

AVEVA PI WORLD

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

Presented By: Allen Turner

AVEVA



Allen Turner

Global Technology

Advanced Analytics Team Lead

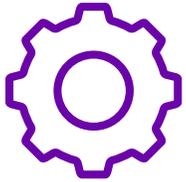
- International Paper
- Allen.Turner@ipaper.com

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



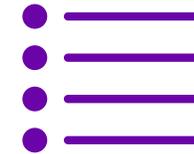
Challenge

- 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

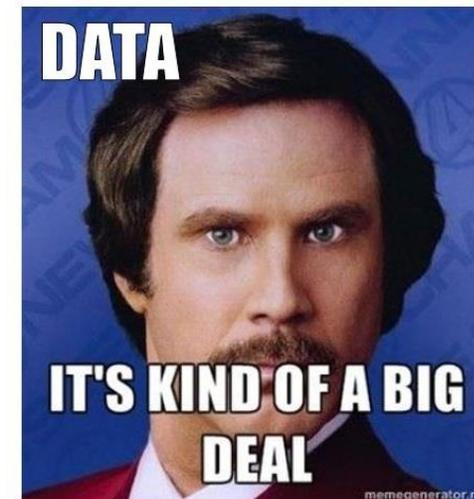
Setting the stage...

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

Data is Valuable

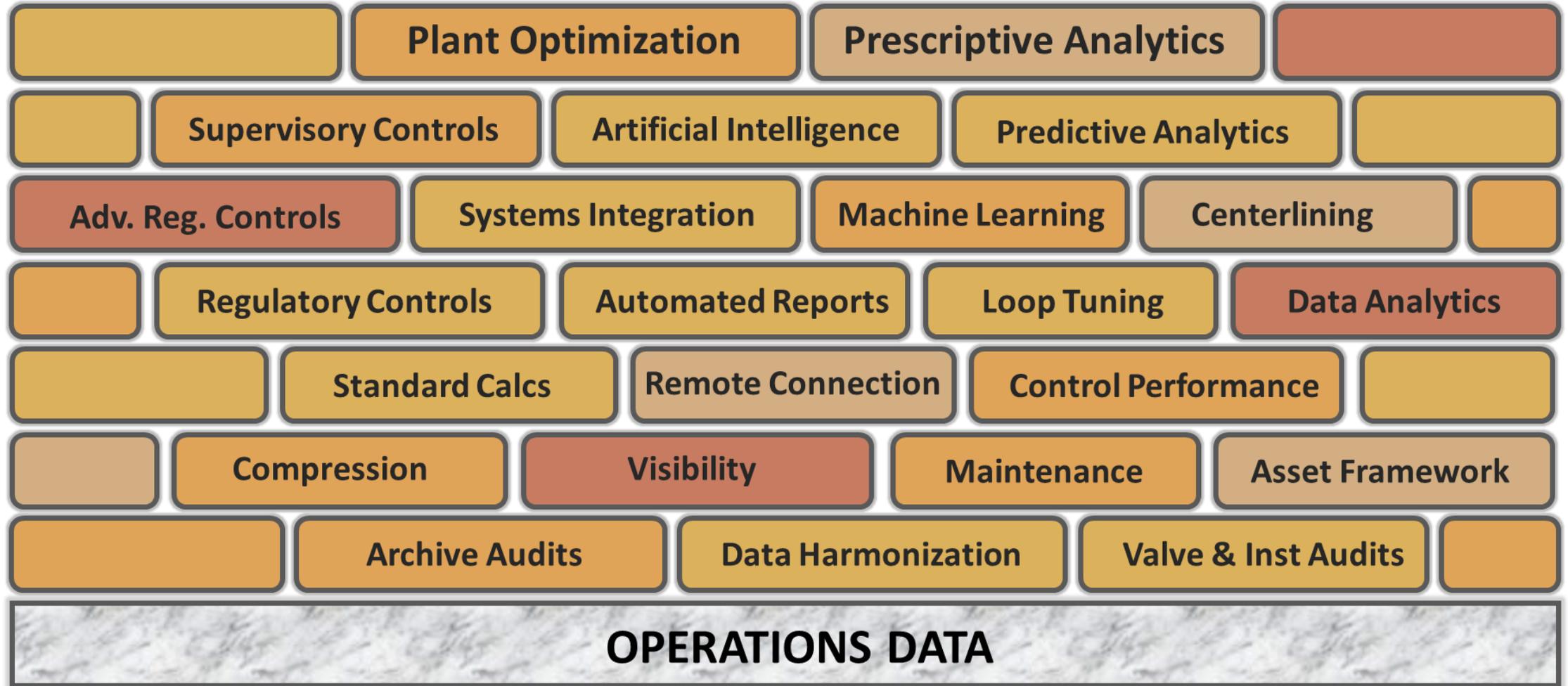
Data is Foundational

Data is not Magical

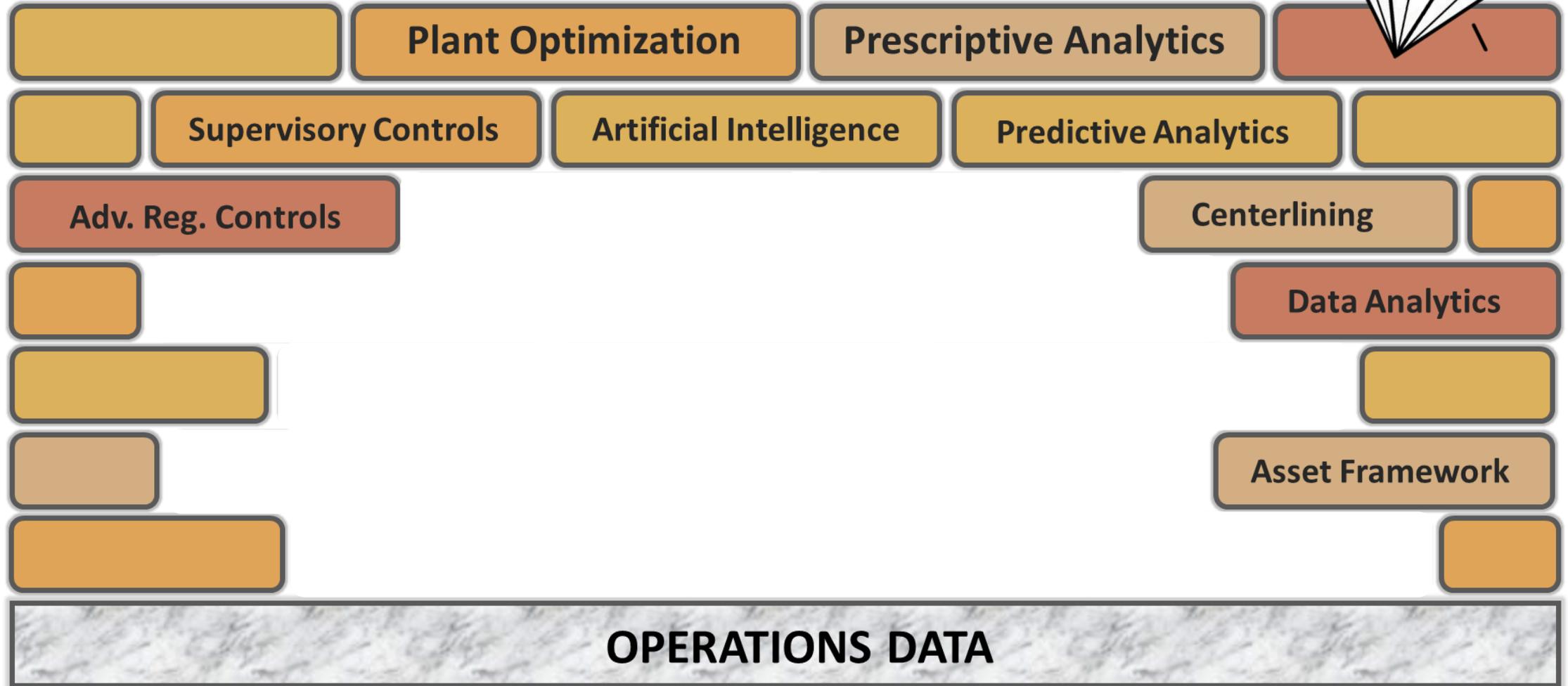
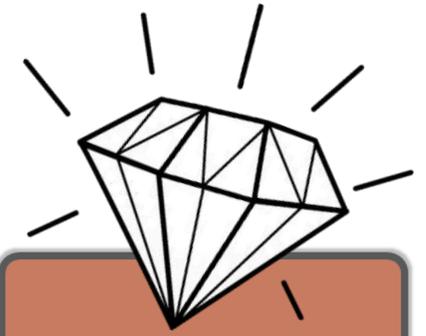


“Sixty percent of the time it works every time”
- Ron Burgundy (Anchorman)

