Evolution of Data Collection and Reporting for FiberLean Technologies

Dr. Richelieu Barranco

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Agenda

FiberLean Technologies

1. About FiberLean Technologies and parent companies
2. Business Challenge
3. Our Infrastructure and Process Evolution
4. Our Global Vision
5. Global and Local Network Architecture
6. AF Structure and Dashboards
7. Future Work and Summary

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About Us

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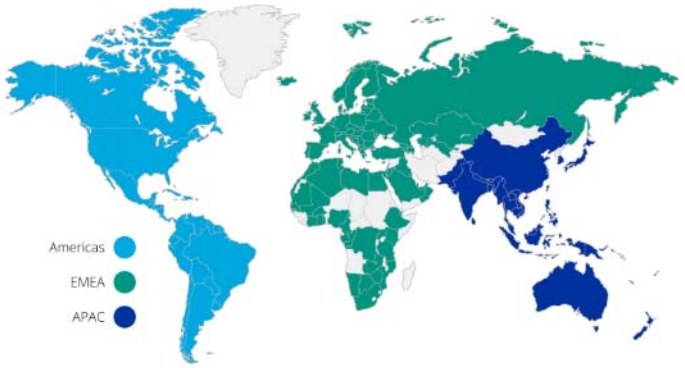
Imerys – Company Profile

- Imerys is a French multinational company
- Founded in 1880
- Headquarters in Paris
- A world leader in mineral-based specialties

2019 Key Figures

€ 4.4 BN
Revenue

16,300
Employees



230
Industrial Sites

Paper and board

Imerys offers high value-added solutions to many different industries, ranging from process manufacturing to consumer goods

+50
Countries

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Omya – Company Profile

FiberLean Technologies

- Swiss multinational company
- Founded in 1884
- Corporate Head office in Oftringen, near Zurich
- A worldwide distributor of specialty chemicals

2019 Key Figures

8,000
Employees

+175
Industrial Sites

+50
Countries

Fillers and coating

Omya is a producer of industrial minerals, mainly fillers and pigments derived from calcium carbonate and dolomite

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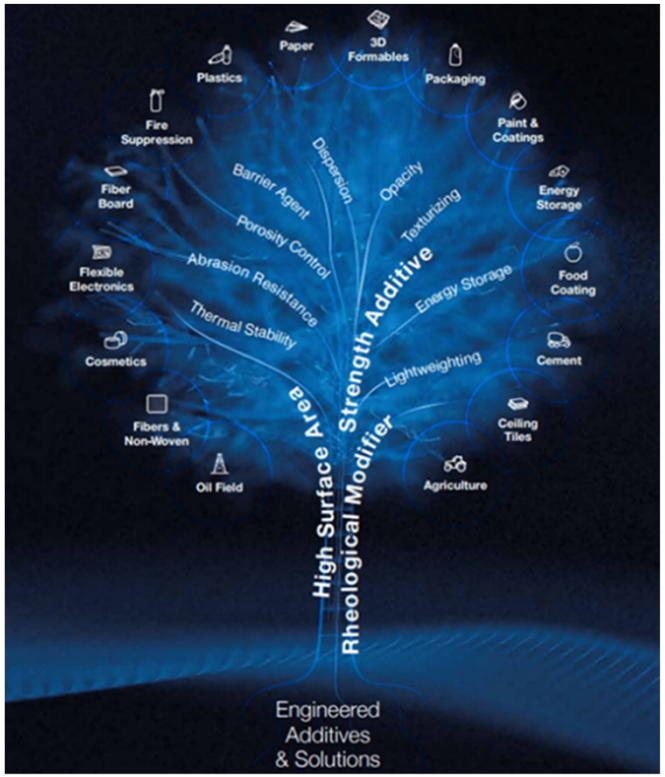
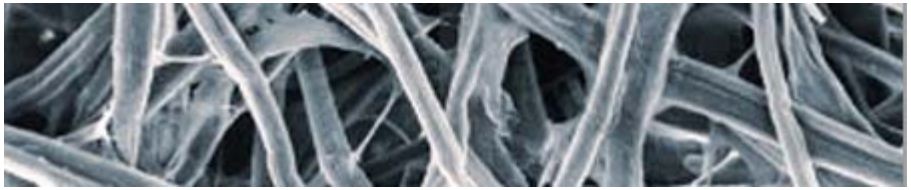
FiberLean® MFC



- FiberLean® MFC, Microfibrillated Cellulose, is a composite produced by co-grinding cellulose fibres with minerals, such as GCC, PCC or kaolin, based on a proprietary patented process
  (GCC/PCC: Ground/Precipitated CaCO3)
- Our mission is to further industrialise and proliferate the use of Micro and Nano Cellulosic Materials



