
AVEVAWORLD

Smurfit Westrock

Leverage Element Templates for Fleet Wide Monitoring

Alex Nehib and Hall Hastings

Division Process Engineering

Paper | Packaging | Solutions

Smurfit Westrock

A global leader in sustainable packaging

40

Countries

62

Paper mills

500+

Converting sites

$32B

Combined net sales

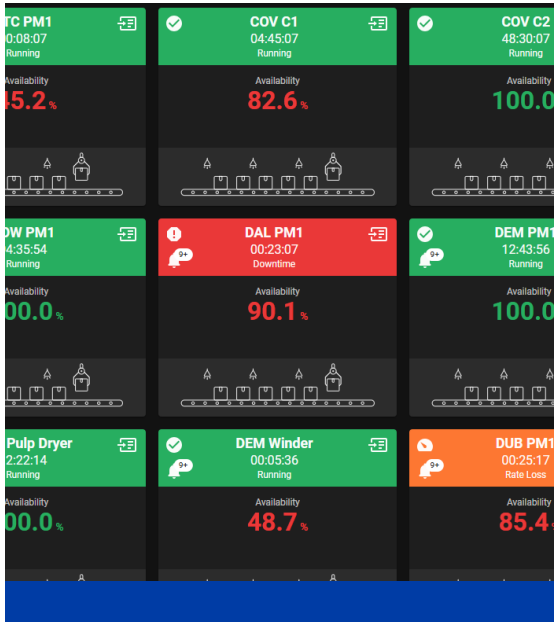
Smurfit Westrock

Division Process Engineering

Innovation, Engineering, and Continuous Improvement

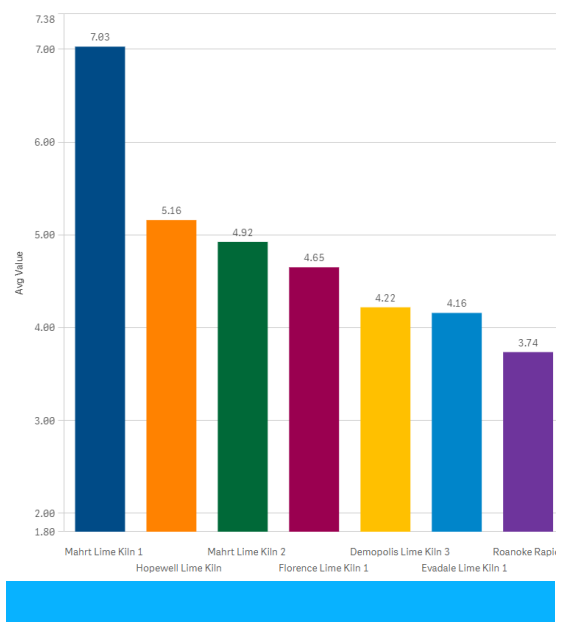
Process Software and Reporting Support

(AVEVA™ PI System™, Qlik, PowerBI, Ekho, PARCView, MES, ERP, Maintelligence, etc.)



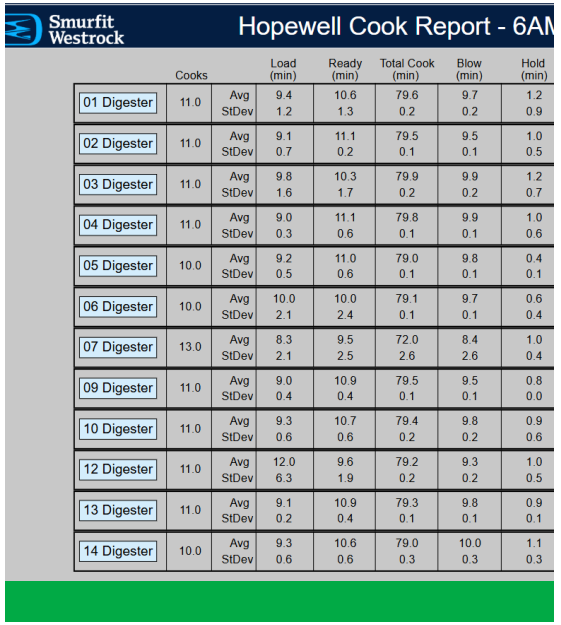
Data Standardization Efforts

(Downtime tracking, production data, KPIs, reliability data)