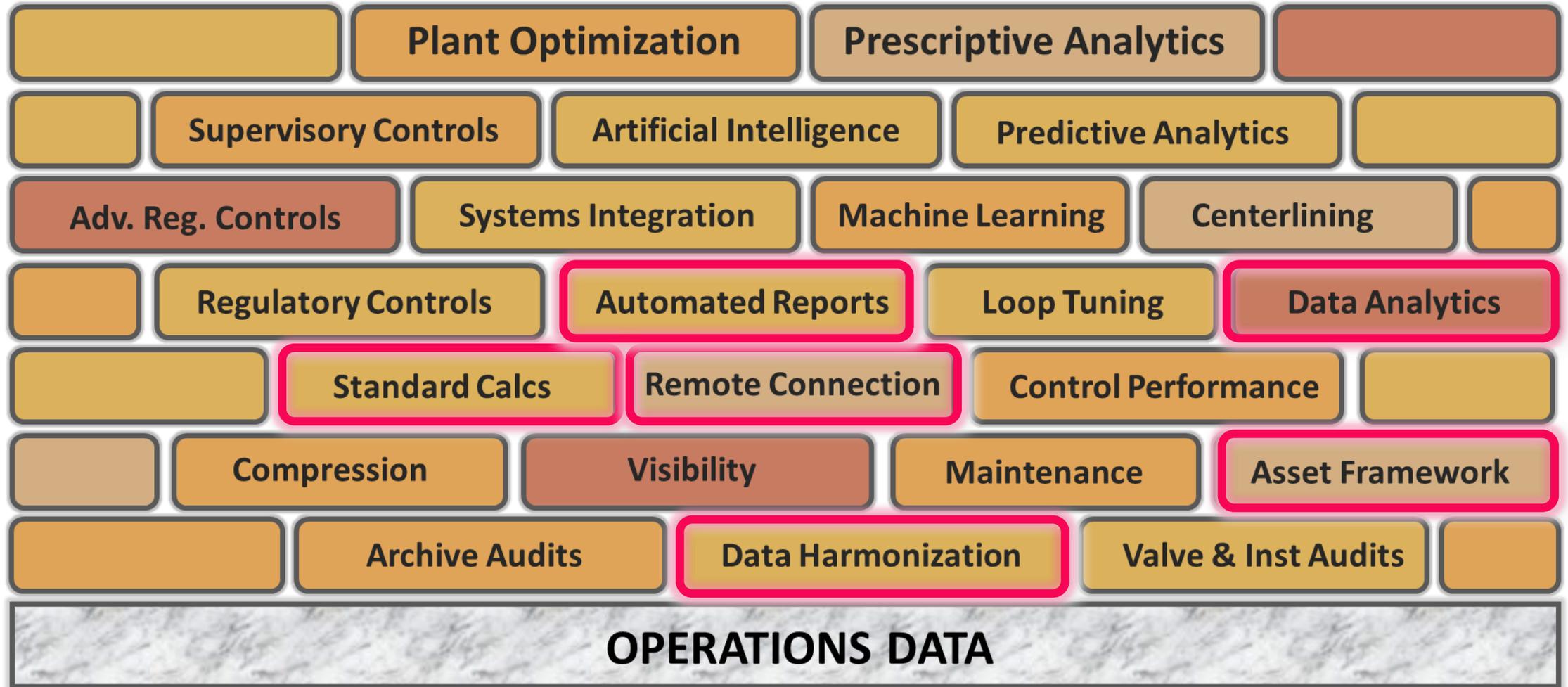
First things first...



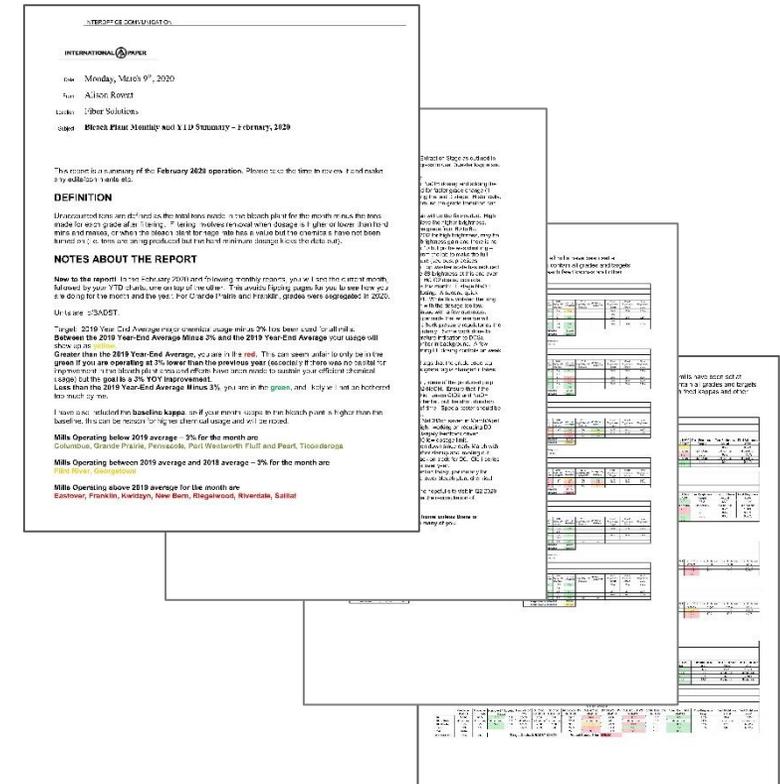
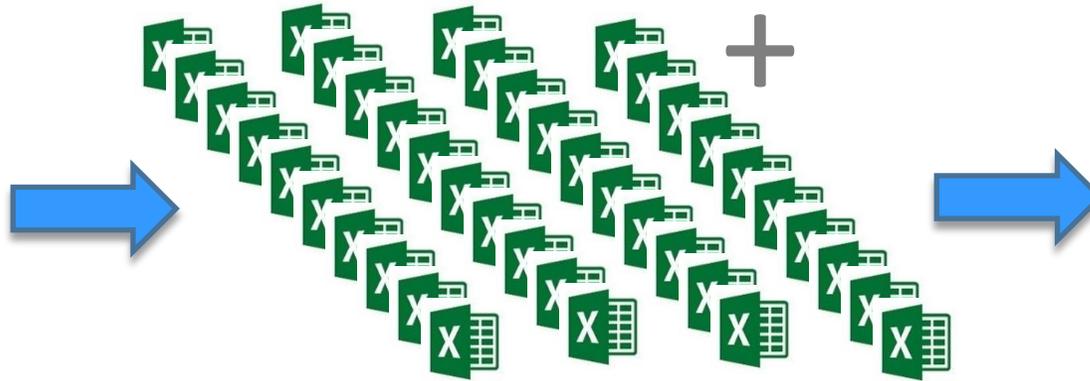
Impact of Layer Focus



