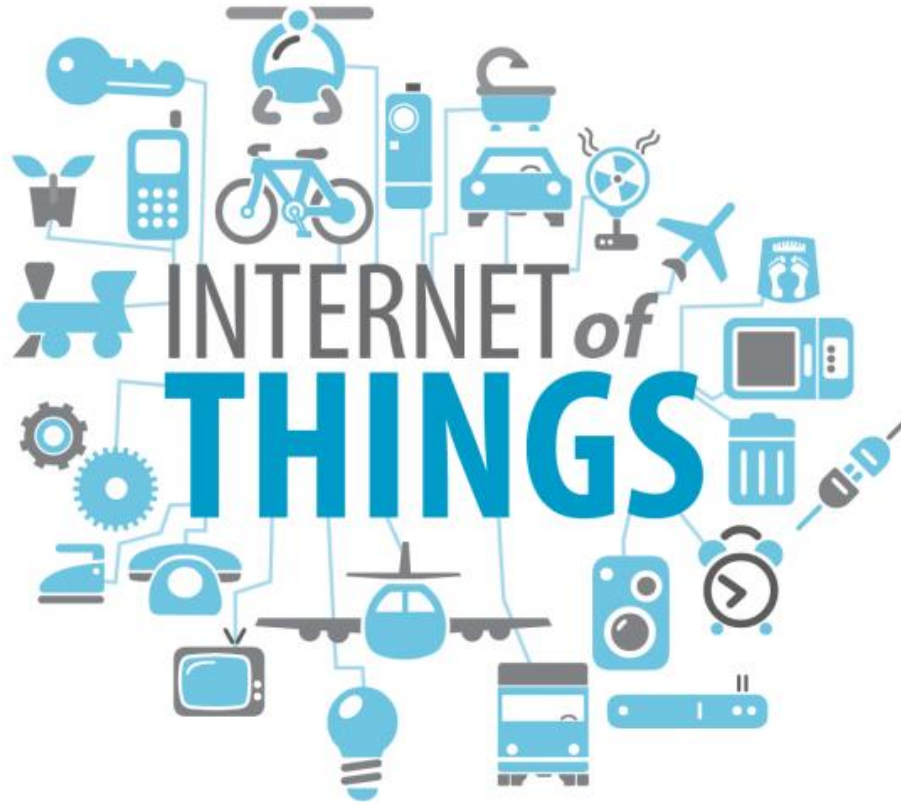


The Benefits of a Connected System



Presented by:

Adam Strynadka
Managing Director
DeviceLynk

Industrial IoT – Not Just for Builders Anymore

We've come a long way since the Industrial Internet of Things (IIoT) became its own 'thing' – when hardware, software, and services were mostly targeted towards developers and engineers – i.e. builders.



What is the Industrial Internet of Things?

The Internet of Things (IoT) can best be described as connecting objects to the internet in order to collect and exchange data and create new informational value.

The basic concepts behind the IoT initiative involve the thousands of devices that already and will soon exist in the world that are connected to the internet to facilitate data exchange to drive visualization, optimization and autonomy of those devices.

Applying IoT technology to industry, the Industrial Internet of Things (IIoT) is the next evolution of existing technologies, but now taking advantage of lower cost connectivity, cloud and mobile capabilities.

What is the Industrial Internet of Things?