Enterprise-wide Benchmarking

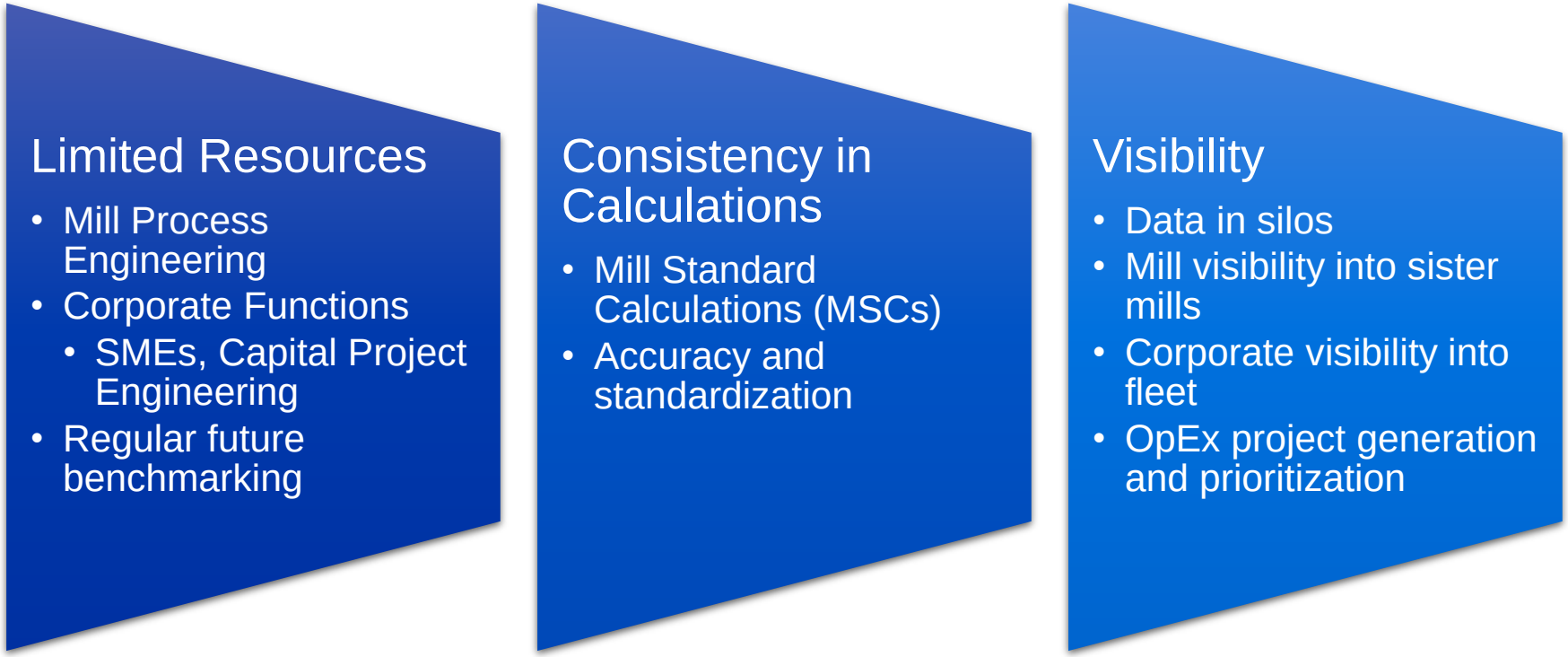
(Resource prioritization and knowledge share)


Smurfit Westrock — Hopewell Cook Report - 6AM

	Cooks		Load (min)	Ready (min)	Total Cook (min)	Blow (min)	Hold (min)
01 Digester	11.0	Avg	9.4	10.6	79.6	9.7	1.2
		StDev	1.2	1.3	0.2	0.2	0.9
02 Digester	11.0	Avg	9.1	11.1	79.5	9.5	1.0
		StDev	0.7	0.2	0.1	0.1	0.5
03 Digester	11.0	Avg	9.8	10.3	79.9	9.9	1.2
		StDev	1.6	1.7	0.2	0.2	0.7
04 Digester	11.0	Avg	9.0	11.1	79.8	9.9	1.0
		StDev	0.3	0.6	0.1	0.1	0.6
05 Digester	10.0	Avg	9.2	11.0	79.0	9.8	0.4
		StDev	0.5	0.6	0.1	0.1	0.1
06 Digester	10.0	Avg	10.0	10.0	79.1	9.7	0.6
		StDev	2.1	2.4	0.1	0.1	0.4
07 Digester	13.0	Avg	8.3	9.5	72.0	8.4	1.0
		StDev	2.1	2.5	2.6	2.6	0.4
09 Digester	11.0	Avg	9.0	10.9	79.5	9.5	0.8
		StDev	0.4	0.4	0.1	0.1	0.0
10 Digester	11.0	Avg	9.3	10.7	79.4	9.8	0.9
		StDev	0.6	0.6	0.2	0.2	0.6
12 Digester	11.0	Avg	12.0	9.6	79.2	9.3	1.0
		StDev	6.3	1.9	0.2	0.2	0.5
13 Digester	11.0	Avg	9.1	10.9	79.3	9.8	0.9
		StDev	0.2	0.4	0.1	0.1	0.1
14 Digester	10.0	Avg	9.3	10.6	79.0	10.0	1.1
		StDev	0.6	0.6	0.3	0.3	0.3

