



# **BIG DATA ANALYTICS FOR DYNAMIC ENERGY MANAGEMENT**

**You cannot manage that which  
you cannot measure**

Evan Enke

# BIG DATA ANALYTICS IS DISRUPTING THE ENERGY INDUSTRY

The four major types of big data sources in utilities.

- SMART meters
- Grid equipment
- Third-party data (off-grid data sets)
- Asset management data

Energy utilities are using big data to improve operational efficiencies:

- Asset Management
- Renewable energy production
- Energy management on the demand side

# IMPROVED ASSET MANAGEMENT THROUGH BIG DATA ANALYTICS

## Optimize power generation and planning

- Power generation planning and economic load dispatch

## Other areas of Improvement

- resource sharing
- asset retirement monitoring
- operation and maintenance management
- procurement monitoring
- inventory management.

# RENEWABLE ENERGY BENEFITS FROM BIG DATA

Wind power and solar power are two major renewable energy power generation methods benefitting from applied analytics

- renewable energy power generation forecasting will be more accurate and efficient.
- What works?

Integration of energy production with:

- consumption data
- GIS data
- weather data

# BIG DATA ANALYTICS ON THE DEMAND SIDE

Data analytics automates the management of energy consumption.

- Electrical devices are being designed with energy efficiency in mind reducing power requirements

Catching the not-so-obvious energy leakages

- chronic equipment efficiency issues
- insulation problems
- operational improvements.

Patterns in energy consumption



# Applying Big Data Analytics to the Energy Industry Outcomes:

Cheaper Energy

Sustainable Energy