AVEVA PI WORLD

Increasing the speed of moving data to insight with an existing toolbox

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- International Paper
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International Paper

- World's Largest Pulp and Paper Company
  - Founded 1898
  - $20.6 Billion Net Sales (2020)
  - Sylvamo Spin-Off (Oct. 2021)
  - 27 Paper Manufacturing Sites in North America
  - ~2 Million PI Tags

Specific to this discussion

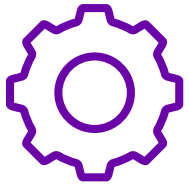
20 Manufacturing Sites

60 PI Servers

1.2 Million Active PI Tags

Increase the speed of moving raw data to actionable insight

INTERNATIONAL PAPER



Challenge

- Prevent process performance erosion over time.

  (operating time-series data)

Solution

- Leverage existing tools within the AVEVA PI System technology including PI AF, PI Vision and PI Integrator for Business Analytics to move performance auditing from manual/periodic to automatic/continuous.

Benefits

- Improved process operations (optimization and reduced variability)
- Building a stronger data foundation within PI AF
- Incorporating subject matter expertise closer to operations
- Increased visibility for insights by unlocking access to data and bringing siloed data together

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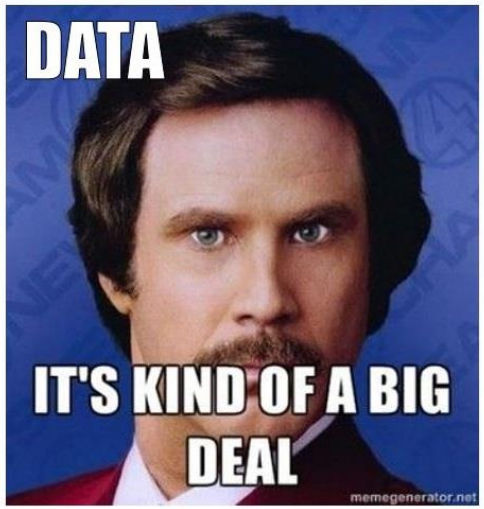
Setting the stage…

PI World 2020 – “Data: Its Kind of a Big Deal”

Data is Valuable

Data is Foundational

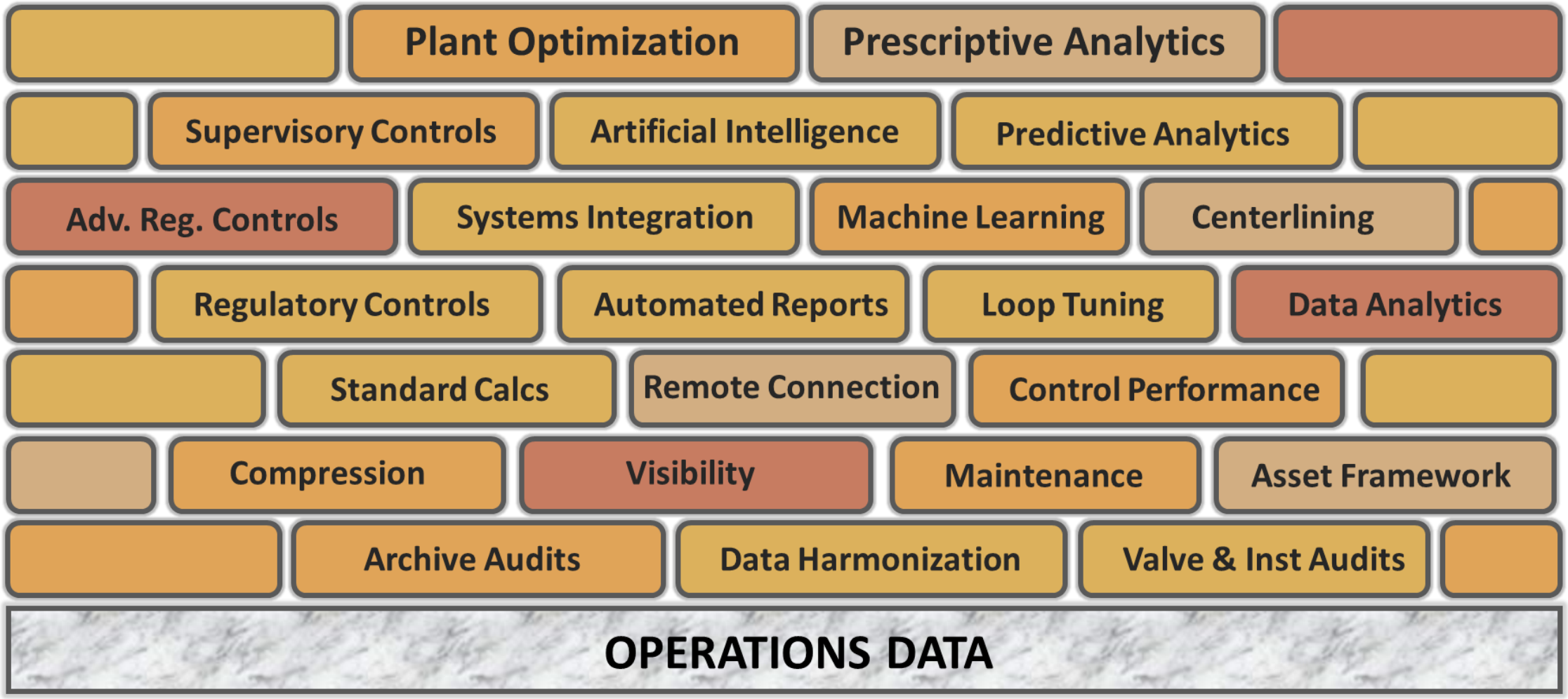
Data is not Magical



“Sixty percent of the time it works every time”

