



# Developing an Energy Transformation Framework In Manufacturing with GrayMatter and Splunk

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Chief Revenue Officer



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# GrayMatter's Investigative Data Platform

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Industrial Intelligence





+



## GRAYMATTER

Technology Curation  
Professional Services  
Industrial Expertise

## SPLUNK

Highly Scalable  
1000+ apps in Splunkbase  
Real-time, Predictive OT  
Insights





## Technology Curation

Companies like P&G, Kimberly-Clark, Smucker's and others trust GrayMatter to co-innovate with them to find the best solutions for their challenges.



## Professional Services

GrayMatter's technical expertise and services carry through from curation to implementation on an as-a-service basis.



## Industrial Expertise

GrayMatter has been working with connected, industrial systems since 1991 and has an established customer base.

# splunk>



## Highly Scalable

Splunk can grow to handle a company's expanding needs – from terabytes to petabytes



## 1000+ Apps

Developers are continuously designing custom, easy-to-install APIs and solutions.



## Real-time, Predictive OT Insights

Powerful data resolution means companies can build an early-warning system for equipment and quality with their data

There's a big problem.

Data is **stuck**.



# DATA IS STUCK

## CEO survey on roadblocks

**42%**

**RESPONDENTS**

Inability to act on signals  
crucial to future of  
business

# TOP REASONS DIGITAL TRANSFORMATIONS ARE ON HOLD



## Lack of Data Ecosystem

IT Data Silo  
OT Data Silo  
Supply Chain  
Silo



## Lack of Agility

Data isn't real-time  
Can't act fast  
on insights  
No data strategy

A hand is shown pointing at a set of architectural blueprints. The blueprints contain various technical drawings, including room layouts, dimensions, and labels such as '202 HOUSE KEEPING' and 'PHOTOCOPY ROOM'. A prominent pink diamond shape is overlaid on the center of the image, framing the text. The text is in a bold, white, sans-serif font.

**WHAT THIS PROBLEM  
LOOKS LIKE ON THE  
INSIDE**



# Process Engineer

**Overwhelmed with trying to:**

- Analyze data
- Combine reports
- Understand metrics



# Senior VP

**Overwhelmed with trying to:**

- Focus on strategy
- Keep an eye on continuous improvement metrics



# Continental & CES

## Industrial Data News Centers

### The Problems

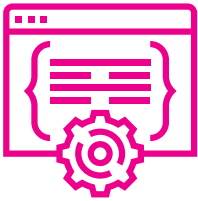
Energy Costs Rising

Missed Opportunities to Coordinate Energy Use With

- Hour-to-Hour Price Changes
- Demand
- Environmental Conditions

Seeking 'Green' Solutions to Reduce Emissions

# THE ANSWER



**OPERATIONAL  
DATA**

+



**BUSINESS  
OUTCOMES**



**INDUSTRIAL  
INTELLIGENCE**



Automation:  
PLCs, CNCs, IoT



Energy  
Management



OT Cyber

02 |

Create a research  
team – *using  
unstructured data*

01 |

Connect industrial  
silos with reporters

03 |

Uncover what's  
happening now



Twitter &  
Weather



Customer  
Complaints



Can I predict issues  
& unplanned downtime?



Why am I losing customers  
to my competitors?