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



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)

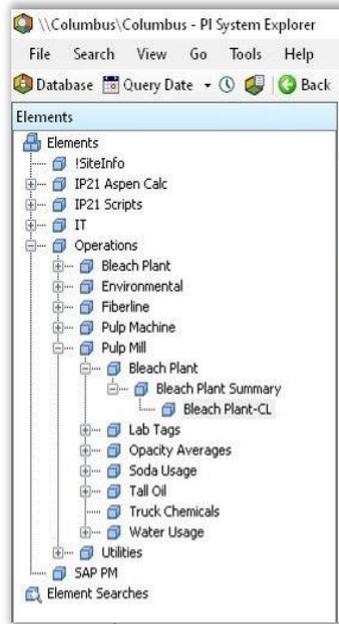


Foundational

AVEVA

Adding structure to the Foundation

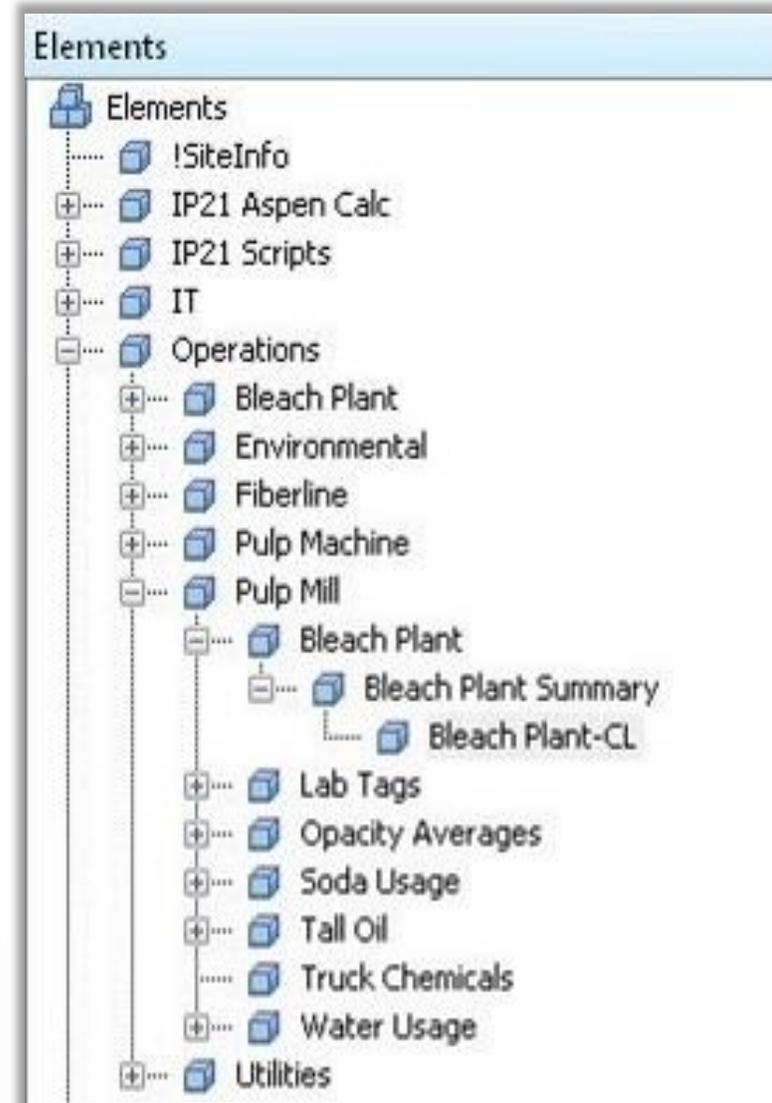
PI Asset Framework



PI Tags



Local PI System Database



Adding structure to the Foundation

The screenshot displays the PI System Explorer interface for a 'Bleach Plant Summary'. The main window shows a table with columns for Name, Value, Description, and Settings. The table is organized into several categories:

- Category: 0_Summary**: Contains calculated values for various metrics such as Final Brightness, Current APC Grade, and usage of CIO2, H2O2, and NaOH.
- Category: Configuration**: Lists general information for the specific mill, including Bleach Plant Line Name (Columbus), Yield (96%), and Final Brightness Stage (D2).
- Category: Inputs**: Lists inputs to the bleach plant, such as D0-CIO2-Converted (0 lb/ADT) and D0-Grade-Stage-15m (CX).

Annotations in yellow boxes highlight specific data points:

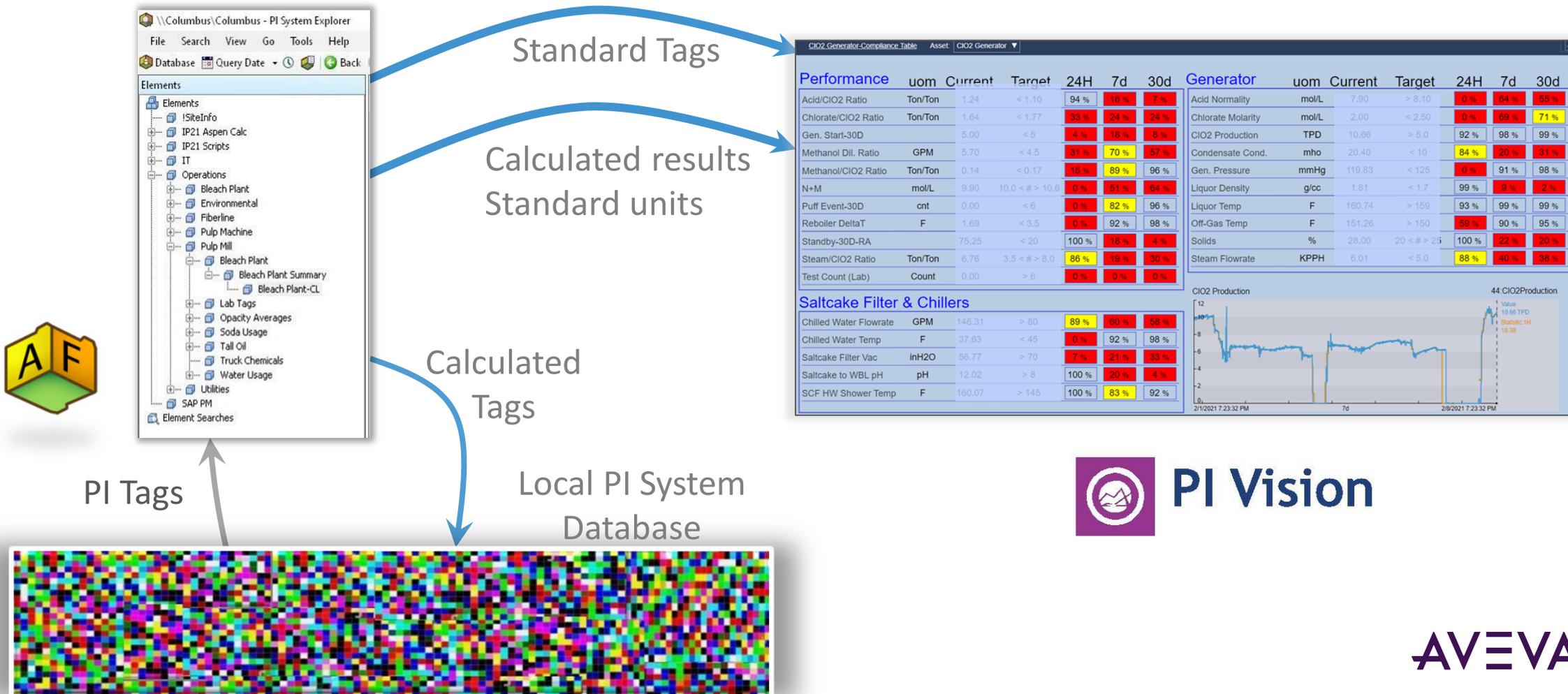
- Calc'd values for summary**: Points to the 'Final Brightness' row in the Summary category.
- General info relating to the specific mill**: Points to the 'Bleach Plant Line Name' and 'Bleach Plant Yield' rows in the Configuration category.
- Inputs to the bleach plant**: Points to the 'D0-CIO2-Converted' row in the Inputs category.