Ad-hoc Mill Process Engineering Support

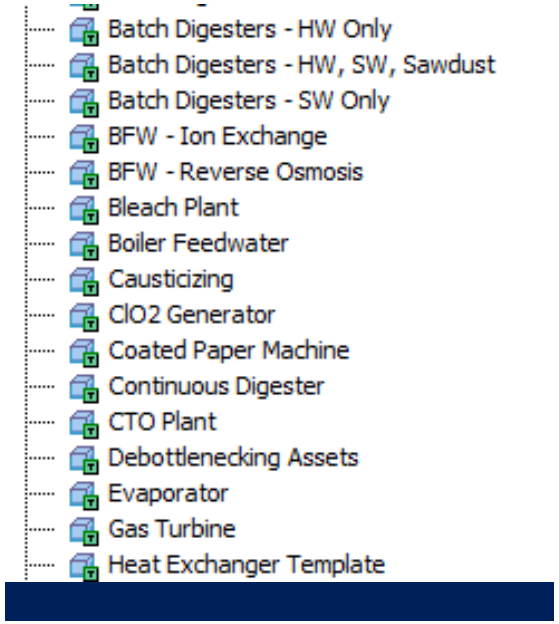
Need - Fleet Wide Monitoring and Benchmarking



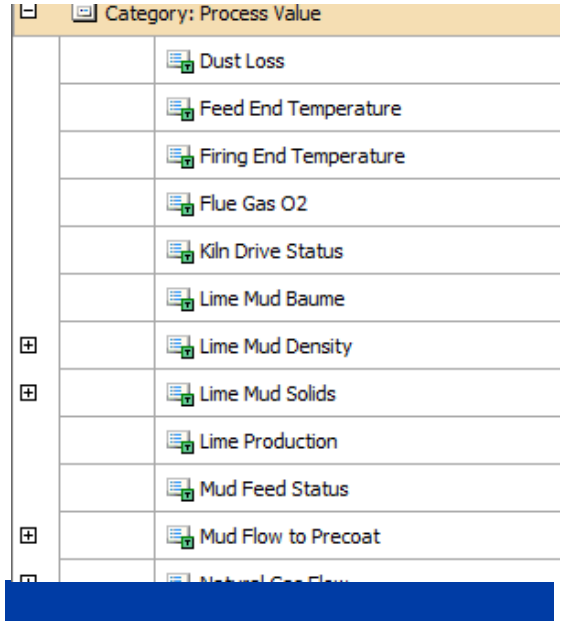
- Challenge – Leverage wide scale use of AVEVA PI System data historians to understand gaps, improve mill performance, and lower operating costs
  - Create tools for the mills to benchmark their operational performance against the rest of the fleet on demand

Solution – Element Templates in AVEVA™ PI Server's 'Asset Framework' (AF)