# INDUSTRIAL DATA NEWS CENTER





**INDUSTRIAL DATA NEWS  
CENTER - LIVE INSIGHTS**



# Continental

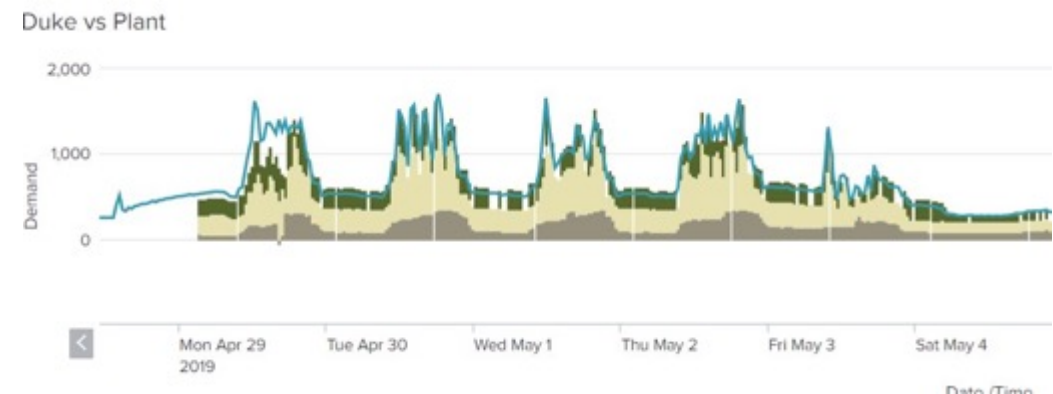
## Industrial Data News Center

**Continental** operates catalytic converter production and other energy-intensive manufacturing operations

### Energy Consumption

- Monitor energy usage in real time
- Compare different usage conditions
- Purchase power *strategically*
  - Rates change depending on day, time, demand and environmental/weather conditions
  - Data on pricing, conditions comes from third parties

Continental wants to align energy consumption with green and cost-effective goal of reducing emissions



# CES

## Industrial Data News Center

**CES** sought to build energy efficiencies over large network of compressors; predict downtime events

- CES is comparing
  - Compressor-by-compressor energy usage
  - Kilowatt (kW) per hour demand
  - Cubic feet per minute performance (CFM)
  - CFM vs kW/hour
  - Adjustable time-scale dashboards

**CES committed to using digital tools to reduce energy costs and downtime events as means of adding value to the company and lowering operating costs.**



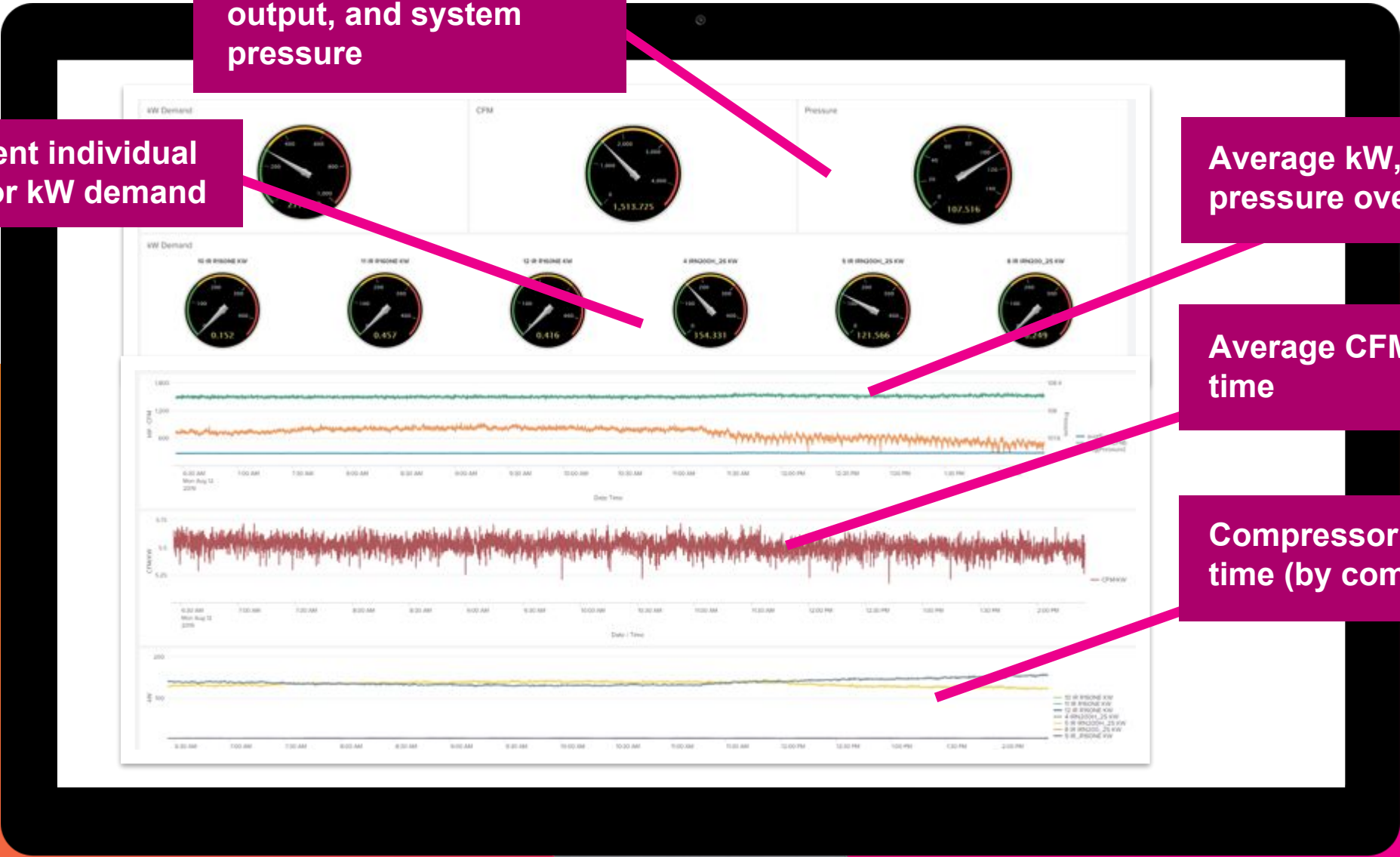
Site's current aggregate kW demand, CFM output, and system pressure

