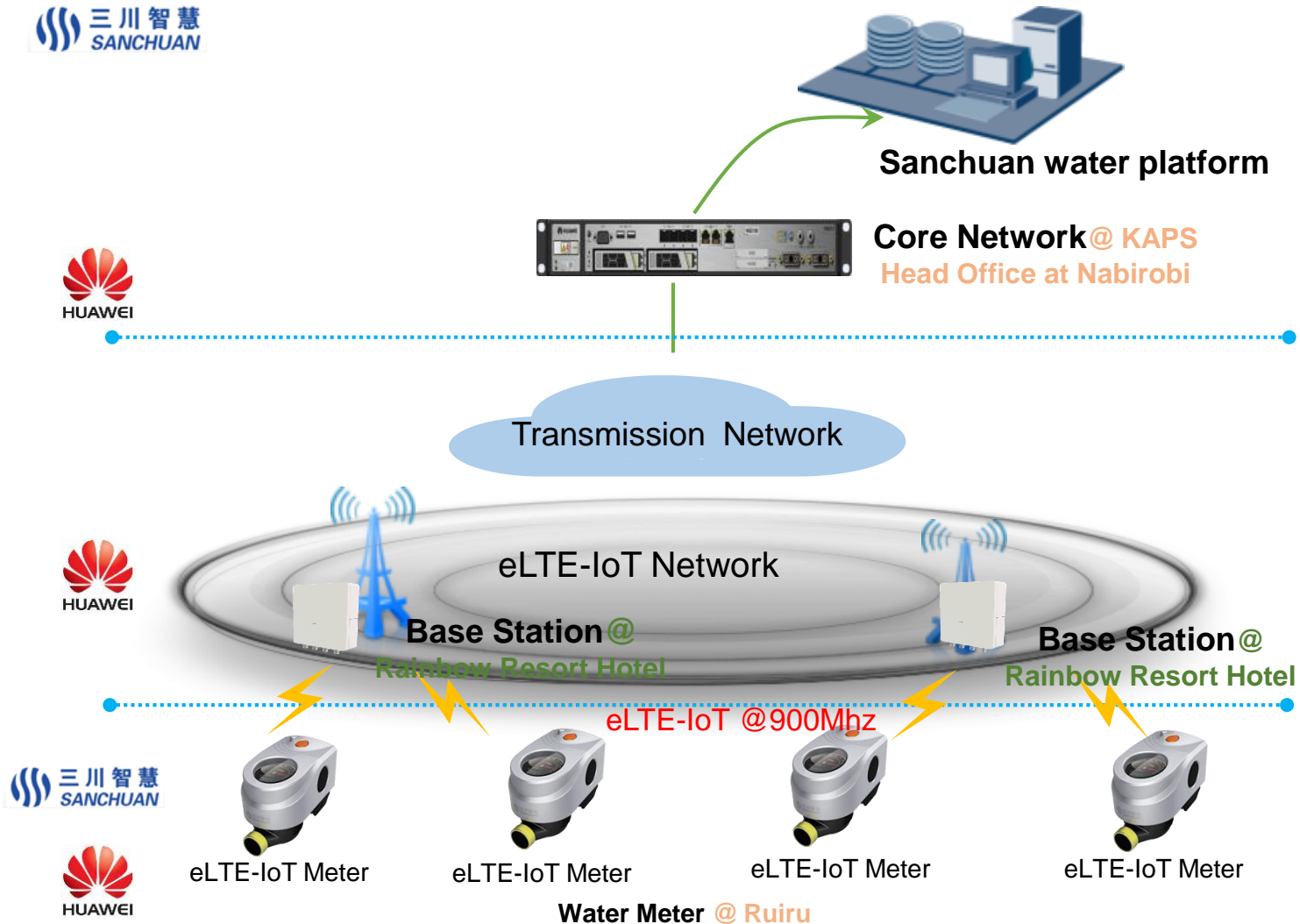
4. Staged water price

5. Wireless connection



No wire required. Transfer directly the data to the Server by wireless communication, with accurate measuring.