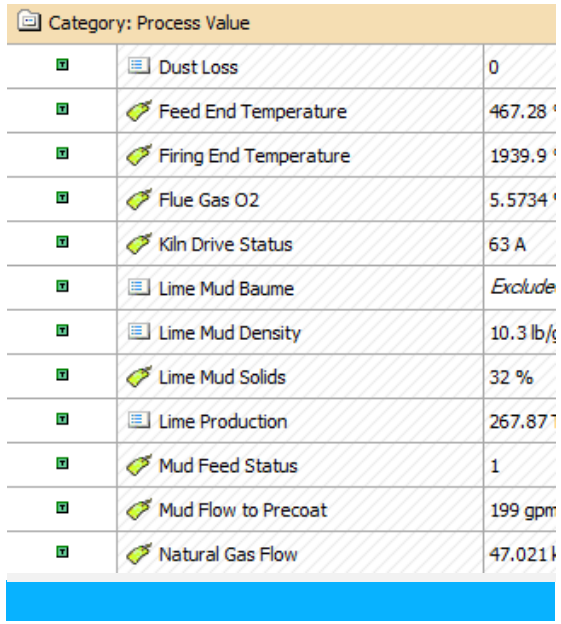
Central Mill AF Database Build Process



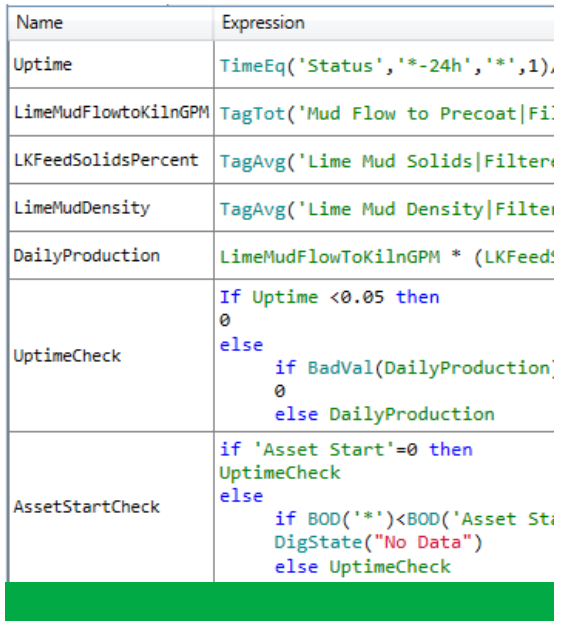
Created templates for every major asset type in the mill



Identified all key process values needed for each asset type



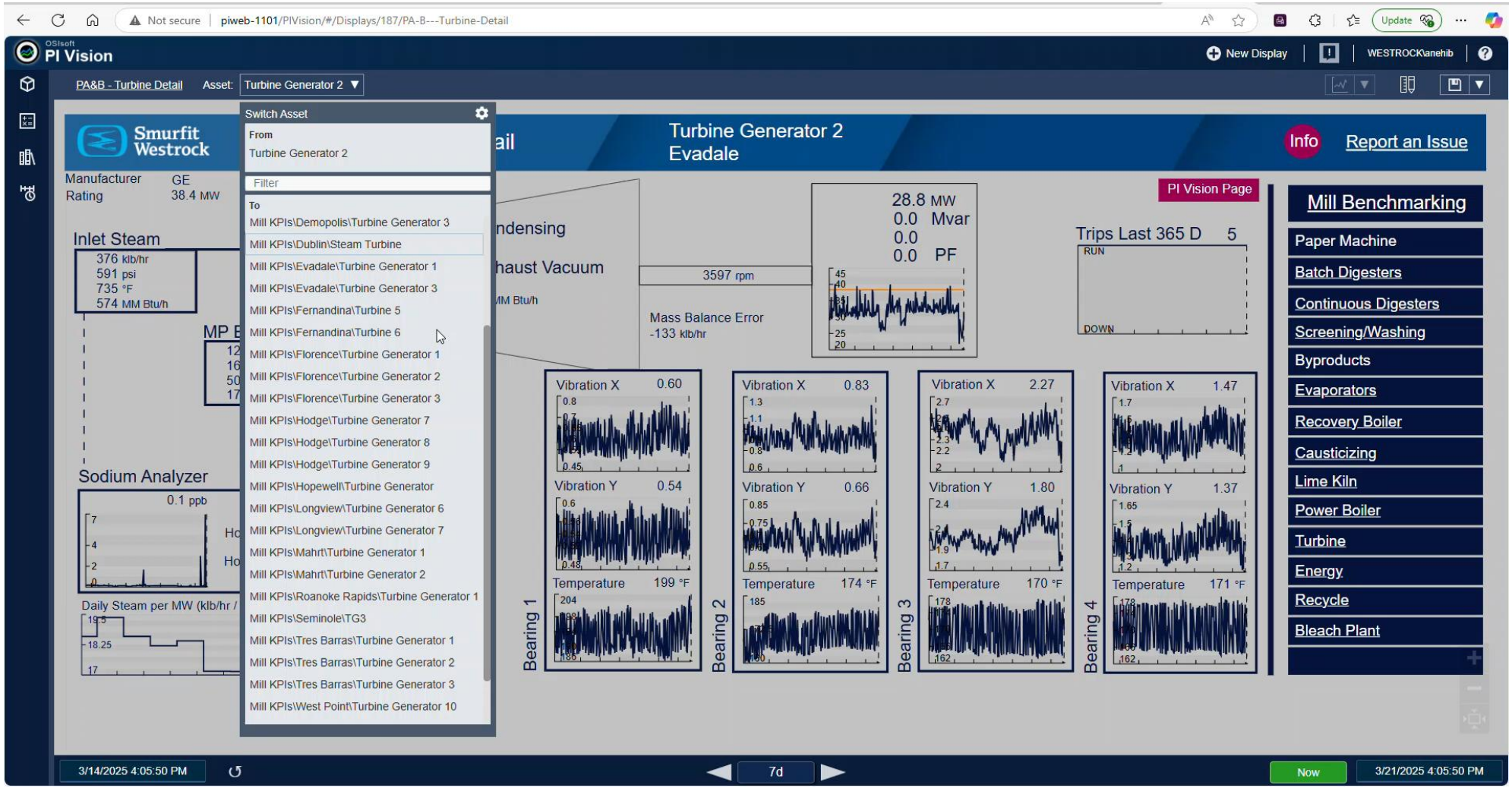
Collected PI tags for every mill, every asset