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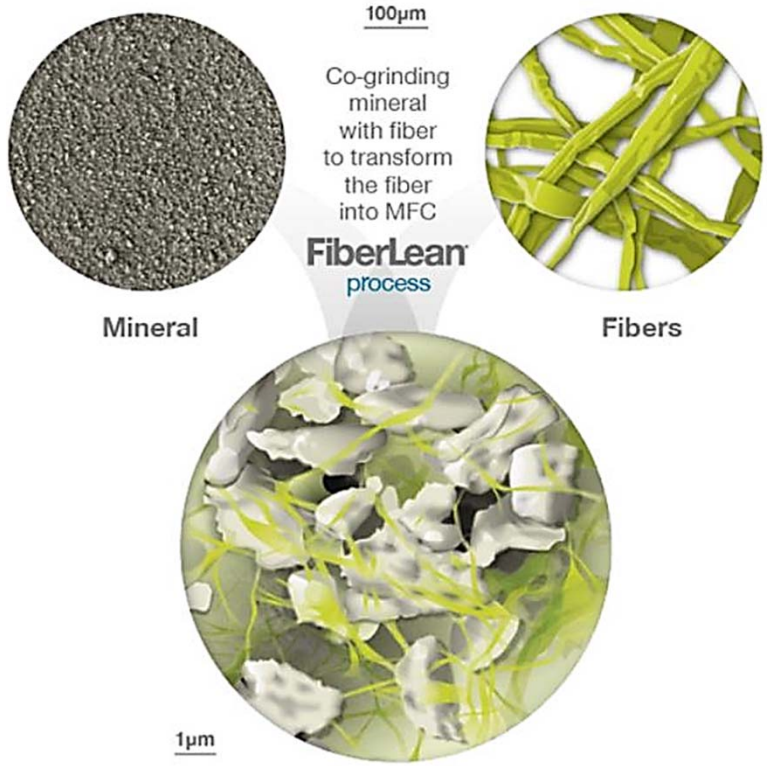
FiberLean® Process

- Our Process is robust, reliable and scalable
- Efficient: The mineral plays an essential role
- Flexible: Wide range of pulp species and minerals can be used
- Environmentally friendly: No chemical additives or pre-treatment is required



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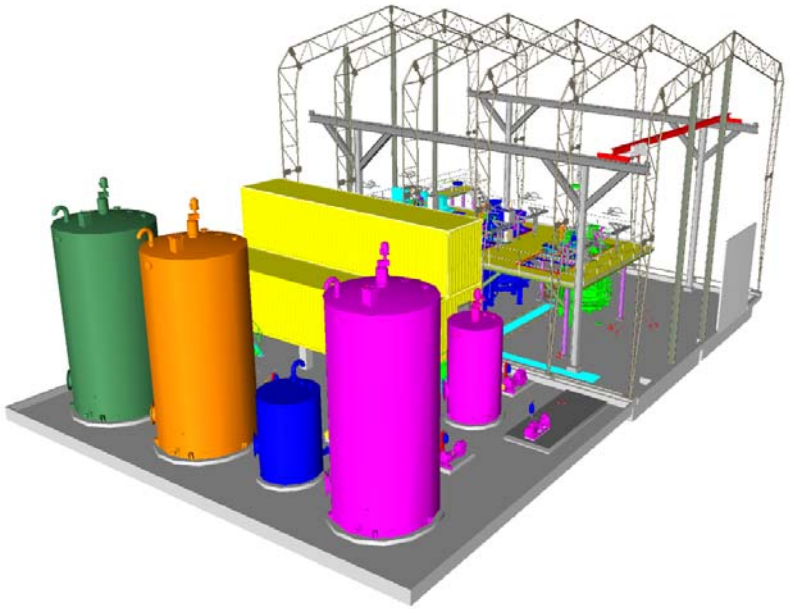
FiberLean® MFC Plant

FiberLean Technologies

- We have established full-scale commercial supply of MFC
- We are further expanding our global commercial reach using an innovative business model → onsite production
- Plants are available in different capacities ranging from 1000 to over 10000 tons of FiberLean® MFC/year
- The capacity and flexibility of the plants has made use of FiberLean® MFC in full-scale papermaking a reality.



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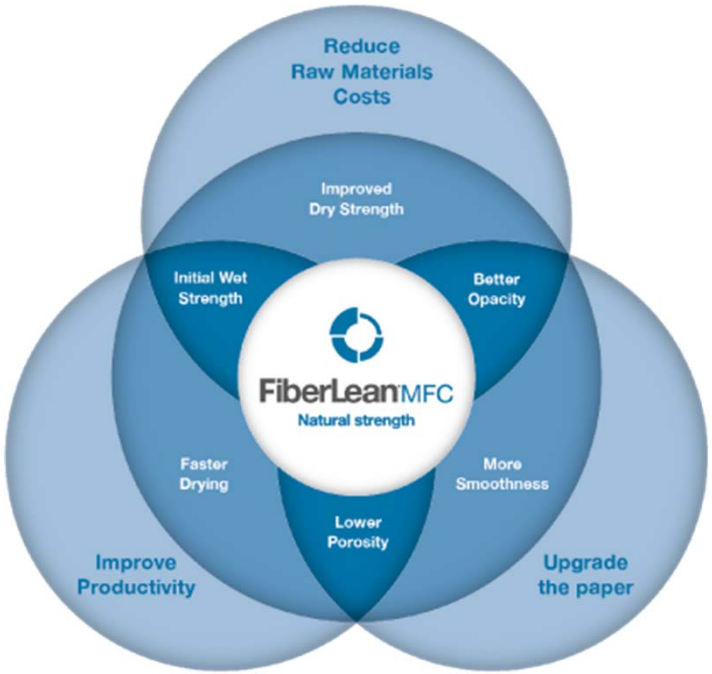
FiberLean® MFC Natural Strength

