



# Driving CI Results Through Facility Intelligence

Presented By:  
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-EnterScape-

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# How Intelligent Is Your Facility?

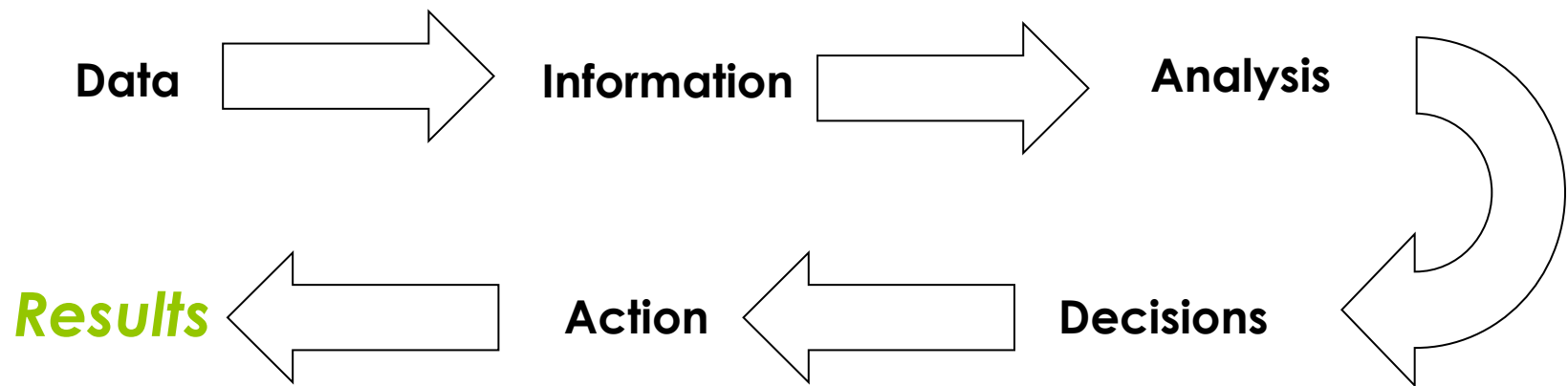
- What's driving your utility usage?
- How efficient are your operating procedures?
- What sort of costs could you be avoiding?



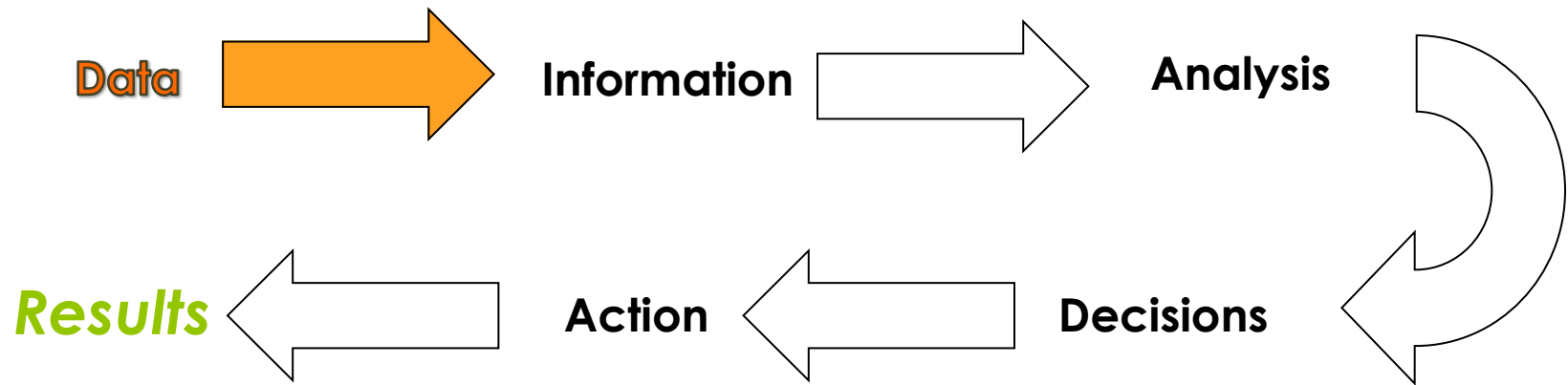
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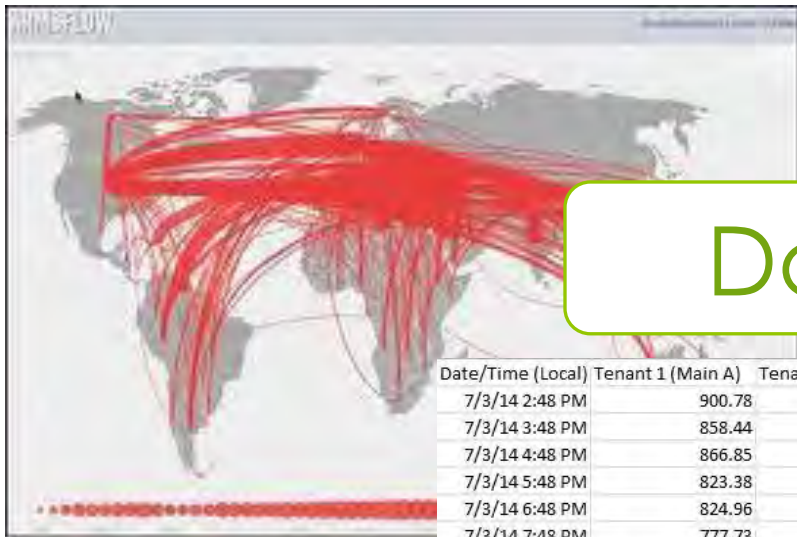


