CSMART
PI@CityScale

Presented by **Dave Roberts, OSIsoft Fellow**
@OSIsoftDRoberts

OSIsoft Overview

Fact Sheet

- **Corporate – Founded 1980, Private**
  - Dr. J. P. Kennedy, Founder and CEO
- Employees – 900+
  - Engineering – 200 Cust. Support - 300
  - Sales & Mkt – 220 Operations - 135
- **Sales**
  - $ 270 MM (FYE 2012)
  - 14.2 % CAGR – 10 years
- **Geography**
  - Doing business in 110 + countries
  - 26 offices in 16 countries.
- **The business we are in…**
  - Enterprise Wide Infrastucture for streaming data & events
- **Installed Base**
  - 4 000 + Active Customers
  - 12 000 + Active System licenses (excluding OEM)
  - 300 000 000 DataStreams
  - Monitor 700 PI servers, 1 800 Host computers & 8 000 interfaces

Leader in many industries

POWER & UTILITIES

- OSIsoft is ranked 1st in the power industry
- DTE Energy, PSE&G, Entergy, British Energy, Iberdrola

OIL & GAS

- 100% of the global Top 10 producers use the PI System
- BP, Shell, Chevron, ExxonMobil, Pemex, Total, Petrobras

CHEMICALS & PETROCHEMICALS

- 40 of top 50 Chemical Companies rely on the PI System
- Dow Corning, Eastman Kodak, Cytec, Rhodia

PHARMACEUTICALS, FOOD & LIFE SCIENCES

- Nine of the Top 10 pharmaceuticals use the PI System
- Amgen, Bayer, PDL, Allergen, Johnson & Johnson, Roche

MATERIALS, MINES, METALS & METALLURGY

- The PI System is installed in the world's largest mining companies.
- Cemex, Cargill, BHP Billiton Yabulu, Codelco

PULP & PAPER

- 400 sites from worldwide leaders use OSIsoft to manage their mills
- Abitibi, Cascades, Inc., International Paper, MeadWestvaco

CRITICAL FACILITIES, DATA CENTERS & IT

- Innovative use of PI System to monitor complex IT environments
- Microsoft, Hewlett Packard, Thomson Reteurs, RBC

What is PI?

- Measure & store time series data, especially sensor based information
- Maps data from physical assets to logical abstractions (PI Tags and AF Elements)

- Moves streaming data and events (payload) from sensors (through control system gateways or some aggregator or head end systems), through networks, to infrastructure based services provided by the PI System:
  - analysis, notifications, pre/post processing, trending, alerting, event framing, etc.
- Delivers the raw & mapped data to users via
  - Visualization & Presentation - native client, MS Office, SharePoint, MS SQL Server Stack
  - Applications - Data Access Services
  - Integration - ERP's (Business Process)
  - Datamarts, BI systems (correlate sensor data with parametric, transactional data)
  - Trans enterprise data exchange (e.g. Demand Response in the utilities market.)
- Span the City's domain of physical infrastructures, scales and adapts to evolving strategic mandates, and supports multiple use cases over time - > Value Now, Value Over Time…

CityScale Infrastructure

One Definition of a Smart City 2.0

- A smart city is an urbanized area where multiple sectors cooperate to achieve sustainable outcomes through the analysis of contextual real-time information shared among sector-specific information and operational technology systems

Source: Gartner Hype Cycle for Smart City Technologies and Solutions Published: 29 July 2013

Vision for “Smart City”

