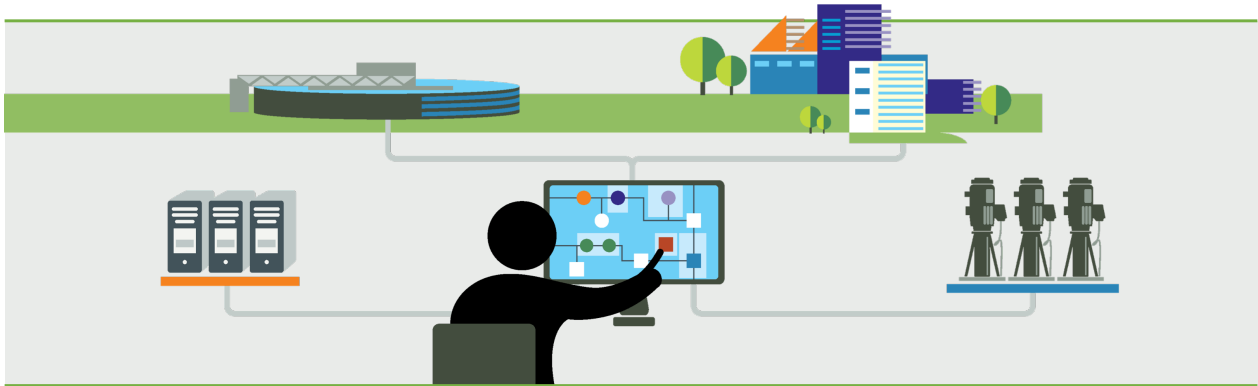




Envisioning a Smart Utility



Today's Agenda ➤



1. Utility and industry challenges
2. SUEZ' vision
3. Smart SCADA with Smart Utility objectives
4. Achieving Smart SCADA



Utility and industry challenges



Utilities are facing a number of challenges



Aging assets



Budget limitations



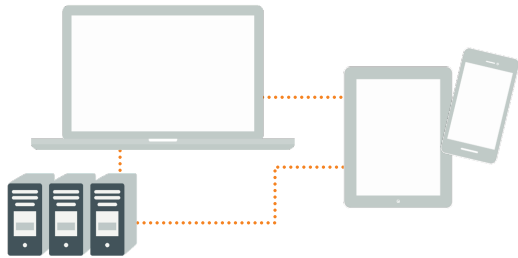
Stricter regulations



Knowledge transfer needs

The industry is also experiencing significant change

Technologies have changed



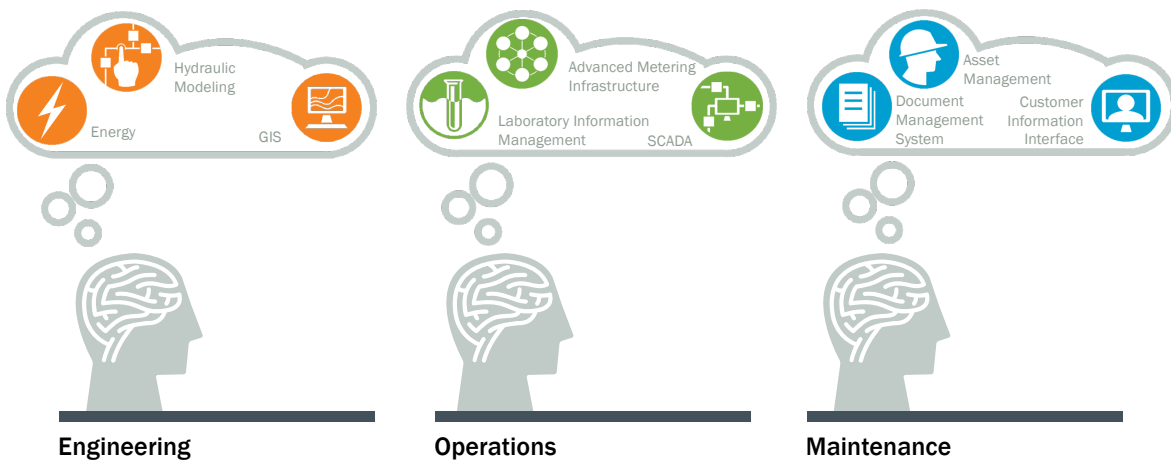
- New ways to instrument and obtain data
- Improved communication networks
- Improved battery technologies
- Operational technology adopts standard business technology protocols
- Cybersecurity landscape

Workforces are changing

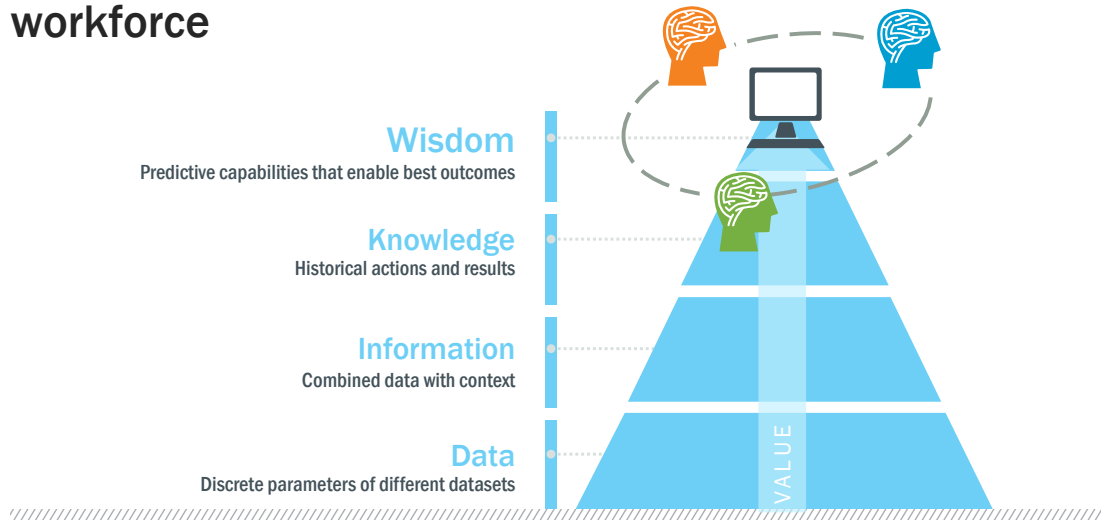


- Staff is eager to learn
- Workforce needs constant, real time information
- Aging workforce and retiring
- Increased level of comfort leveraging automation

