COMPUTERWORLD **SNIA**

SNW

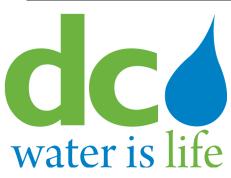# Driving Innovation Through the Information Infrastructure

SPRING 2011

Virtualization from the Perspective of the Business
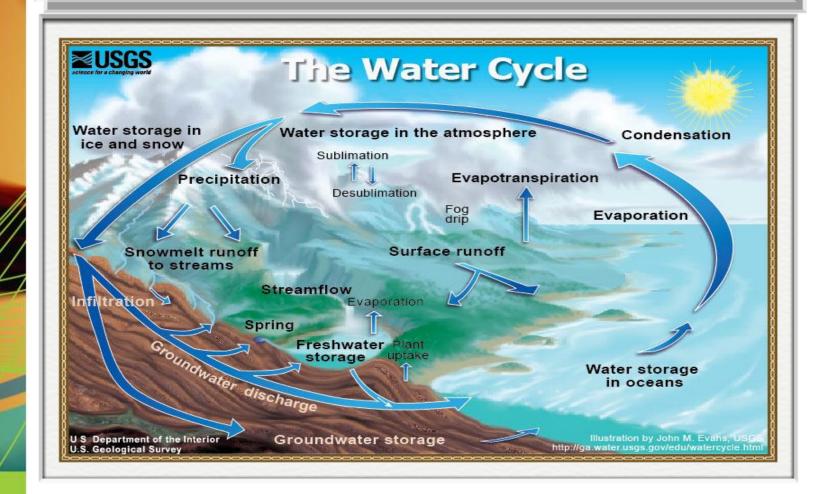
Omer Siddiqui
CIO

**District of Columbia
Water & Sewer Authority**

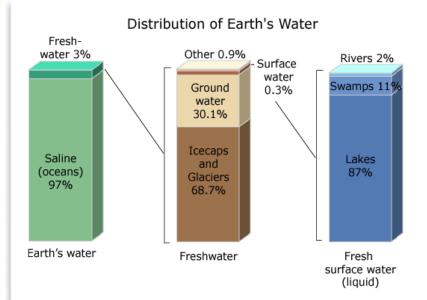**GEORGE S. HAWKINS
GENERAL MANAGER**

THE CASE FOR WATER

CIVILIZATION DEPENDS ON IT!

THE CASE FOR WATER

Distribution of Earth's Water

Earth's water: Saline (oceans) 97%, Fresh-water 3%

Freshwater: Other 0.9%, Ground water 30.1%, Icecaps and Glaciers 68.7%, Surface water 0.3%

Fresh surface water (liquid): Rivers 2%, Swamps 11%, Lakes 87%

It takes...

- **10** liters of water to make one sheet of **PAPER**
- **40** liters of water to make one slice of **BREAD**
- **70** liters of water to make one **APPLE**
- **80** liters of water per dollar of **INDUSTRIAL PRODUCT**
- **91** liters of water to make one pound of **PLASTIC**
- **120** liters of water to make one glass of **WINE**
- **140** liters of water to make one cup of **COFFEE**
- **1,300** liters of water to make one kilogram of **WHEAT**
- **4,800** liters of water to make one kilogram of **PORK**
- **10,855** liters of water to make one pair of **JEANS**
- **15,500** liters of water to make one kilogram of **BEEF**
- **16,600** liters of water to make one kilogram of **LEATHER**

Source: IBM

25

Water Utilities
Deliver a Premise for Life

- Deliver a fundamental of life
- Water Infrastructure is aging
- Infrastructure is out of sight, out of mind
- Lack of Innovation in the sector
- Financial Catastrophe awaits