Today



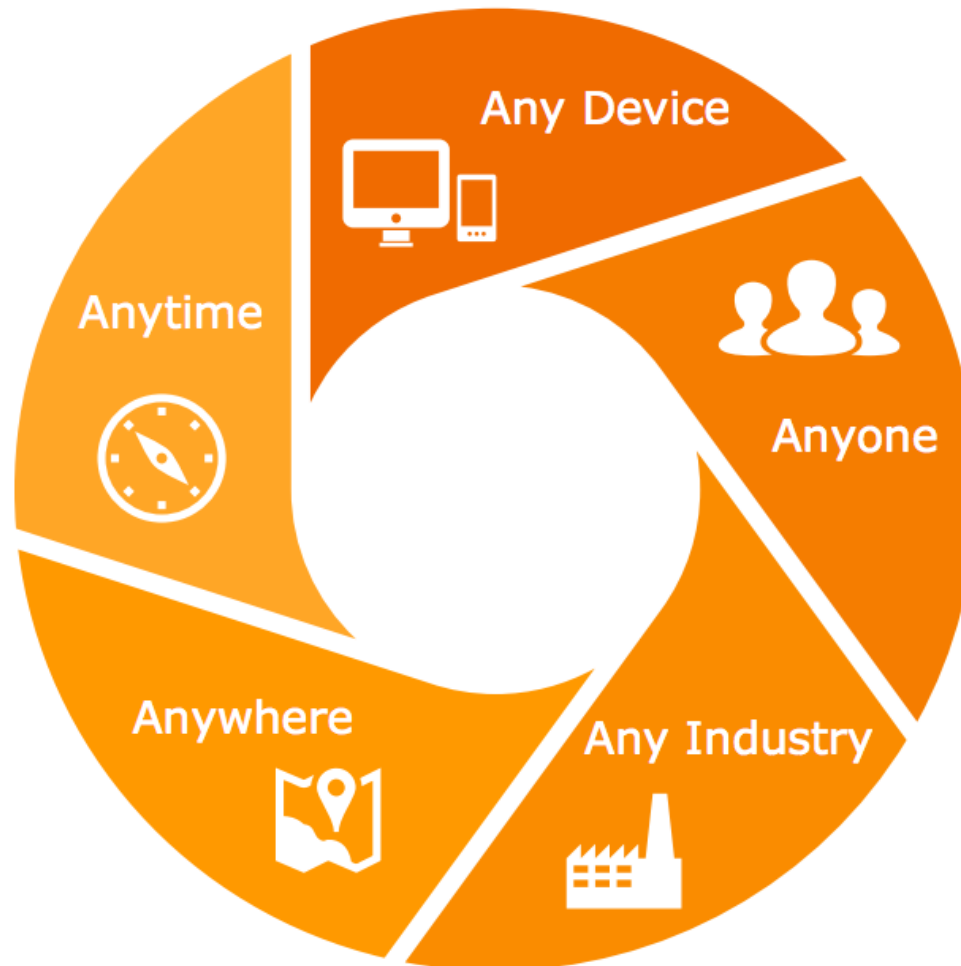
What is the Industrial Internet of Things?

Vision

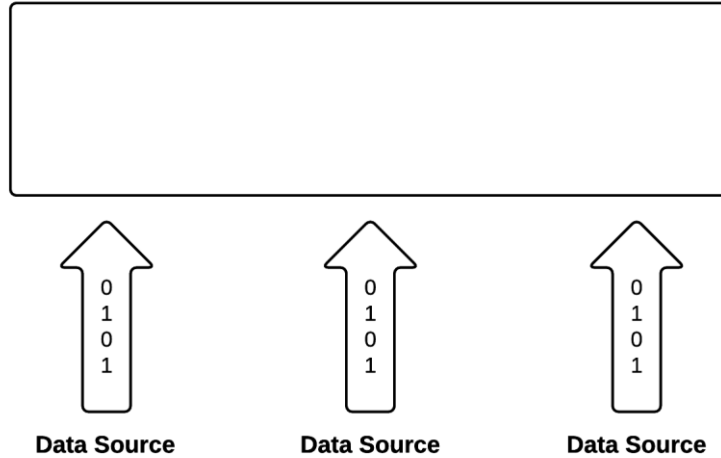


What is the Industrial Internet of Things?

