Remote Operations Viewing and Data Sharing using OSIsoft Cloud Services (OCS)

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11/19/2020

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OSIsoft Cloud Services Successes Agenda

- Unilever and Kilbourn Site Overview
- Site Challenges
- OCS use at Kilbourn
- Lighthouse Summary

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Unilever

Slogan - “Feel Good, Look Good, and get more out of life”

Vision

Unilever has a simple but clear purpose – to make sustainable living commonplace.

Value & Principles

To succeed requires "the highest standards of corporate behavior towards everyone we work with, the communities we touch, and the environment on which we have an impact.“

Strategy

To achieve our purpose of making sustainable living commonplace

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Who We Are

161,000 employees

28 Sustainable Living brands

49% of management are women

€51 billion turnover in 2018

400 brands in 190 countries

No. 1 employer of choice in 50 markets in 2018

2.5 billion people use Unilever products to feel good, look good and get more out of life

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Unilever Kilbourn Site Overview

- What do we make?
  - 5 product Formulas
  - 7 Lines, 14 Product Sizes
    - 0.32 Oz Portion Packs to 2,000 Pound Totes

- 196k Sq. Ft – Production and Packaging
  - Minimal warehousing onsite
- Largest Unilever Dressings Factory in the World

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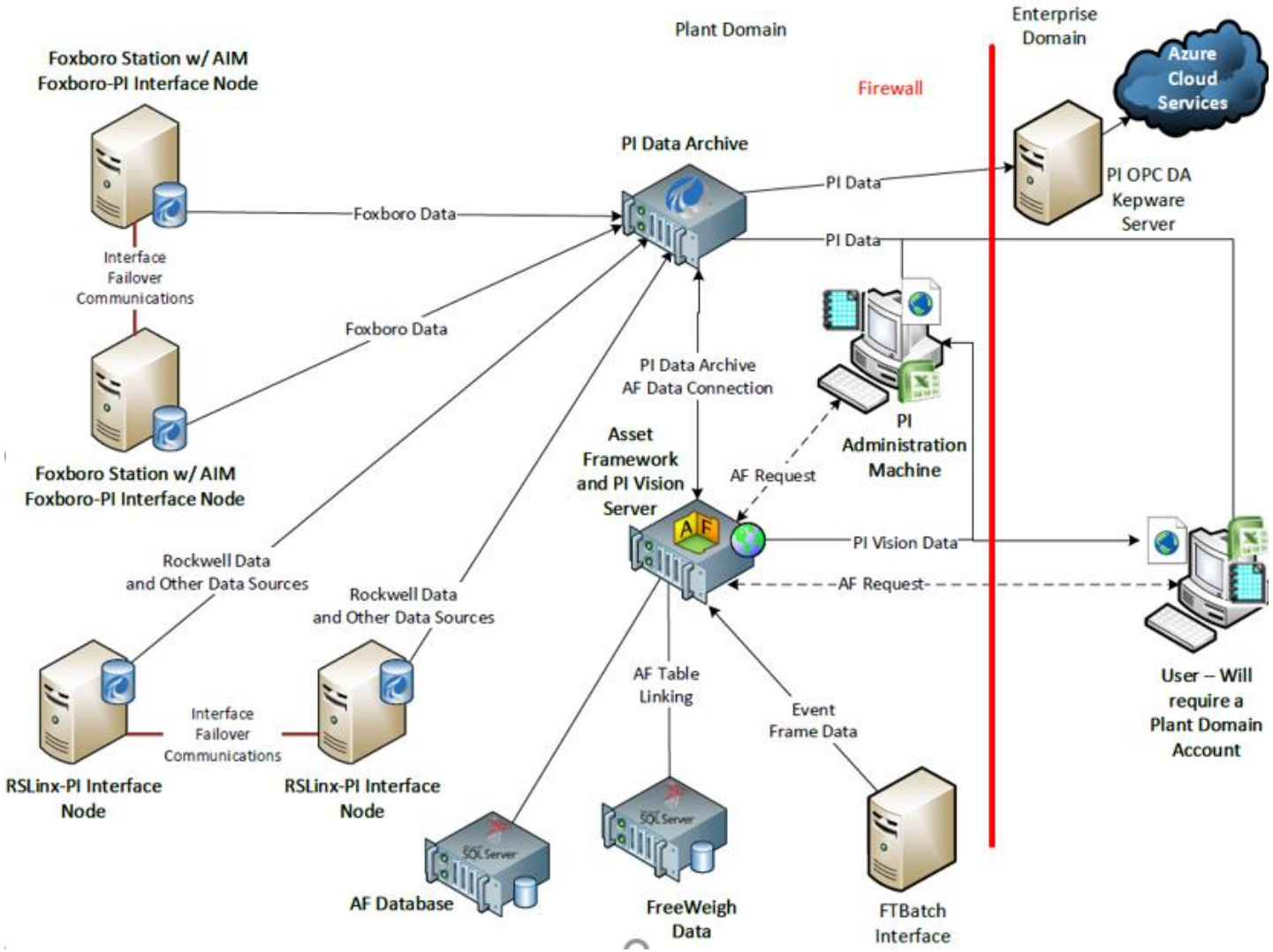
Current PI System - Overview