Built standard analyses to calculate KPIs for each asset type

Solution – AVEVA™ PI Vision™ Asset Displays

Using template attributes, a single display can be used to view PI data for all assets of same type



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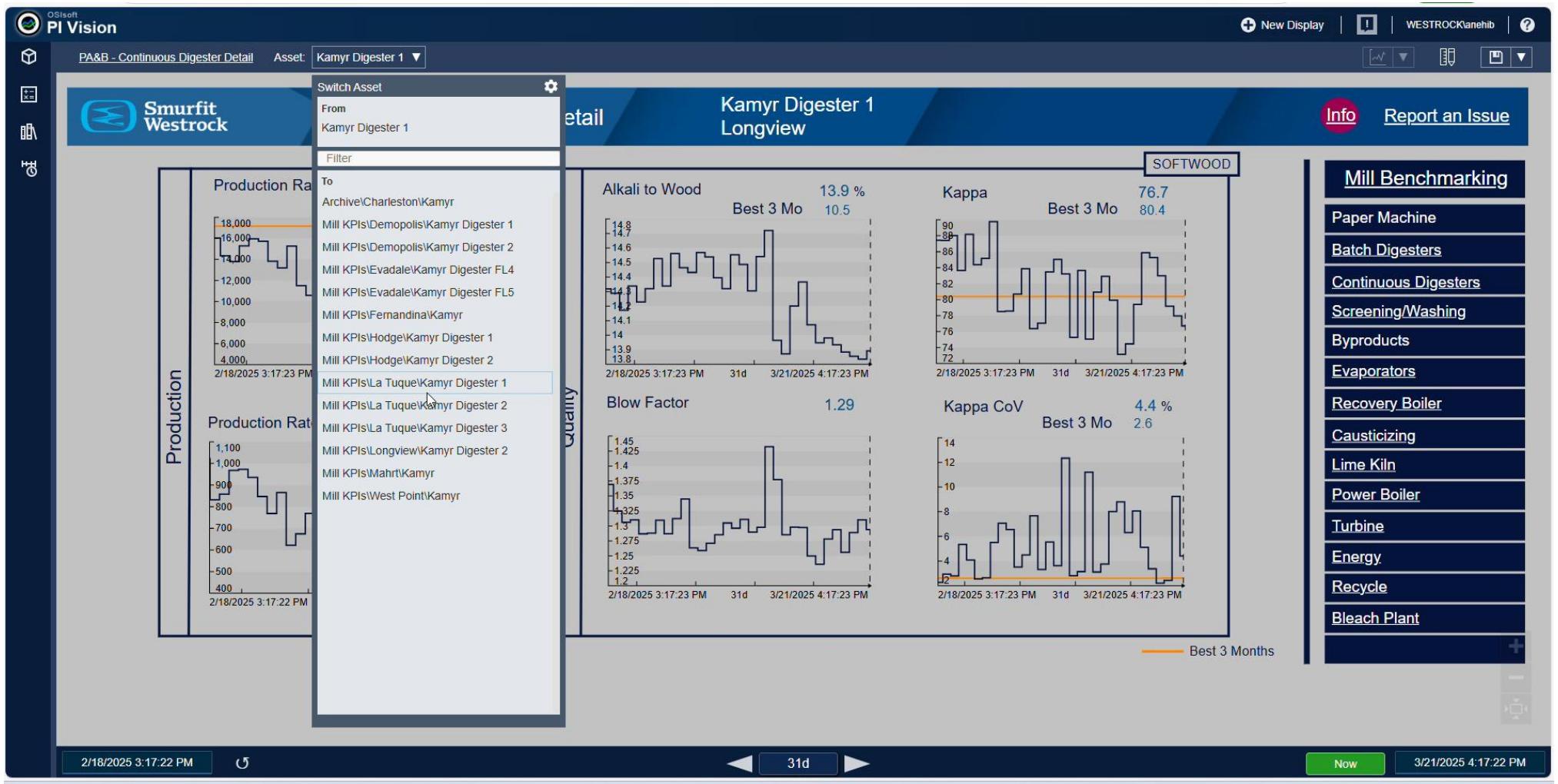