- Ron Burgundy (Anchorman)

First things first…



Impact of Layer Focus

Plant Optimization

Prescriptive Analytics

Supervisory Controls

Artificial Intelligence

Predictive Analytics

Adv. Reg. Controls

Centerlining

Data Analytics

Asset Framework

OPERATIONS DATA

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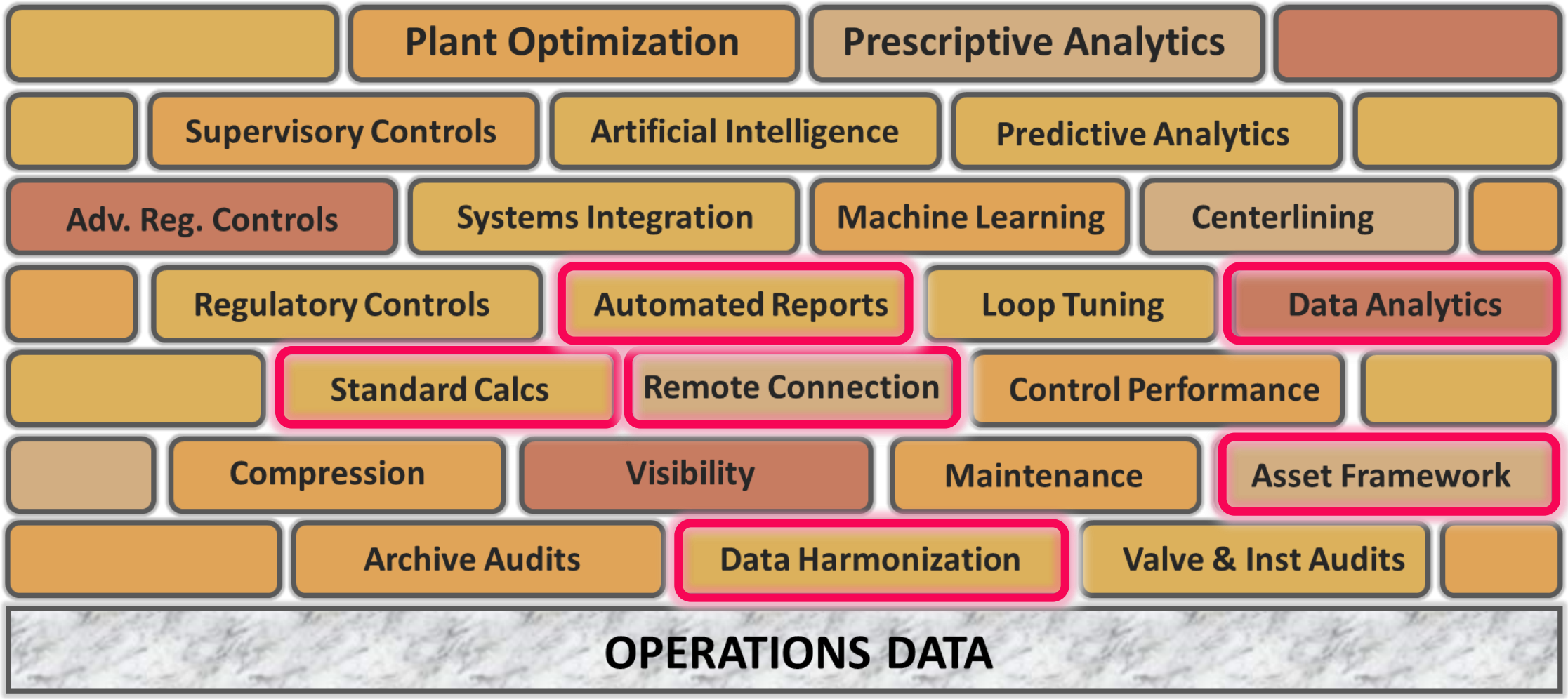
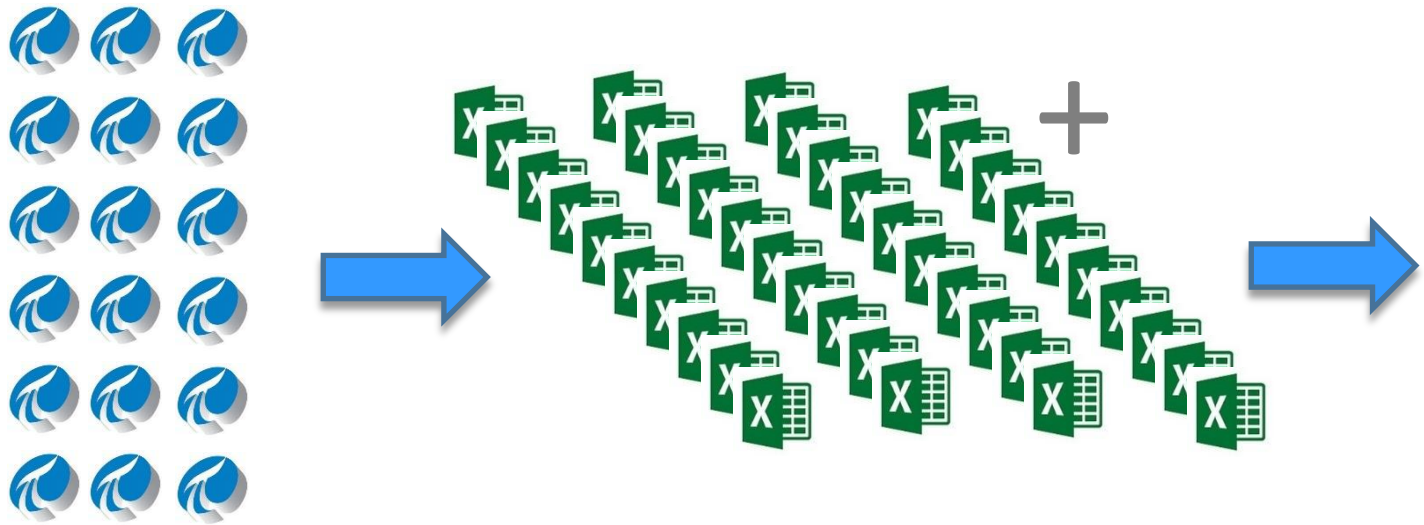
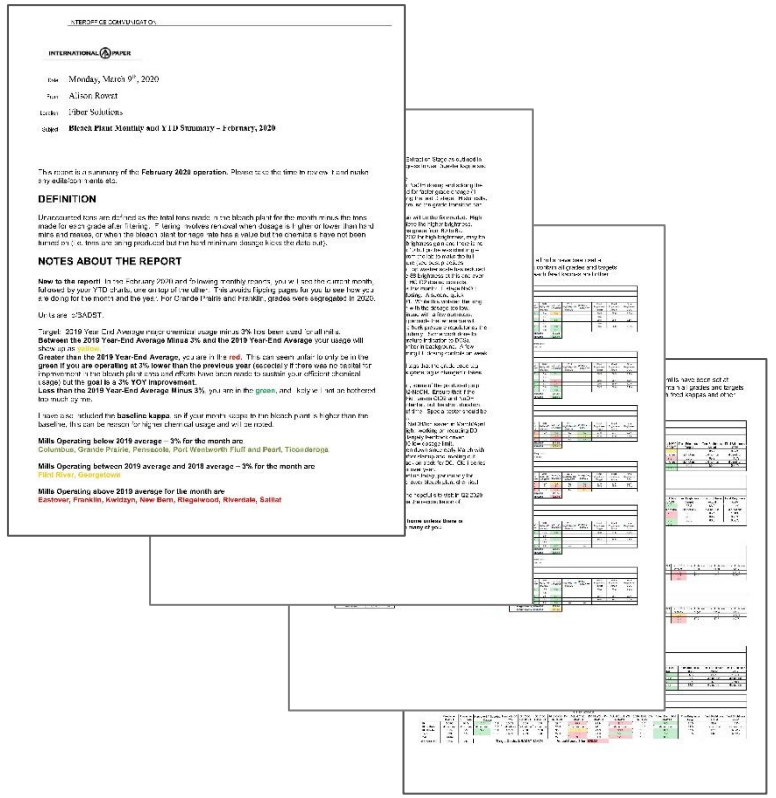
Our Challenge…