INHERITED AN AGING WATER DISTRIBUTION AND COLLECTION SYSTEM BADLY IN NEED OF REPAIR

MEDIAN AGE OF 1300 MILES OF WATER DISTRIBUTION SYSTEM ALONE IS 76 YEARS

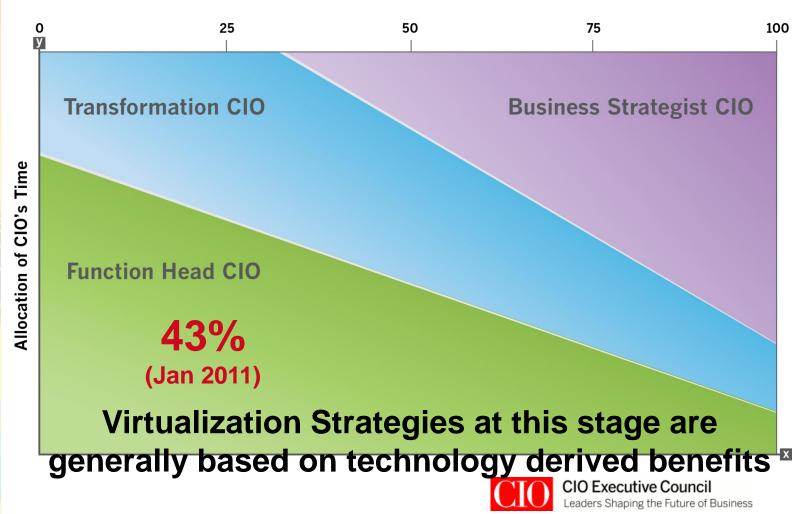MUCH OF 1700 MILE SEWER COLLECTION SYSTEM WAS INSTALLED BEFORE THE CIVIL WAR

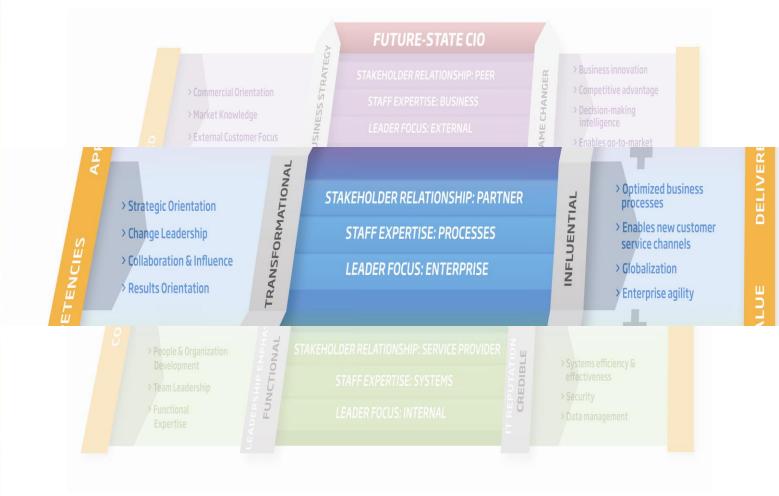# Technology Road Map

- Fundamentals

Functional Stage

Trending from State of the CIO survey

0   25   50   75   100

Allocation of CIO's Time

Transformation CIO

Business Strategist CIO

Function Head CIO

43%
(Jan 2011)

Virtualization Strategies at this stage are generally based on technology derived benefits