# Always be Results Driven



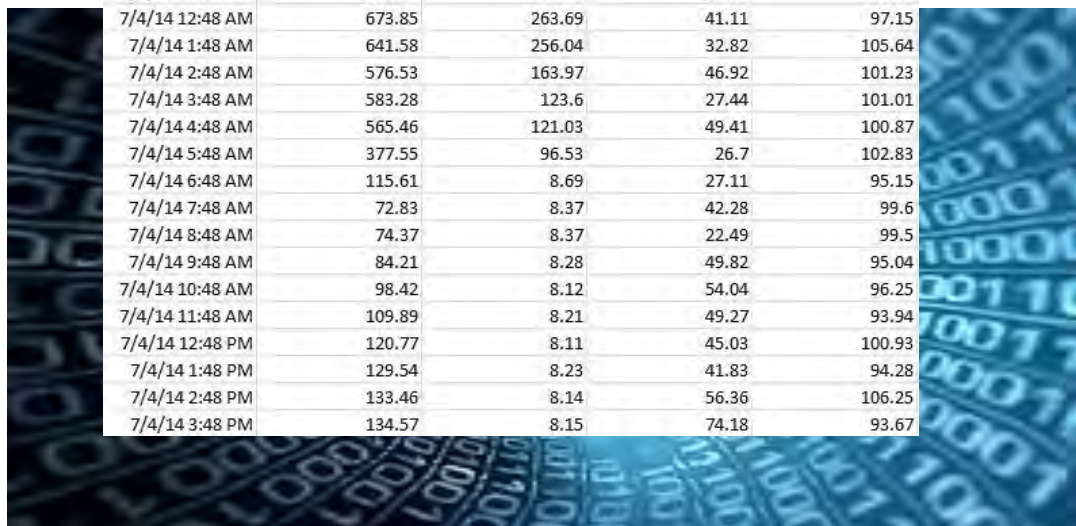
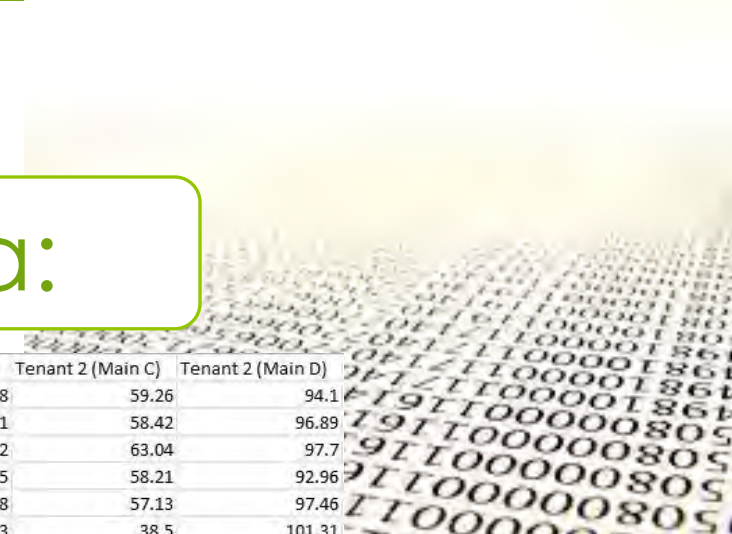
# Always be Results Driven