Facing the challenge - Prototype





Source data:

- *PI Data Archives, multiple sites*
- *Manual data extraction*

Data transformation:

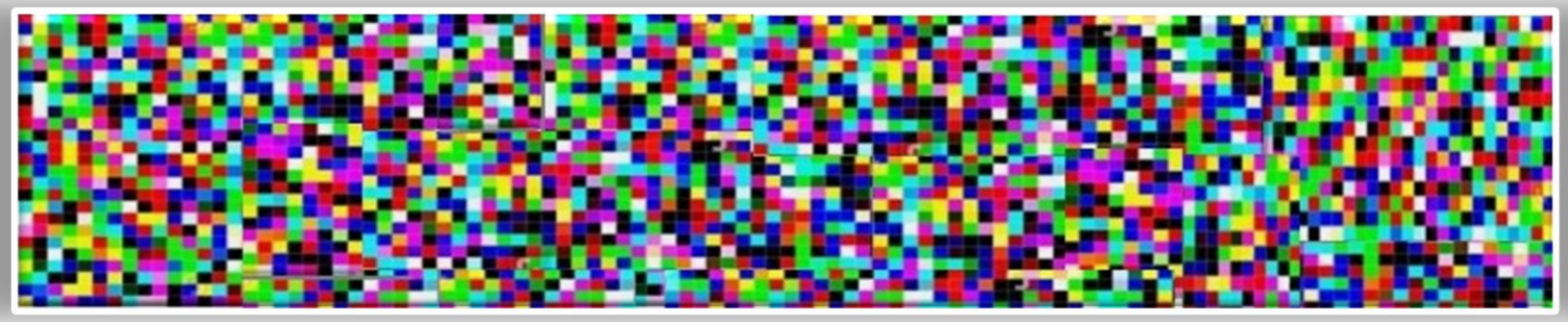
- *Customized calculations per prod. line.*
- *Data is imported, filtered, and conditioned (manually)*
- *Data visualizations exported manually*

The Product:

- *Enterprise performance report*
- *Issued monthly via email*

Status Quo (2019)

Typical Local PI System Database
(unstructured data)
30,000 to 75,000 tags



Raw Data to Insights – The Status Quo

Analytical Spreadsheets

Excel

Operational Dashboards

PI ProcessBook

Local PI System Database

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To empower your SME's [Subject Matter Experts] with insight-rich information that they can access remotely, you need data that is normalized and contextualized.

