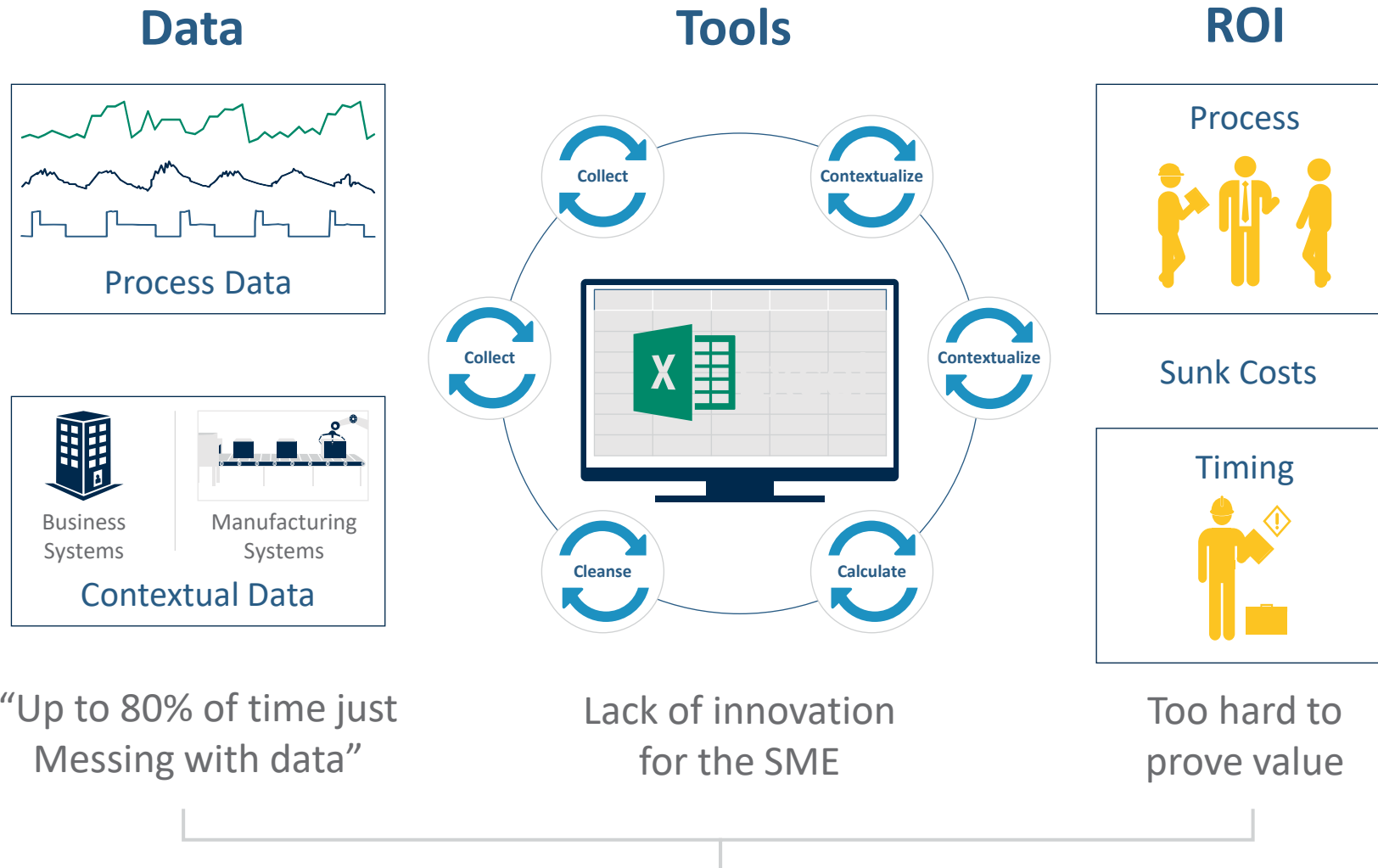


# Accelerating Decision Making using Self Directed Analytics and Reporting



# Process Data Reality



**Result: Billions and billions in lost opportunity**

# What is Seeq?

3

Easy to Use Applications



Innovation anywhere your employees are working

2

Analytics Platform

**Seeq CORTEX**

Service-based advanced analytics, Machine Learning (ML), in the cloud or on-premises