The right-hand pane shows the properties for the selected 'Brightness-Final' element, including its Name, Description, Properties, Categories, Default UOM, and Value Type.

Adding structure to the Foundation

PI Asset Framework

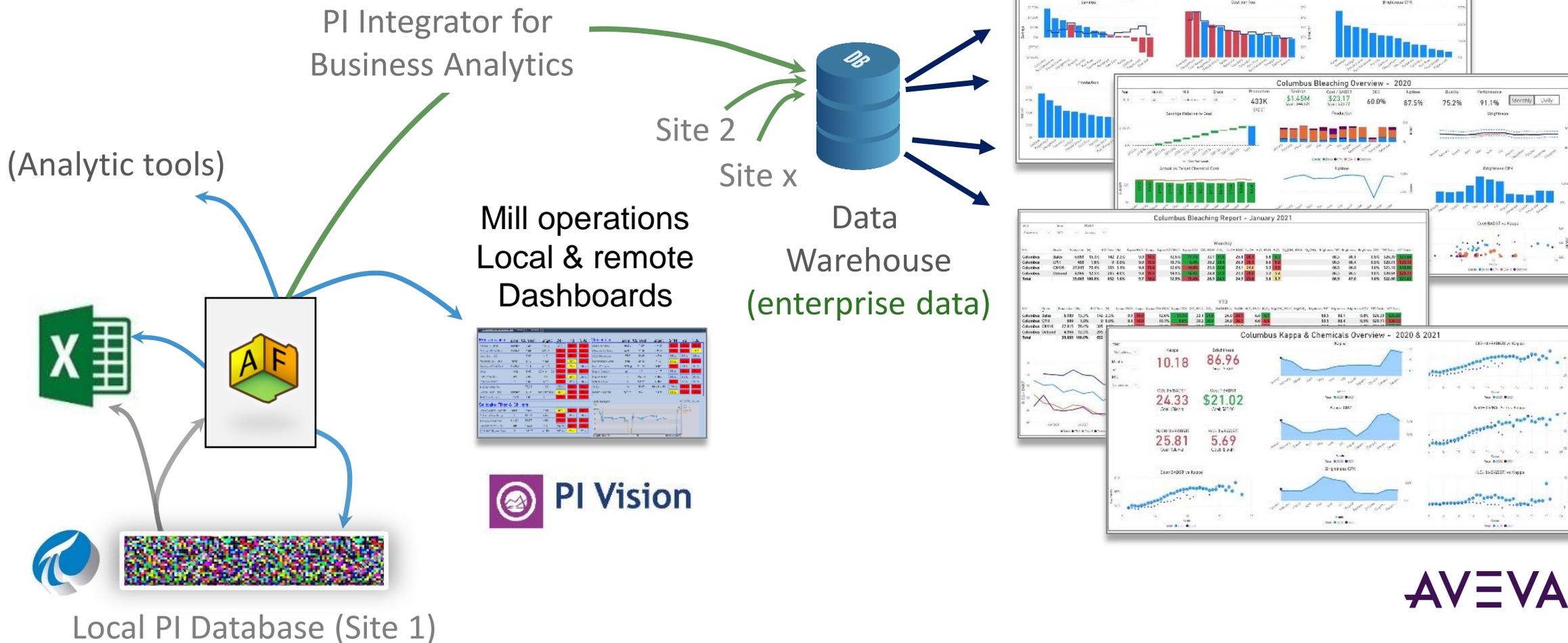
Operational Dashboards



Raw Data to Insights – The bigger picture

Operational

Strategic



Raw Data to Actionable Insights – Strategic

INTERNATIONAL PAPER

Monday, March 9th, 2020

Alison Rowett

Liber Solutions

March Plant Monthly roll 119 Summary - February, 2020

This report is a summary of the February 2020 operation. Please refer to the time to review it and make any adjustments as needed.

DEFINITION

Unaccounted tons are not included in the total tons made in the month or over the time made for each grade of all types. It may include material when change is a job or lower than the mill and make, or when the black roll for top rolls has a value but the covers have not been removed, i.e. when an unproduced but to have revenue savings from the mill.

NOTES ABOUT THE REPORT

New to the report: In the February 2020 and following monthly reports, you will spot the current month values by your STD status, one at top of the other. The most fitting page for you to see how you are doing for the month and the year. For Grade 1 with and 1+ mill, grades were segregated by ZLOC. Mills are 25ADST.

Target: 2019 Year End Average major chemical usage minus 3% has been used for all mills. Between the 2019 Year-End Average Minus 2% and the 2019 Year-End Average your usage will show in the green. Greater than the 2019 Year-End Average, you are in the red. This can occur only if only be in the green if you are operating at 3% lower than the previous year (665408) if there was no change for improvement in the month and the other three return means to reduce your chemical usage (usage) cut the goal by a 3% YOY improvement.