- 20,000 tag system
- 8,000 currently in use
  - 2000 Foxboro tags
  - 5000 Rockwell tags
  - 1000 Calculated tags
- 40 active Users
- Architecture
  - Redundant Interface Nodes
  - Standalone SQL Standard
  - Standalone PI Data Archive Server
  - Asset Framework and PI Vision Server
- MettlerToledo Quality data
- FactoryTalk Batch Event data



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Stone Technologies, Inc.

Systems Integrator

Marc Gallant, VP: Digital Transformation
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The Challenge – Accessing Data from the Outside

- Areas of Importance
  - **Quick Access**
  - **Contextualization**
  - **Visualization**
- Global Initiative
- PI Vision from Outside
  - Limited Flexibility
- Transitioning to Power BI
- Sharing Trend

Kilbourn Plant

Largest Unilever Dressings Factory in the world

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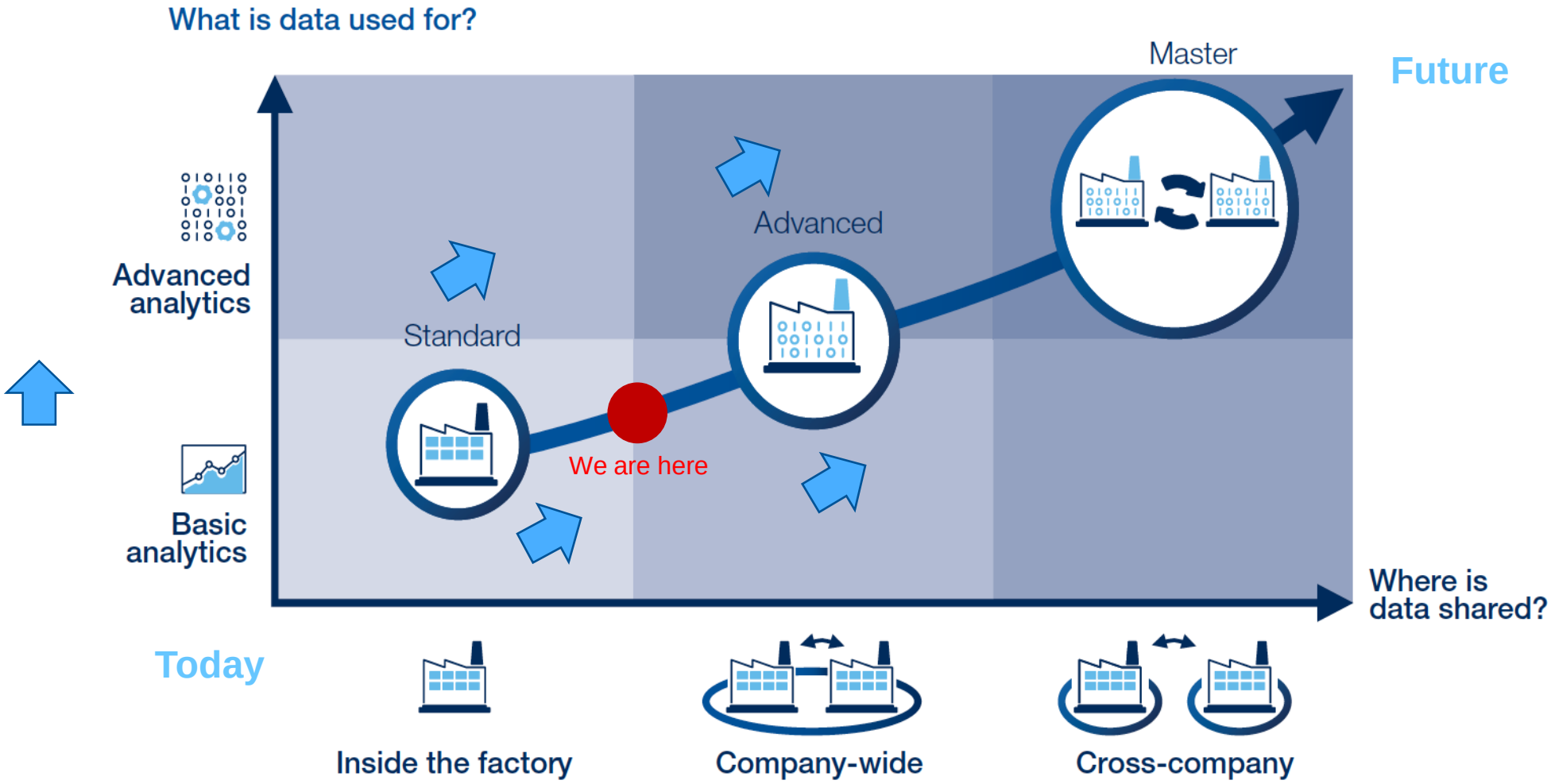
Data Sharing Within the Plant and Across Enterprise