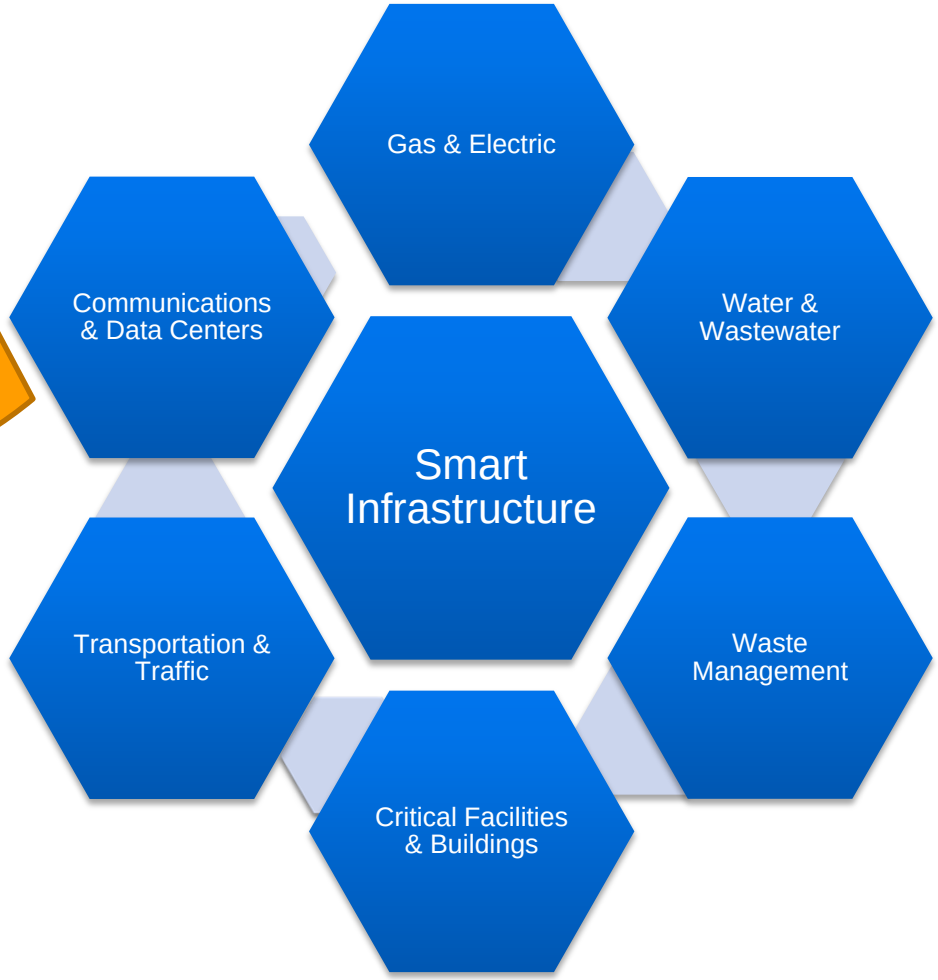
- A common data infrastructure deployed across all the islands of data in the City domain…so that…
- Individual Users can optimize their facilities inside their own fence…and….
- The City can be optimized as a system, much in the same way users have optimized industrial parks, campuses, and critical systems…to achieve this…
- We have to create an environment that allows the users to have access and understand their own data and performance, but also be comfortable with publishing elements of their data into a common environment to enable systemic efficiencies and other high-value uses at city scale…

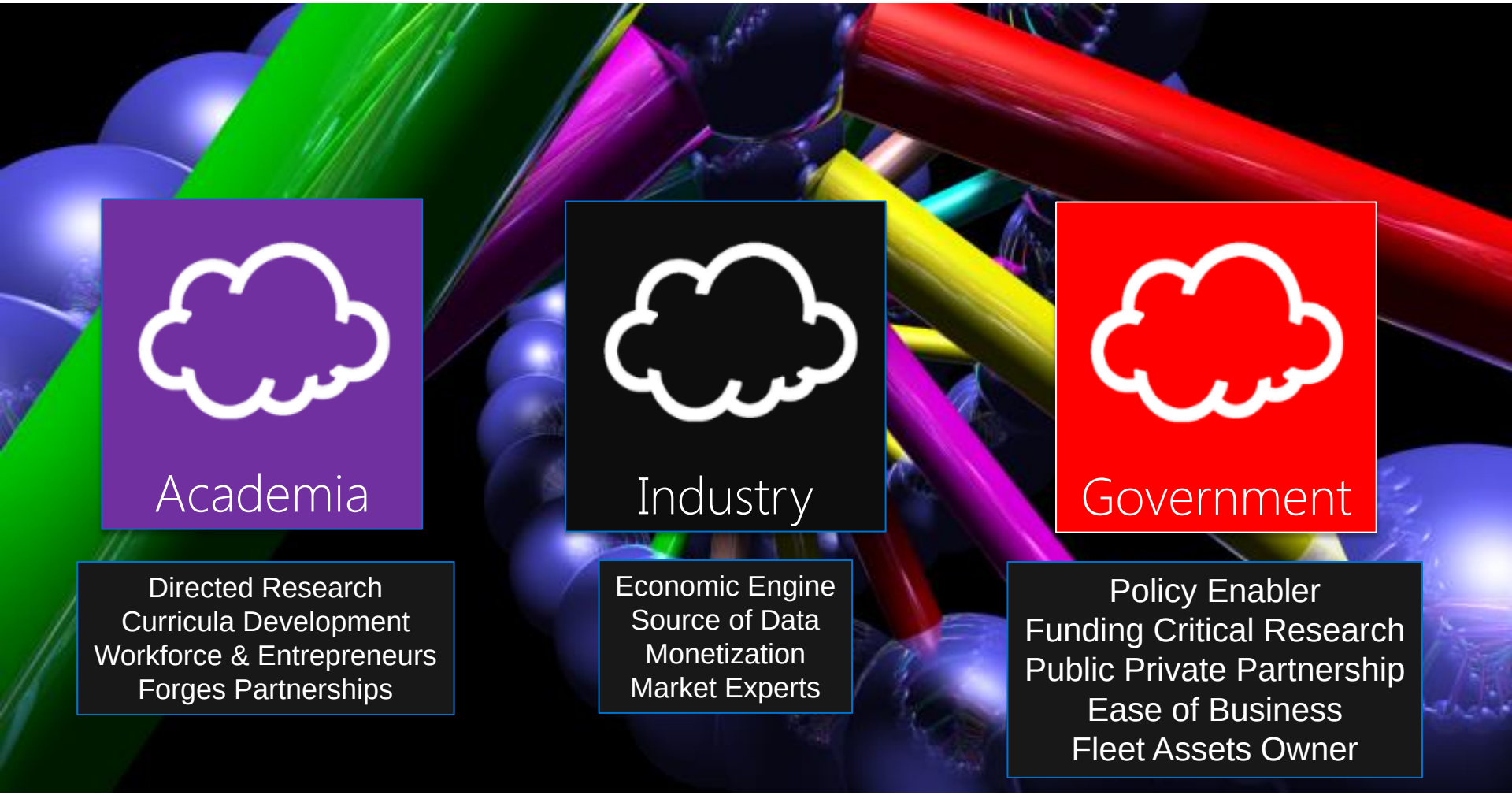
PI as a Common Data Infrastructure @cityscale