FiberLean Technologies

- Application of FiberLean® MFC typically allows replacing 10-15% of the fiber in the base paper
- FiberLean® MFC has a large surface area, thus allowing the formation of more hydrogen bonds within the web, giving natural strength to the paper
- FiberLean® MFC allows paper makers to reduce their raw material costs, to innovate and to develop new differentiated products
- The increased use of mineral gives better base paper opacity, brightness and improves the paper machine's drying performance



A new Dimension in Paper Making

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FiberLean® Current Plants

FiberLean Technologies

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Business Challenge

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- To deliver a reliable, scalable and sustainable data collection and reporting system
  - Convey the right type of information
  - To the right people within the organisation
  - At exactly the right time
- To capture plant performance
  - Able to send reports and alarms and any notifications automatically
  - Compare OEE, downtime, production, equipment data, etc

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Infrastructure and Process Evolution

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- Current system evolved based on leadership and determination towards being successful
- Product continuous improvement based on performance feedback from end users
- Plant design evolved through knowledge and implementation- batch process to continuous
- Standardisation then became important

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Infrastructure Evolution

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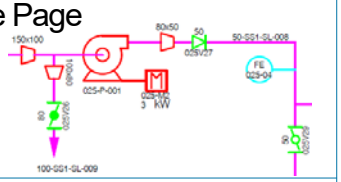
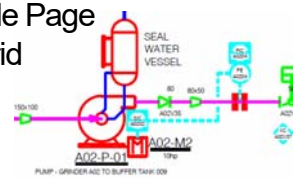
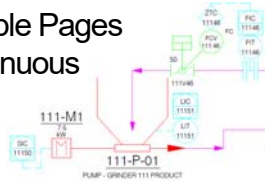
	Plant	HMI	Data	Access	*P&IDs/Process
DEVELOPMENT	Trebal				Single Page Batch 
	Galactus				Single Page Hybrid 
STANDARDISATION	Vixen Quicksilver				Multiple Pages Continuous
	Speedy				Multiple Pages Continuous 

*P&IDs: Process and Instrumentation Diagram

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Global Vision

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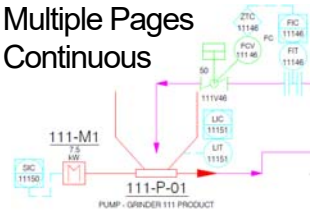
Plant	HMI	Data	Access	P&IDs/Process
Global				Multiple Pages Continuous 

Tag Nomenclature Examples	Plant ID_Asset ID_P&ID Page#_Asset #_Variable_Modifier_Units		
	GLO_P_001_02_P_KW	VIX_G_111_01_W_KG	SPE_LIT_150_09_HC_SP_PCT

Plant ID	Asset ID	P&ID Page#	Asset#	Variable	Modifier	Units
Global	Pump	001	02	Power	None	kW
Vixen	Grinder	111	01	Weight	None	kg
Speedy	Level Transmitter	150	09	HC Level	Set Point	Percent