CIO Executive Council
Leaders Shaping the Future of Business

Technology Road Map
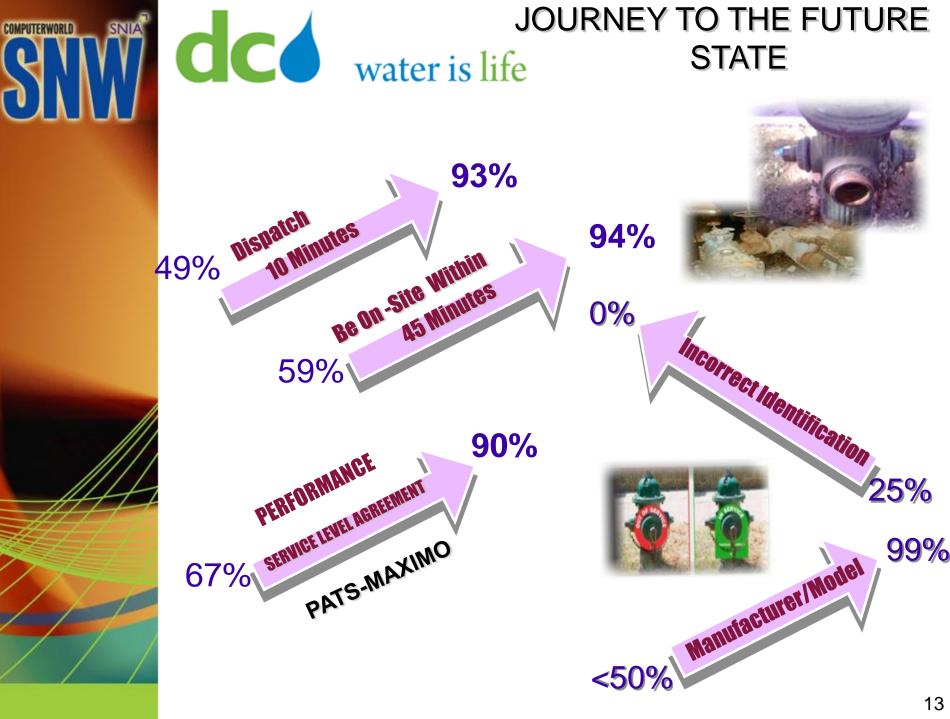
- Fundamentals
- Transformational
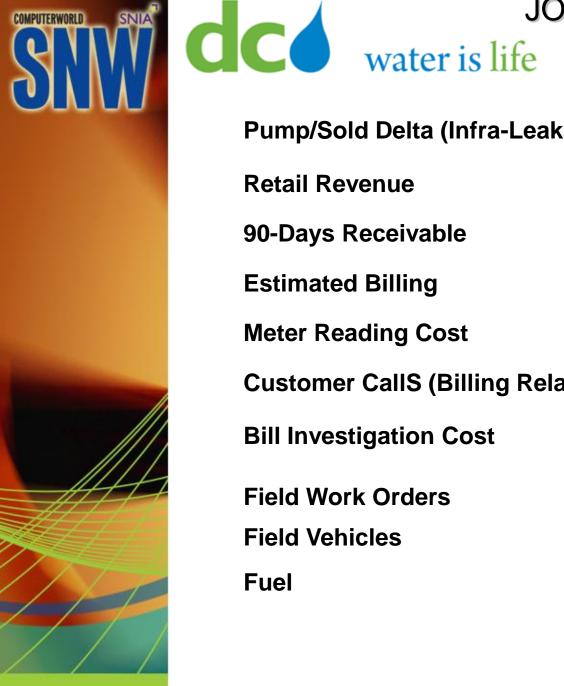
Journey: Transformational Stage

49% **Dispatch 10 Minutes** → **93%**

59% **Be On-Site Within 45 Minutes** → **94%**

0% ← **Incorrect Identification** ← 25%

67% **PERFORMANCE SERVICE LEVEL AGREEMENT PATS-MAXIMO** → **90%**

<50% **Manufacturer/Model** → **99%**
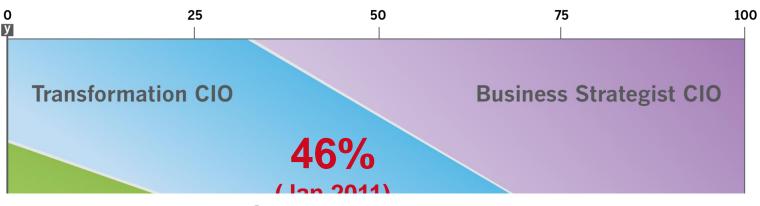
Pump/Sold Delta (Infra-Leaks)	**36%**	**22%**	↓
Retail Revenue		**7%**	↑
90-Days Receivable	**$26.1M**	**$5.1 M**	↓
Estimated Billing	**25%**	**2%**	↓
Meter Reading Cost	**$4.15**	**Cents**	↓
Customer CallS (Billing Related)		**36%**	↓
Bill Investigation Cost		**50%**	↓
Field Work Orders		**36%**	↓
Field Vehicles		**20**	↓
Fuel		**28,000 GY**	↓

Trending from State of the CIO survey

46%
(Jan 2011)

Virtualization Strategies at this stage are still based on technology derived benefits but business value is entering the equation