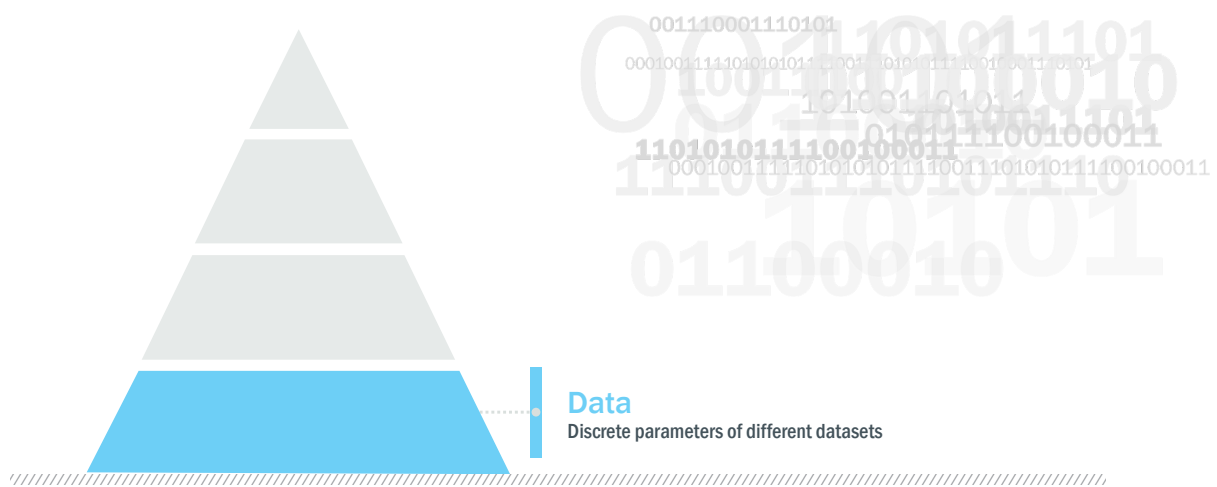
Specialized department tools have created information silos



Fully leveraging technology to empower workforce

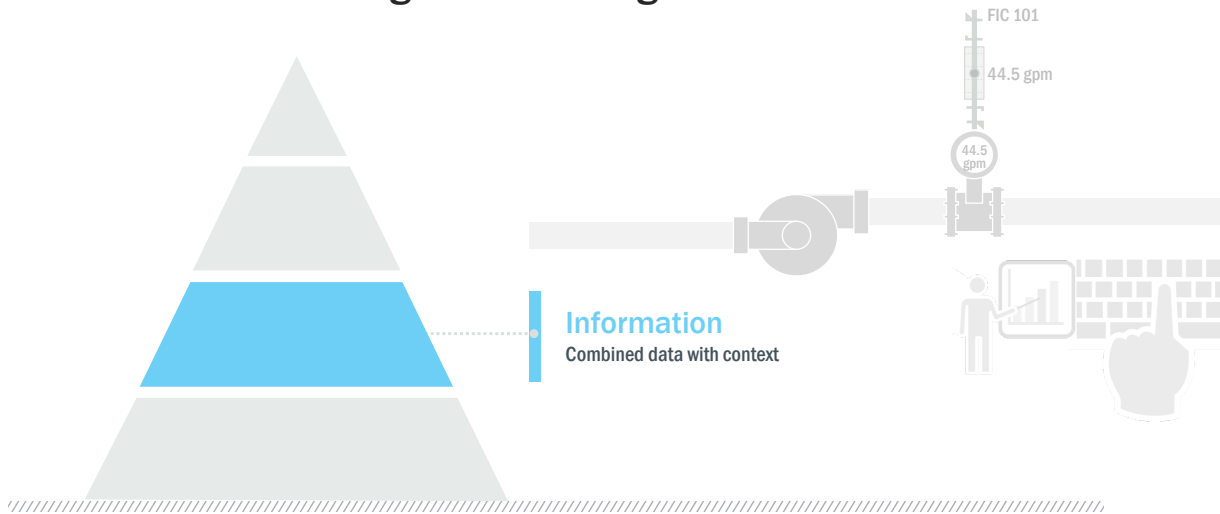


Data: Digital and manual data collection



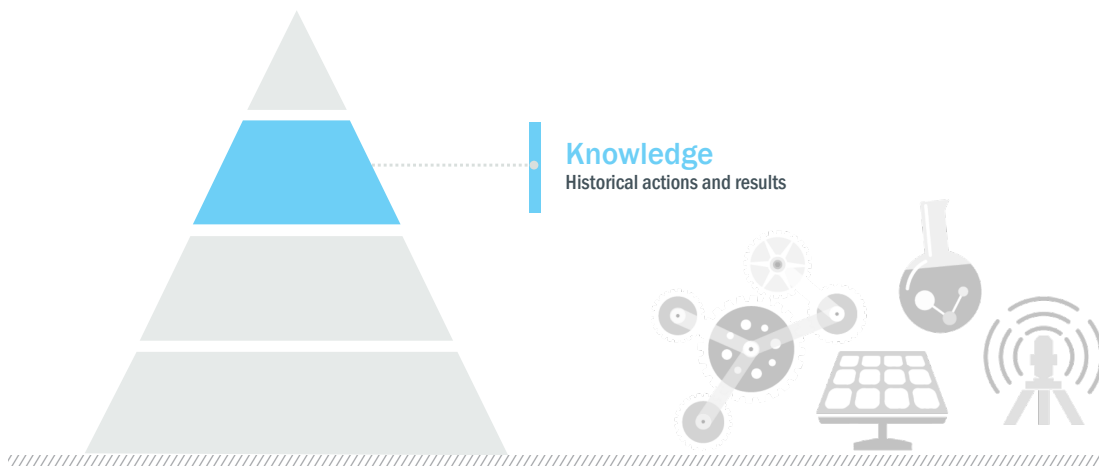
Information:

Provide understanding and meaning of the data



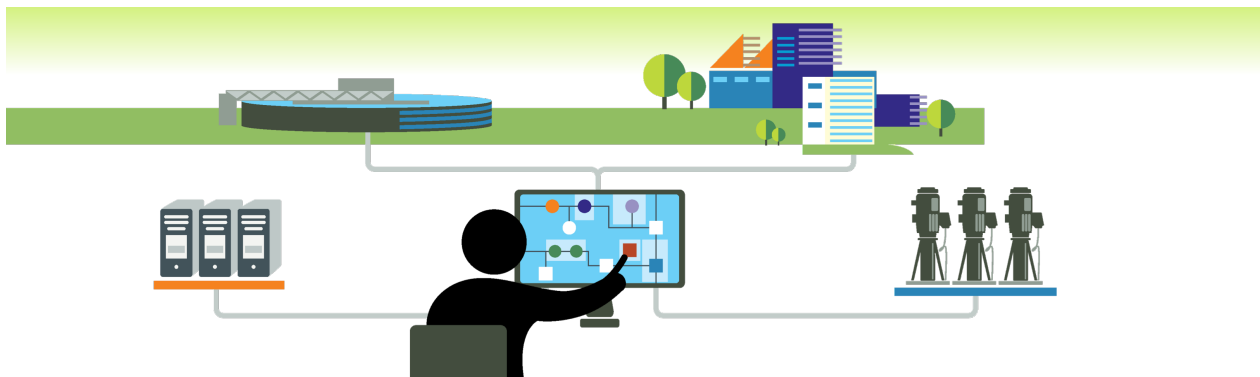
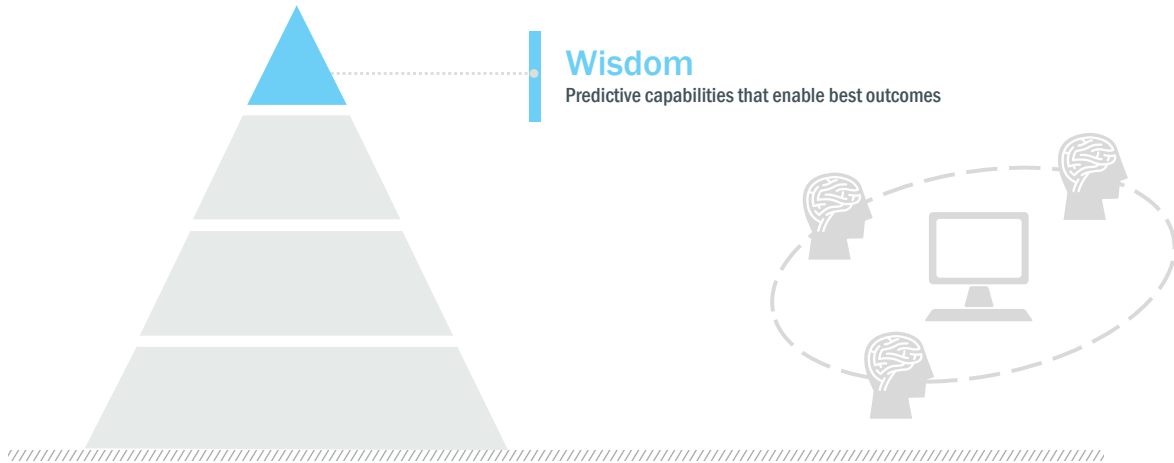
Knowledge:

Embedding goals and requirements with historical context



Wisdom:

Understanding how a complex system will react in future scenarios



SUEZ' vision
to fully leverage technology

SUEZ in North America Regulated Utility Operations

15 Water Utilities Regulated by
5 State Utility Commissions

- Delaware
- Idaho
- Pennsylvania
- New York
- New Jersey



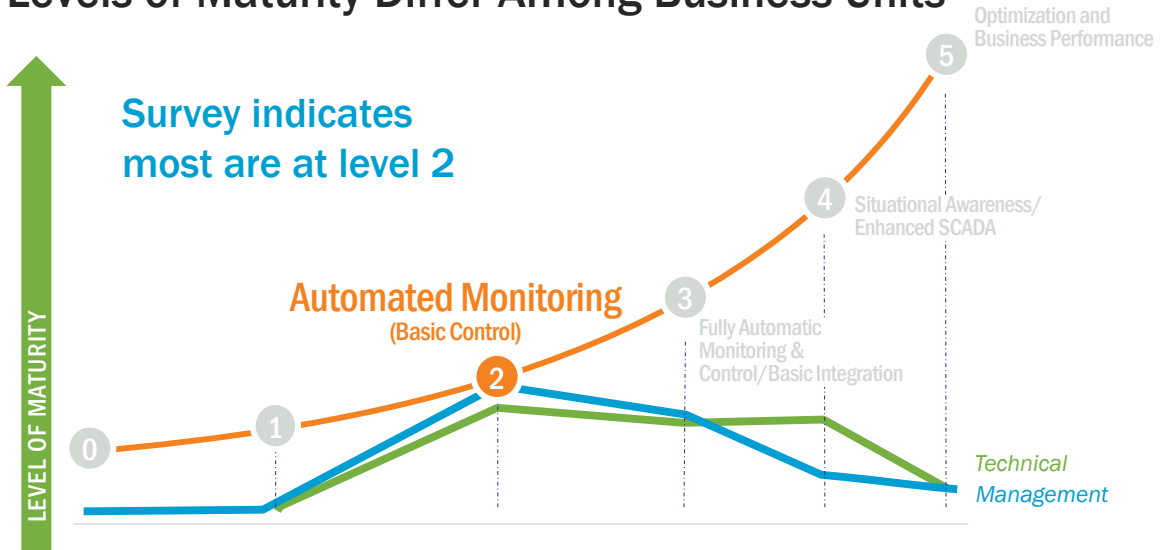
SHARING COMMON STANDARDS IN MANY AREAS

DIFFERENCES IN OTHERS

Focus on Industry Leadership



Levels of Maturity Differ Among Business Units



SUEZ Smart SCADA - Proof of Concept Demo

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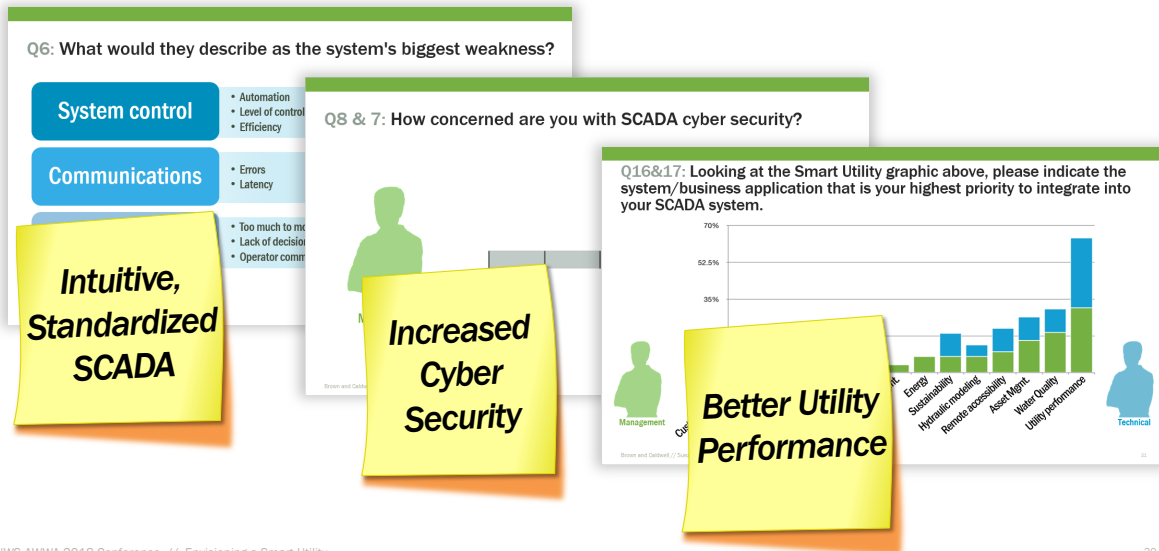
SUEZ Vision

SUEZ will build a Smart Utility by establishing an integrated framework for business applications and SCADA to transform operational information into knowledge.

A cross-business team will create and manage common standards for industrial control system security, user interface, and real-time data integration that will optimize resources to better serve customers and grow the business.

