



INDUSTRY X


OSIsoft PI Footprint Selected Credentials

October 2021



ACCENTURE GLOBAL PI CAPABILITY

Mature and Growing Delivery Ability

200+ 
professionals
trained in various
platforms

115+ **certifications**

accredited by OSIsoft
(#1 in the world)



91



41



6



200+ **historian projects**

successfully delivered

Proven
solutions
built upon
data
infrastructure

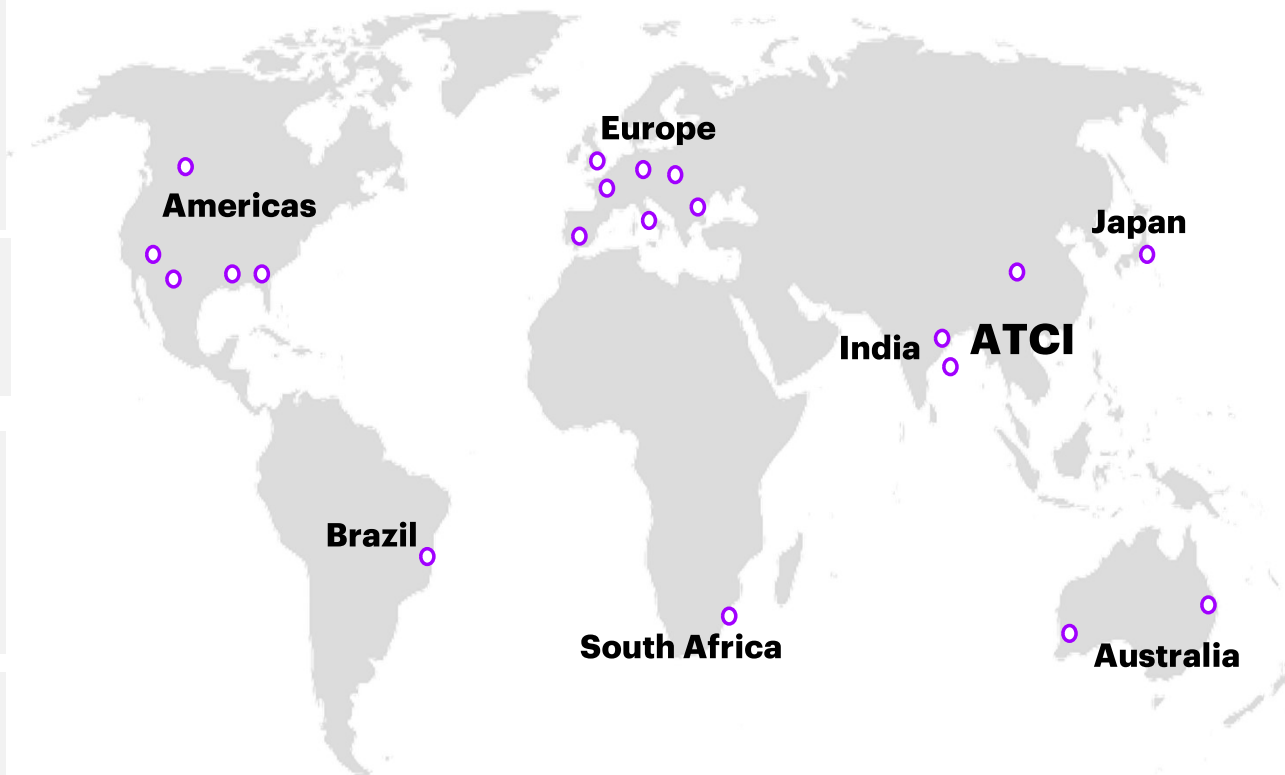


Multiple cloud
platforms supported,
including Azure and AWS



100+ **sites supported**

remotely by our team



INDUSTRY X

ACCENTURE'S APPROACH TO PI

Identifying Opportunities Through a Value Framework

Start with the desired outcomes:



REAL-TIME DATA CAN BE THE BASIS FOR A WIDE RANGE OF USE CASES

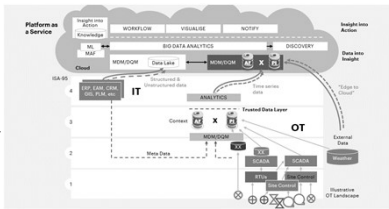
	Performance	Resilience	Compliance	Planning
Production Optimisation	Integrating PI with Machine Learning		Increased Maintenance	
Asset Health	Using AF to Drive Equipment Health Monitoring			
EHS				
Product Quality	Advanced Asset Monitoring Centered Around PI with Edge Data Collection	Manual Logger with AF Validation		
Governance & Reporting			Reducing Pollution Events through Effective Intervention	
Capital Projects	Centralized Infrastructure Migration			



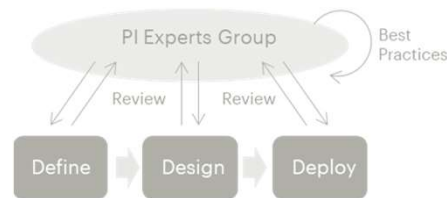
ACCENTURE **PROVEN** DELIVERY METHODS

Our clients benefit from Accenture Delivery approaches used by our projects teams

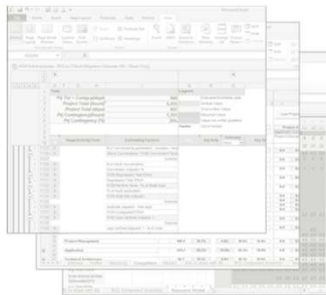
Optimal **IT/OT Architecture** to contextualize time series data and apply calculations in a layered approach