Site's current individual compressor kW demand

Average kW, CFM, and pressure over time

Average CFM/kW over time

Compressor kW over time (by compressor)



# CES



**Time period comparison**  
(here, the same 12-hour period for two days).  
Selectable aggregate  
CFM, kW, or Pressure

**CFM/kW performance**  
for two 12-hour time  
periods, relative to  
performance curve





### THREE BIG SCADA INSIGHTS

- Alarming reporter
- Historian reporter
- Cyber reporter



**SCADA  
INSIGHTS**

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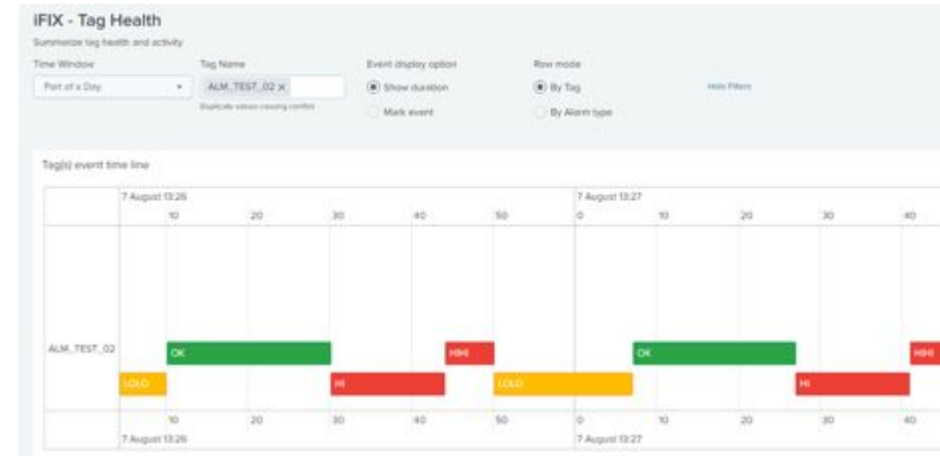
**INDUSTRIAL DATA NEWS  
CENTER – SCADA INSIGHTS**



# ALARMING REPORTER: SCADA TAG HEALTH

## Tag Health Timeline

- Organizes **enormous amounts of data** from SCADA applications
- Shelved **alarms no longer “forgotten”** as they live on in timeline
- Provides an **appealing, visual timeline** of alarms and operator actions
- Displays relationships between events:** duration, frequency and severity
- Reveals opportunities to improve plant performance
- Tracks **how and why operators acknowledge** or alter an alarm
- Highlights trends that point to persistent alarm patterns** (ex. alarm that happens every Monday at the same time)



# ALARMING REPORTER: SCADA TAG HEALTH

“We’re exposing the information that we know is critical to the process in a different way.”

Gabriel Miños, GrayMatter



# AWARDS & ACCOLADES





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# Thank

# You



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