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**CONNECTING
THE WORLD**



CONNECTING
THE WORLD

Don't Sell Analytics!!!

It's the solution that counts

Laura Kevitt, Moderator

Trust me,
you really need
this.



**FOR
SALE**

ANALYTICS

Analytics Panel

Presentation

John Petze, SkyFoundry

Panelist

George Thomas, Cleveland Hospital

Jerry Gray, Enterprise Controls Group

John Petze, SkyFoundry

Session 1

John Petze – Applying Data Science Technics to Building Systems



Principal & Co-Founder, SkyFoundry
Executive Director, Project Haystack,
Experience:

Over 30 years experience in the building business.

Former CEO of Tridium

VP Product Development for Andover Controls

Global Director of Sales for Cisco Systems



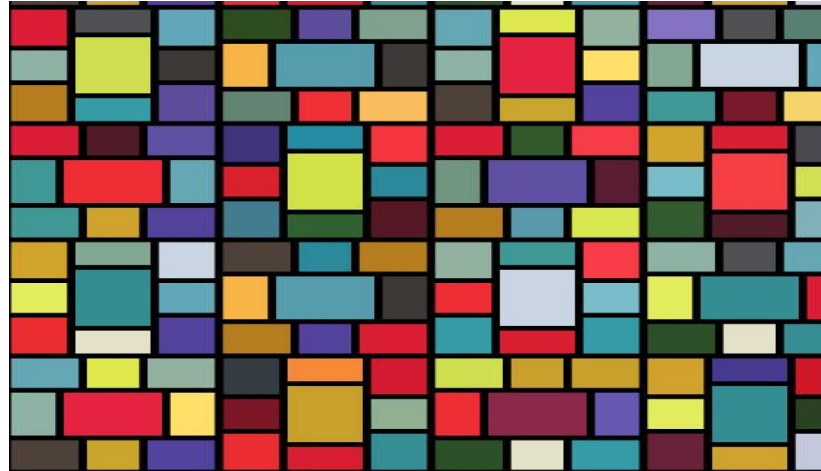
CONNECTING
THE WORLD

Data Science for the Built Environment

John Petze
Co-Founder, SkyFoundry

Creating Value From Data with Analytics

Simply put... we can create value by detecting patterns that represent faults, deviations, anomalies and opportunities for savings.



It Starts With a Simple Question ?



Do we know how our building systems really operate?

Yes You Say?

Who's Watching to Make Sure?

- Who verifies that what they are doing is right?
- That control strategies were well designed?
- That assumptions were (are) correct?
- That they are still running as expected... haven't degraded, been interfered with or overridden – a common problem.
- Buildings are too complex for this to be done solely by humans.
- Too much data... systems too complex...



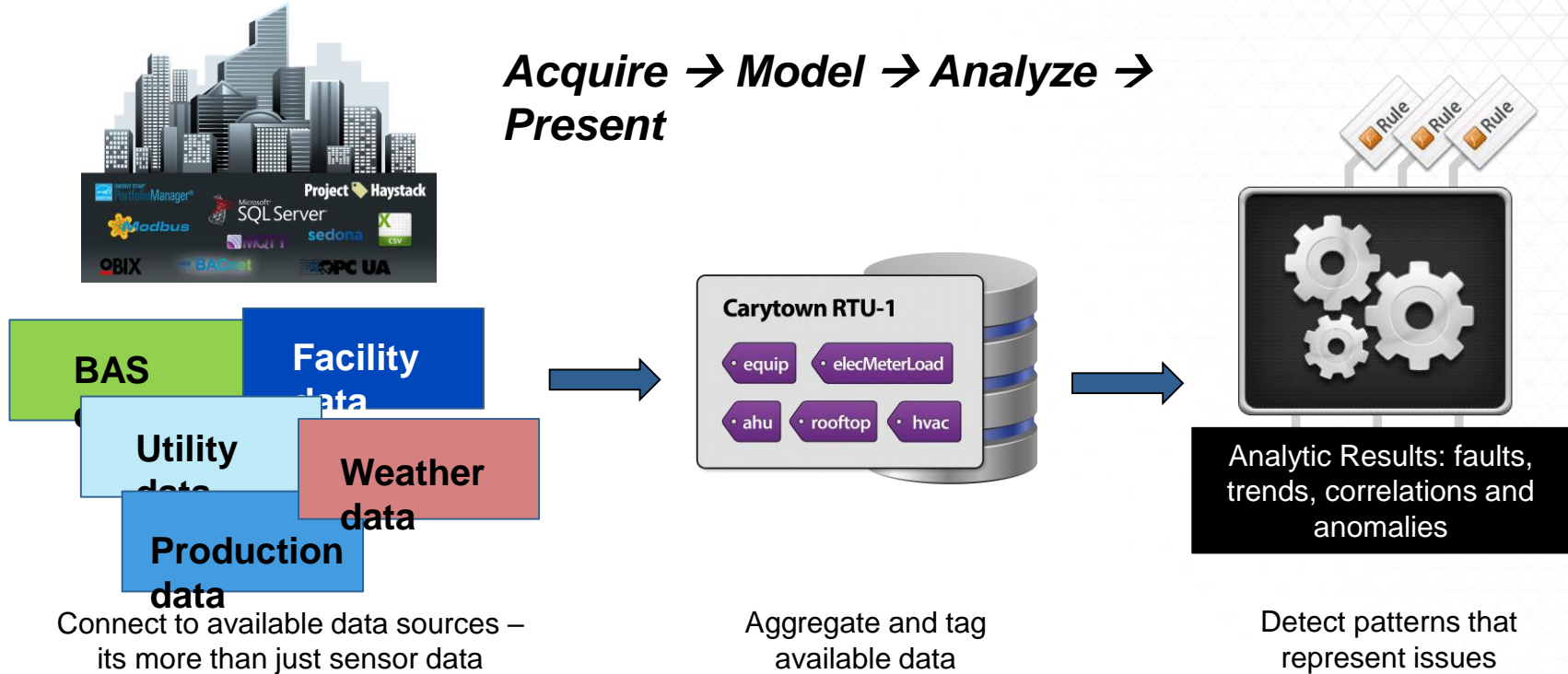
So Where Do We Start ?