eLTE-IoT Solution Overview



Long-range coverage

Long-range coverage

Maximum 8 km



Deeper coverage



Longer coverage

Low power consumption

Maximum 10 years' battery life



- Fast transmission of small data packets
- Power Saving Mode (PSM)
- Discontinuous Reception (DRX)

More connections



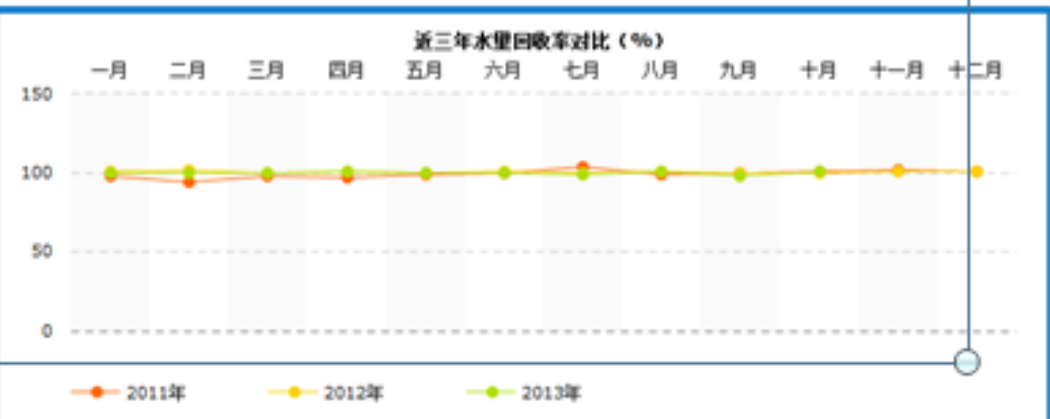
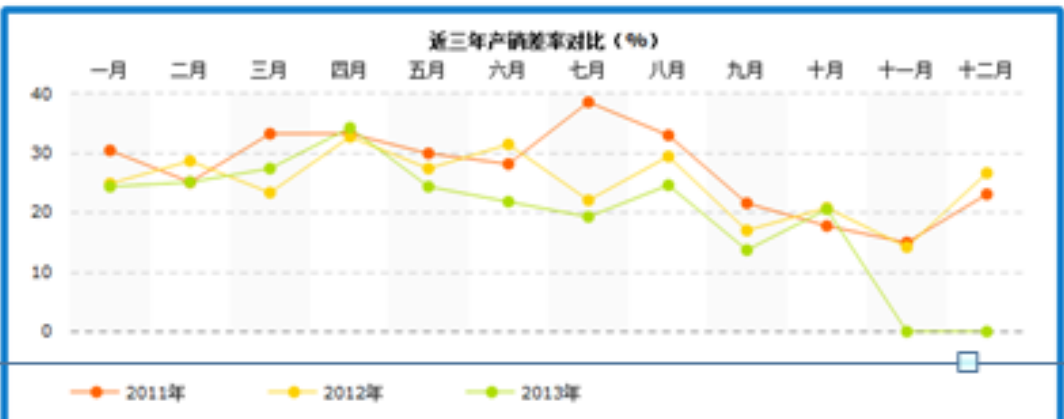
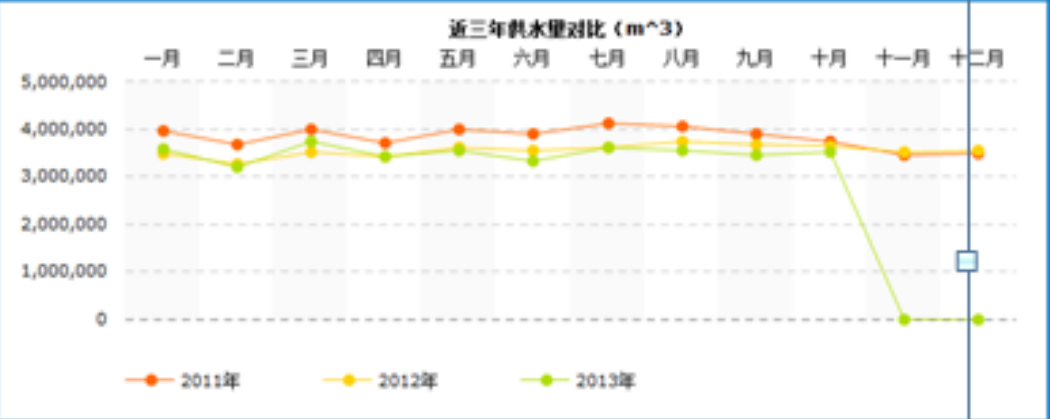
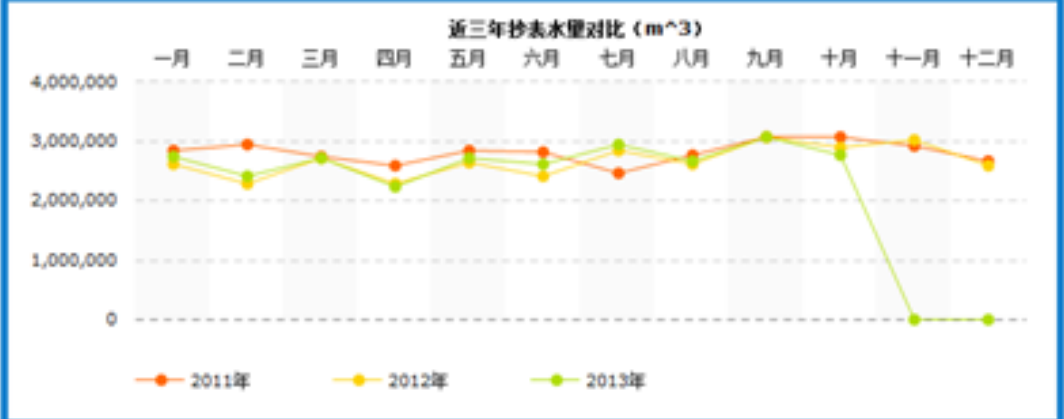
- Slotted ALOHA, predefined transmission time slot, improves efficiency and capacity
- More channels with narrow band