Less than the 2019 Year-End Average Minus 3%, you are in the green, and it will be an excellent result for you.

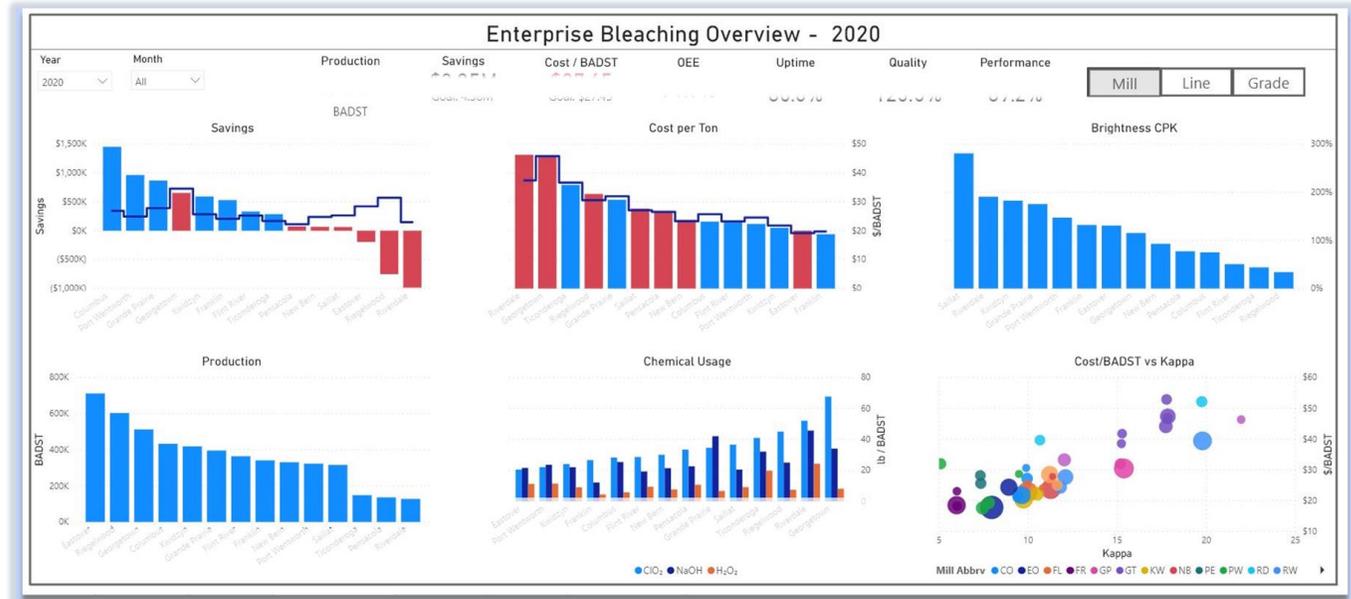
I have also included the baseline kappa on if your mills' kappa in the bleach plant is higher than the baseline, this can be reason for higher chemical usage and will be noted.

Mills Operating below 2019 average - 3% for the month are:
 Cochenille, Grande Prairie, Peninsula, Port Wessely, Trail and Pearl, Tioconderoga

Mills Operating between 2019 average and 2019 average - 3% for the month are:
 119 River, Georgetown

Mills Operating above 2019 average for the month are:
 Eastman, Franklin, Kentucky, New Bern, Okanogan, Riverside, Sault