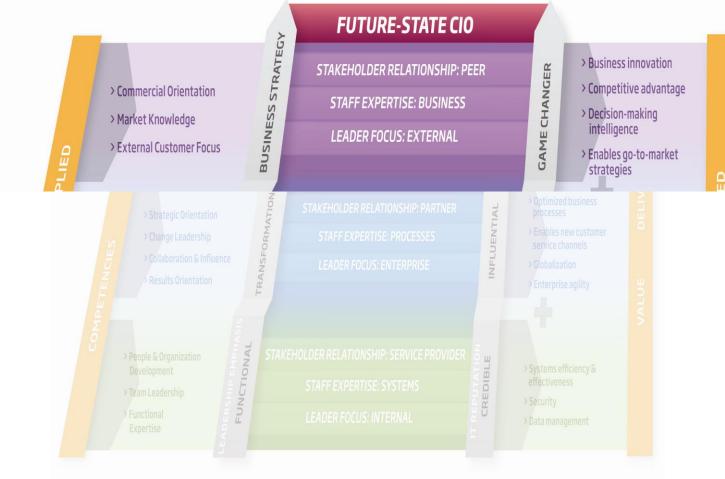CIO Executive Council
Leaders Shaping the Future of Business

Technology Road Map

- Fundamentals
- Transformational
- Future State

Creating New Business Value

Strategist Stage

THE FUTURE STATE

DC WATER AND IBM ARE PARTNERING ON A JOINT RESEARCH PROJECT ON PREDICTIVE ANALYTICS, FIRST-OF-A KIND ("FOAK" PROJECT , "ANALYTICS DRIVEN ASSET MANAGEMENT (ADAM) TO DEVELOP AND APPLY ADVANCED DATA ANALYTICS TECHNOLOGY

Preventive Maintenance

Develop analytics which can lower the cost of preventive maintenance.

Demand Management

Understand water usage patterns to support pricing and demand management.

Customer Service

Develop analytics which can improve the quality of service (uninterrupted, high quality water) for DC WASA customers

Work Management
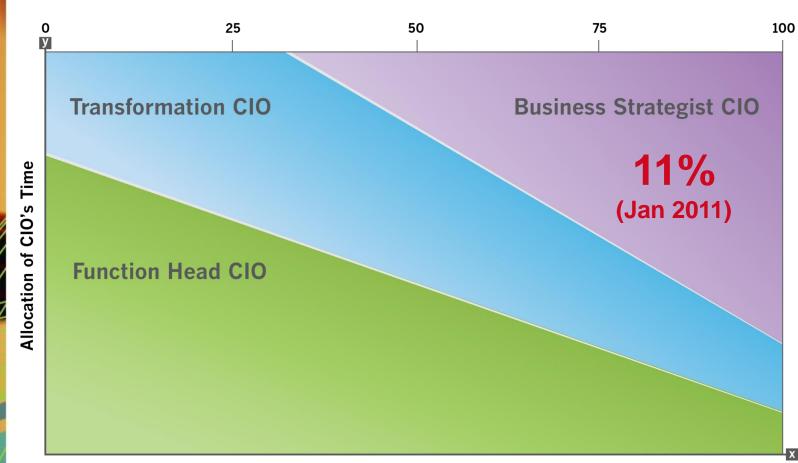
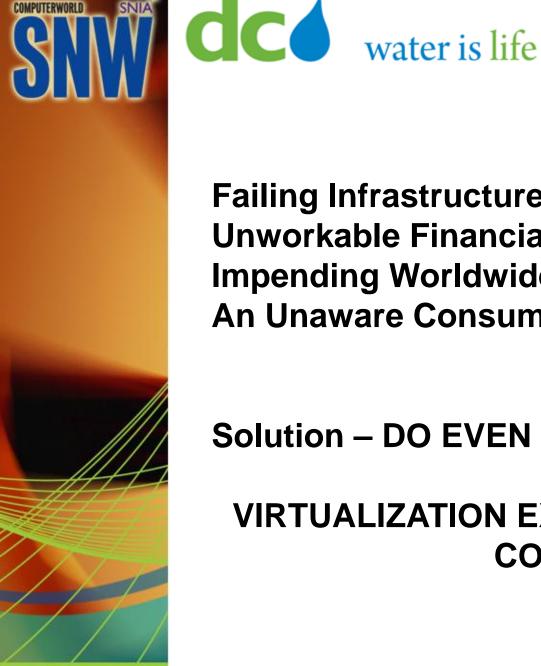Lower the operational cost of DC WASA by effective crew scheduling and optimal rolling stock use
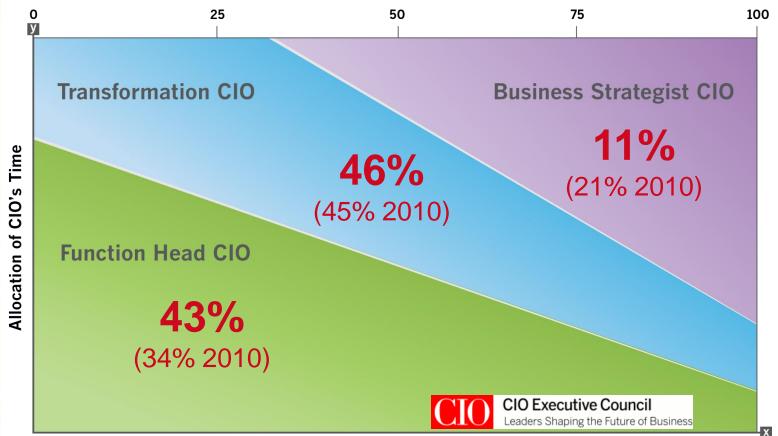
Trending from State of the CIO survey