SOURCE: https://www.bcg.com/publications/2020/manufacturers-unlock-value-from-data-sharing

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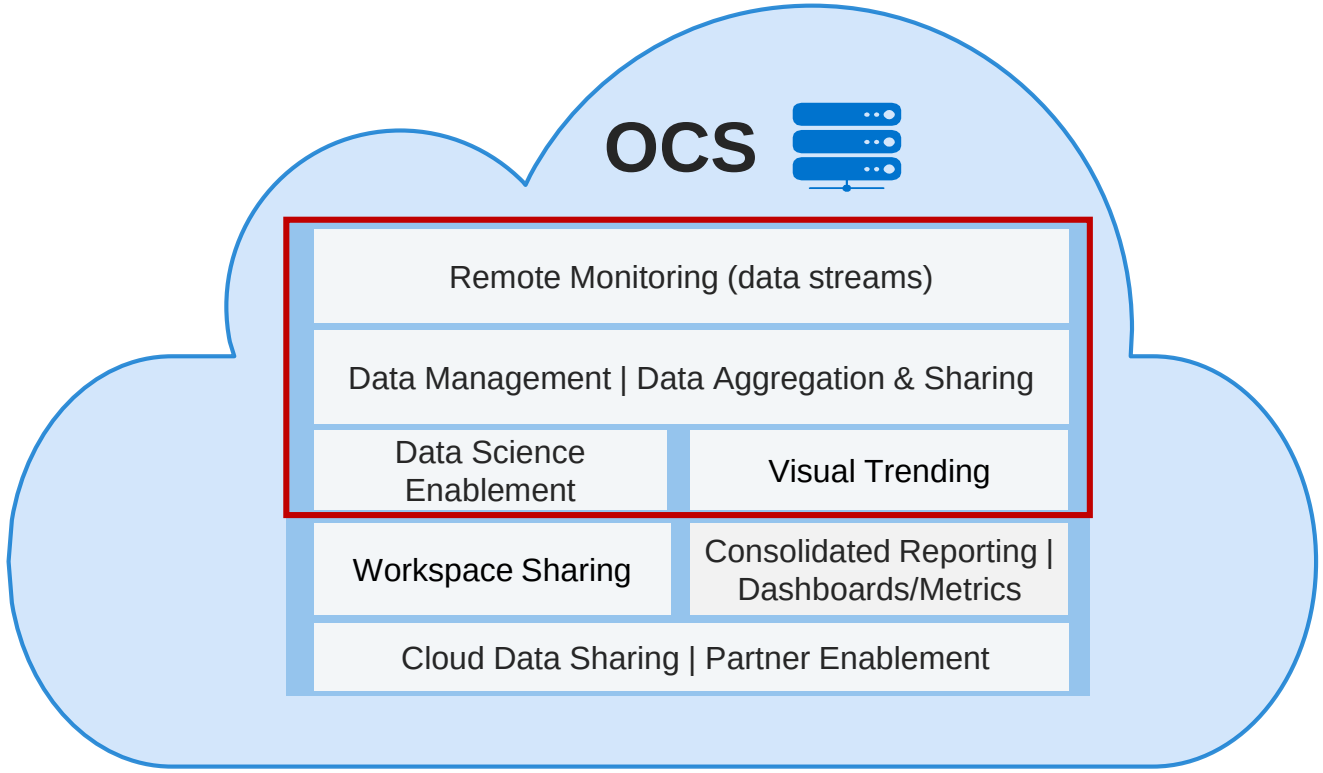
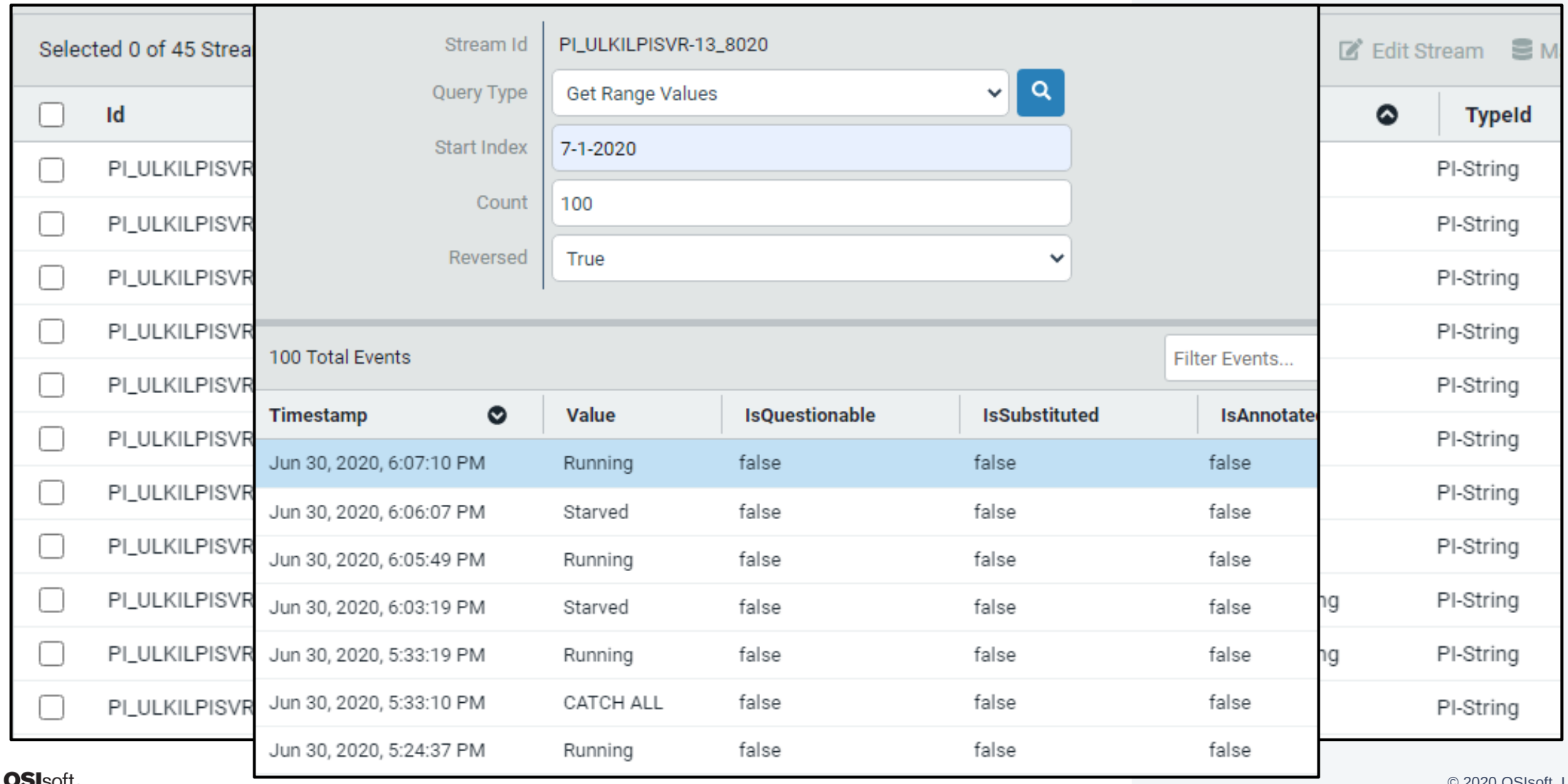