We now have access to data... lots of it!

*Hidden in this data are the keys to
better building performance*

Applying Analytics to Our Buildings

Acquire → *Model* → *Analyze* → *Present*

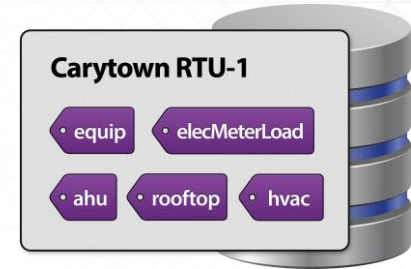


Where to Start – Identifying & Accessing Your Data

- What data do you have?
 - Live data from sensors, equipment systems, control systems, meters
 - Historical data – interval meter data, service records, other
 - Facility & Asset data
 - They are all valuable
- Where is it located and how will you connect?
 - Protocols – open, standard and legacy
 - Security issues
 - Performance limitations

Giving Data Meaning: “Data Tagging”

- Dimensions, Units
- Relationships
- Location
- Other meaning and descriptors



Project Haystack

The open-source markup language for device data

www.project-haystack.org

dis	elecMeter	equip	hvac	lighting	plug	siteMeter
Headquarters ElecMeter-Main	✓	✓				✓
Bon Air ElecMeter-Main	✓	✓				✓
Va Beach ElecMeter-Lighting	✓	✓		✓		
Woodley Park ElecMeter-Main	✓	✓				✓
Inner Harbor ElecMeter-Main	✓	✓				✓
Bon Air ElecMeter-Hvac	✓	✓	✓			
Inner Harbor ElecMeter-Lighting	✓	✓		✓		

Analytics Are Not A Thing



Getting Value from Data Analytics: The Last Mile

- To get value from data analytics organizations need to be prepared to act on the results
- If I could walk into your building and magically detect 100 problems could you address them?
- How quickly? What if they require capital \$
- What if they would exceed your planned budget?
- Even if they had a 1 month payback?



*Its not an LED
lightbulb!*

Analytics is a Journey

- Applying analytics to building systems is not like simply buying new equipment with lower energy consumption
- Not possible to calculate the exact savings ahead of time – can you sell that?
- Don't look at it as an “install it and forget it solution”
- Analytics are a tool – enables us to see how building systems are really performing
- Operational data identifies faults, deviations from expected performance, anomalies...
- ...All of which represent opportunities for savings



*Its not an LED
lightbulb!*

Analytics Are Not A Thing

- No “magic” to eliminate the need for human involvement
- Operators need to take action to benefit from analytics
- Identifies many low-cost/no-cost steps
- But they still require action

So How Does All of This Affect Me?

As a Contractor, SI or Specialty Consultant

Data Analytics and the IoT

- Data will have profound impacts on our businesses:
 - Products
 - Services
 - Revenue streams
 - Partners
 - Employee skill sets
 - Business Models

Making Data Part of Your Business

- Get involved
- Invest to properly train one technical and one sales person
- Understand and assess the various data-oriented business models to determine one (or more) that fits you and your customers
- Its not just about learning a new product
- What will be your business model?

Why Get Involved ?

- The **positive** reasons
 - Leverage your deep expertise into new lines of business
 - Become – or maintain the position of the trusted expert for your customers
 - Data analytics services are sticky – its not install it and forget it – it drives ongoing service relationships
- The “**negative**”
 - Someone is most likely talking to your customers now about data analytics
 - The value is moving up the stack – controls are increasingly a commodity
 - Mindshare goes where the value goes
 - The people that use data to help their customers improve their facilities will become the trusted suppliers
 - You may be left behind

Hurdles and Challenges to Our Data-Driven Future

- Data technology and software principles are different than control
- Did you invest in new skills or people to move to DDC from pneumatics?
- You will need to again
- Are you a systems integrator or controls contractor?

The New Tool Bag

- IT Networking and security
- Multiple protocols – Bacnet, Modbus, Haystack, Obix, OPC, Thread and on and on
- Software stuff: JSON, XML, js.node, CSV, FTP, HTML5, javascript
- Analytics software and data principles – ETL vs PID
- Services model vs project model



We Need to Advance with Technology

- Data Analytics will be as standard as a PID loop
- All this technology will move to the EDGE – the cloud is not enough
- Companies that don't use analytics will be as outdated as a CFO that uses a paper ledger



Data – Its The New Money



Thank You

John Petze

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www.skyfoundry.com

George Thomas, Cleveland Clinic

Session 2

George Thomas



Enterprise Building Automation Manager, Cleveland Clinic

Experience:

Over 22 years experience with Cleveland Clinic Buildings and Properties Group

Niagara Certified

Specializes in in Building Integration

Assists to reduce Cleveland Clinic's Energy consumption – more the 13% saved.

Panel Discussion

Panel Discussion

- Questions?



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