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Local Network Architecture

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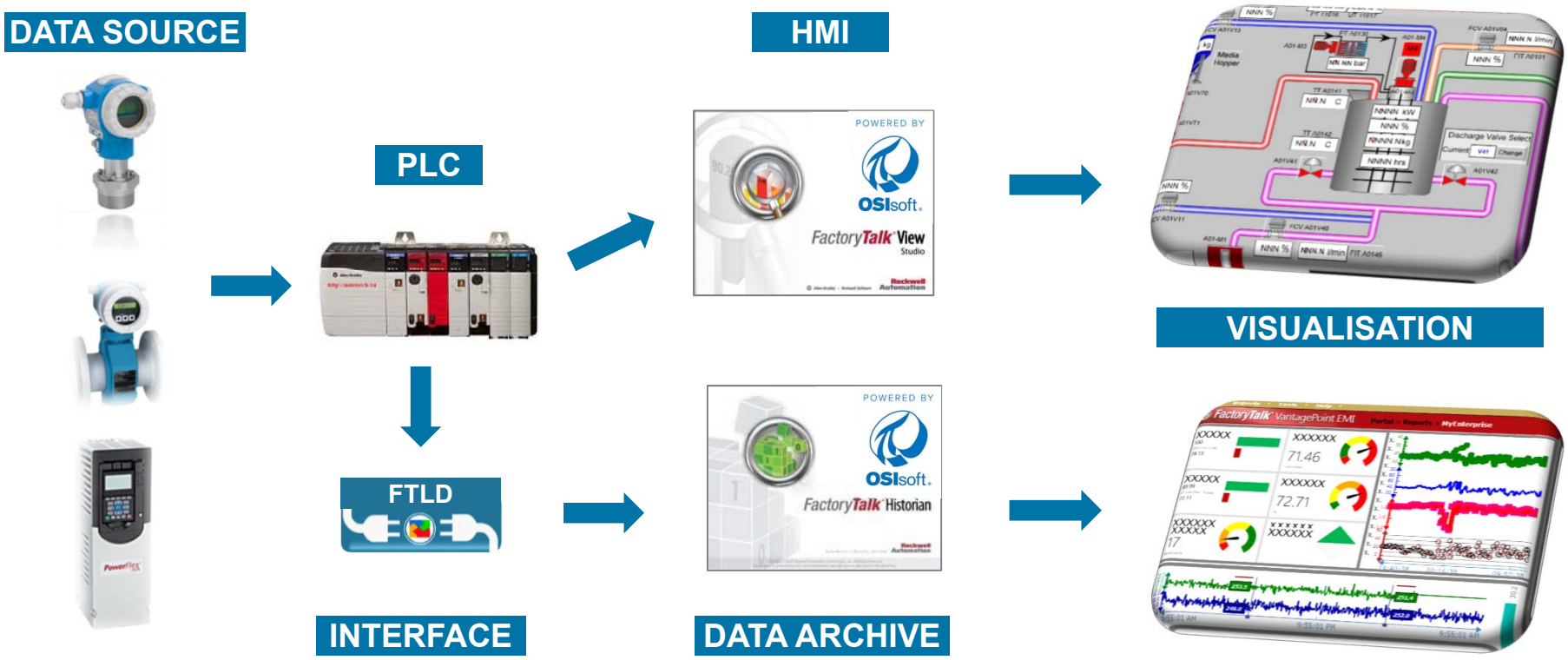

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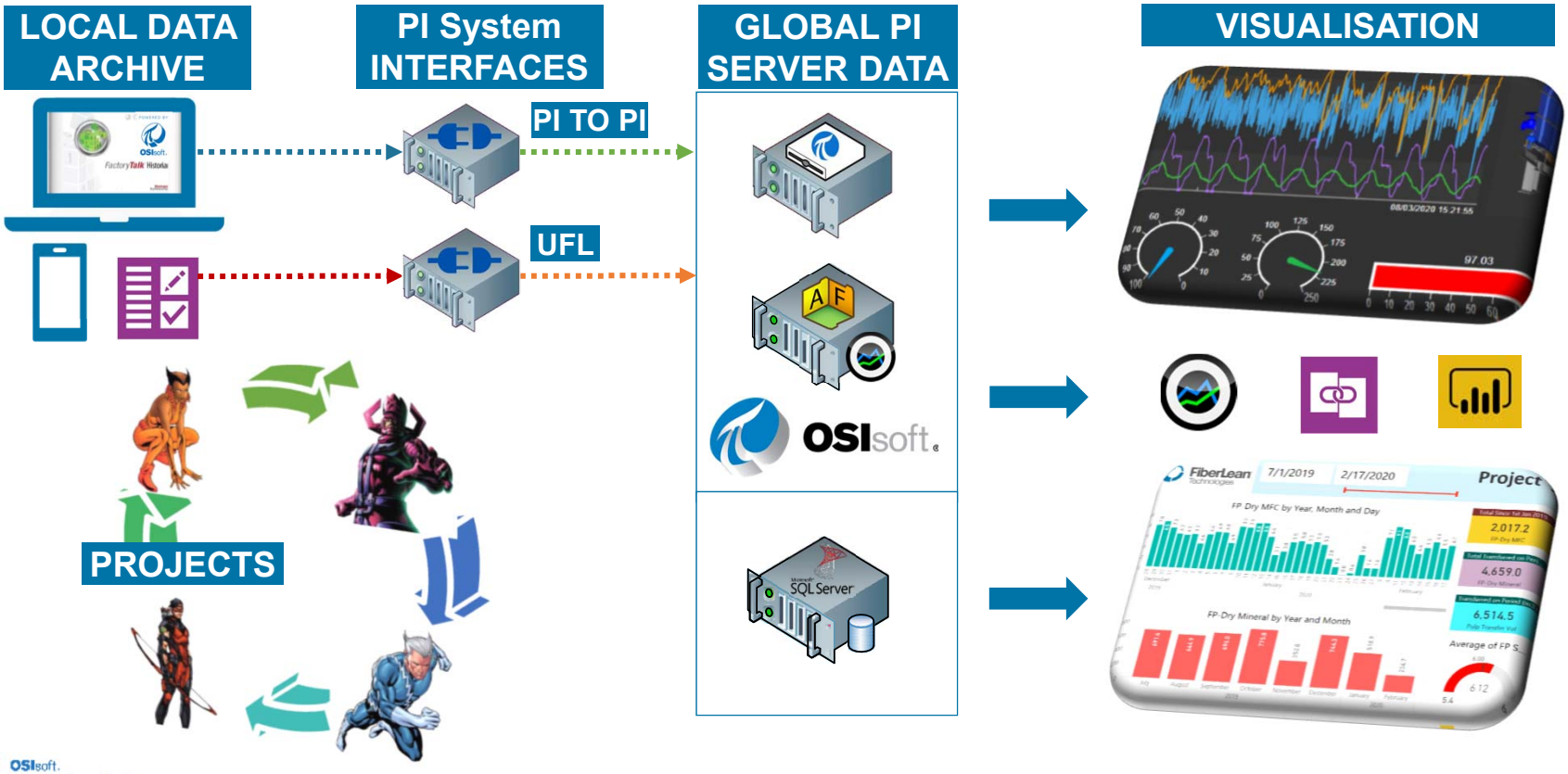
Global Network Architecture