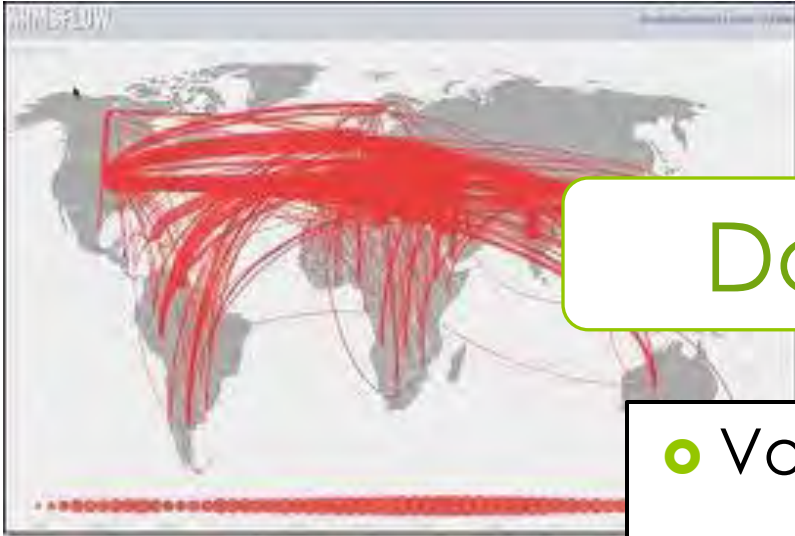


# Data:

Date/Time (Local)	Tenant 1 (Main A)	Tenant 1 (Main B)	Tenant 2 (Main C)	Tenant 2 (Main D)
7/3/14 2:48 PM	900.78	287.98	59.26	94.1
7/3/14 3:48 PM	858.44	279.71	58.42	96.89
7/3/14 4:48 PM	866.85	267.82	63.04	97.7
7/3/14 5:48 PM	823.38	278.95	58.21	92.96
7/3/14 6:48 PM	824.96	275.78	57.13	97.46
7/3/14 7:48 PM	777.73	276.83	38.5	101.31
7/3/14 8:48 PM	788.41	274.87	46.92	100.33
7/3/14 9:48 PM	769.95	275.78	56.81	102.86
7/3/14 10:48 PM	789.95	263.87	32.71	99.68
7/3/14 11:48 PM	650.72	253.73	41.59	106.7
7/4/14 12:48 AM	673.85	263.69	41.11	97.15
7/4/14 1:48 AM	641.58	256.04	32.82	105.64
7/4/14 2:48 AM	576.53	163.97	46.92	101.23
7/4/14 3:48 AM	583.28	123.6	27.44	101.01
7/4/14 4:48 AM	565.46	121.03	49.41	100.87
7/4/14 5:48 AM	377.55	96.53	26.7	102.83
7/4/14 6:48 AM	115.61	8.69	27.11	95.15
7/4/14 7:48 AM	72.83	8.37	42.28	99.6
7/4/14 8:48 AM	74.37	8.37	22.49	99.5
7/4/14 9:48 AM	84.21	8.28	49.82	95.04
7/4/14 10:48 AM	98.42	8.12	54.04	96.25
7/4/14 11:48 AM	109.89	8.21	49.27	93.94
7/4/14 12:48 PM	120.77	8.11	45.03	100.93
7/4/14 1:48 PM	129.54	8.23	41.83	94.28
7/4/14 2:48 PM	133.46	8.14	56.36	106.25
7/4/14 3:48 PM	134.57	8.15	74.18	93.67

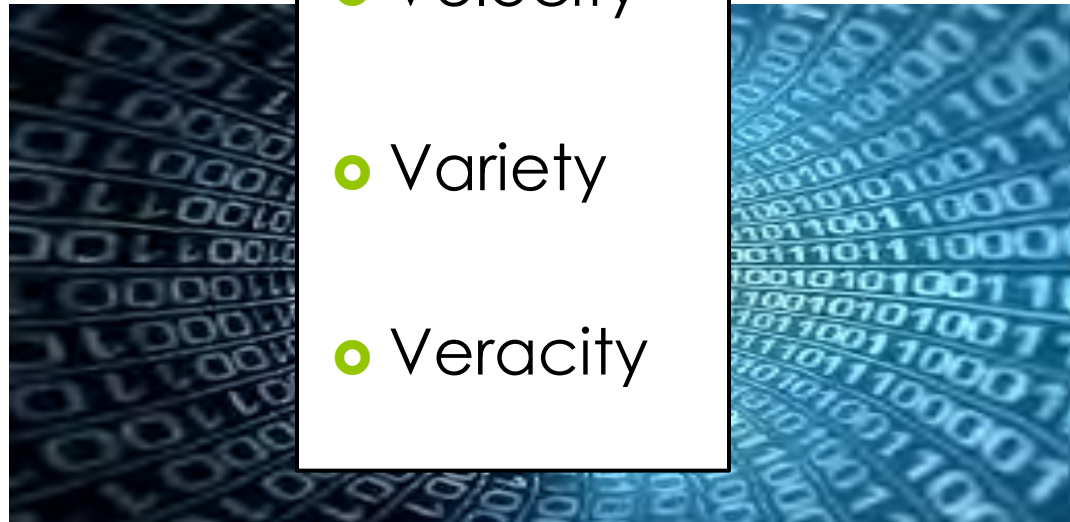






# Data:

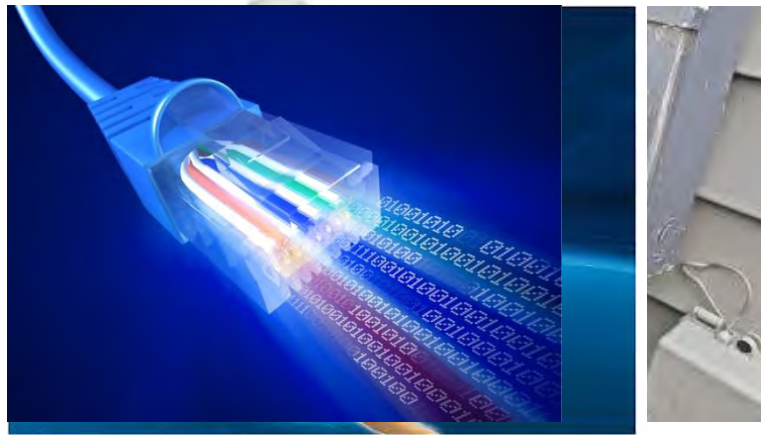
- Volume
- Velocity
- Variety
- Veracity



