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

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.
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
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
01 | Connect industrial silos with reporters

02 | Create a research team – *using unstructured data*

03 | Uncover what’s happening now

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Automation: PLCs, CNCs, IoT

Energy Management

OT Cyber

Twitter & Weather

Customer Complaints

Can I predict issues & unplanned downtime?

Why am I losing customers to my competitors?
INDUSTRIAL DATA NEWS CENTER - **LIVE INSIGHTS**
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)
CFM/kW performance for two 12-hour time periods, relative to performance curve.

Time period comparison (here, the same 12-hour period for two days). Selectable aggregate CFM, kW, or Pressure.
THREE BIG SCADA INSIGHTS
• Alarming reporter
• Historian reporter
• Cyber reporter

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

Gabriel Miños, GrayMatter
AWARDS & ACCOLADES
Thank You!

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