OCS bridges OT & IT Domains

Remote Monitoring of Data Streams



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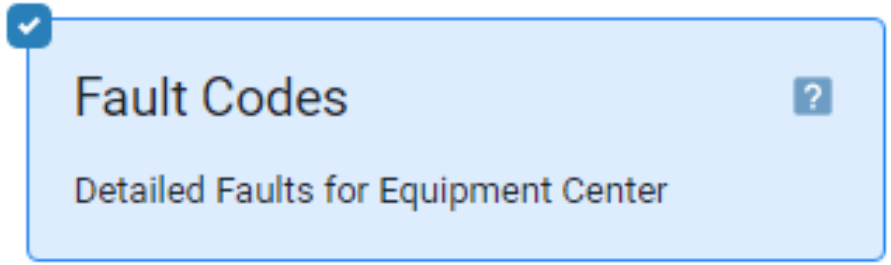
Data Management, Data Aggregation, and Sharing



Measurement	Last Value	UOM	Timestamp
ALinePackaging.Bander.FaultCodeString	MACHINE NOT SELECTED	---	11/17/2020 7:08:59 PM
ALinePackaging.Capper.FaultCodeString	Running	---	11/17/2020 11:23:05 PM
ALinePackaging.Depalletizer.FaultCodeString	Running	---	11/17/2020 11:31:05 PM
ALinePackaging.Filler.FaultCodeString	Running	---	11/17/2020 11:23:08 PM

- User Created assets
  - Buckets/Containers of PI Streams
- Assets to Trends
- Assets to Power BI
- View Last Value with Timestamp

