DC Water
Creating the Digital Utility

“The foundation of the Smarter Water Utility”
An effective **Digital Utility** strategy has positive impacts across a range of stakeholders and processes both internal and external.

**Benefits of the Digital Utility**

- Better decision making
- Ubiquitous access
- Preventive & Predictive analytics
- Real-time data
- Automated workflows
- Elimination of paper
- Real-time monitoring & alerts
- Decision support
- Integrated financial & operational data
- Cost transparency
- Reduced cost of operations
- Predictive analytics
- Access to information anywhere & anytime
- Common information for customers & employees
- Automated workflows
- Improved data quality
- Improved performance

**External Stakeholders** (customers, regulators, directors)

**Employees & Contractors**

**Financial**

**Operations**
The Digital Utility is characterized by enabling capabilities that allow for proactive management of all aspects of the business. The Digital Utility thinks in the terms of a Systems View rather than a single application or transactional requirement. The lines of source systems blur for the Digital Utility as the focus shifts from collecting data to applying knowledge.
Traditional Process

Water Main Break

- Collect Information
- Emergency Phone
- Notify Emergency Ops
- Dispatch Crew
- Report History
- Condition Assessment
- Review History
- Update History
- Work Order History
- Find Map Book
- Paper Maps
- Boil Water Door Hangers
- Customer List
- Customer List
- Customer Service
- Emergency Operations
- Field Crews

Customers

Call Center
Digital Enablement

Water Main Break

Customer Mobile Apps or Social Media

Real-time Sensors

Network Trace

Auto Dialer, Text & IVR

Call Center

Real-time Sensors

Location & Event Data electronically

Traffic Cameras & Uploaded content

Real Time Event Updates

Location & Event Data electronically

Real Time Event Updates

Work Orders

Asset Data

Resource Information

Digital Maps

Customer Information

Work, Asset & Resource Management Portal

Field Crews

Digital Integration Hub

Customer & Operations Data

Waze

Street closures
The existence of digital silos and digital islands coupled with the absence of an enterprise data model and standard definitions for core information assets prevents the organization from transitioning to a Digital Utility. Synchronization problems persist and more time is spent proving results rather than analyzing trends and driving performance improvements.

**Digital Silos**

- **CIS**
- **MDM**
- **Social Media**
- **3PP**
- **Customer Portal**
- **Website**

### Characteristics:
- Excessive data gathering
- Extensive production cycle
- Limited sharing
- Limited analytics
- Limited time for decision making

**Digital Utility**

- **Customer**
- **Operations**
- **Administrative**

### Characteristics:
- Automated data gathering
- Automated data production
- Seamless sharing
- Automated & adhoc analysis
- Informed decision making

The high-level enterprise data model is influenced by 3 primary entities:

**CUSTOMER**
The information assets that define our customers and the relationships with them. Systems that contain customer data include: CIS, Collections, Meter Reading, Social Media, Customer Portal, 3PP

**OPERATIONS**
The information assets that define the operational activities the company performs. Systems that contain operational information include: PCS, SCADA, P16, Innovyze, eLogger, Maximo

**ADMINISTRATIVE**
The information assets that define the support functions required to run the company. Systems that contain support data include: Dayforce, Ceridian, Lawson, Pipeline

Common relationships exist between the primary entities but are not clearly defined and multiple interfaces exist to move data between applications. The absence of accurate meta-data can lead to inaccurate results and makes end-user reporting and analysis difficult.
Other Opportunities

- AMI
  - Analyze usage to identify potential leaks and alert customers
  - Overlay AMI usage to create dynamic/virtual DMA’s
  - Monitor large meter performance
- Use pattern recognition technology to replace manual CCTV reviews
- Customer Segmentation to improve collections
- Integrate construction and inspection activities with Asset Management to monitor “as building” activities rather wait for “As-Built”
- Applications for 3rd party activity tracking, BPA Testing, Service installations, Permits, hydrant use
- Real-time monitoring of asset performance against baseline
- Drones for asset inspections