Solution – AVEVA PI Vision Asset Displays

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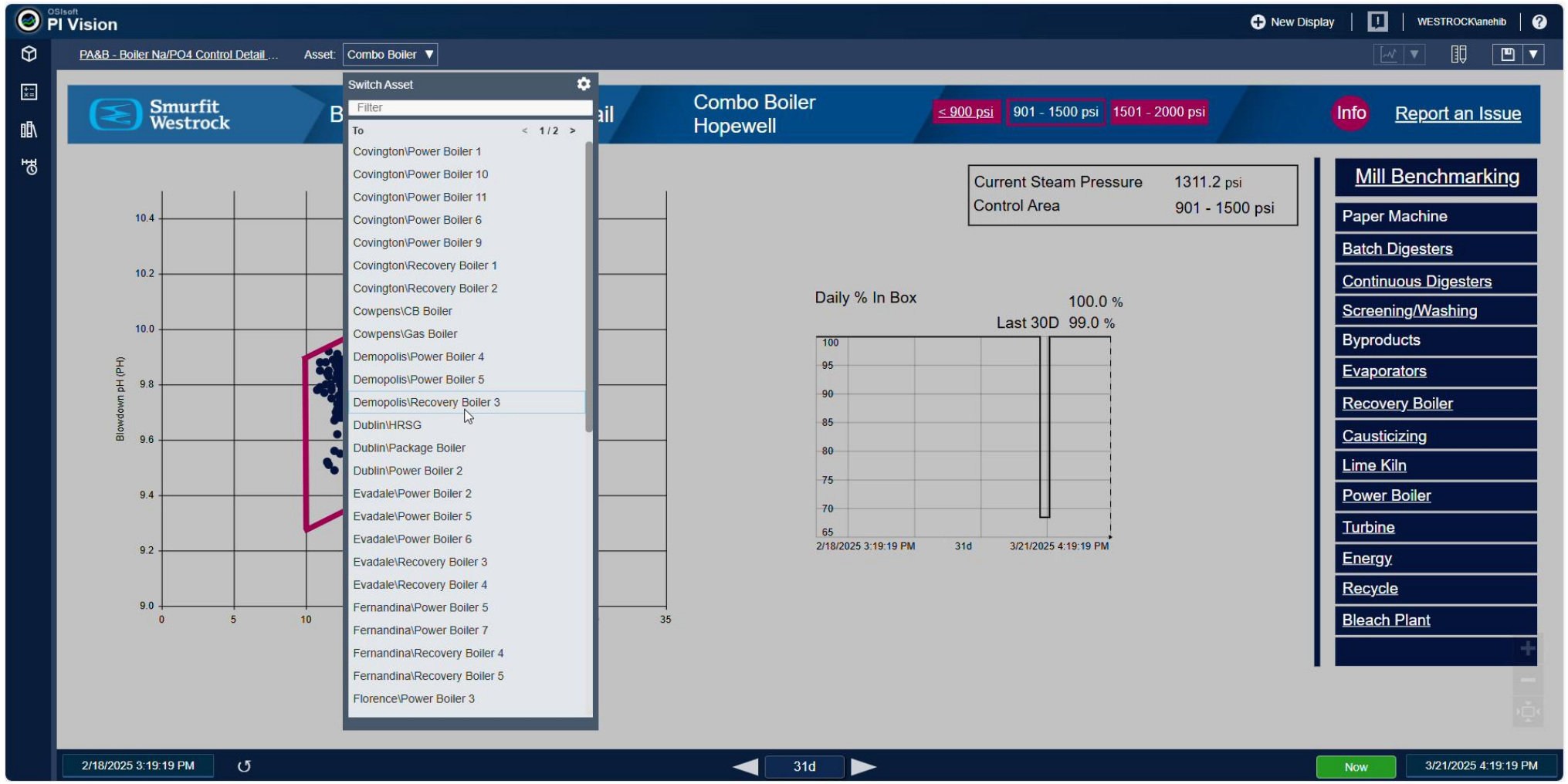
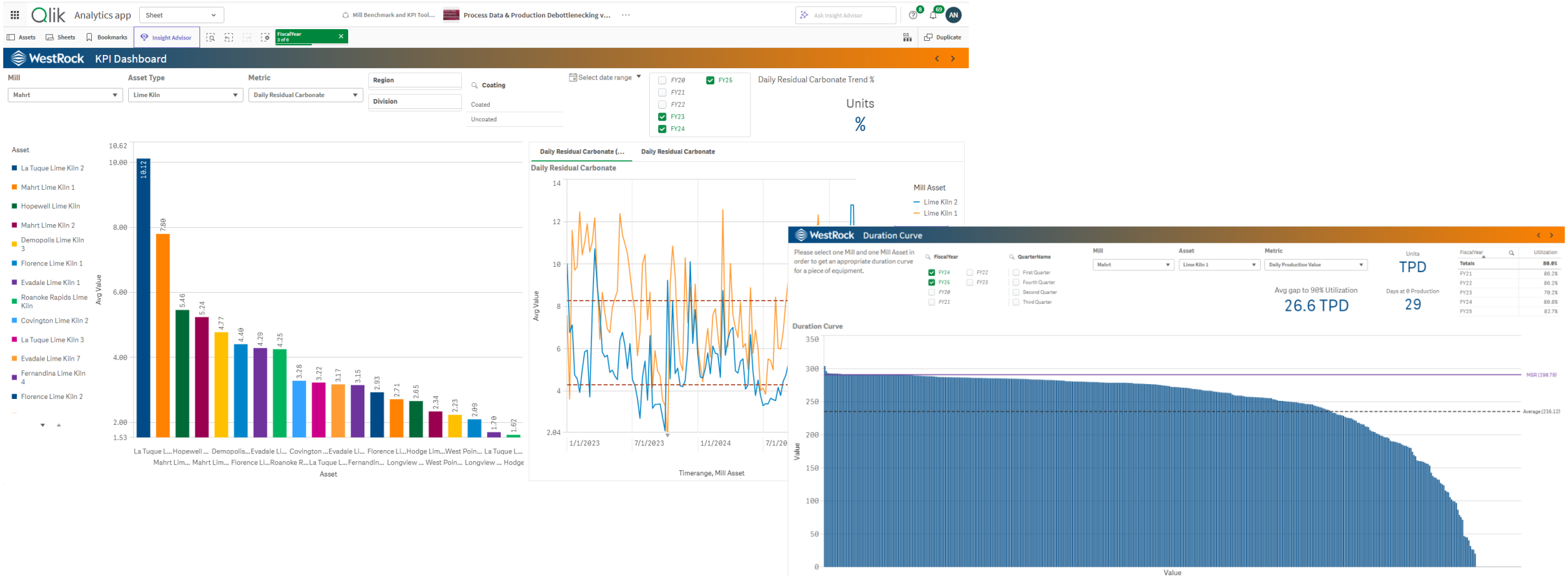


Solution – Using AVEVA PI Web API to View Data in BI Tools

Calculated benchmarking metrics are pulled into BI Tools using PI Web API and data is joined with other sources (Finance, Production/MES, Downtime, etc.)