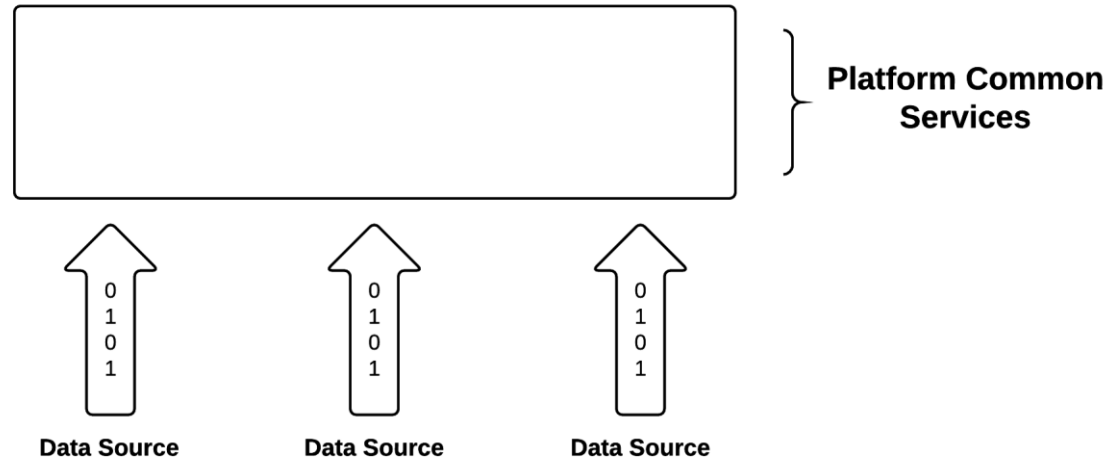
Vision



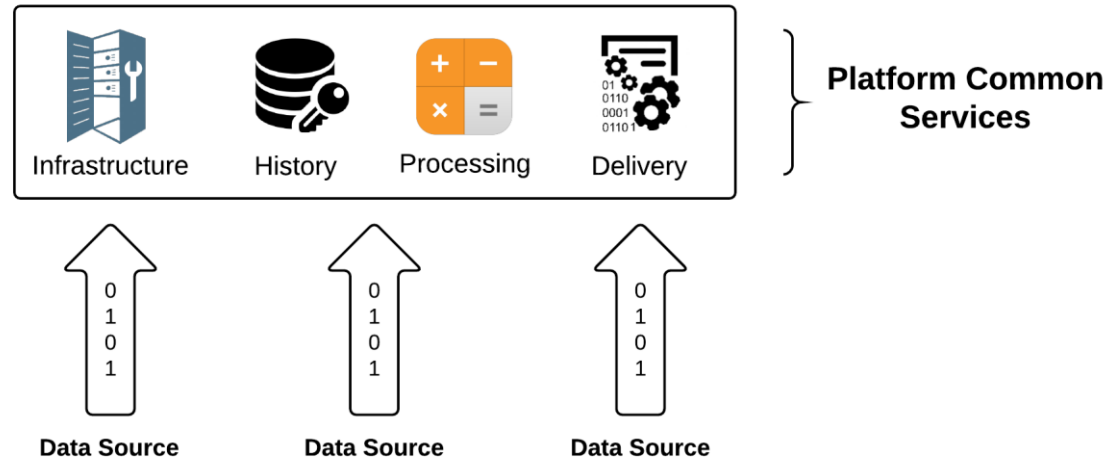
Platform Concept



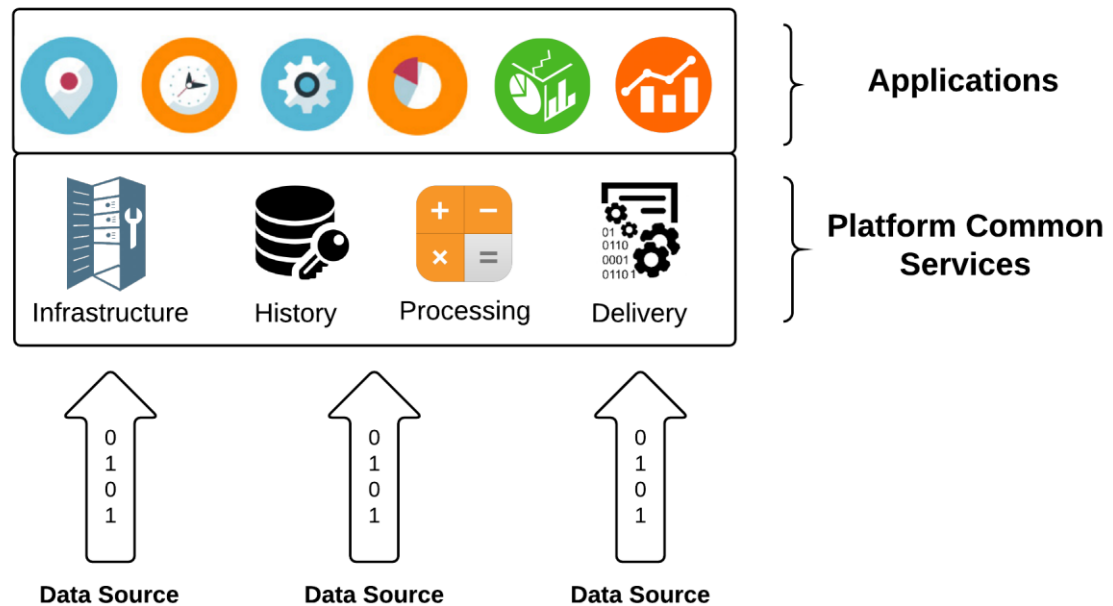
Platform Concept



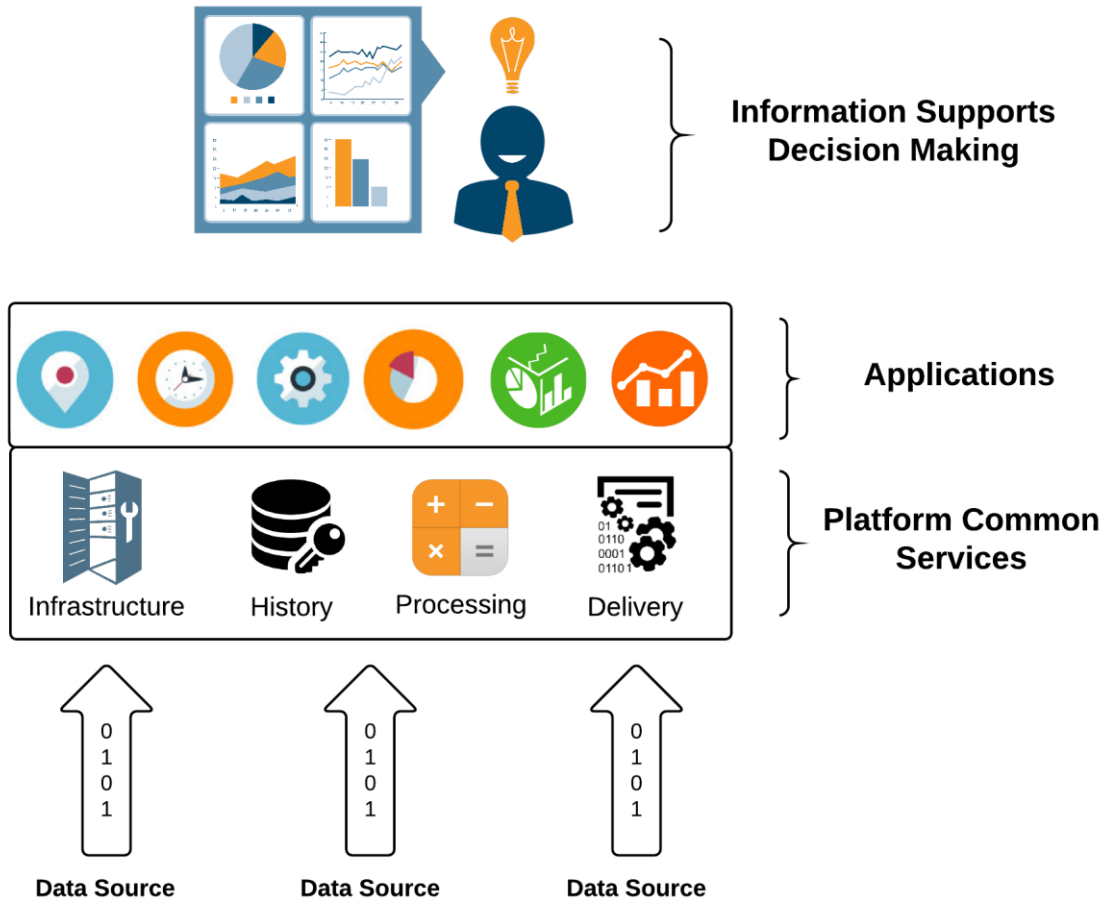
Platform Concept



Platform Concept



Platform Concept



Benefits of Platforms

- Low-cost access to reliable shared infrastructure
- Provide customers access to operations data without risk
- Ability to tie in additional data-sources (sensors, building system, meta-data of other similar buildings, etc.) to create comprehensive overview
- Access to “app-store” functionality for advanced functions like energy optimization and machine learning for predicting failures
- Value of community “Meta-Data”