Connect data historians, sources, and silos wherever your data live (on-premises, hybrid, in the cloud)

1

Your Process Data, Anywhere, Any Type

Manufacturing Data\*



Business Data\*



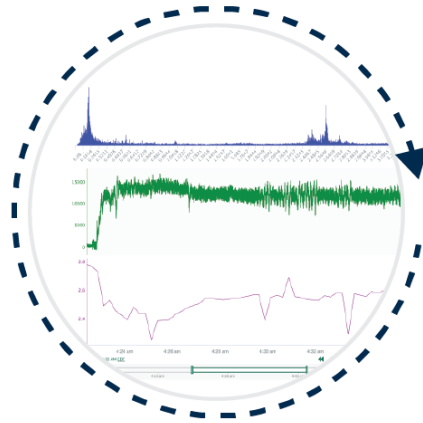
Custom Sources



# Seeq Capabilities

## Diagnostic

Why did it happen?

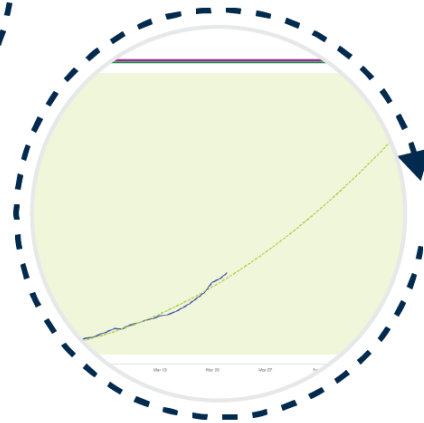


### Benefits

Root cause investigations on/of historical data sets

## Predictive

What will happen?

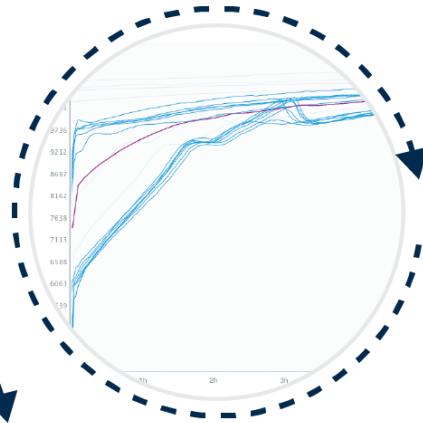


### Benefits

Increase asset availability and improve batch outcomes

## Monitoring

What is happening?

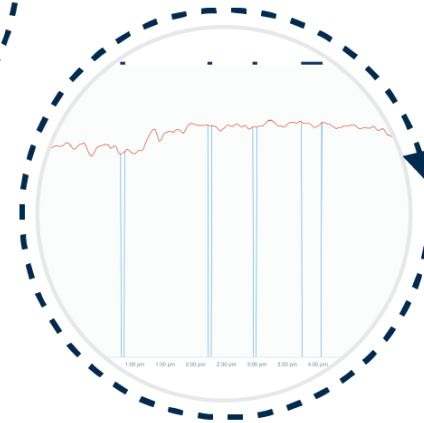


### Benefits

Advisory real-time and prediction view of process and asset status

## Prescriptive

What should happen?