Failing Infrastructure
Unworkable Financial Model
Impending Worldwide Water Crisis
An Unaware Consumer

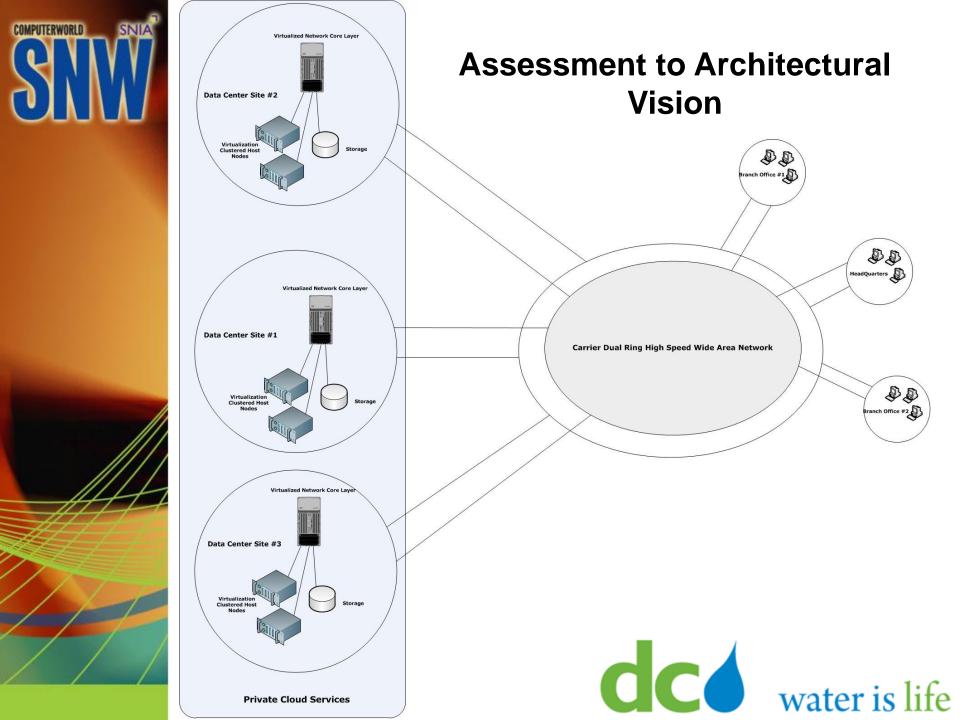**Solution – DO EVEN MORE WITH EVEN LESS**