A common data infrastructure that connects all of the various physical assets/infrastructure

- Electrical
- Gas
- [illegible]
- [illegible]tation &
- [illegible]ic
- Critical Facilities
- Communications
- Buildings

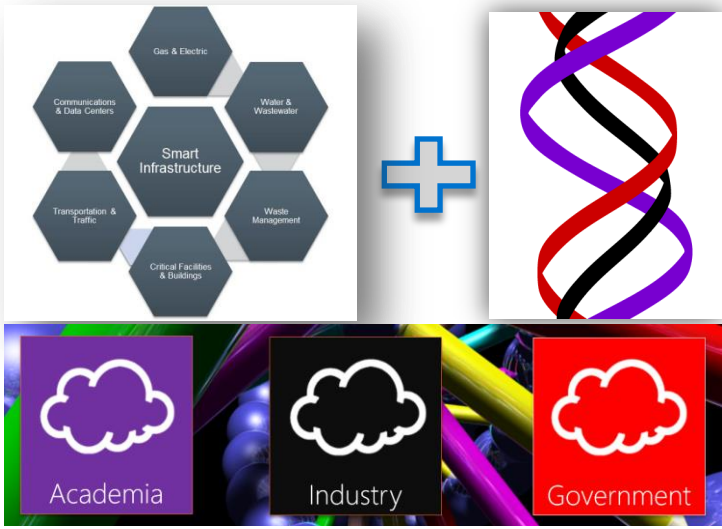
Doing this in the plant for 30 years!!!





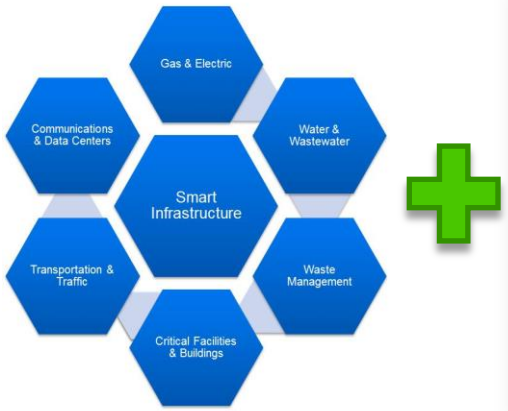
Smart Infrastructure –

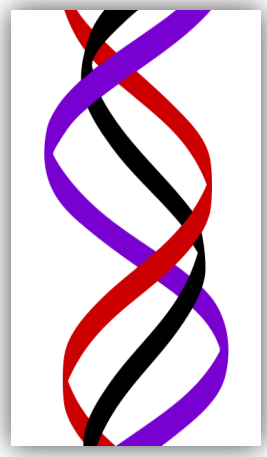
- Enable Advanced Applications
  - End-to-end Value Chain Coverage
  - Energy Efficiency
  - Situational Awareness/Security
  - Sustainability
  - Asset Optimization
  - Microgrids/Energy Surety
  - Open Data/Innovation Programs



Transformational Development Path

- Data Infrastructure goes in “thin and wide” connecting all of the islands of data
- Scales from Level 1 to Level 5 Systems
- Energy Efficiency (e.g. minimizing demand charges) gains pay for the system in the short term.
- Use the same data infrastructure to drive other uses across all Public Assets:
  - Situational Awareness/Security
  - Sustainability
  - Asset Optimization
  - Microgrids/Energy Surety
  - Open Data/Innovation Programs





Demo Concepts

Case Examples
Airport

Airports are “Smart Cities”

Case Examples
Port & Utility

SMART Airport

Alignment with Geospatial

SMART Airport – Geospatial Context

OSIsoft

Thank you

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