– C. Harclerode (June 2020)

Foundational

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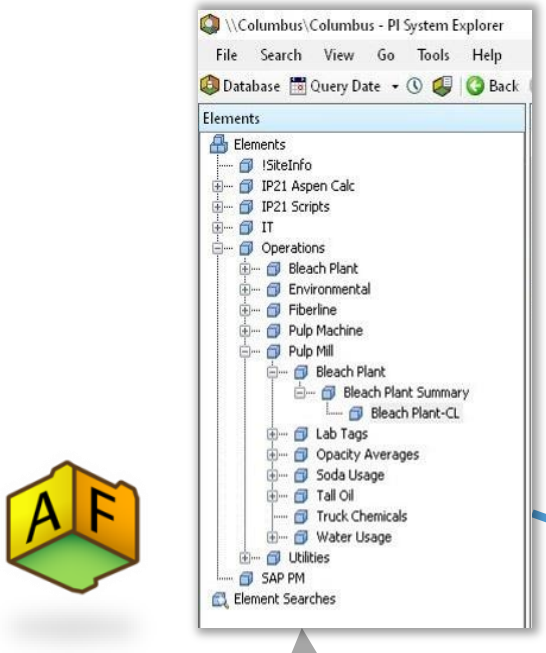
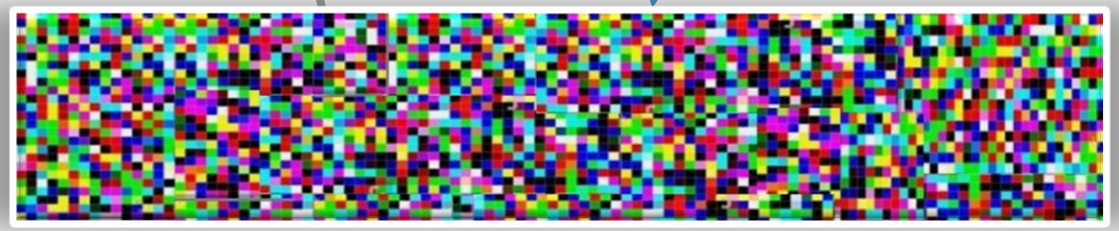
Adding structure to the Foundation