DeviceLynk Use Case – District Energy

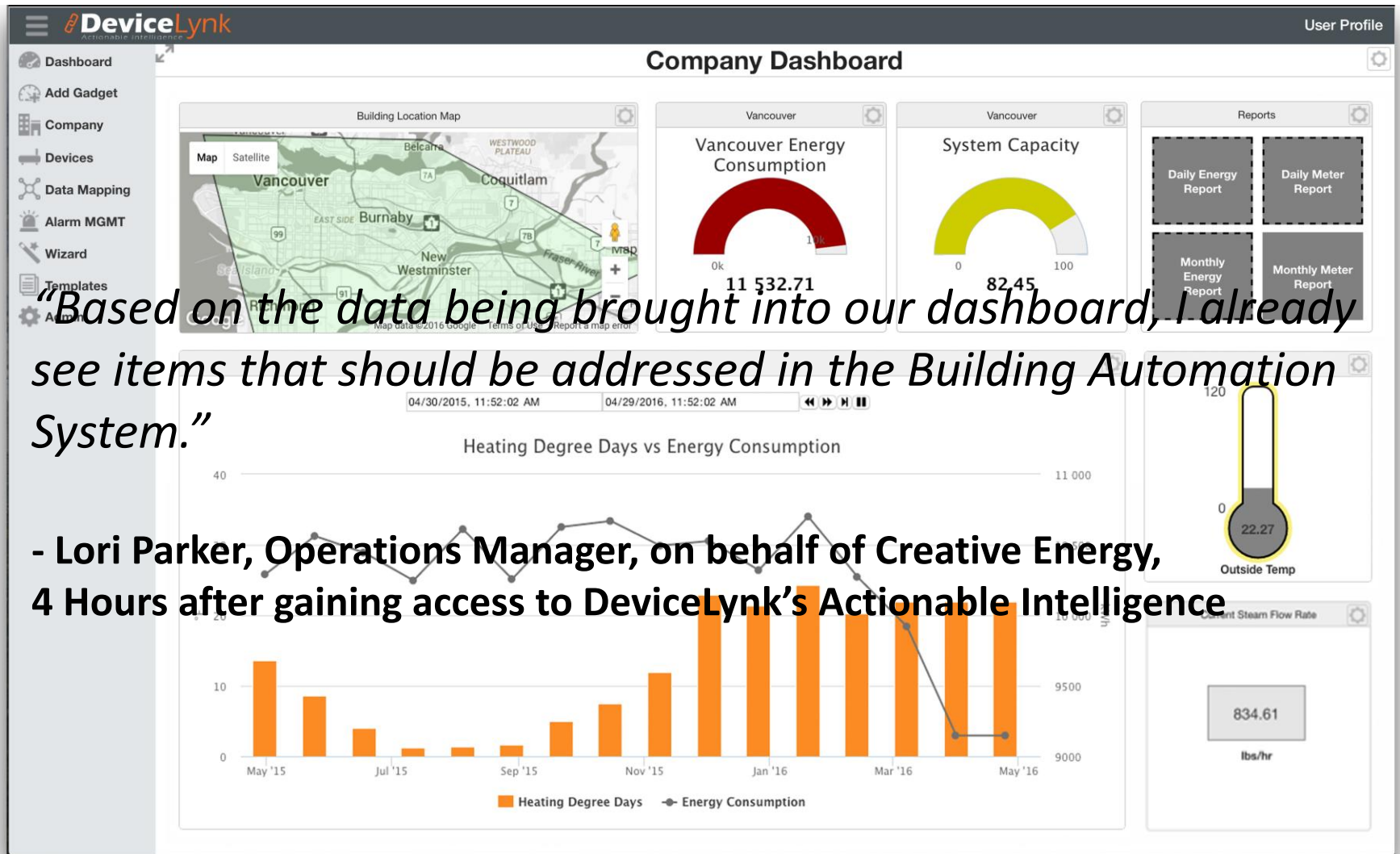
Vancouver-based Creative Energy seeks remote monitoring solution for automated metering, customer retention, and more efficient system utilization.

The customer's project goals:

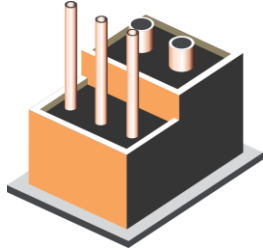
- Automate system-wide meter reading
- Provide customers with visibility into energy usage and billing
- Enable mobile maintenance staff with real-time data on mobile devices
- Make generation facility data available outside the control room



DeviceLynk Use Case – District Energy



Benefits of Connected Systems



Generation Facility

- View key plant data outside the control room without affecting production
- Remote assistance for inexperienced operators with unique and challenging situations



Customer (building operator)

- Understand energy usage and invoicing
- Relate external data to usage (like weather data)
- Integrate building automation system (BAS) data into a single dashboard