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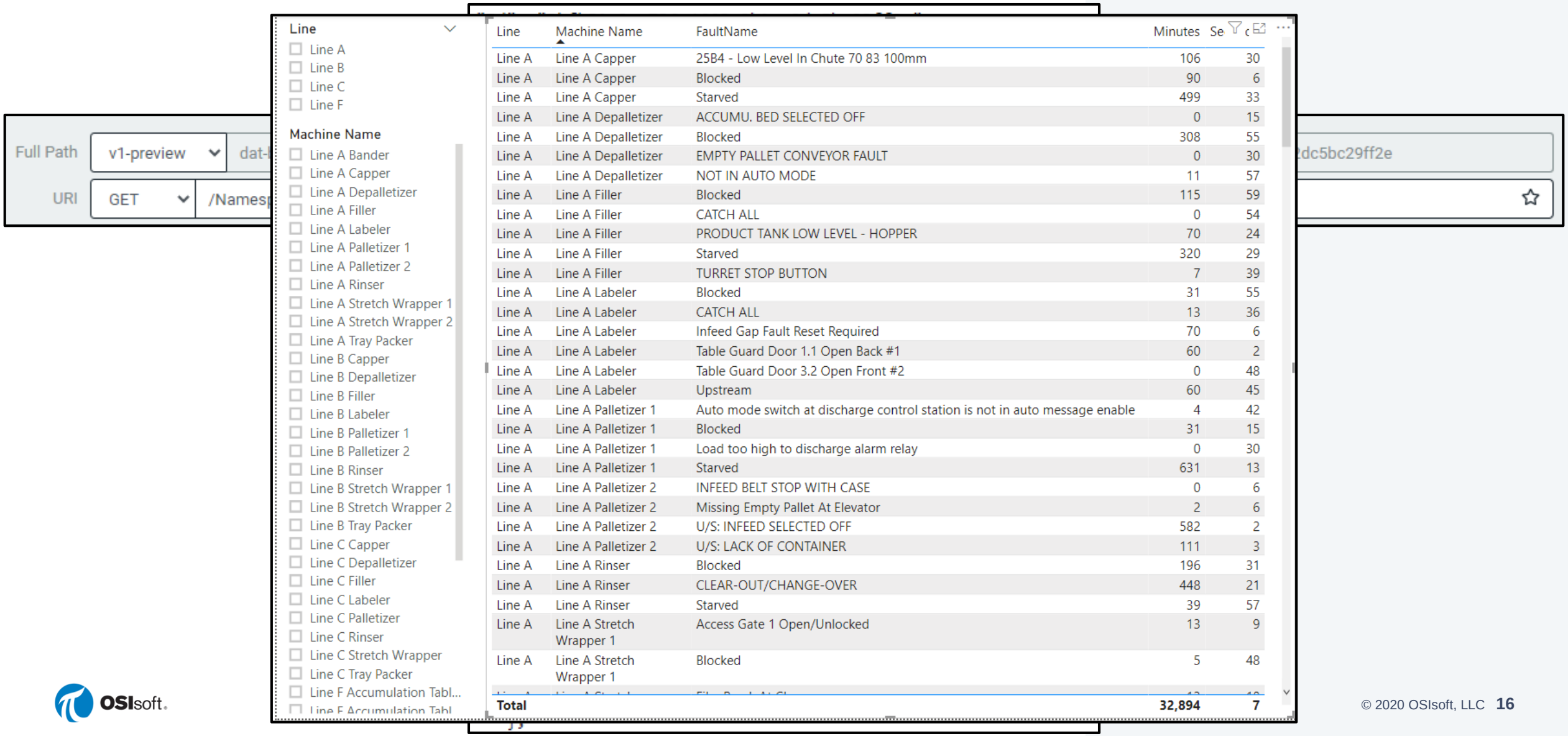
Data Science Enablement using OCS Rest API



Line	Machine Name	FaultName	Minutes	Se
Line A	Line A Capper	25B4 - Low Level In Chute 70 83 100mm	106	30
Line A	Line A Capper	Blocked	90	6
Line A	Line A Capper	Starved	499	33
Line A	Line A Depalletizer	ACCUMU. BED SELECTED OFF	0	15
Line A	Line A Depalletizer	Blocked	308	55
Line A	Line A Depalletizer	EMPTY PALLET CONVEYOR FAULT	0	30
Line A	Line A Depalletizer	NOT IN AUTO MODE	11	57
Line A	Line A Filler	Blocked	115	59
Line A	Line A Filler	CATCH ALL	0	54
Line A	Line A Filler	PRODUCT TANK LOW LEVEL - HOPPER	70	24
Line A	Line A Filler	Starved	320	29
Line A	Line A Filler	TURRET STOP BUTTON	7	39
Line A	Line A Labeler	Blocked	31	55
Line A	Line A Labeler	CATCH ALL	13	36
Line A	Line A Labeler	Infeed Gap Fault Reset Required	70	6
Line A	Line A Labeler	Table Guard Door 1.1 Open Back #1	60	2
Line A	Line A Labeler	Table Guard Door 3.2 Open Front #2	0	48
Line A	Line A Labeler	Upstream	60	45
Line A	Line A Palletizer 1	Auto mode switch at discharge control station is not in auto message enable	4	42
Line A	Line A Palletizer 1	Blocked	31	15
Line A	Line A Palletizer 1	Load too high to discharge alarm relay	0	30
Line A	Line A Palletizer 1	Starved	631	13
Line A	Line A Palletizer 2	INFEED BELT STOP WITH CASE	0	6
Line A	Line A Palletizer 2	Missing Empty Pallet At Elevator	2	6
Line A	Line A Palletizer 2	U/S: INFEED SELECTED OFF	582	2
Line A	Line A Palletizer 2	U/S: LACK OF CONTAINER	111	3
Line A	Line A Rinser	Blocked	196	31
Line A	Line A Rinser	CLEAR-OUT/CHANGE-OVER	448	21
Line A	Line A Rinser	Starved	39	57
Line A	Line A Stretch Wrapper 1	Access Gate 1 Open/Unlocked	13	9
Line A	Line A Stretch Wrapper 1	Blocked	5	48
Total			**32,894**	**7**