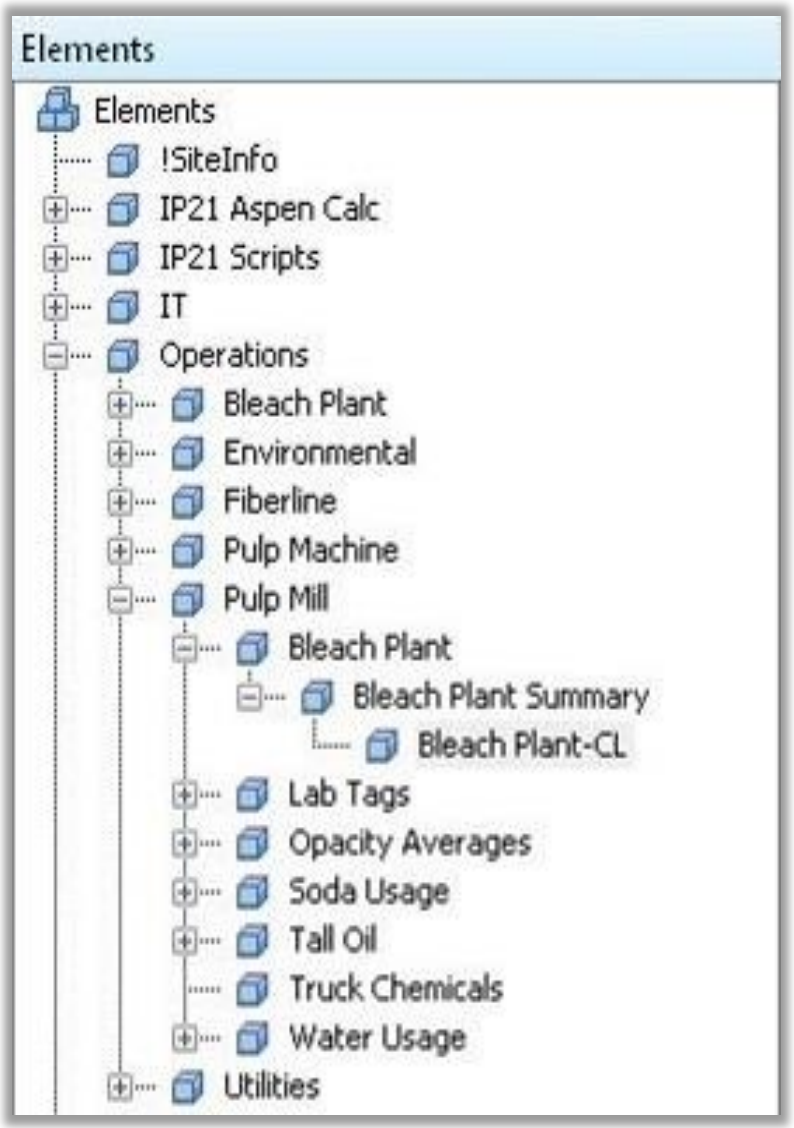
PI Asset Framework



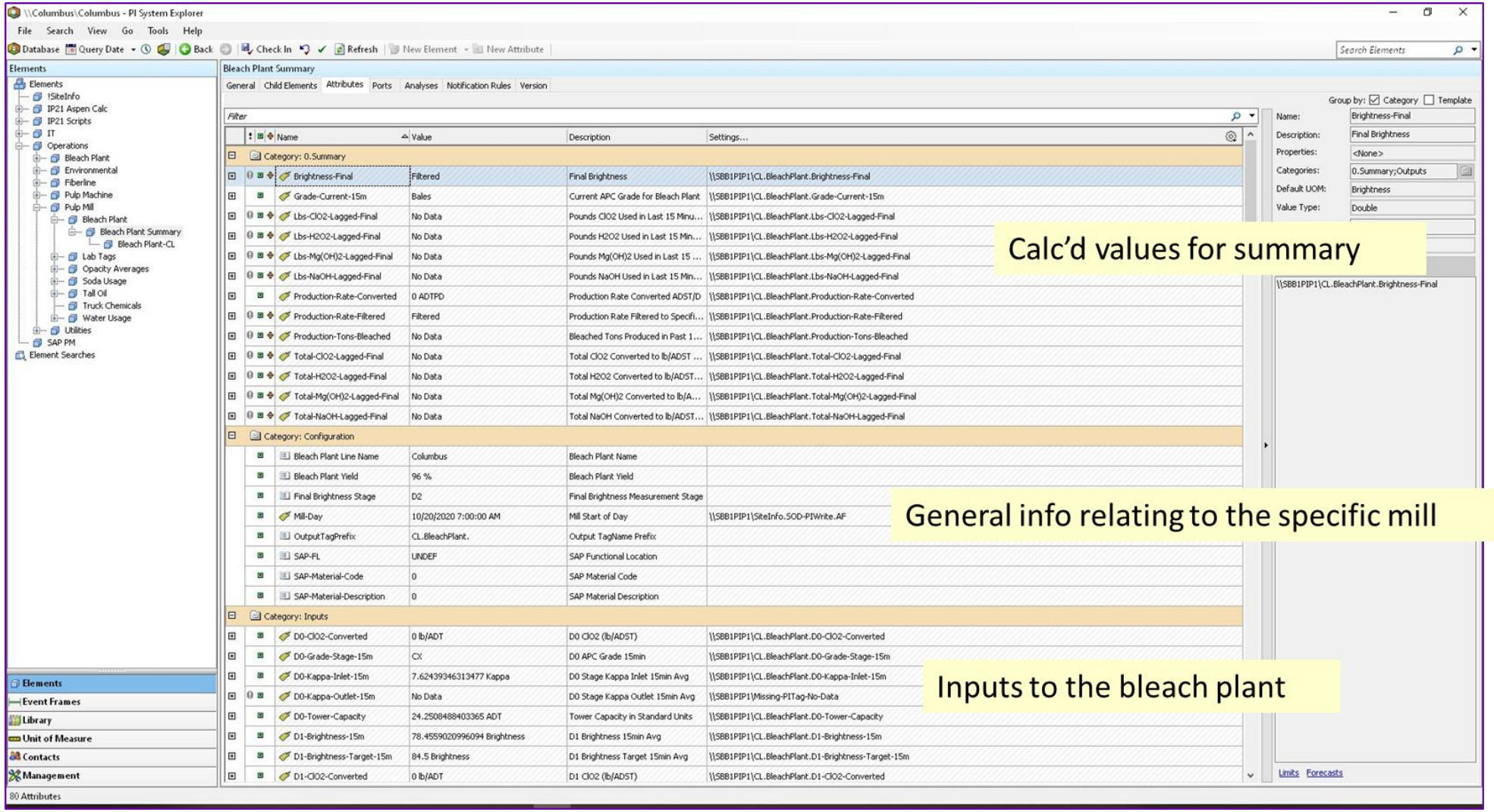
PI Tags

Local PI System Database



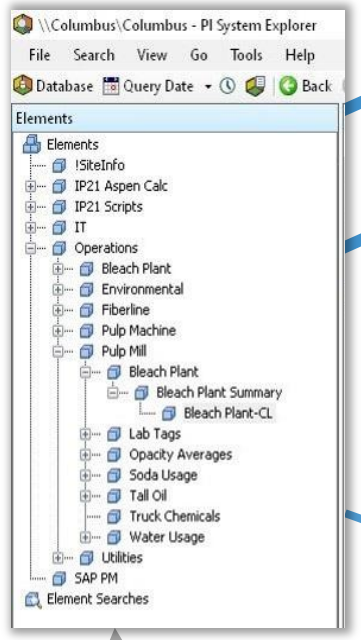


Adding structure to the Foundation



Adding structure to the Foundation

PI Asset Framework



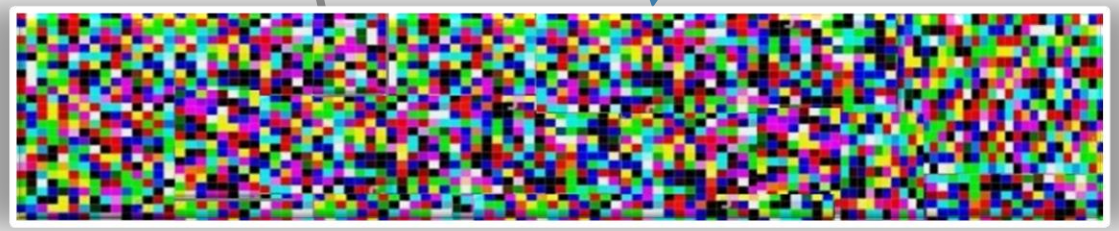
Standard Tags

Calculated results
Standard units

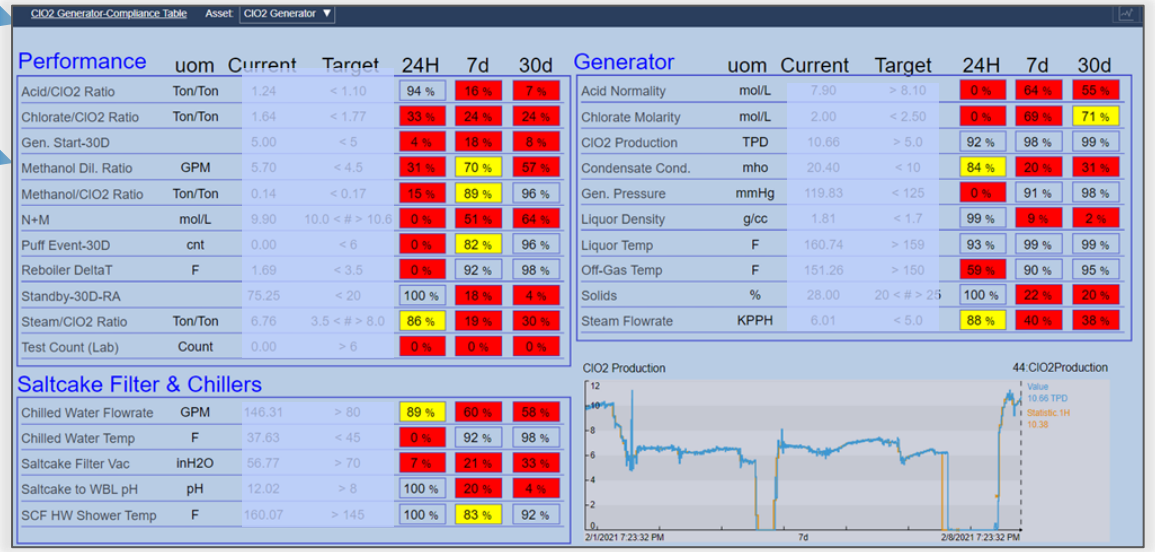
Calculated
Tags

PI Tags

Local PI System
Database

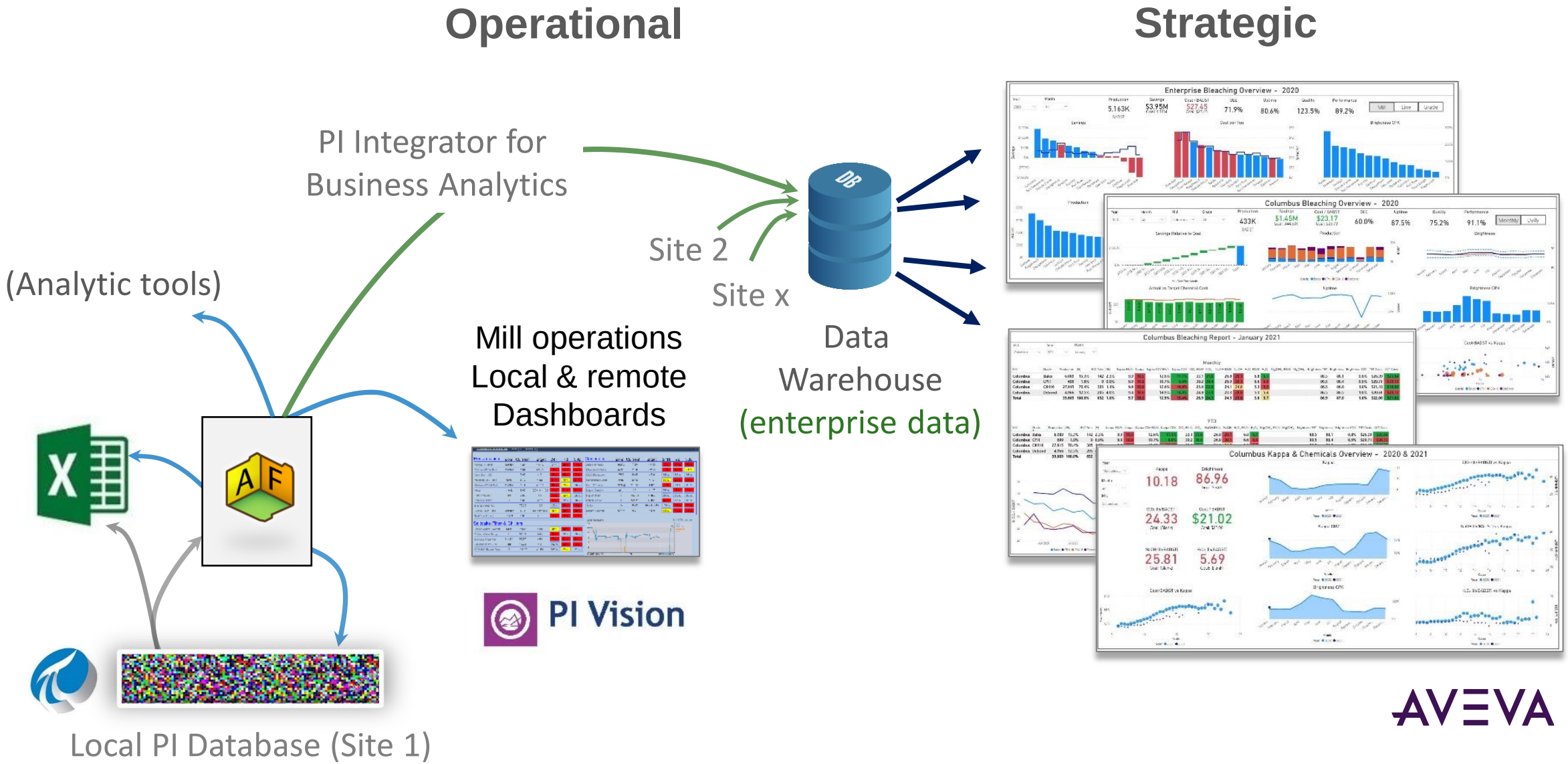