VIRTUALIZATION EXCELS AT THIS SIMPLE CONCEPT
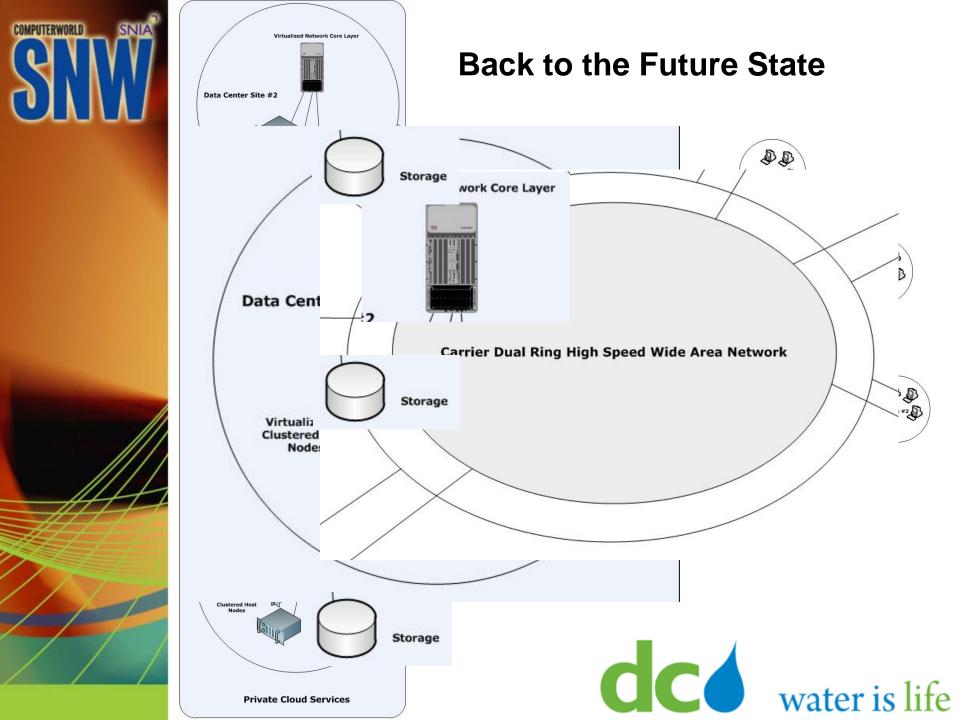
Trending from State of the CIO survey

- Fundamental
  - Obvious Technical Reasons

- Transformational
  - Better Focus on Business Issues
  - Reallocation of technology resources

- Future State
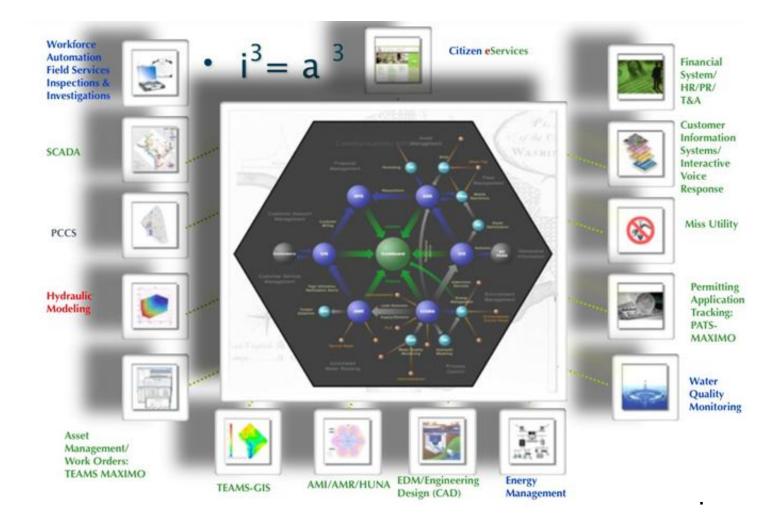 - Create business value
  - Enable new business opportunity

Assessment to Architectural Vision

- **Perform Assessments**

- **Virtualize Servers**

- **Outside the Fence Infrastructure**

- **Data Centers**

Back to the Future State

Data Center Site #2

Virtualized Network Core Layer

Storage

...work Core Layer

Data Cent...

Carrier Dual Ring High Speed Wide Area Network

Storage

Virtuali...
Clustered...
Nodes

Clustered Host Nodes

Storage

Private Cloud Services

- **IT Business Orientation**

- **Innovation non-confrontational**

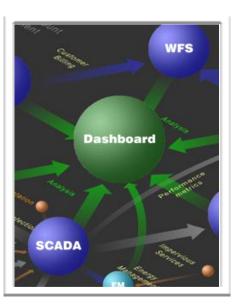- **Dynamic Data Analytics Support**

- **Responsive to business growth**

A smart utility

IN A SMARTER CITY ON A SMARTER PLANET
BY MAKING OUR

ASSETS
INTELLIGENT

OMER SIDDIQUI, CIO (omer.siddiqui@dcwater.com)

GEORGE HAWKINS, GENERAL MANAGER