Water Data Management System



180
160
140
120
100
80
60
40
20
0
-20
-40



Big Data Application: Risk Predict

Challenges to water supply system:

1. Frequent cases of pipe network explosive/leakage cases;
2. High water leakage in Chinese urban, average 25%.

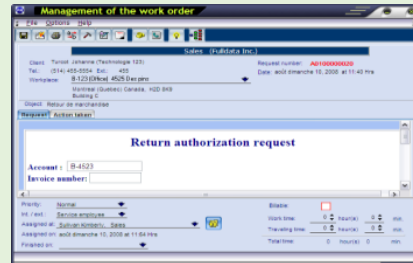
Solution

1. Build a pipe network risk prediction system;
2. Take key maintenance on the 2% high danger pipeline;
3. Improve the accuracy;
4. Improve the pertinence of the prediction maintenance;
5. Do not install external equipment or instrument.

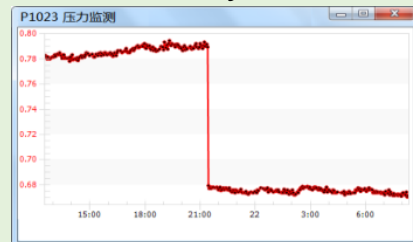
1. Pipenetwork GIS system



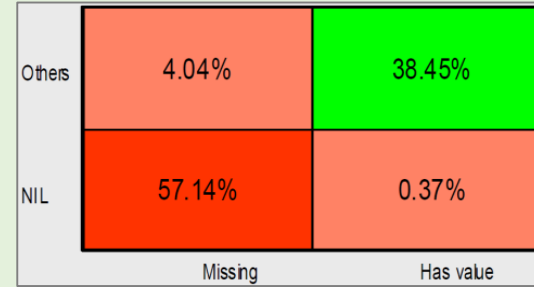
2. Maintenance list and fault report



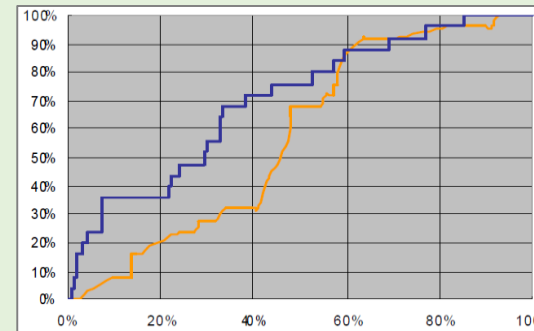
3. Other history data



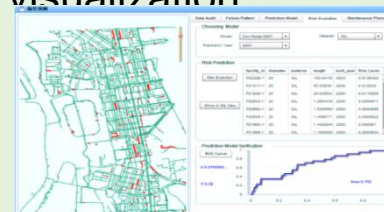
1. Data quality analysis



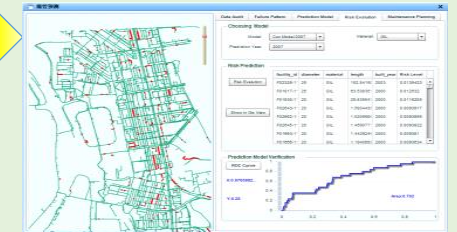
2. Fault predict model



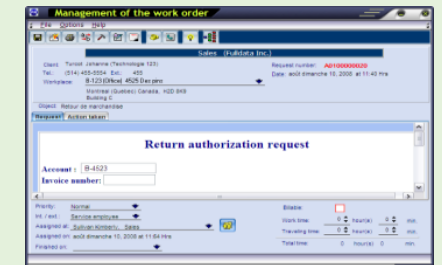
3. evaluate fault risk evaluation and visualization