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AF Database and Templates

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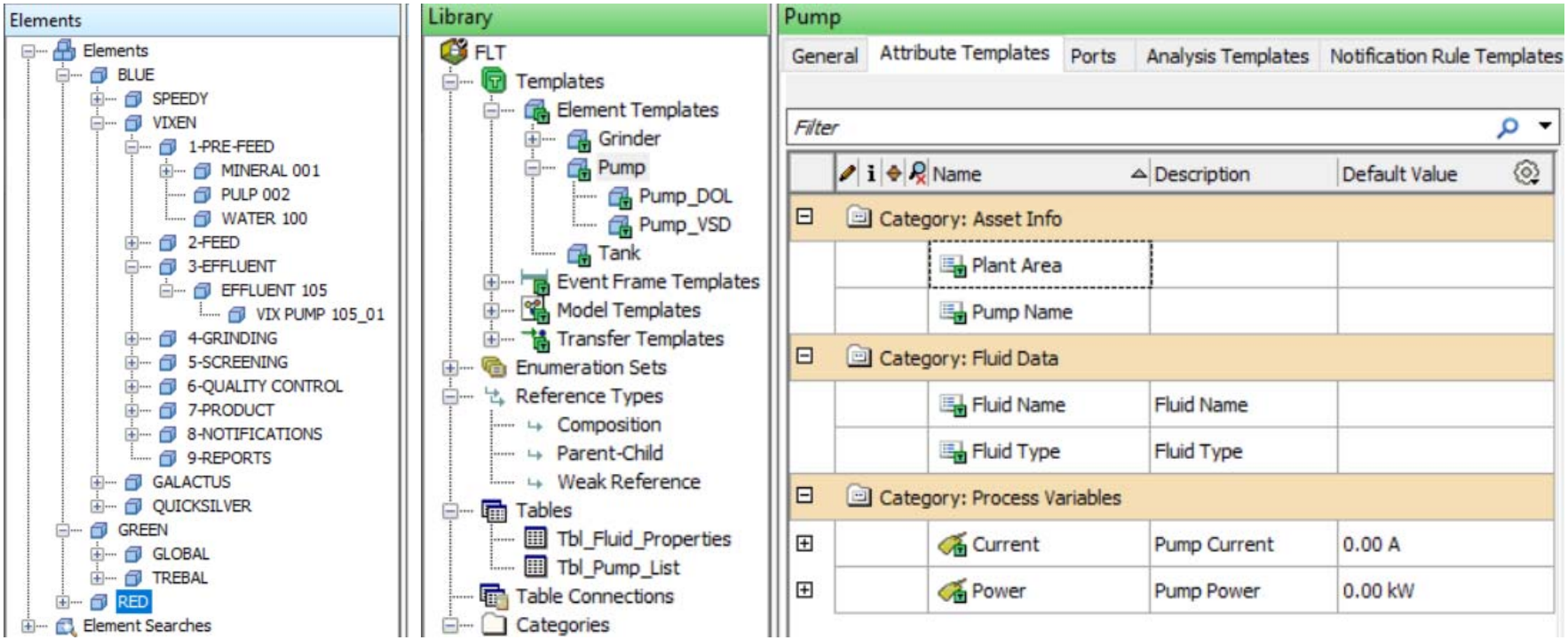