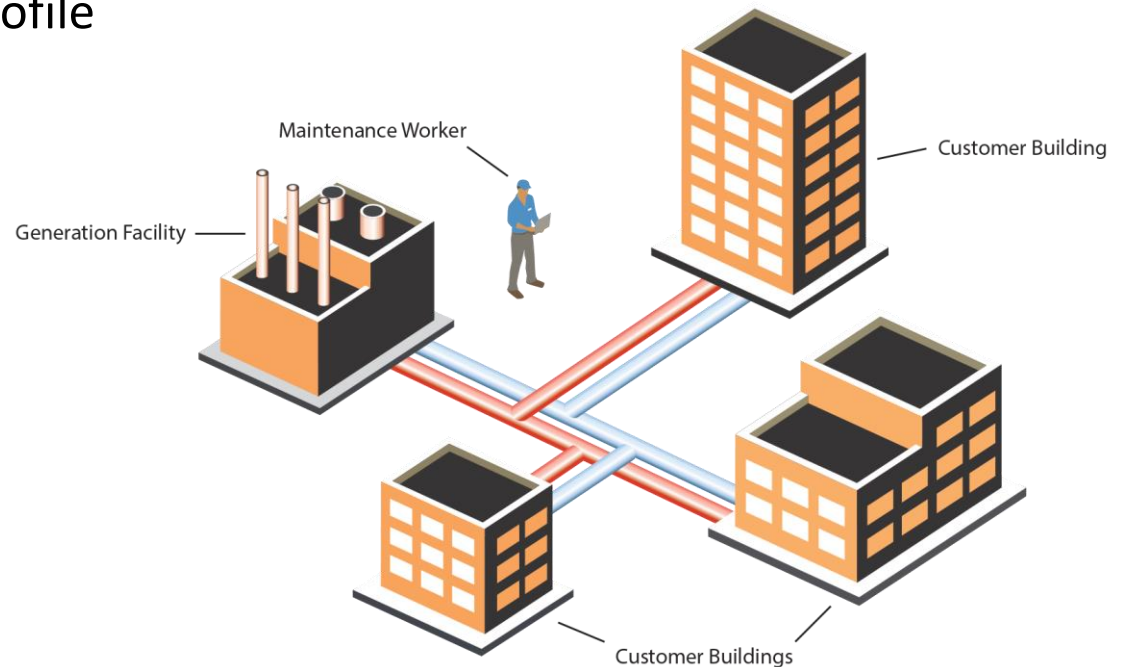
Mobile Worker

- Save time and money by automating meter-reads
- Have access to customer operations data any time, any where.

Benefits of Connected Systems

District Energy System Operator

- Improve accuracy and timeliness of billing
- Assist customers develop energy saving strategy
- Provide customers access to real-time and historical operations data without a security risk
- Incorporation of 'meta-data' allows customers to rank themselves against others of their same profile



Case Study

Sheraton Wall Centre – Vancouver Canada



Problem Set and Requirements

1. Customer Retention

- Detailed explanation of monthly bill
- Information enables customers to make smart, energy saving investments