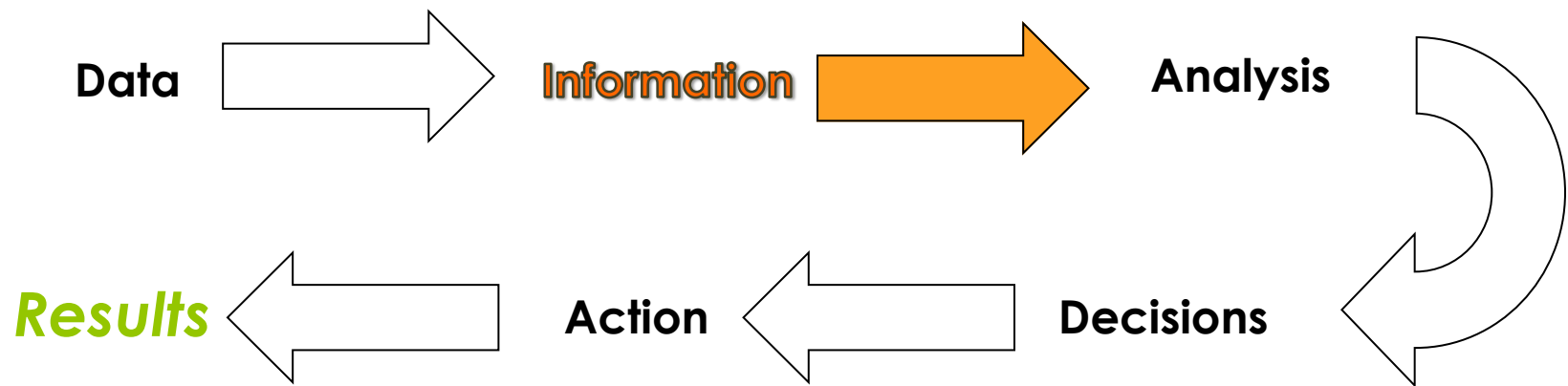


# Collecting Big Data

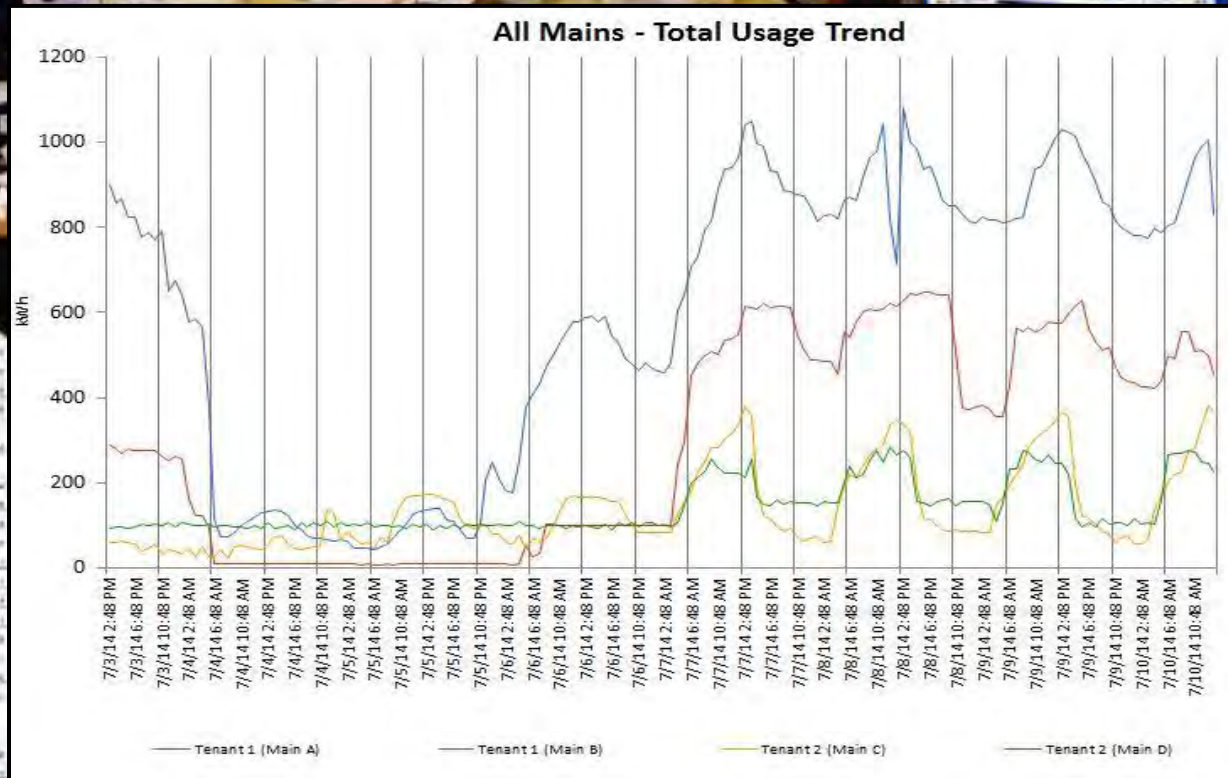
- Smart Utility Meters
- Advanced Wireless Sensors
- Machine Data
- High-Speed Internet Connections