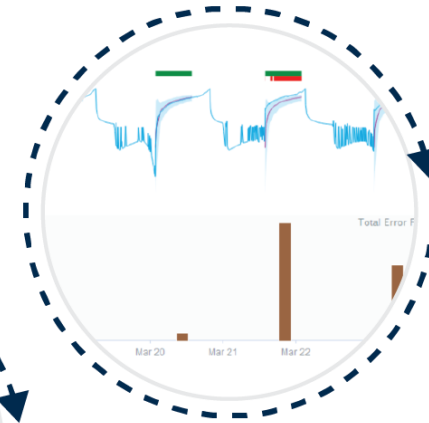


### Benefits

Evaluate options to make decisions that optimize outcomes

## Descriptive

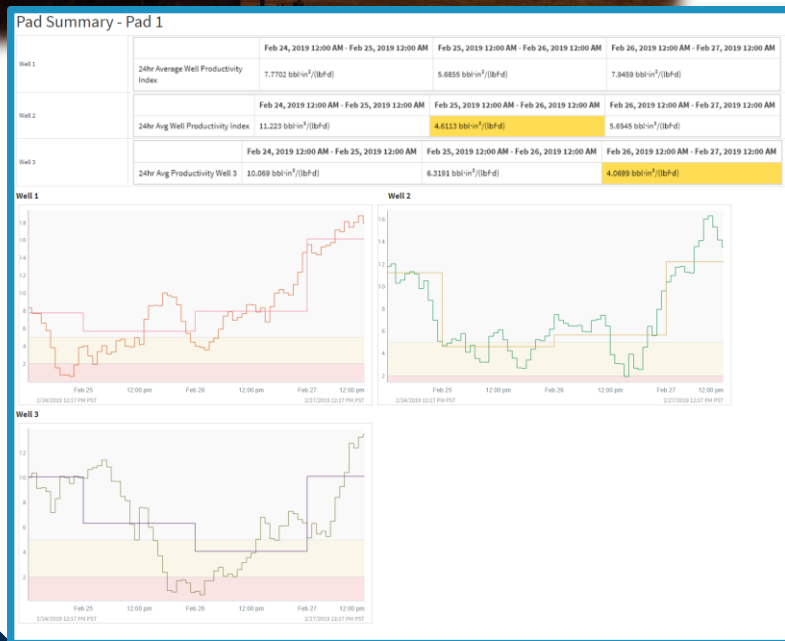
What happened?



### Benefits

Create and share insights to inform decisions plant wide

# Well Productivity Index Calculation



## CHALLENGE

- Well Productivity Index is a measure of individual well health and is difficult to scale
- Calculations are typically done manually offline and require significant amounts of engineering time



## SOLUTION

- Calculate the productivity index for each well based on flows and pressures
- Scale analysis to 1000s of wells for performance monitoring



## RESULTS

- Save 500 hours of engineer time for 1000 wells
- Reduce data entry errors and improve the quality of well productivity calculations

# Electrical Submersible Pump (ESP) Monitoring



CHALLENGE

- **Inability to detect and anticipate ESP performance issues can lead to**
  - Events where flow drops and causes damage to the pump
  - Lack in sophistication of trip logic leads to premature trips
- **ESP analysis is difficult to standardize and scale across hundreds of similar or dissimilar assets**



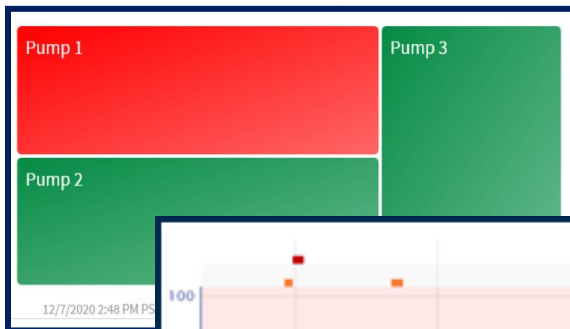
SOLUTION

- **Anomaly detection analysis enables engineers to**
  - Continuously monitor multiple pump health variables
  - Detect poor performance which leads to taking corrective actions and preventing failure
- **Replicate the analysis automatically across all wells**



RESULTS

- **Enabling operation teams to anticipate ESP failure and avoid costs due to production loss and engineering time**
- **Helps to identify risks and prioritize maintenance activities**
- **Replicate the analysis automatically across asset populations with easy asset swap and visualization mechanisms**



# Lockout Pressure Optimization



## CHALLENGE

- It is difficult to specify and refine the lockout pressure for a pipeline – too low and events are missed, too high means unnecessary shutdowns
  - Requires large volumes of data and cleansing in spreadsheets



## SOLUTION

- Identify pattern for pump pressure data during periods when the pumping station is running normally
- Determine a new pressure trip limit for implementation in the control system
- Report the discharge lockout limit over time to refine



## RESULTS

- Reduced shutdown events by 30+ hours per quarter and an estimated \$1.5 million per event in lost revenue

# Summary

Transition from Reactive Analytics to  
Predictive Analytics → Prescriptive Analytics → Profitability Analytics

Leverage  
Existing Data

Apply  
Advanced  
Analytics

Enable  
Personnel

Optimize  
Business