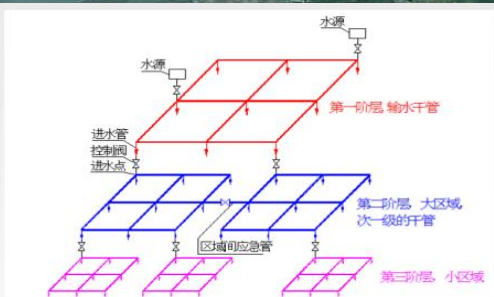
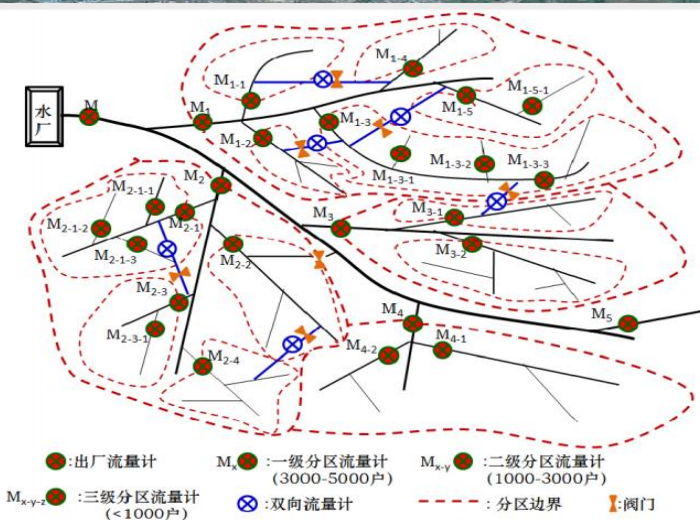
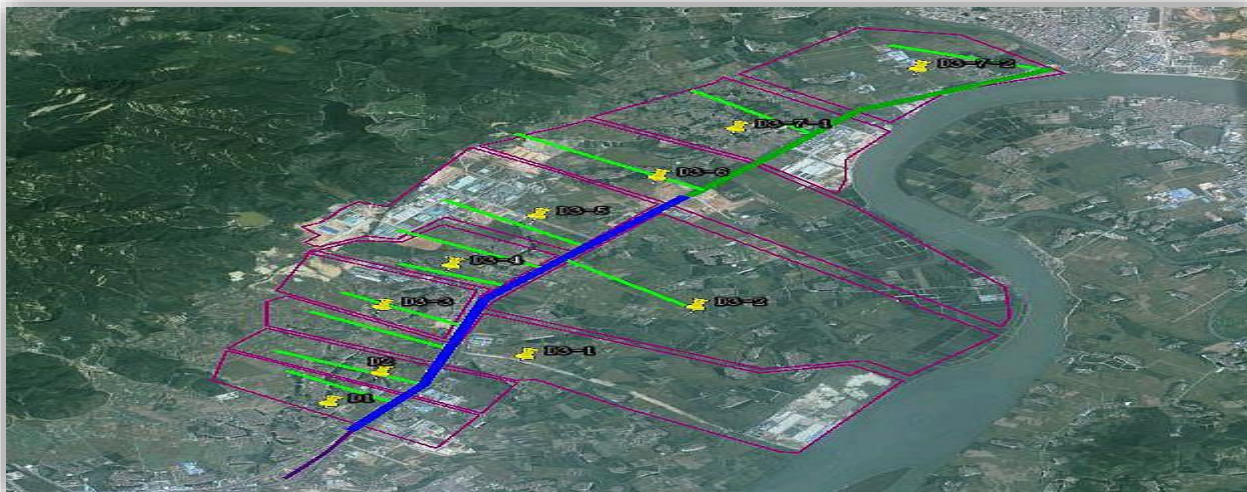
1. Preventive maintenance plan



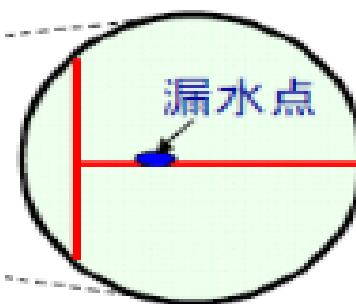
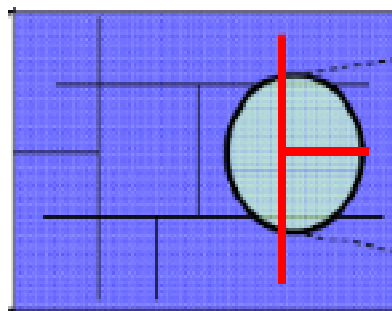
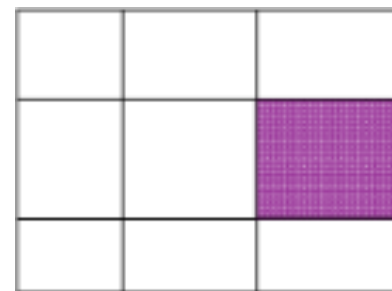
2. Maintenance list distribute



DMA management - Metering is basis



阶层	管道与功能	区域功能	漏损控制方向
第一层(大区)	主干管(输水)	整个区域综合管理	水锤等爆管漏损
第二层(中区)	干管(输水)	均衡流量、压力管理	压力管理
第三层(小区)	支管(配水)	DMA管理, 漏损控制	水量平衡管理和检漏