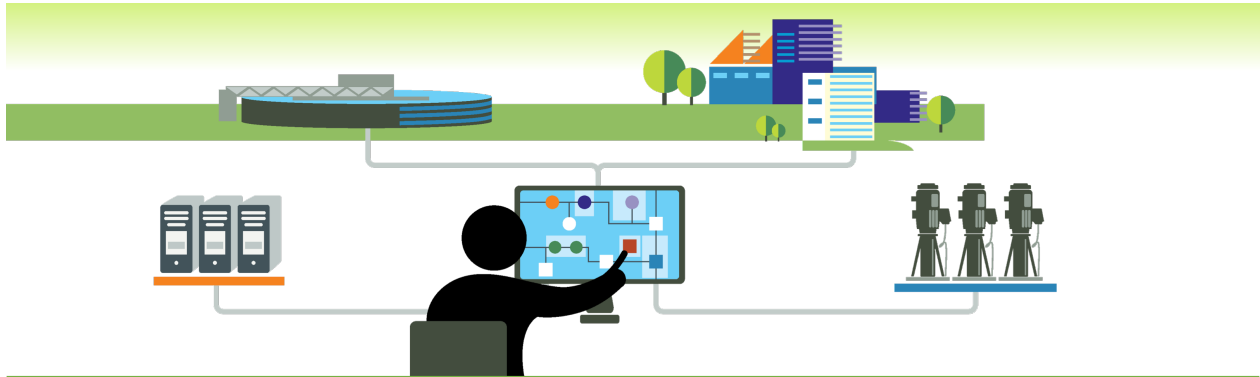


Survey Results // System Needs



Survey Results // Operator Training

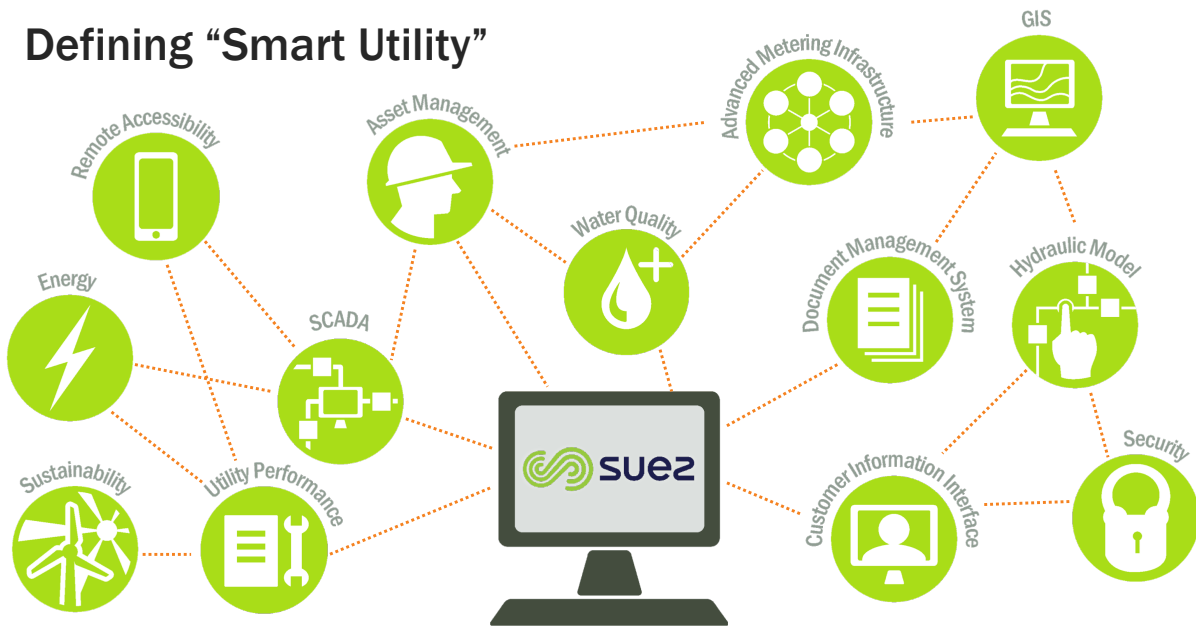




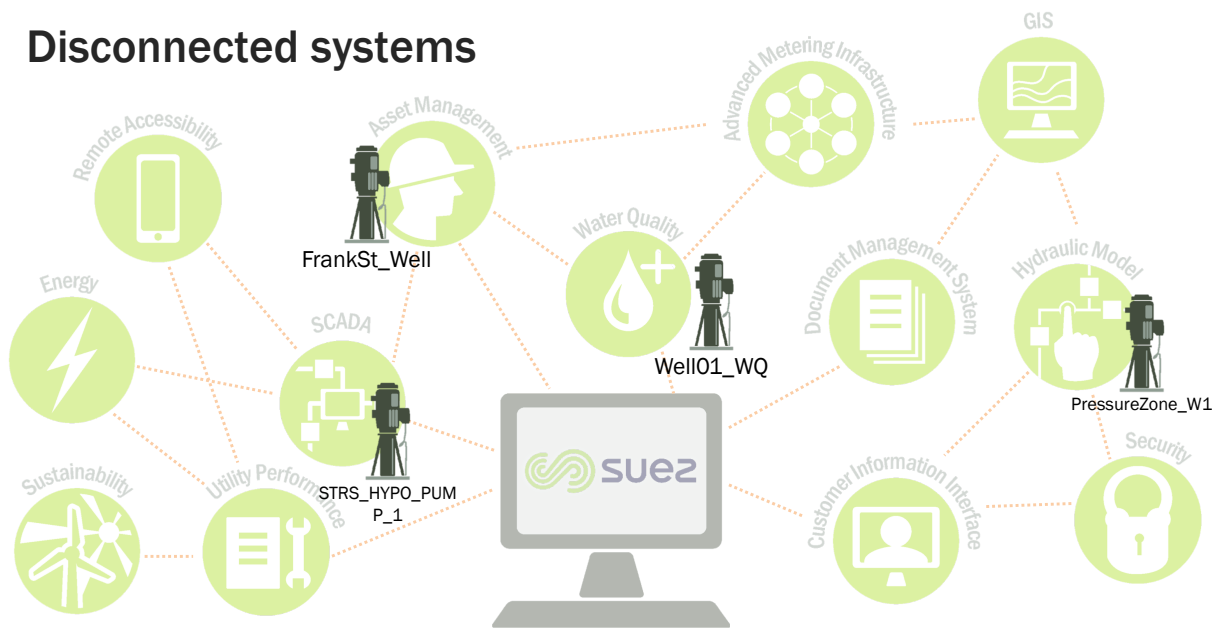
Smart SCADA with Smart Utility objectives



Defining “Smart Utility”

