



Big Data Analytics: The Next Frontier of Operational Efficiency



Turn HVAC Data into Actionable Information

AKA...

- **Monitoring Based Commissioning**
- **Ongoing Commissioning**
- **Automated Fault Detection & Diagnostics**
- **Big Data Analytics**



MACRO TRENDS

Big Data: The Management Revolution

by Andrew McAfee and Erik Brynjolfsson

FROM THE OCTOBER 2012 ISSUE

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4 Ways Big Data Will Transform Business

Forbes

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STEAMROLLED BY BIG DATA

BY GARY MARCUS

Cloud computing spending to hit \$32bn in 2015

by Dan Worth 22 Apr 2015

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TRENDING: Big Data

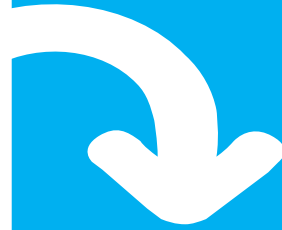
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Big Data



O&M challenges

- Complex systems
- Reactive to HVAC Problems
- Potential for Data Overload



There is a need for
technology to find energy
waste & direct resolution
every day



The Utility Business Case

- **3-4 years post implementation, 20% of RCx measures have failed**
- **Are incentivized direct installs operating as assumed?**
 - **Easy to drive a Prius with the break and gas on at the same time!**

Challenges:

- **How do you quantify the benefit upfront? More research needed. Automated M&V**