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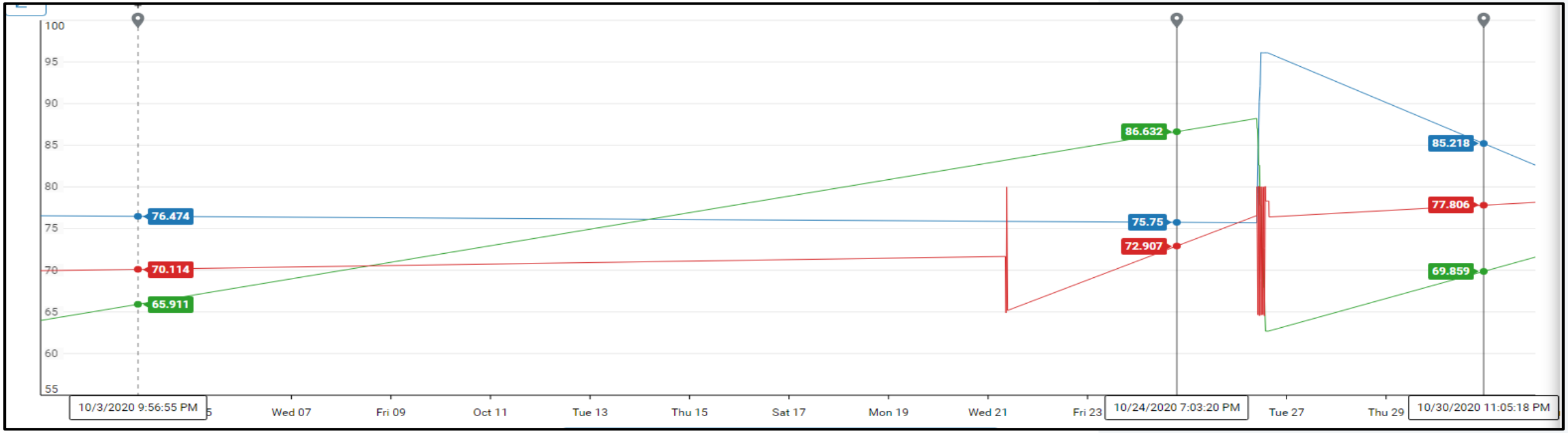
Visual Trending



Name	Timestamp	Value	UOM	Min	Max	Avg
Silos.YS5010Oil.Level.LT5011.PV | Value	10/26/2020 2:55:19 PM	96.099		75.694	96.138	80.161
Silos.YS5020Oil.Level.LT5021.PV | Value	10/26/2020 3:12:19 PM	62.688		62.678	88.226	63.812
Silo1.SoyOil.Level.LBT_256.PV | Value	10/26/2020 3:35:10 PM	76.393		64.514	80.088	70.333

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CUSTOMER RESULTS

Enterprise-wide Data Sharing and Visibility

Challenge

- Needed transparency into why and where top plant losses were occurring - essential to improving plant efficiencies
- Plant employees had limited access to raw data to make informed decision
- Data that was accessible, was difficult to decipher

Solution

- Self-service visualization with OCS to identify significant problems in filling lines
- Processing and packaging data sent to OCS to improve situational awareness within plant
- Enabled shared data access for plant and corporate stakeholders

Benefits

- **Gained visibility into manufacturing lines where top losses were occurring**
- **Can view trending datasets in PowerBI (big win)**
- **Competition did not have OT contextual awareness or a platform (they'd have to build it)**

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