Benefits – Fleet Wide Benchmarking Tools

Alignment on KPIs and Standard Calculations

- Everyone speaking the same data language
- Visibility to critical instrumentation

Easily Scalable and Expandable

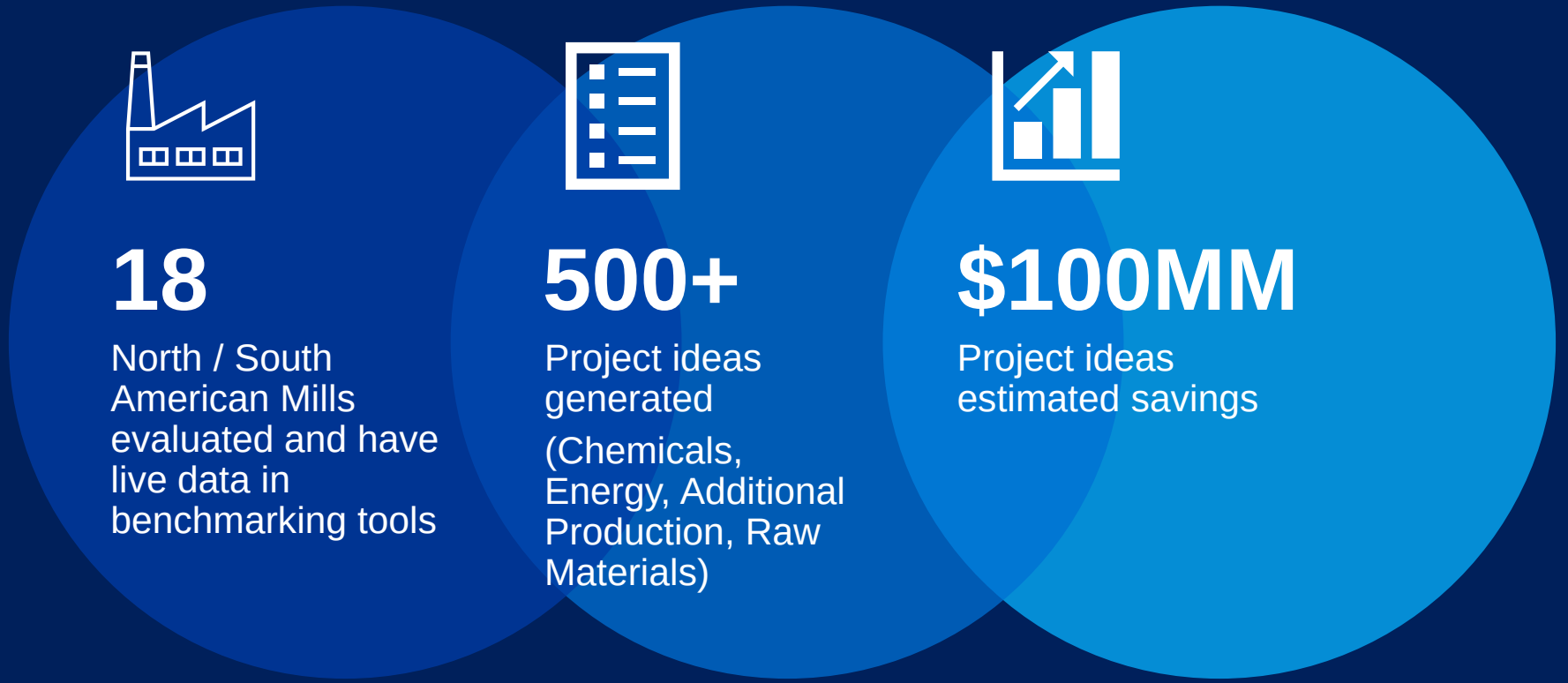
- Can quickly add new metrics and analyses
- Add PI Vision displays or BI visualizations to suit any customer (mill, corporate, vendor)

Dynamic, Live Benchmarking Tools

- Used in on site benchmarking sessions to generate project ideas
- Relieve countless process engineer man-hours data collecting and standardizing
- **On-Demand data**

Benchmarking Project

Benchmarking tools were key to identifying mill gaps and project prioritization



18

North / South American Mills evaluated and have live data in benchmarking tools

500+

Project ideas generated

(Chemicals, Energy, Additional Production, Raw Materials)

$100MM

Project ideas estimated savings

Smurfit Westrock

PULP, PAPER AND FOREST PRODUCTS | AMERICAS

Smurfit Westrock identifies $100MM in cost reduction opportunities by benchmarking fleet

Challenge

- Mill process data visibility and access
- Desire for regular on-demand fleet benchmarking
- Limited resources at both mill and corporate level for data collection and analysis

Solution

- Utilize PI AF element templates to build a central AF database with all major assets in the fleet

Results

- **Alignment on KPIs and Standard Metrics**
- **Easily scalable and expandable**
- **Dynamic, live Benchmarking Tools on demand**

Questions

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