Table shows in PDF

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

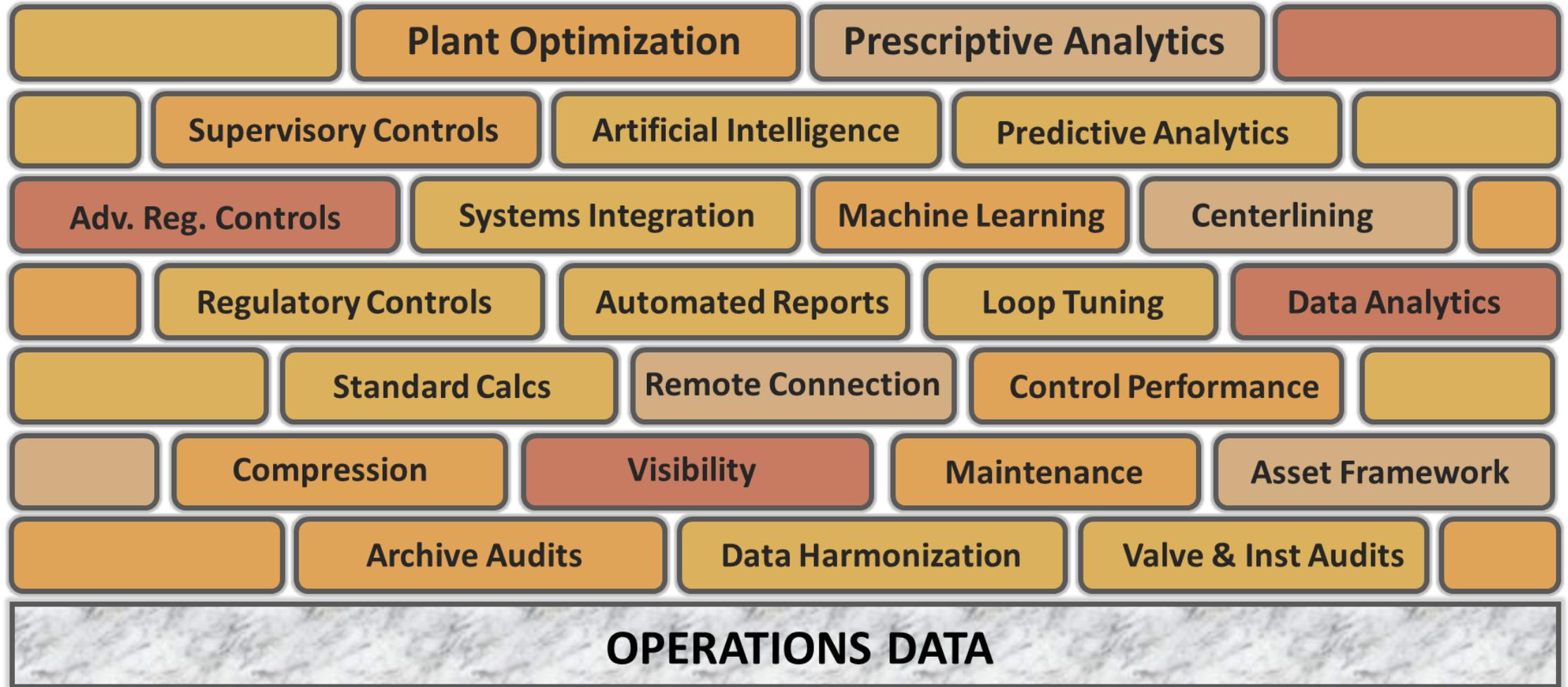


Key takeaways

- ❖ 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



THANK YOU

謝謝

DZIĘKUJĘ CI

NGIYABONGA

TEŞEKKÜR EDERİM

DANKIE

TERIMA KASIH

GRACIES

WHAKAWHETAI KOE

DANKON

TANK

TAPADH LEAT

SALAMAT

SPASIBO

GRAZIE

MATUR NUWUN

ХВАЛА ВАМ

MULŢUMESC

PAKMET CIZGE

고맙습니다

GRAZIE

شكرا

FAAFETAI

ESKERRIK ASKO

GO RAIBH MAITH AGAT

HVALA

HVALA

БЛАГОДАРЯ

GRACIAS

MAHADSANID

TEŞEKKÜR EDERİM

ТИ БЛАГОДАРАМ

DANKJE

EΥΧΑΡΙΣΤΩ

GRATIAS TIBI

OBRIGADO

TAK DANKE

AČIŮ

SALAMAT

MAHALO IĀ 'ŌE

TAKK SKALDU HA

МЕРЦИ

RAHMAT

MERCI

GRAZZI

PAKKA PÉR

ありがとうございました

DI OU MÈSI

ĎAKUJEM

HATUR NUHUN

PAXMAT CAĜA

SIPAS JI WERE

TERIMA KASIH

CẢM ƠN BẠN

UA TSAUG RAU KOJ

TI БЛАГОДАРАМ

СИПОС

WAZVIITA

FALEMINDERIT

This presentation may include predictions, estimates, intentions, beliefs and other statements that are or may be construed as being forward-looking. While these forward-looking statements represent our current judgment on what the future holds, they are subject to risks and uncertainties that could result in actual outcomes differing materially from those projected in these statements. No statement contained herein constitutes a commitment by AVEVA to perform any particular action or to deliver any particular product or product features. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect our opinions only as of the date of this presentation.

The Company shall not be obliged to disclose any revision to these forward-looking statements to reflect events or circumstances occurring after the date on which they are made or to reflect the occurrence of future events.

 [linkedin.com/company/aveva](https://www.linkedin.com/company/aveva)

 [@avevagroup](https://twitter.com/avevagroup)

ABOUT AVEVA

AVEVA, a global leader in industrial software, drives digital transformation for industrial organizations managing complex operational processes. Through Performance Intelligence, AVEVA connects the power of information and artificial intelligence (AI) with human insight, to enable faster and more precise decision making, helping industries to boost operational delivery and sustainability. Our cloud-enabled data platform, combined with software that spans design, engineering and operations, asset performance, monitoring and control solutions delivers proven business value and outcomes to over 20,000 customers worldwide, supported by the largest industrial software ecosystem, including 5,500 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 6,000 employees at 90 locations in more than 40 countries. For more details visit: www.aveva.com