2. Automated Data Collection (Meter Reading)

- Enhance existing infrastructure

3. Tie in Building Automation System system of customer

1. Integration with District Energy provider's billing software

1. Customer portal for real-time viewing

Parties Involved in Project

Creative Energy – District Energy Provider

Sheraton Wall Centre - Customer

Kerr Controls – Electrical and Controls Contractor

Spartan Controls – Hardware Supplier

DeviceLynk – Solution Vendor



Sheraton
Vancouver
WALL CENTRE

CREATIVEENERGY

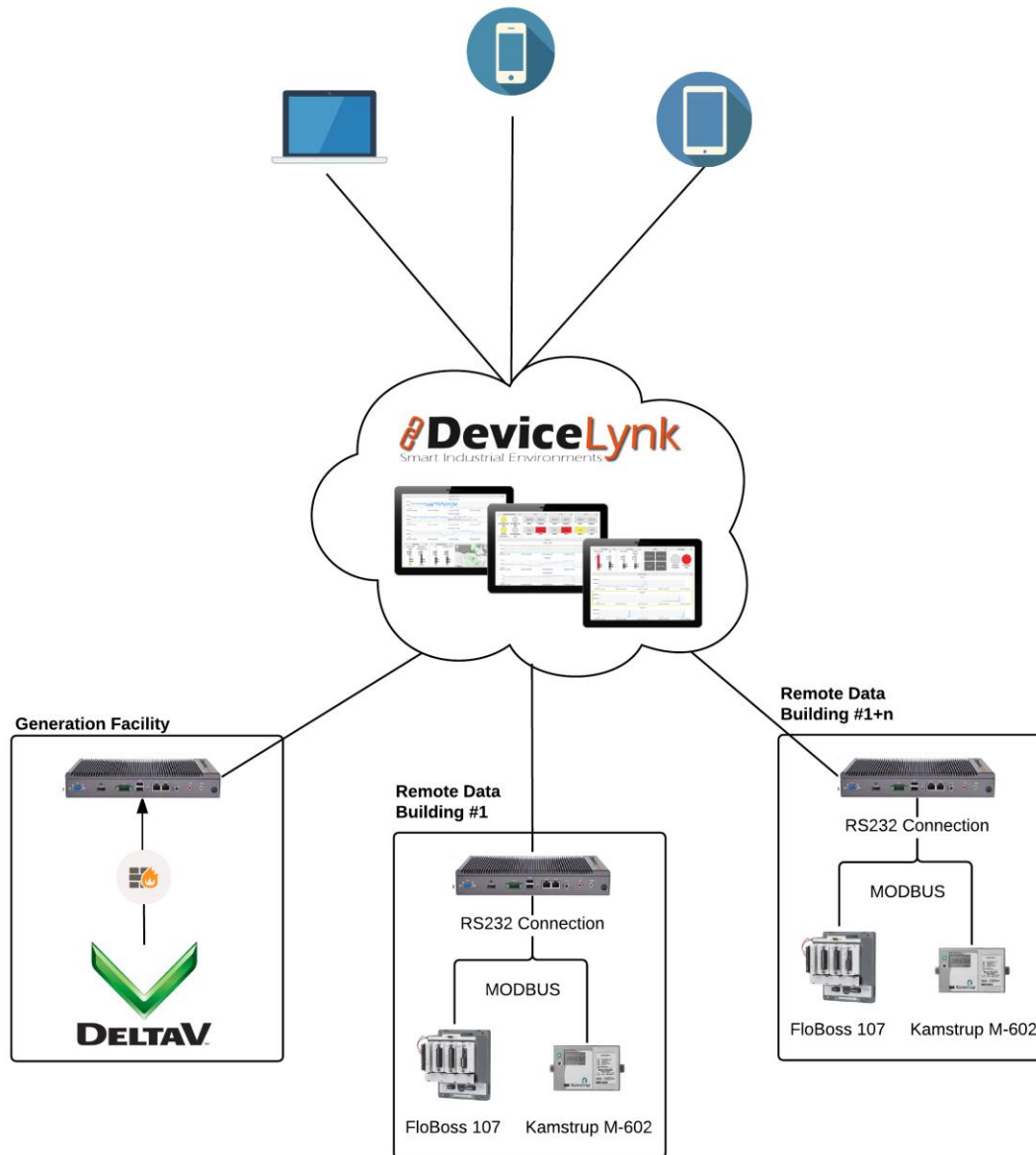
 **SPARTAN**
Controls

KERR CONTROLS INC.

Building Automation Specialists

 **DeviceLynk**
Actionable Intelligence

Architecture Diagram

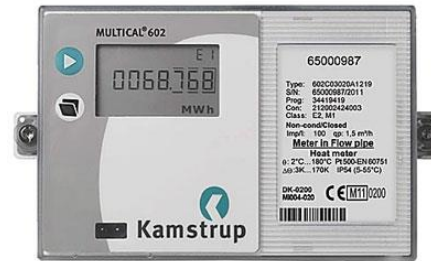


General Tags:

Outdoor Air Temp
Supply Water Setpoint

Energy:

Energy Consumption
Accumulated Product
Water Consumed
Operating Hours
Supply Water Temp
Return Water Temp
Energy Differential



Kamstrup M-602



FloBoss 107

Current Usage:

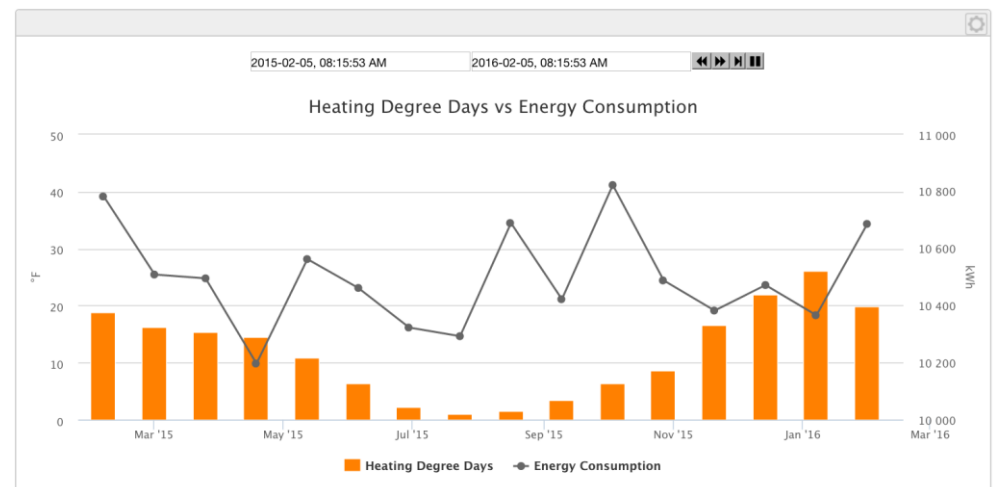
Energy Supply
Water Valve Position
Current Flow 1
Current Flow 2
Total Flow 1
Total Flow 2