Operational Dashboards

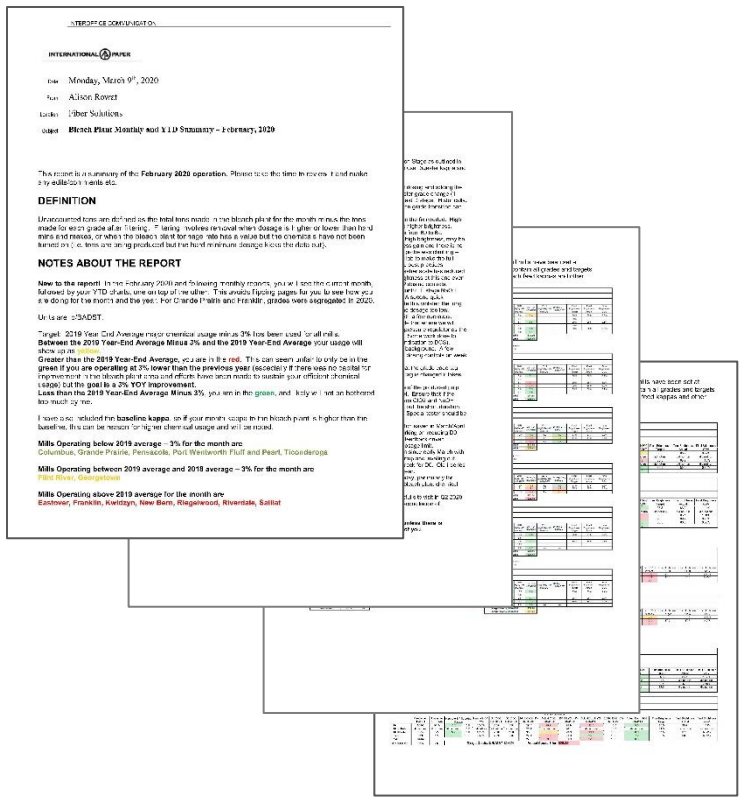


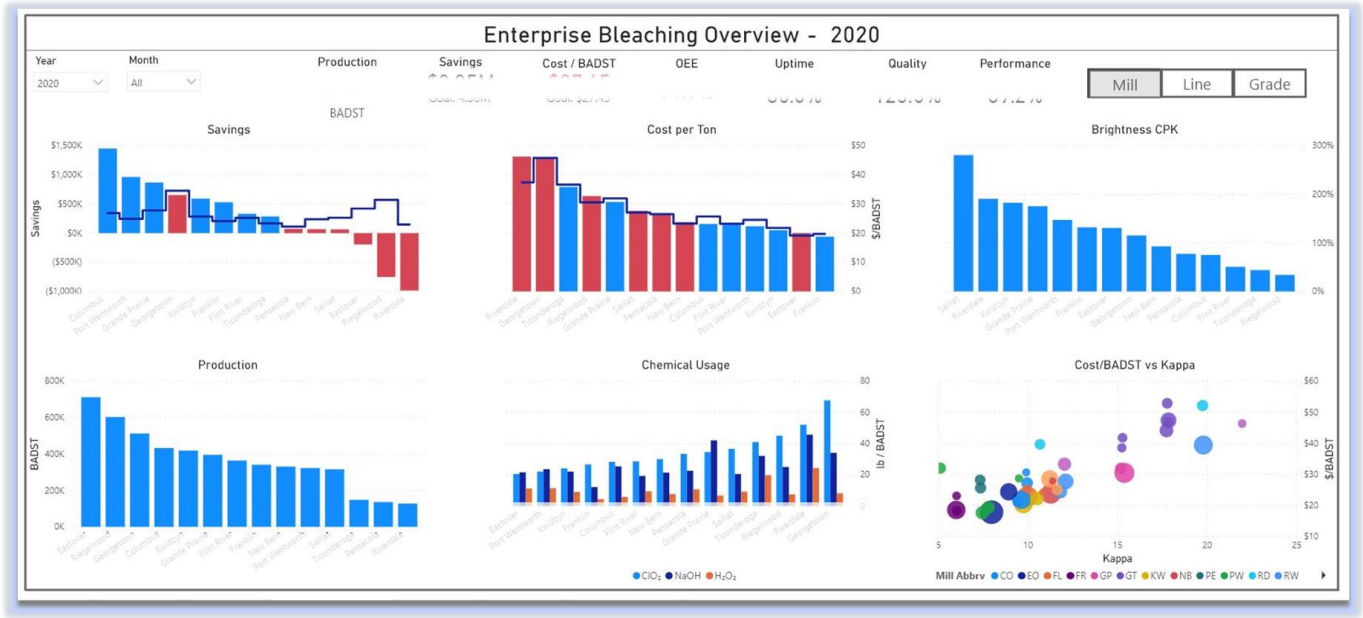
PI Vision

Raw Data to Insights – The bigger picture



Raw Data to Actionable Insights – Strategic





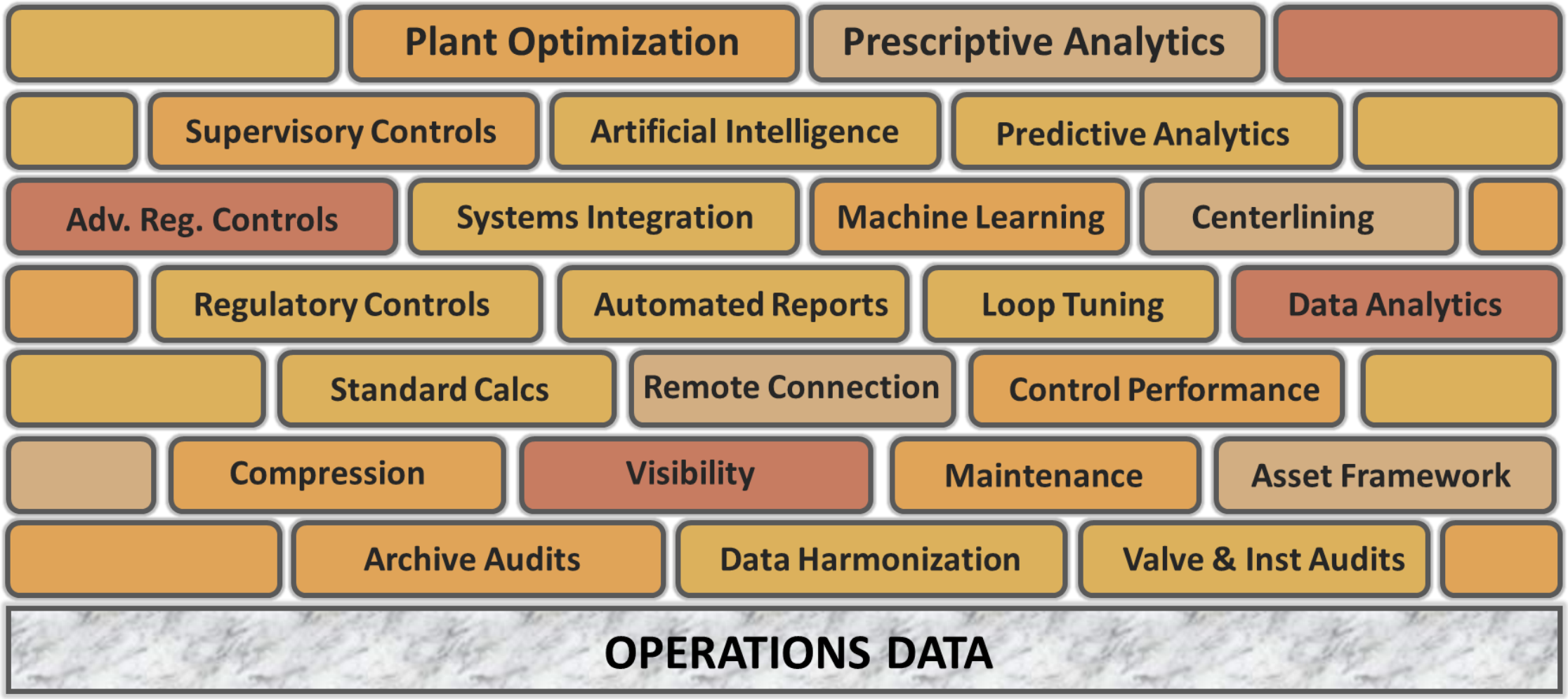
Impact / Savings

- The prototype moved the process performance audit from a manual / periodic process to an automatic / ad-hock process.
- Eliminated the steps of manual manipulation and conditioning of raw data .
- Increased the speed of visualizing insights from enterprise raw data
- Increased visibility should lead to compounding value
  - Releasing data from current silo’s
  - Freeing data to be remotely available (website access)
  - Leading to residual increases in creativity from expanded use
- Means of proactively reducing process performance erosion over time

Key takeaways

- Building a strong “Foundation” is a critical and very necessary step for developing analytics of any kind or complexity

Build upon a strong Foundation…



Key takeaways

- Building a strong “Foundation” is a critical and very necessary step for developing analytics of any kind or complexity
- Concept of moving away from manual reporting will likely meet resistance initially
- Utilizing existing tools improved the speed of development and acceptance.
- Prototyping to show end product had a profound effect on user engagement.
- The initial prototype fueled expansion of the idea into an enterprise wide initiative

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