Plane

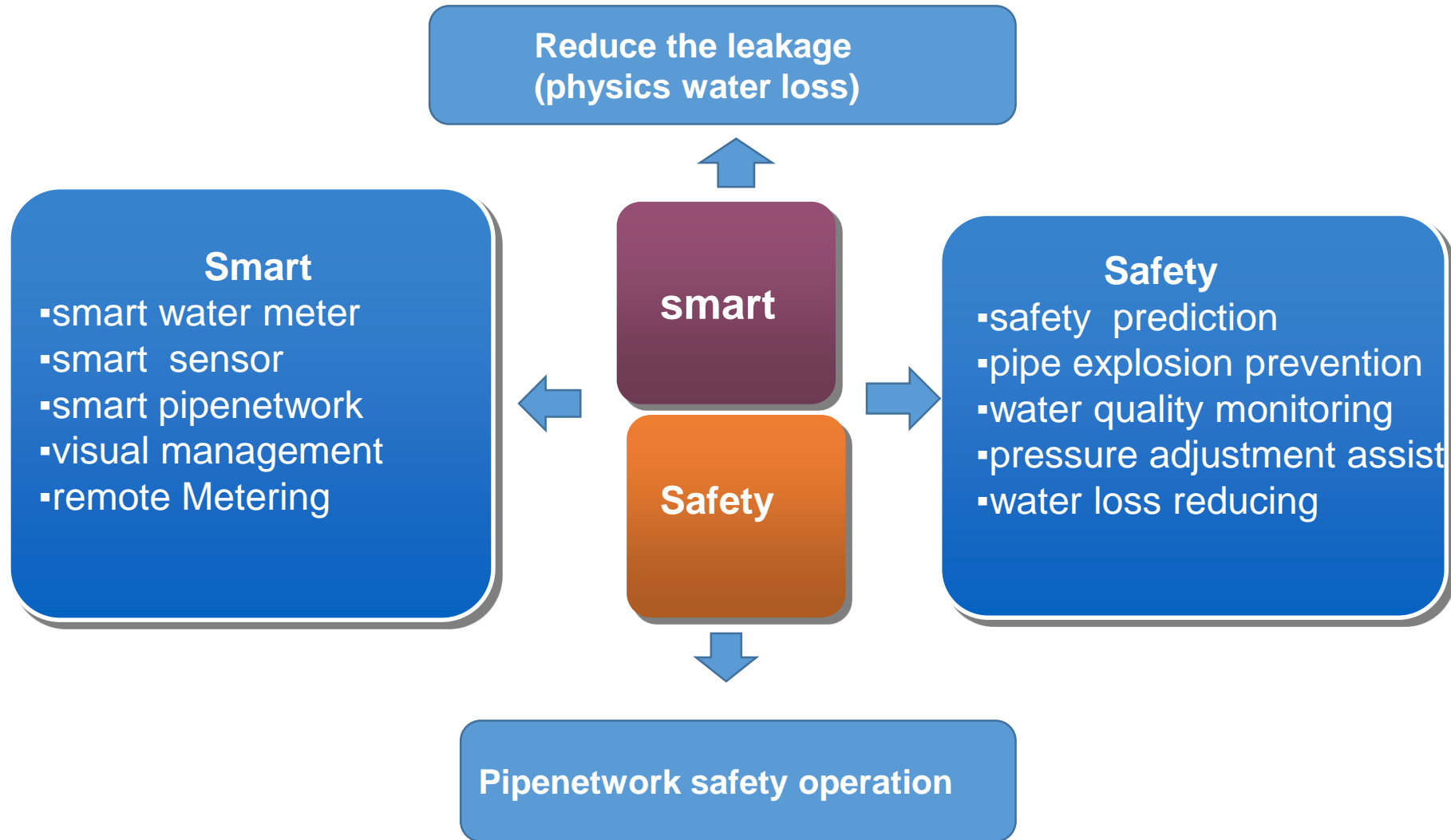


Line

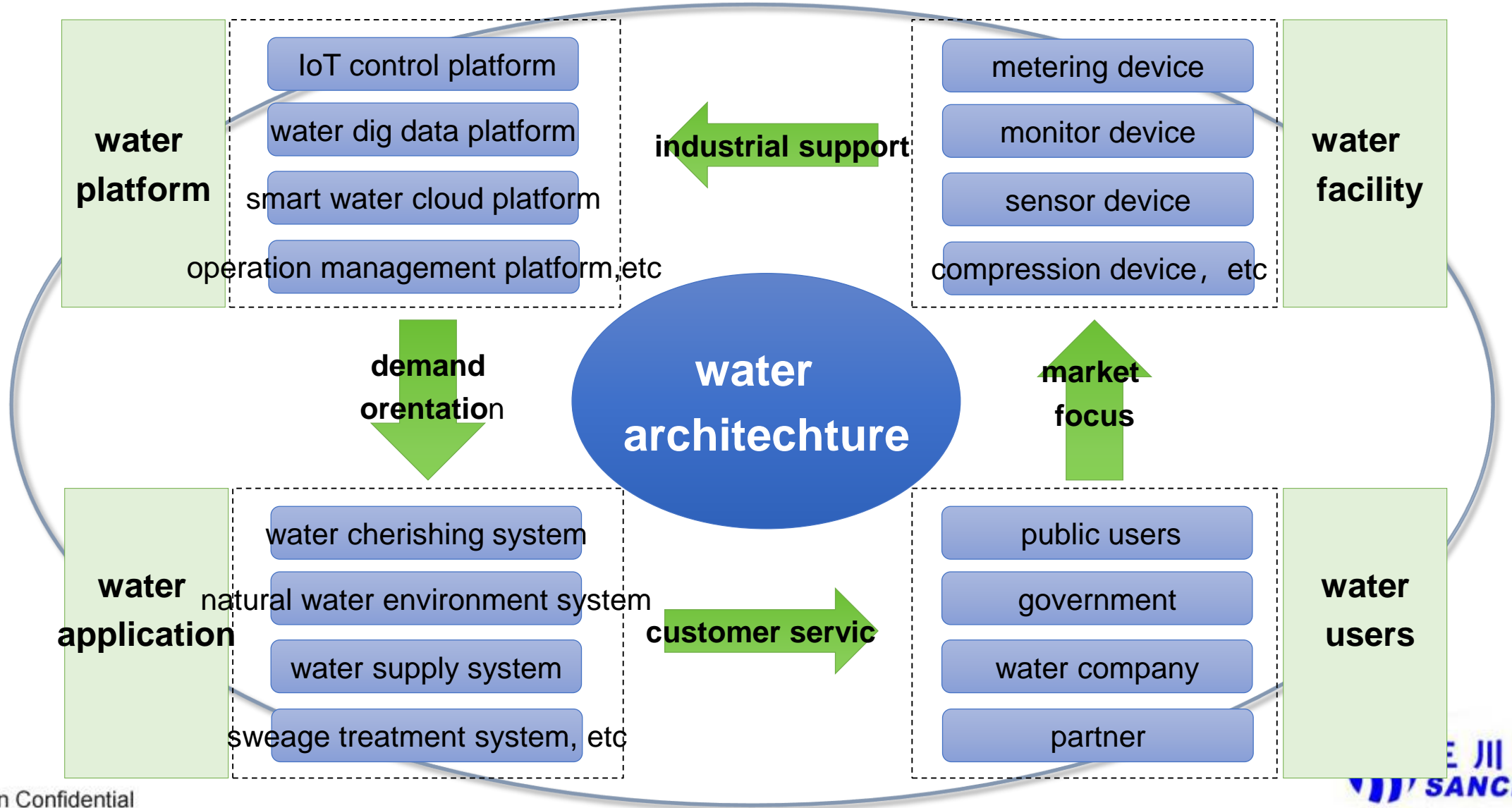


Point

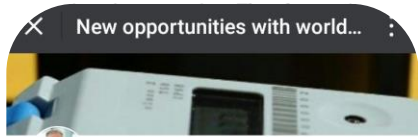
Smart Water Management: Smart|Safty



Interactive Development Framework



World-first IoT water meter trial deployment



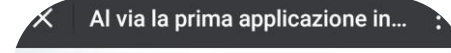
Kevin Hutchings GIACD
Non Executive Director | Water Utility Specia...