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Pump Trend Template

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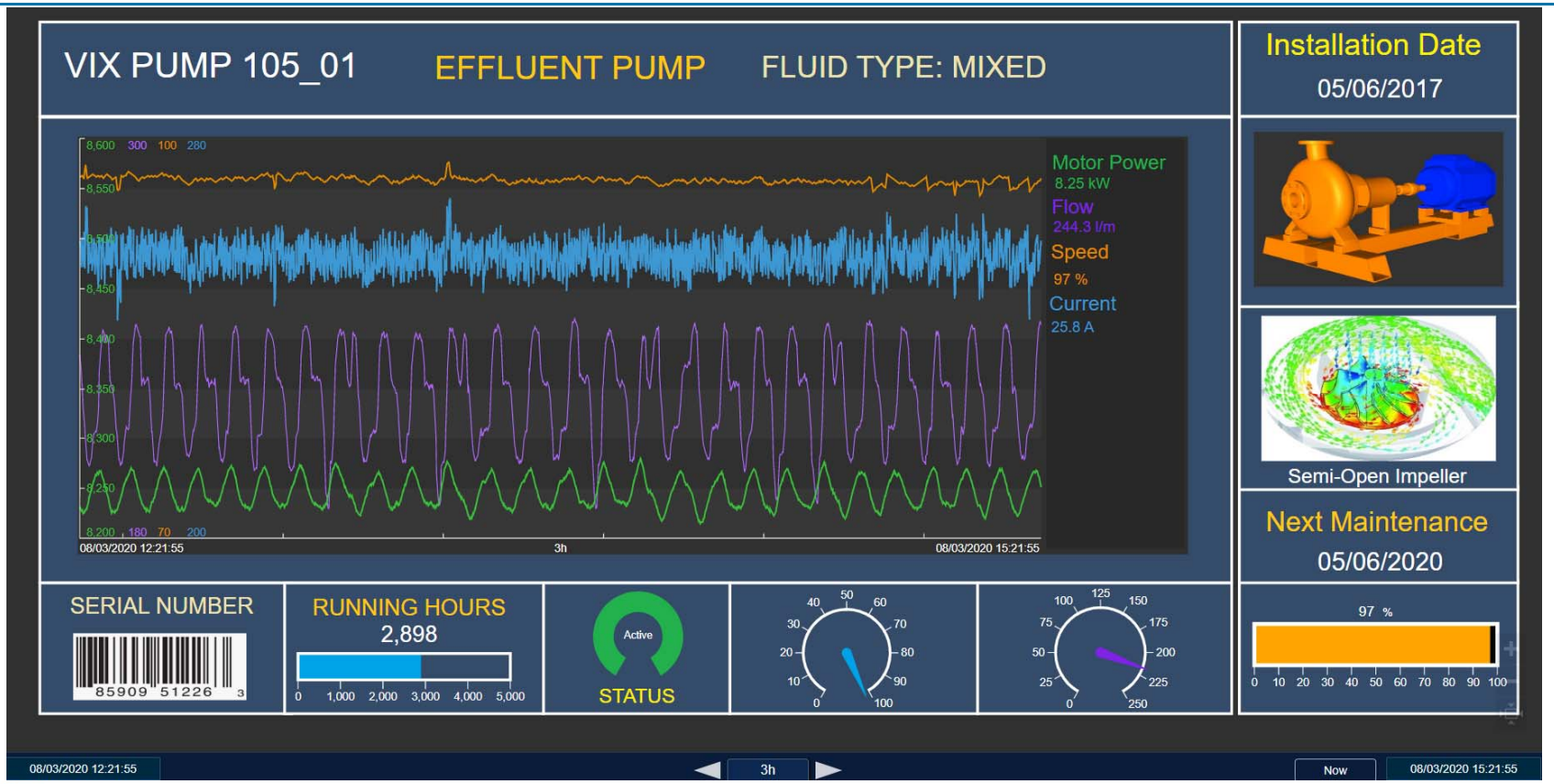

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Datalink – Lab Data Entry Instructions

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FiberLean Technologies	**DATA ENTRY INSTRUCTIONS** — Version 1, 10-June-2019
	Data is to be entered during the shift or at the end
1	Select you current Shift on Cell B6 (Drop Down List) SHIFT A - 06:00-14:00 SHIFT B - 14:00-22:00 SHIFT C - 22:00-06:00 Columns A <>"Date" and B <> " Time" are automatically updated for you
2	Enter the results for each of the samples you have analysed, in Column D Leave unavailable data points blank Make sure you check all of the results before the next step To help with this, pH and Conductivity limits have been set up to warn you pH: XXXXXX; Conductivity: XXXXXX µS/cm
3	Pres the "Update Historian" button - This will send all of your results to the Historian If you forgot to enter a value - you can still enter it and press the "Update Historian" button again If you realise you have entered a wrong value, correct it and press the "Update Historian" button again
4	After you have updated all the results from your current shift, you can then press the "Clear Results" button This will clear all the entries in the results column and populate the outcome column. Ready for the next Shift
	Please note that all cells but the Shift Drop Down and the Results Column are locked

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Datalink – Lab Data Entry Sheet

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pH & CONDUCTIVITY DATA ENTRY