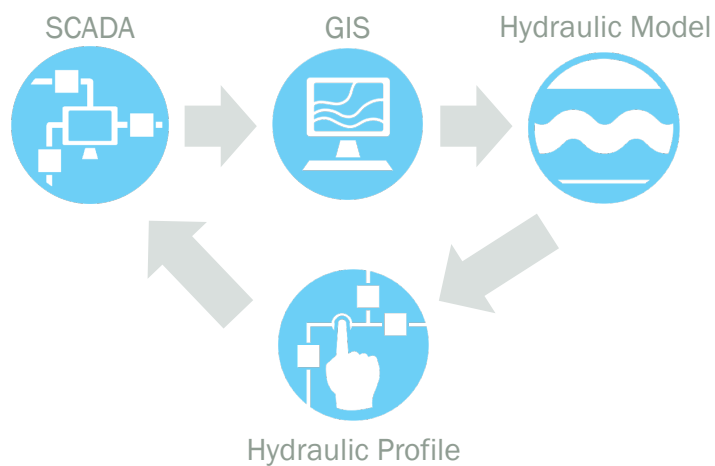


Disconnected systems



24

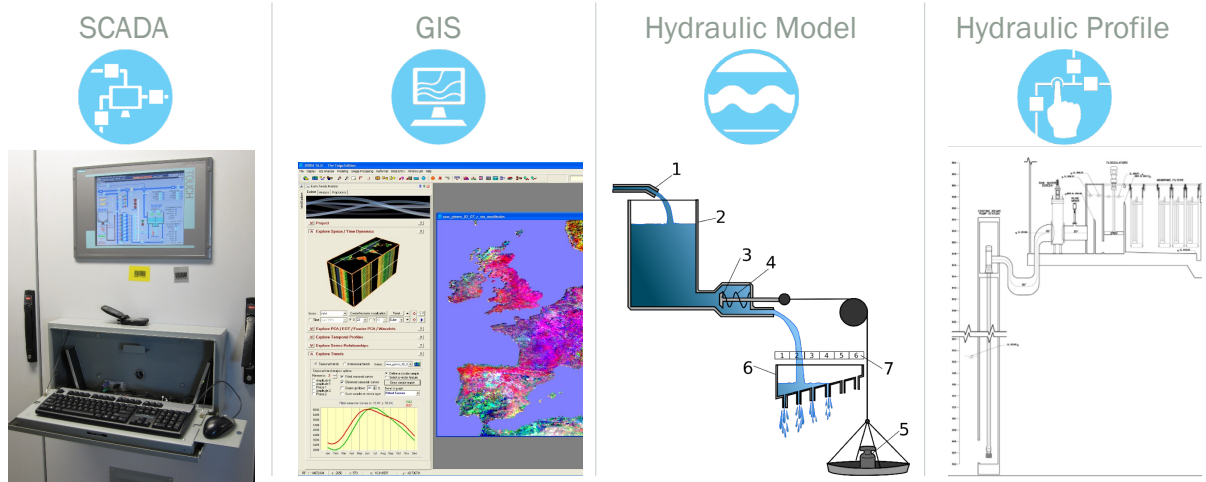
We focused on four core systems



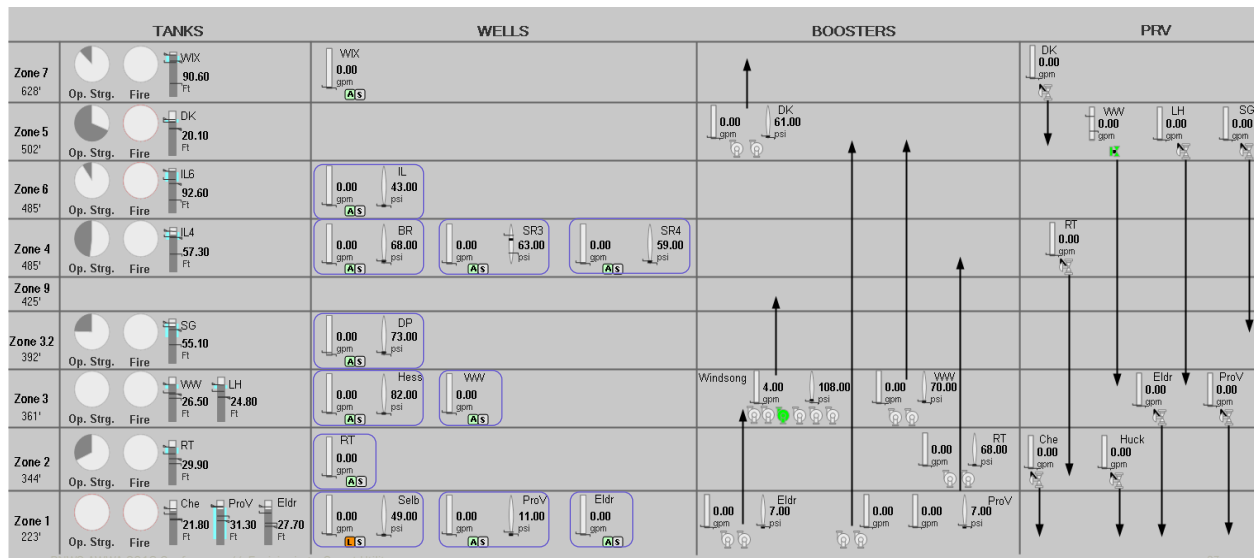
PNWS AWWA 2018 Conference // Envisioning a Smart Utility

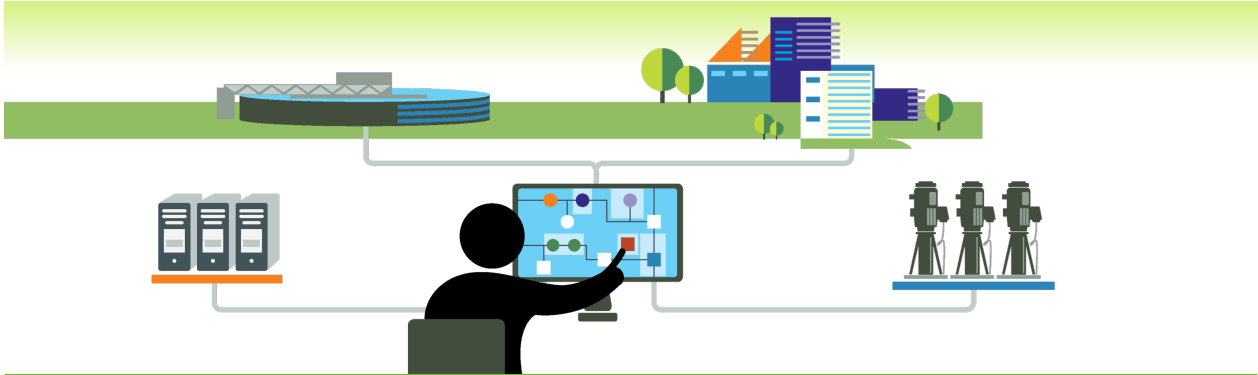
25

Real time model enables best in class operations



Smart Distribution Management





Achieving Smart SCADA



Building national standards

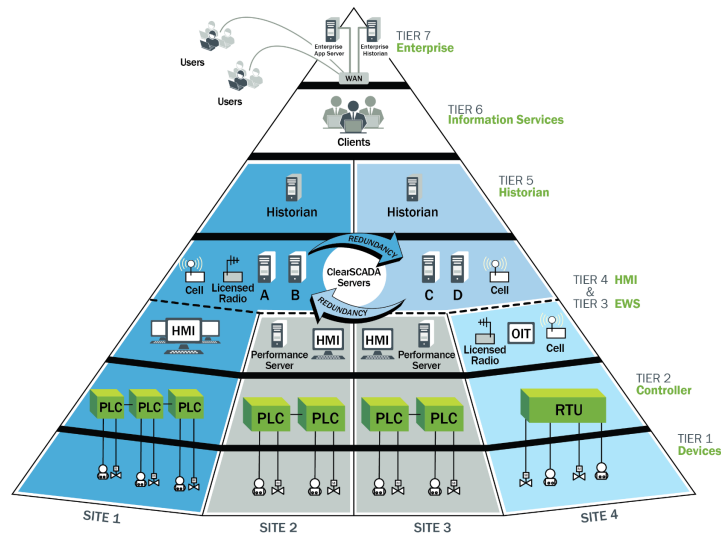
Effective workshops and continuous collaboration