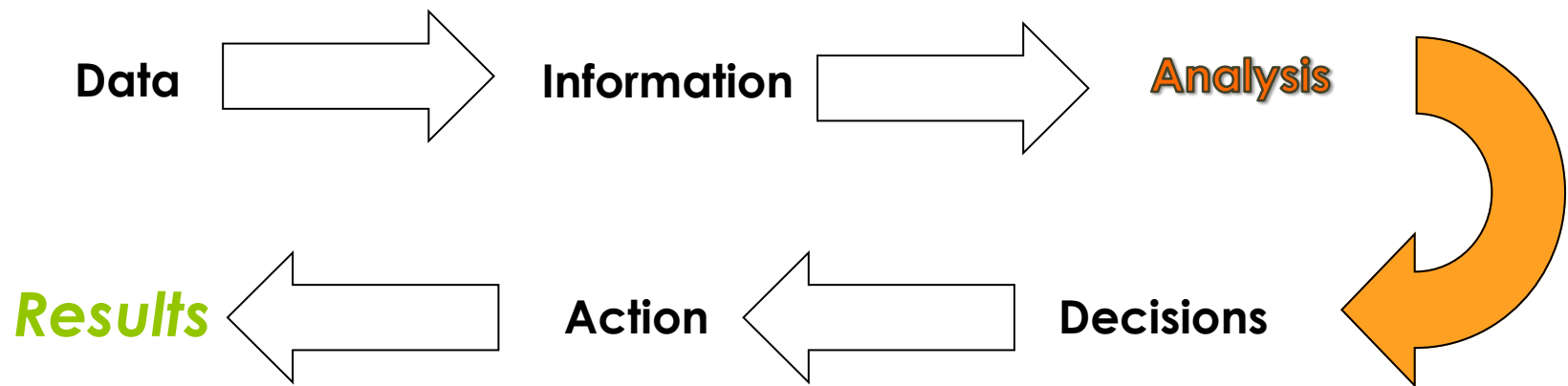
# Always be Results Driven



# Information:



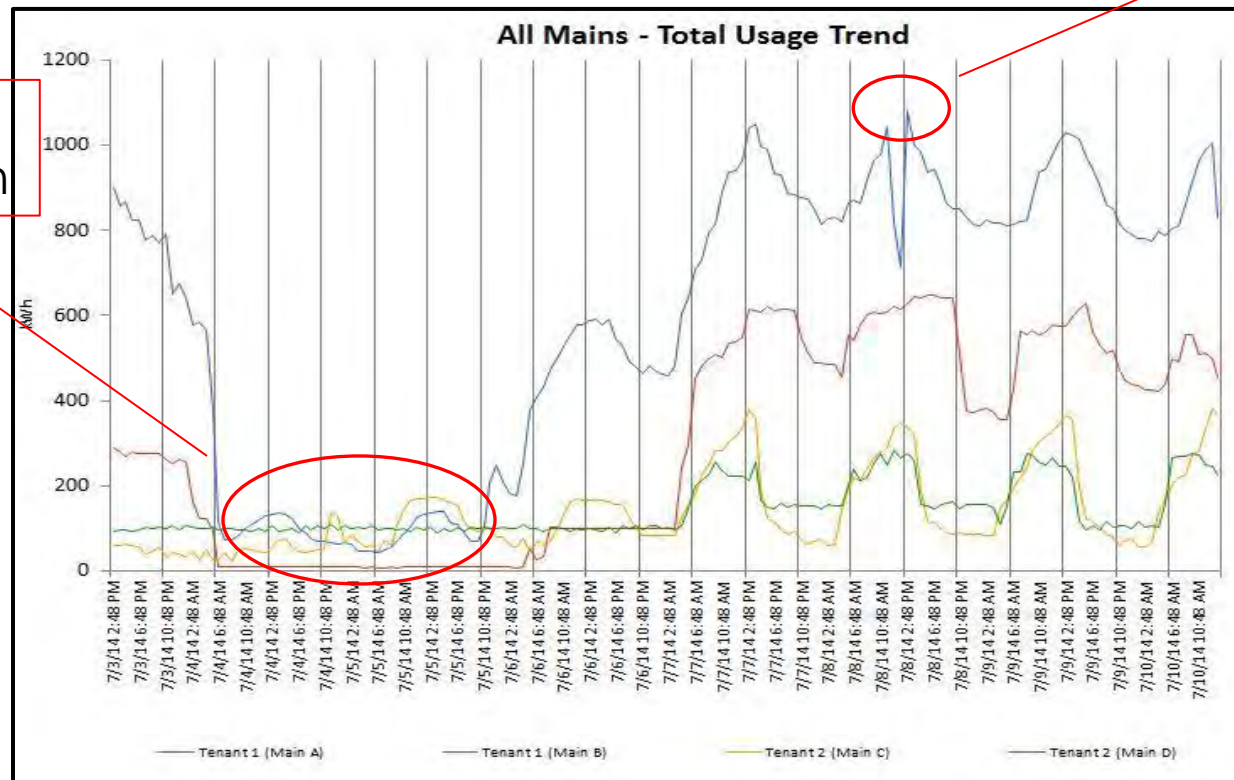
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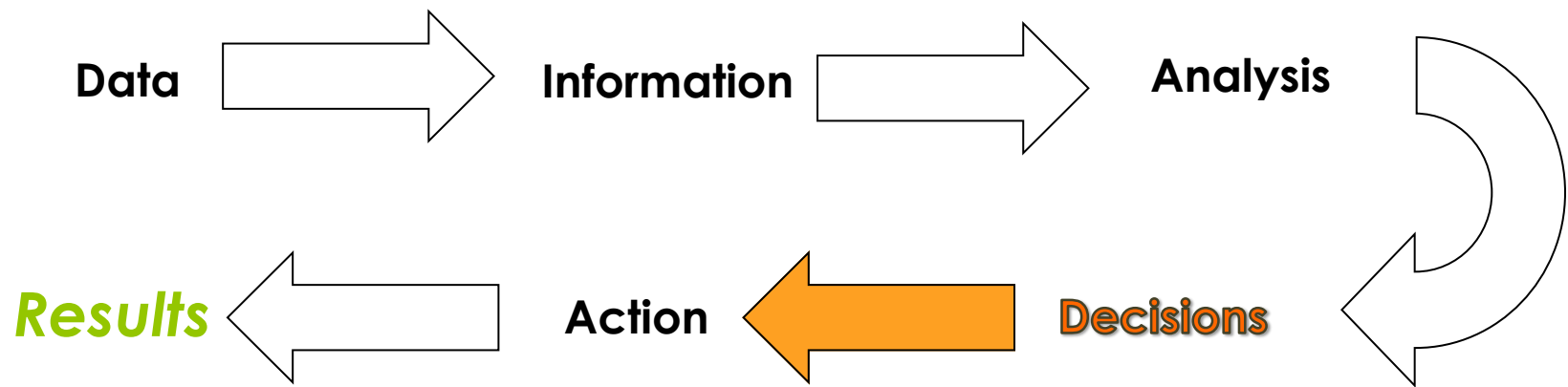
# Analysis:

Peak Usage

Weekend  
Shutdown



# Always be Results Driven



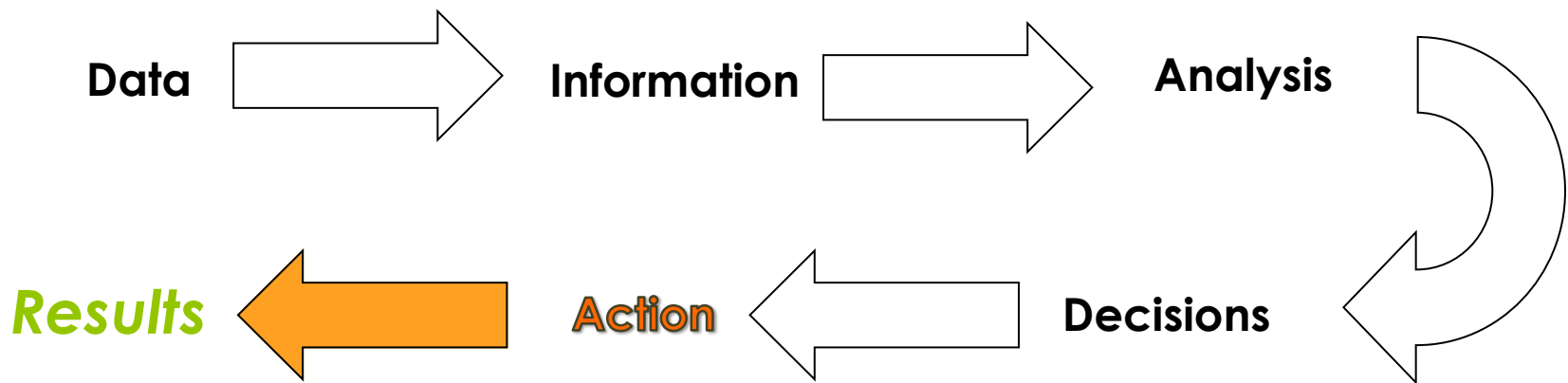


# Decisions:

- Operational Improvements
- Policy Changes
- Capital Investments



# Always be Results Driven

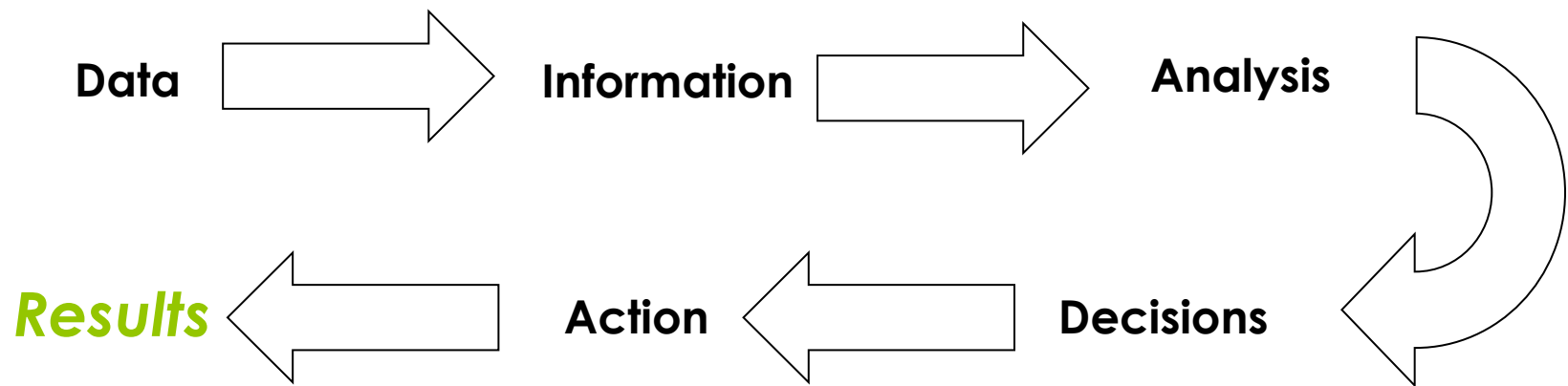


# Action:

- Prioritize
- Payback driven
- Action Plan
- Implementation
- Follow through



# Always be Results Driven

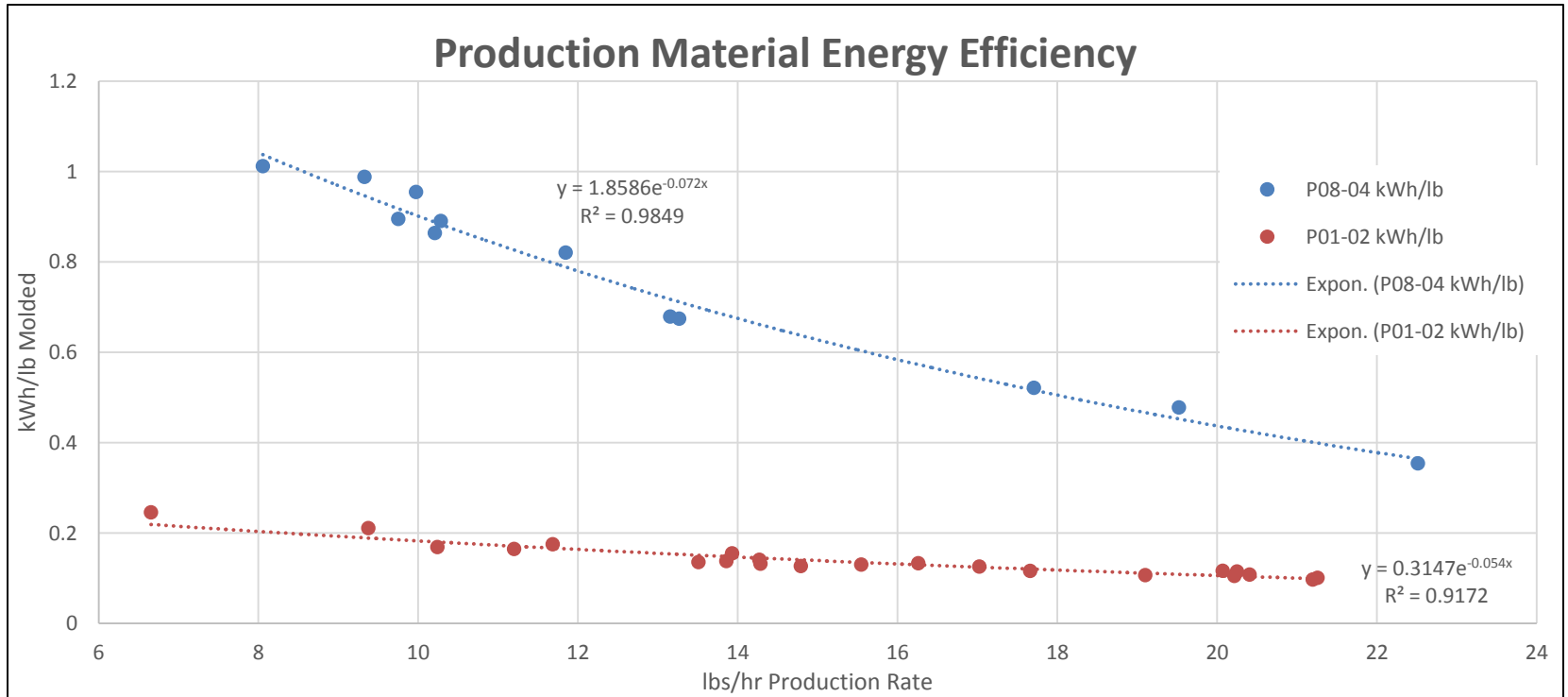


## Results:

- ◉ Where the rubber meets the road
- ◉ Full circle – back to PDCA
- ◉ Positive results means do it again
- ◉ Negative results means learn from it