SELECT SHIFT | C | Update Historian | Clear Results

Date	Time	Tag	Results	Outcome
15-Mar-20	00:00	QUI.Pulp_Cond		No Value Entered
15-Mar-20	00:00	QUI.Pulp_pH		No Value Entered
15-Mar-20	02:00	QUI.Pulp_Cond		No Value Entered
15-Mar-20	02:00	QUI.Pulp_pH		No Value Entered
15-Mar-20	04:00	QUI.Pulp_Cond		No Value Entered
15-Mar-20	04:00	QUI.Pulp_pH		No Value Entered
15-Mar-20	06:00	QUI.Pulp_Cond		No Value Entered
15-Mar-20	06:00	QUI.Pulp_pH		No Value Entered
15-Mar-20	00:00	QUI.Lab_Water_Cond		No Value Entered
15-Mar-20	00:00	QUI.Lab_Water_pH		No Value Entered
15-Mar-20	02:00	QUI.Lab_Water_Cond		No Value Entered

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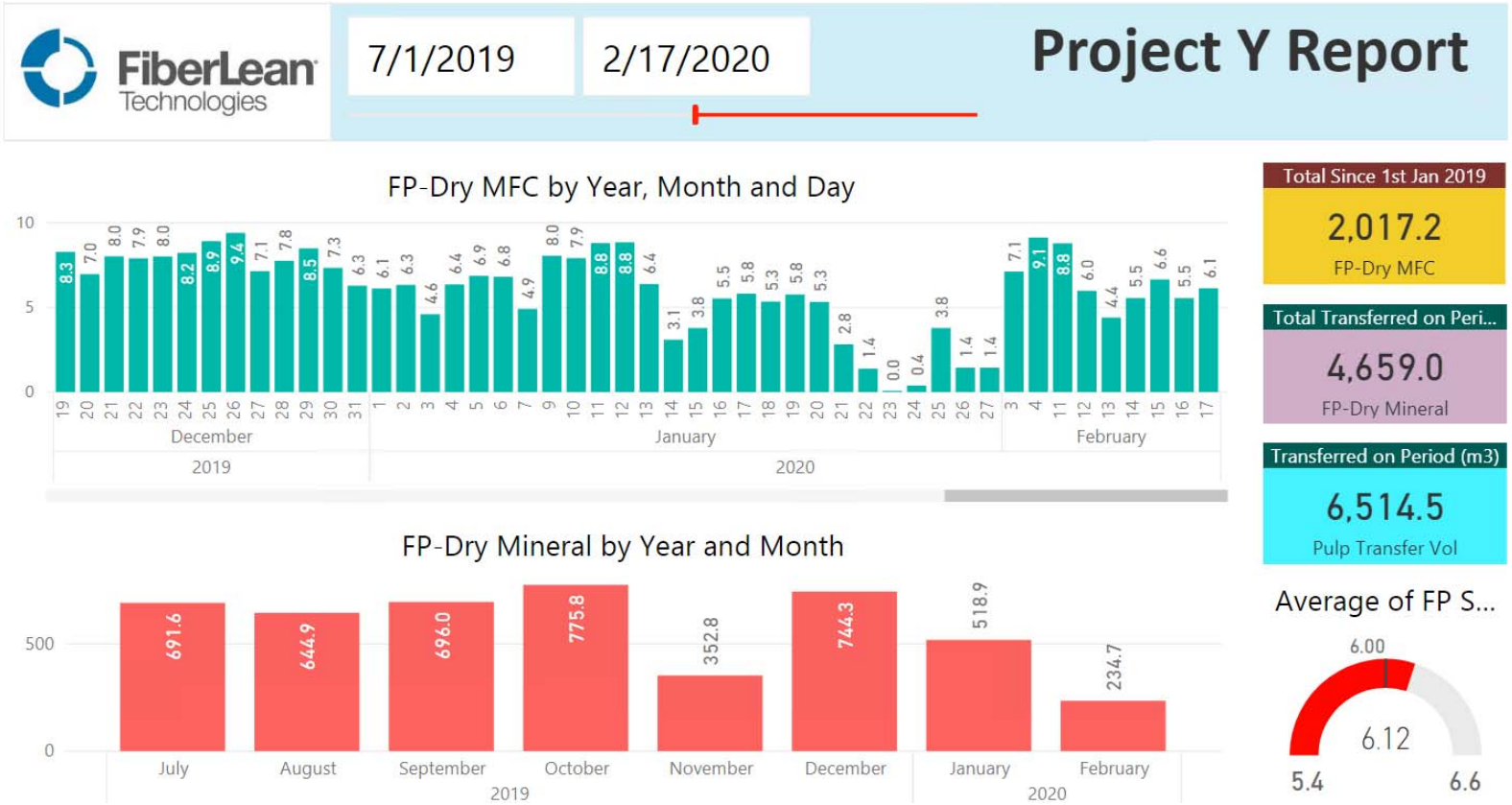
Power BI Report –Project Y