New opportunities with world-first NB-IoT water meter deployment

December 22, 2016 • 208 赞 • 22 评论

The year may be almost over, but I can't end 2016 without sharing news of an exciting breakthrough by our technical team.

In a world first, South East Water this week deployed fully integrated NB-IoT enabled digital meters at customer



Al via la prima applicazione in campo in Italia della nuova tecnologia cellulare NB-IoT basata su reti LTE/5G

12/04/2017 - 12:30

Archivio Media / Note stampa / Olivetti /
Al via la prima applicazione in campo in Italia della nuova tecnologia cellulare NB-IoT basata su reti LTE/5G

Il dato dei consumi idrici passa attraverso le reti mobile.



Dec.22, 2016, World-first IoT water meter is deployment at one of the living area in Melbourne.

Mar.28, 2018, NMI Certificate approved.



Apr.12, 2017, Italy announced the first IoT water meter is successfully deployed at site.

Yingtang IoT Water Meter deployment



Business Value from Smart Metering

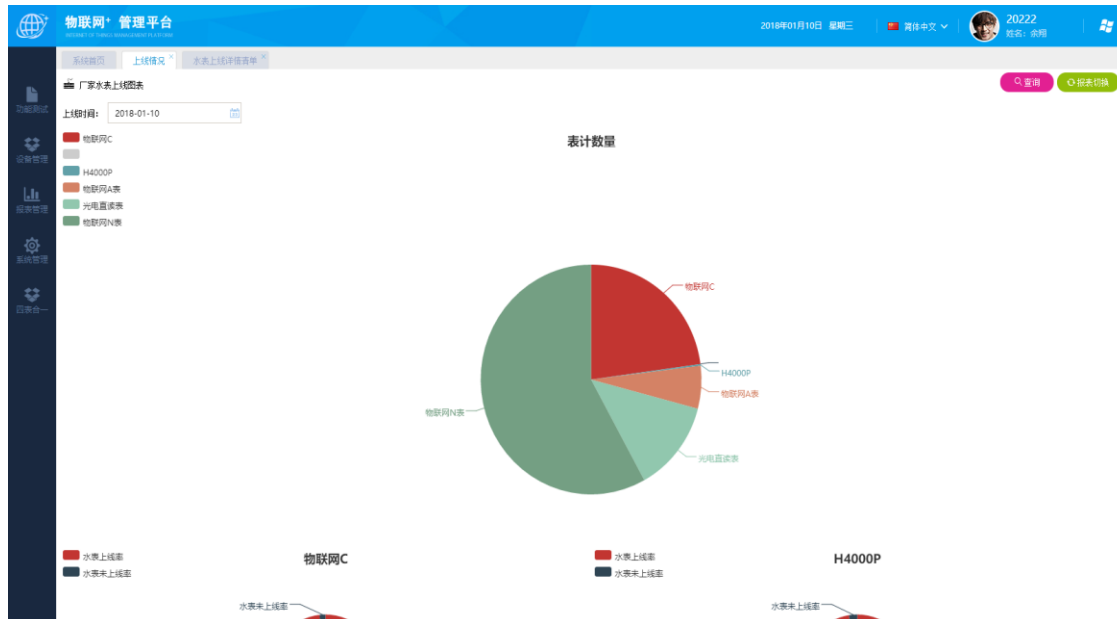
Saving from reduced leakage: :
 (Reference data: daily water supply 150Kton,
 water tariff USD0.5/ton)

21%



10%

Water 4.93M ton/Year
 Cost USD2.46 M/Year



From May 2017 until now, there have installed 70K NB-IoT water meter in Yingtang City. Collecting rate 99.99%, Metering accuracy 99.95%.

Thank you !



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