# Case Study: NIBCO





# Install

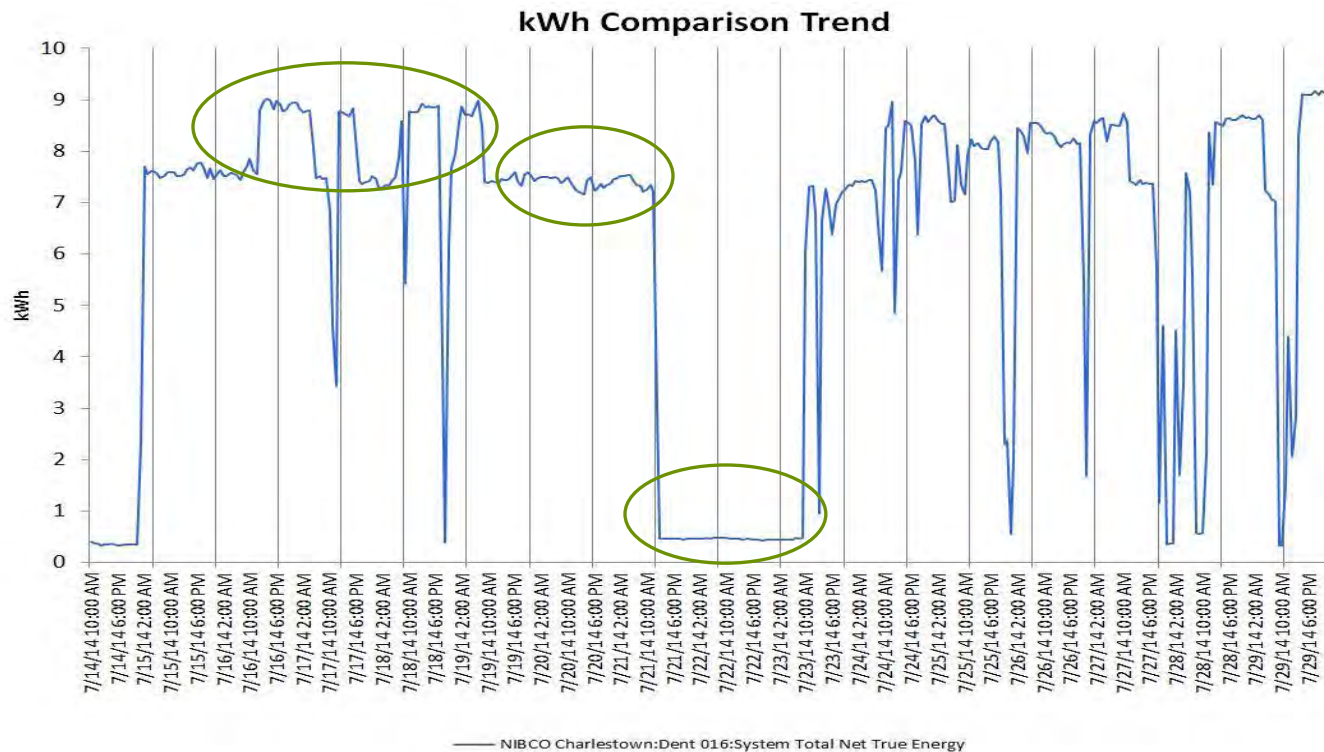


# Install cont.

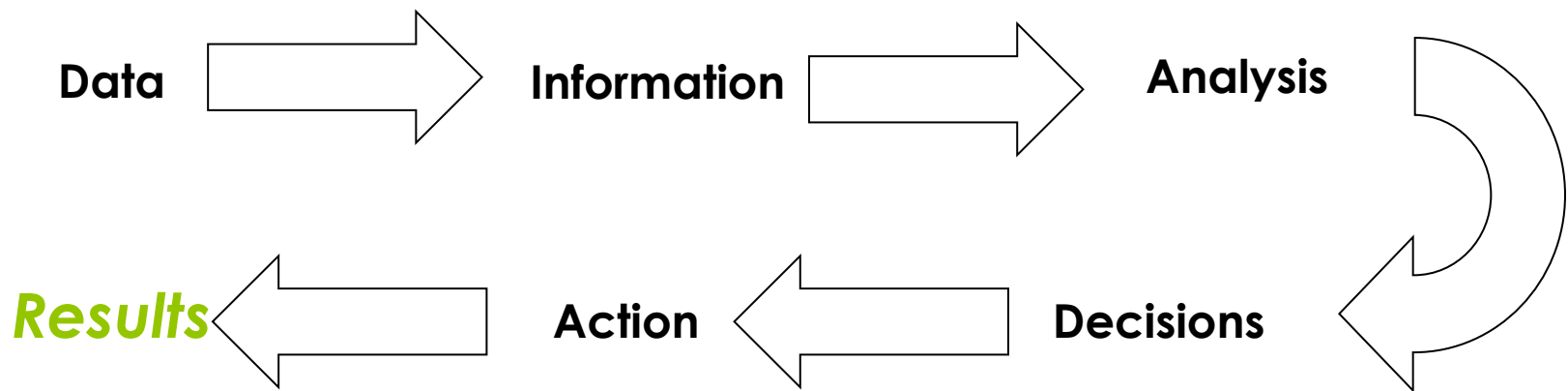


# Case Study: NIBCO

- Unexpected finding



# MUBEA Case Study



# Data:

## **Challenge:**

- No Real time data
- Utility bills monthly or quarterly
- No Submetered data

## **Solution:**

- Added real-time submetering
- Implemented software for data collection and analysis

## Information:

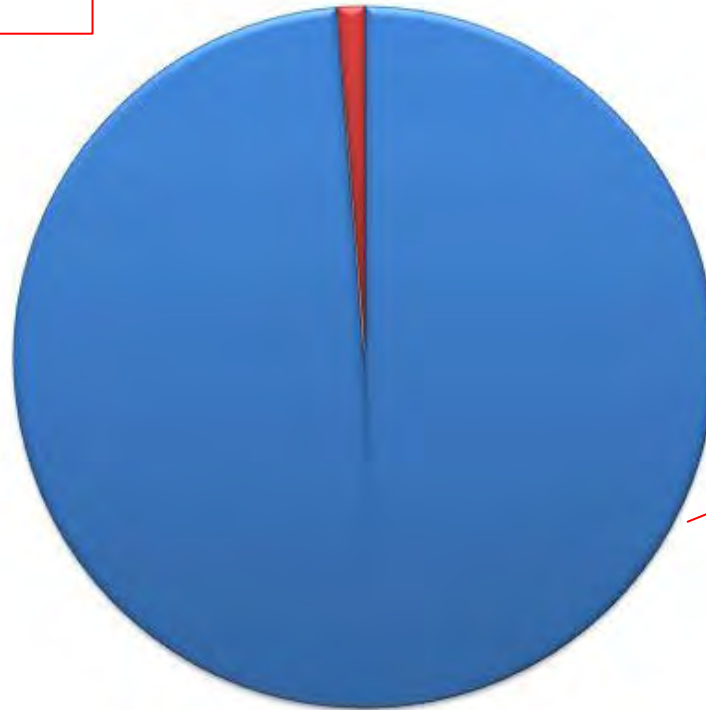
- Collected 1,076,000 data points over a 3 month period
- Organized information by building and department
- Validated against utility bills



## Analysis:

- Used software for analysis
- Looked for anomalies
- Asked about perceptions
- Discovered some key items

Production/Office  
2.15%



Cooling Towers  
97.85%

- 98% of water was going to cooling towers
- Sewer bills were based on 100% of the water usage.

## Decisions:

- First step - focus on water consumption
- Reduction in waste through controls
- Determine what is being evaporated
- Pursue sewage bill credit

## Action:

- Contacted PreTreatment coordinator at the wastewater plant.
- Installed additional metering on discharge line.



## Results:

- **60%** of water was being evaporated
- Water was being discharged below the acceptable conductivity limit, wasting water
- **250,000** gallon reduction per year
- Sewage credit around **\$75,000** per year



## Case Study: Utility Sub-Metering

**Client:**

Jeffersonville, IN building owner.

**Project:**

Main Electric Utility Service Sub-Metering

**Situation:**

To provide the building owner with an accurate utility bill break-down for a multi-tenant space. The ultimate goal being precise bill allocation based on true usage.

**Solution:**

EnterScape engineered and installed, in coordination with licensed electrical contractors, industrial grade power meters on each of the buildings four main electric switch gear. The power meters transmit data wirelessly to an onsite data server that populates the client's online account in real-time.

**End Result:**

Project Cost - \$12,000

Monthly Utility Savings - \$4,000-\$8,000

Project Payback Period - 3 Months



EnterScape is pioneering real-time facility intelligence systems that improve operating efficiency, mitigates risk, and saves money.

[www.EnterScape.com](http://www.EnterScape.com)

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