Other:

Tariff TA2
Tariff TA3
Info Code
Customer Number

A large, multi-column table with many rows of numerical data. The columns are labeled with various parameters such as 'Energy Supply', 'Water Valve Position', 'Current Flow 1', 'Current Flow 2', 'Total Flow 1', 'Total Flow 2', 'Tariff TA2', 'Tariff TA3', 'Info Code', and 'Customer Number'. The data appears to be organized in a structured format, possibly representing a time series of measurements.


Dashboard Images/Gadgets Deployed



Customer Portal

Long-term sustainability ✓

Robust, reliable system ✓

Regulated by the BC Utilities Commission ✓

24/7 monitoring for peace of mind ✓

Monitor your energy consumption in real time ✓

Understand your *Energy Profile* ✓

Creative Energy is pioneering a real-time metering infrastructure that enables customer's to view their energy usage and access an '*Energy Profile*'.

Scalable

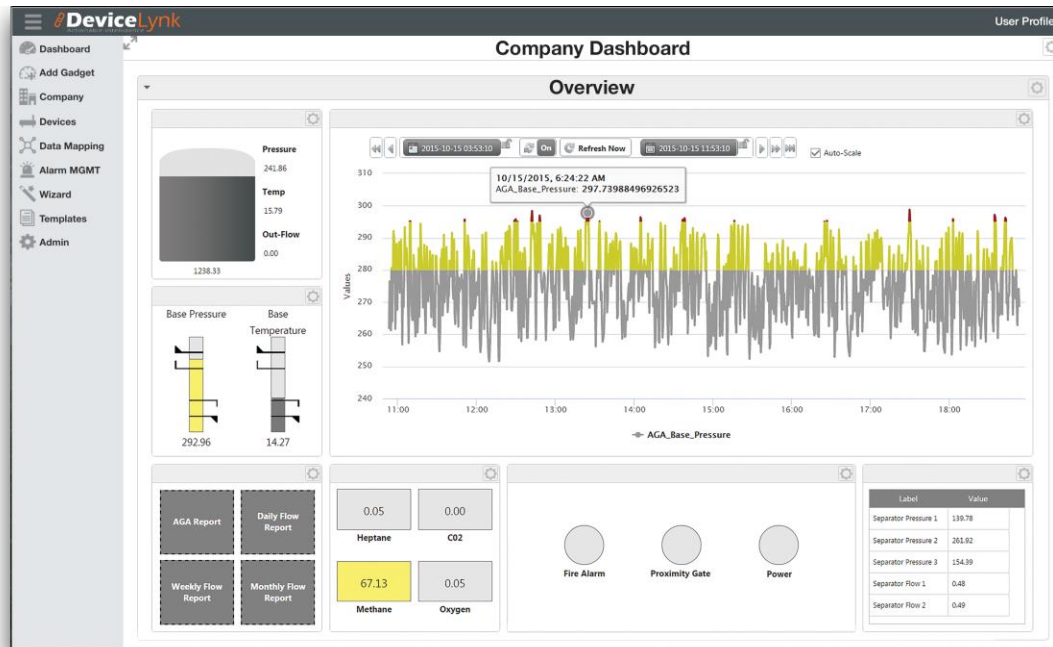




Industrial IoT Realized by Actionable Intelligence



Dialed into Industrial Automation Trends



Situational Awareness

Complexity made Simple

- Quickly and accurately focus the recipients attention to the areas requiring action
- Provide a contextual overview of the assets being monitored
- Promotes 'Decision Support' for operators and managers

Advantages of Buying a Complete IIoT Solution

- ✓ No custom engineering required / Provides seamless updates
- ✓ Fully-integrated connectivity = Actionable Intelligence
- ✓ Extensive dashboard library designed by industry professionals
- ✓ Situational Awareness theme
- ✓ Industrial-grade infrastructure
- ✓ Immediate Time-to-Market



Industrial IoT and DeviceLynk

- PO to delivered system in less than 30-days
- Retrofit and modernize existing system
- SaaS model for application deployment on reliable inexpensive infrastructure
- Extension of customer's business



Questions