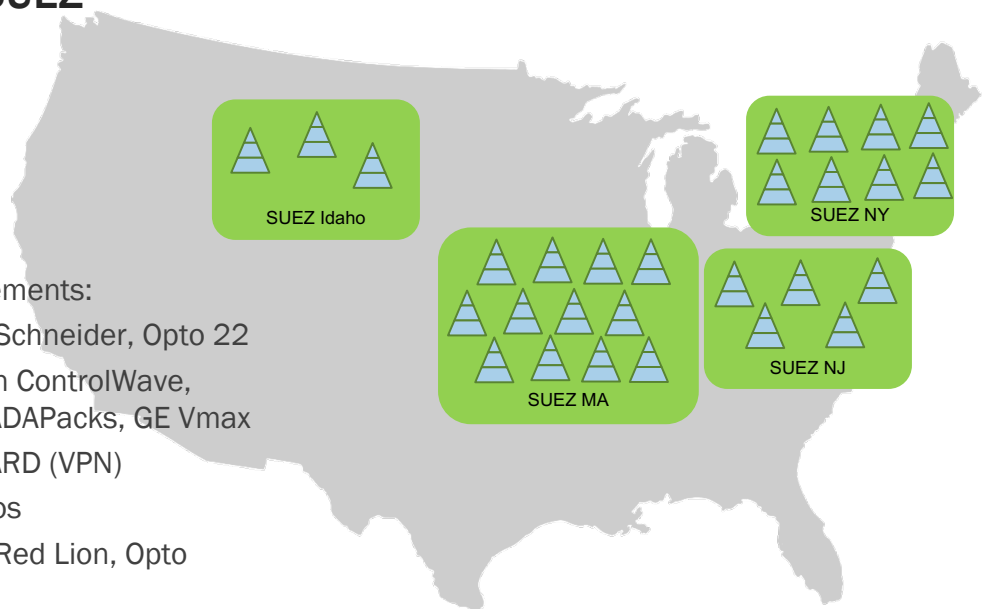
Valuable standards document that is living and breathing

BC Brains | SUEZ Brains | Schneider Technology

STEP 1: Agree on What SCADA Is



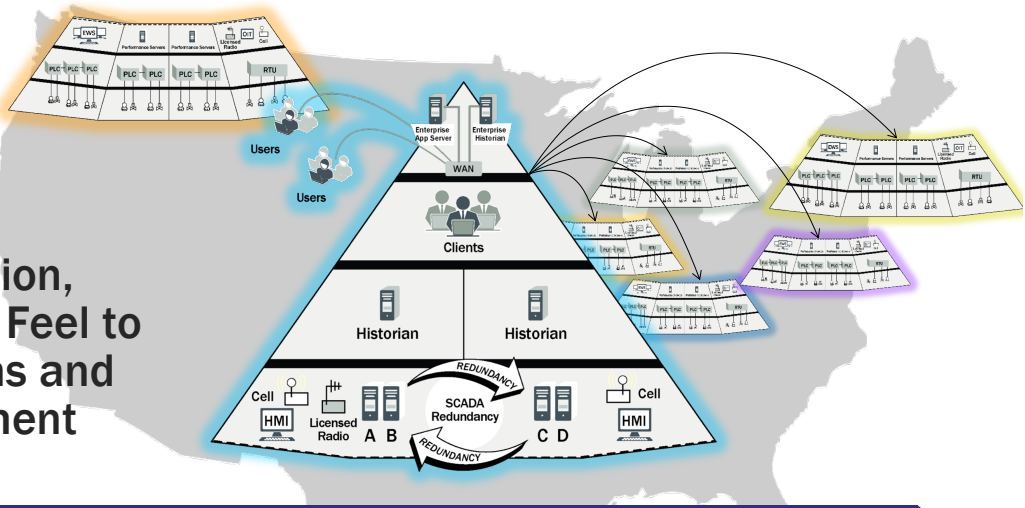
Identified SUEZ Systems



Major System Elements:

- PLCs: AB, GE, Schneider, Opto 22
- RTUs: Emerson ControlWave, Schneider SCADAPacks, GE Vmax
- Phoenix MGuard (VPN)
- GE/MDS Radios
- OITs: GE, AB, Red Lion, Opto

Common Organization, Look and Feel to Operations and Management



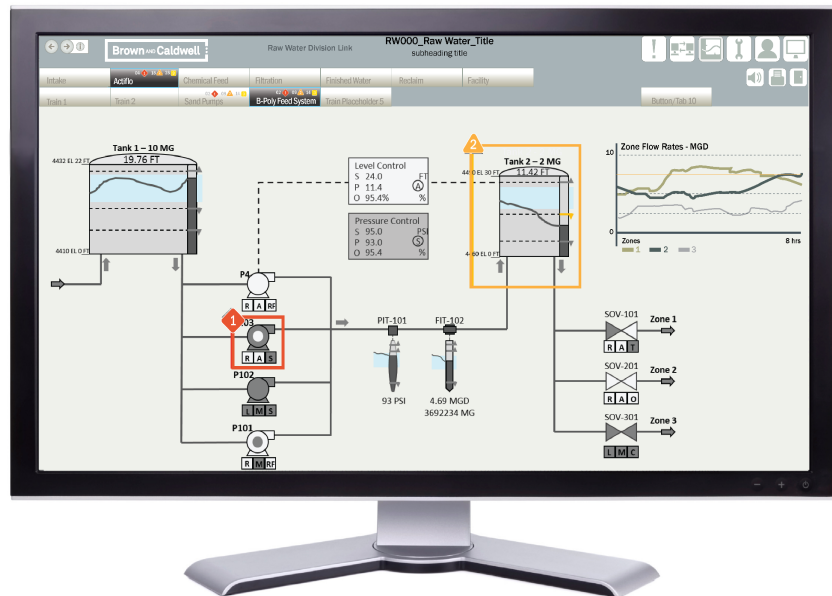
Creating A Federated Model for North American SCADA

Guiding principals for OMS

Viewing all of operations (North America from one application)

Transforming Data to Wisdom focused on these:

- Alarm Identification
- Process Status
- Optimization

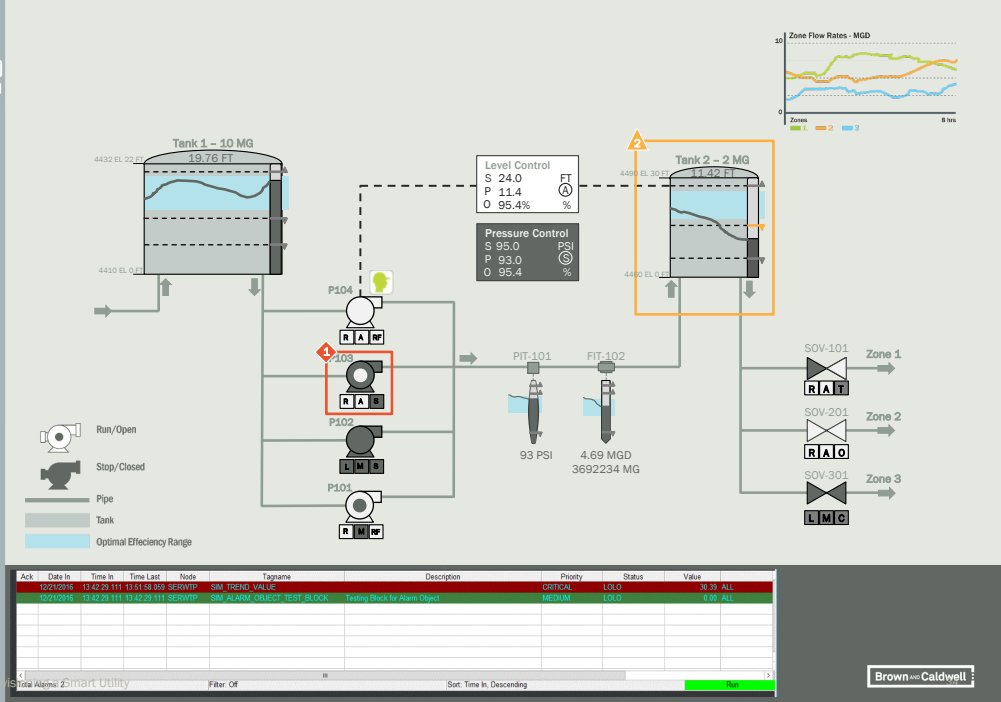


SUEZ B-Poly Feed System

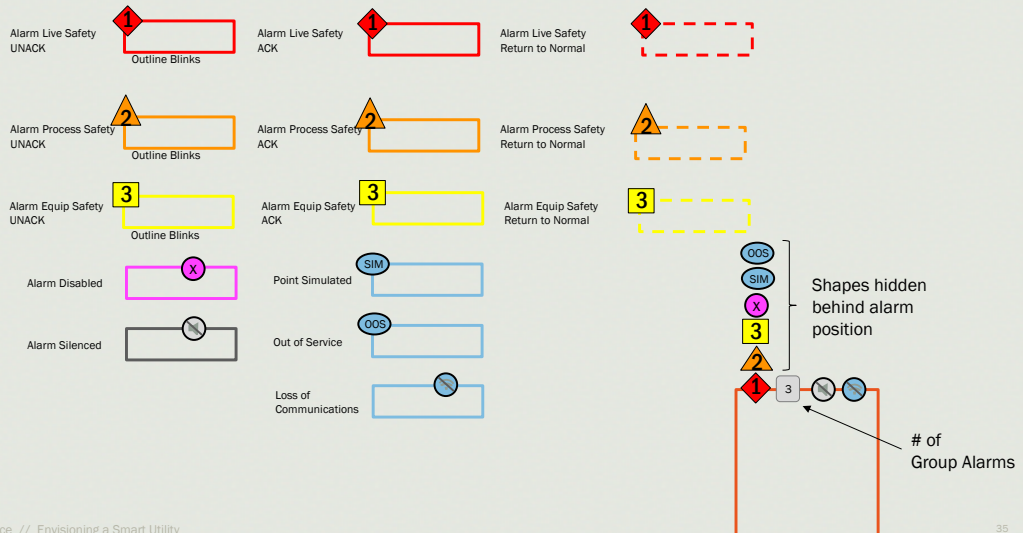
Raw Water | Distribution | F/WTP | SERWTP | SWGWTP

Intake Train 1
 Actiflo Train 2
 Chemical Feed Sand Pumps
 Filtration B-Poly Feed System
 Finished Water Train Placeholder 5
 Reclaim
 Reclaim
 Facility
 Facility
 Button/Tab 10 Button/Tab 10

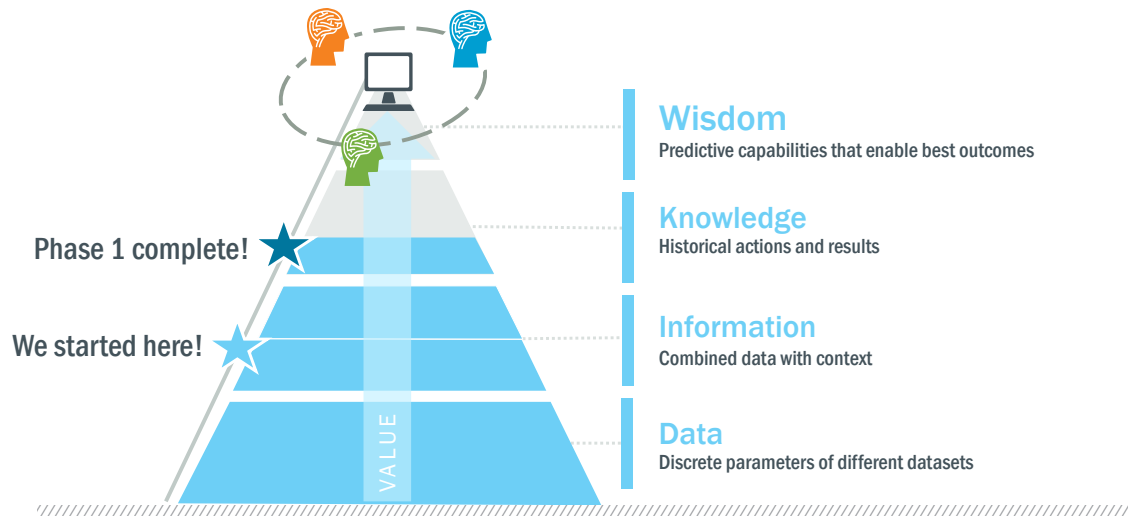
Run/Open
 Stop/Closed
 Pipe
 Tank
 Optimal Efficiency Range



OMS Alarm Management



Our journey



Our connected system
has resulted in



better utility performance,



an empowered workforce,



and enhanced customer service.



“Providing our customers and employees with the best service through proper use and application of operational technology”

- *Smart Utility Committee*



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