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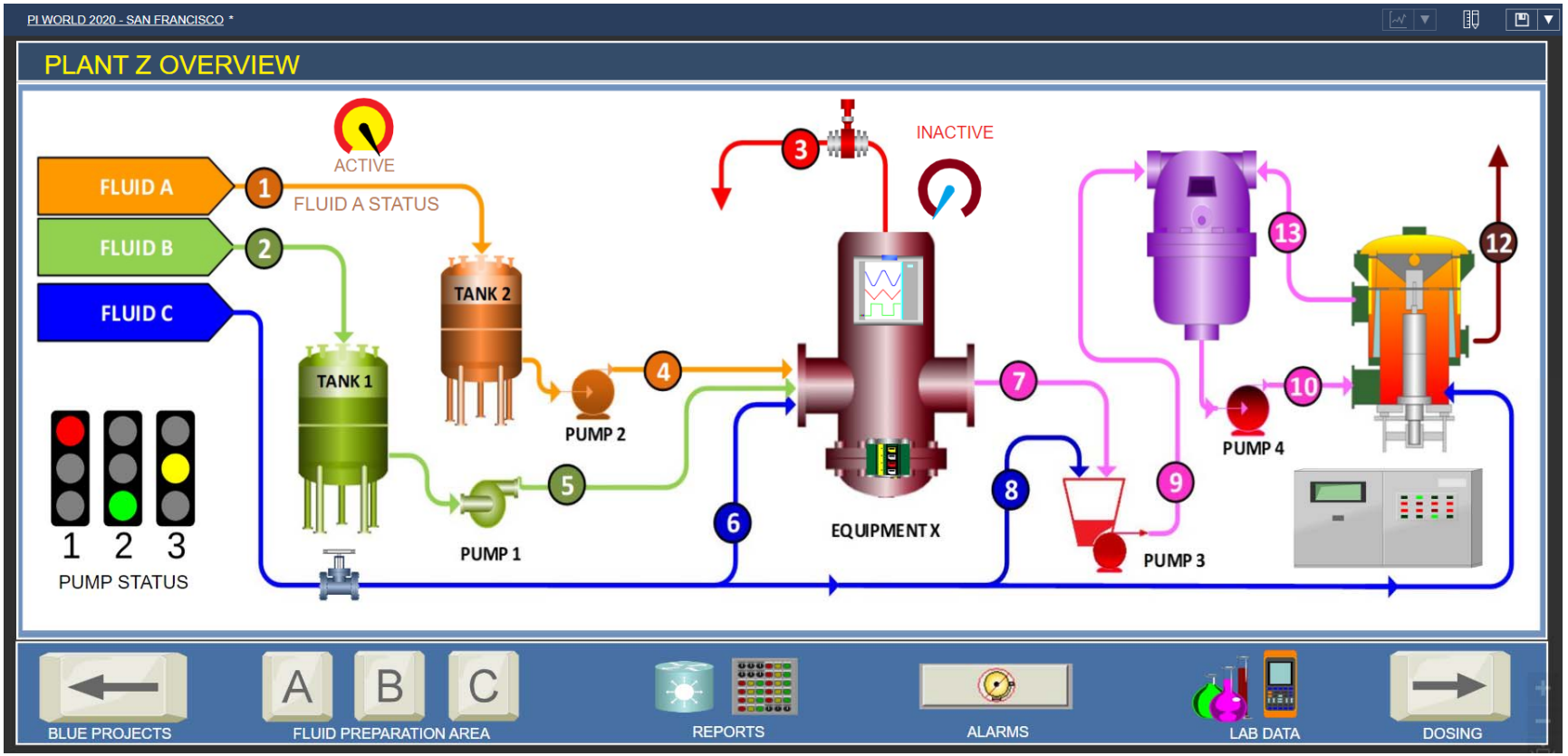
Present and Future Work



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Customer Story

FiberLean Technologies

CHALLENGES

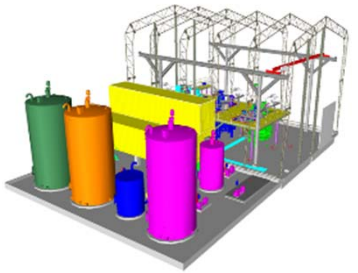
- Deliver a reliable, scalable and sustainable data collection and reporting system
- Need to easily compare plant performance across geographies

SOLUTION

- Global OSIsoft PI System data and SQL Servers
- Standard process, plant design, commissioning and process control

BENEFITS

- Faster and more cost effective deployment, commissioning and maintenance of plants
- Plant easily expandable
- Improved security, performance and System Upgrades



> We have estimated a 50-60% of cost savings on commissioning of a global plant and 50% reduction on the amount of hours engineers need to spend onsite

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Please wait for
the **microphone**

State your
name & company

Save the Date...

AMSTERDAM
October 26-29, 2020

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