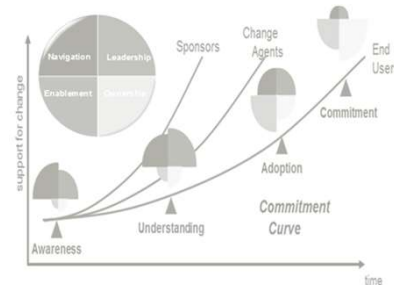
Accelerators to implement best practices and resolve gaps with minimal disruptions



Estimator Tools to plan and compare our projects using our proven **Agile Delivery Methodologies**



Change Journey Management for successful deployment throughout the business



SELECTED CREDENTIALS



**Accenture projects and use cases
across industry and themes.**

Cloud based Data Historian

Real-time data available across the enterprise

BUSINESS CHALLENGE

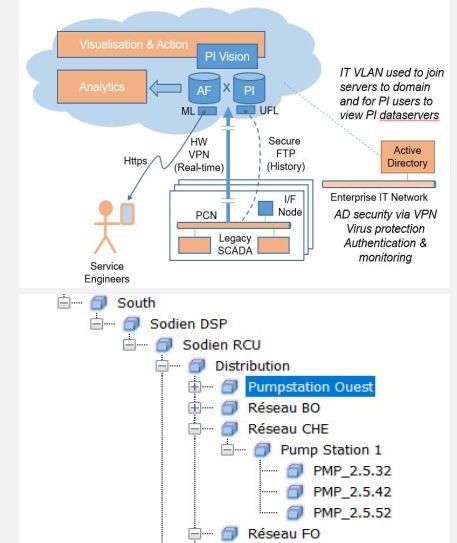
The client did not have any real-time data – all data was manually entered into spreadsheets. The challenge was to make real time data available from a number of **geographically dispersed sites with old legacy automation** across the enterprise for efficiency and optimisation analytics.

SOLUTION

The PI Data Historian was implemented in a private Azure-based cloud – **Platform as a Service**. Data was migrated from flat files and interfaces to SCADA systems at disparate sites using various networking techniques and interfaces. Manual input using web-based methods and PI Manual Logger. Transformation via **Operational Analytics as a service** for data validation, aggregation of measurements and efficiencies insights and recommendations.

OUTCOME

- **Facility overview** monitoring real time data
- Real time **performance view** of Process versus optimum operating envelope
- **Significant** performance improvement measured and rewarded based on each site's monthly P&L



Renewable power generation

Data collection infrastructure

BUSINESS CHALLENGES

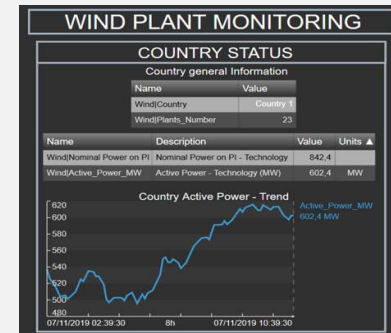
A customer in the power generation industry needed to collect real-time data from over 1,000 hydro and wind assets across 20+ countries in 5 continents. With over 2 million data points, the client had difficulty ingesting and organizing these data points so they could be used as inputs to business data analytics. System uptime was a consistent issue with interfaces and data sources across different networks, resulting in data losses.

SOLUTION

- Renewable plants added to the PI Data Archive to capture 90% of the power capacity for each country
- New architecture reduced data losses and allowed for two methods of integration: streaming (real-time) and batch (historical data recovery)
- PI Buffer Subsystem and “Watchdog” alerts enabled data collection due to network issues or frozen/suspended service
- Advanced analytics enabled for all external systems, including data lakes to store and organize data points

OUTCOME

- New architecture improved system uptime to 99+% over last 5 years
 - Significant improvement in data accessibility/acquisition and quality resolution
- Visibility into asset health and performance led to a 5-15% reduction in maintenance using predictive and proactive analytics
 - Production losses reduced and renewable asset values maximized
- Increased global renewable capacity from 75% to 98% in 11 months timeframe
- 90% of renewable power capacity for each country captured and integrated into PI Data Archive



Water and waste water utility

Improved quality of compliance reporting

BUSINESS CHALLENGE

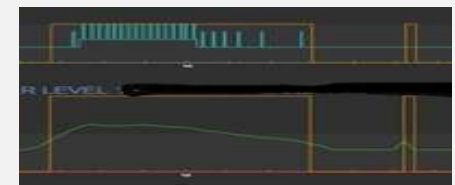
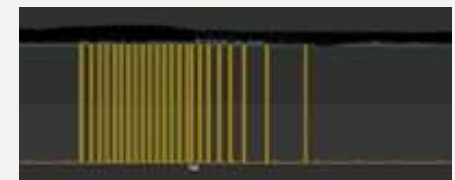
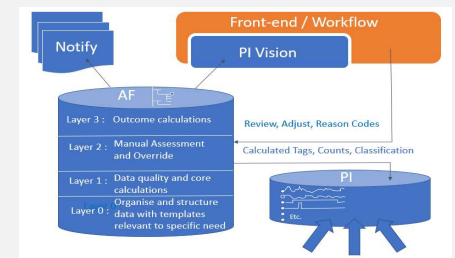
- Regulatory reporting of waste water spill events at overflows required manual assessment of potential spills which was time consuming and inconsistent.
- End of year reports required significant effort to review and correct poor data quality.

SOLUTION

- Combine multiple inputs to calculate confidence levels for potential spills.
- Use of **Event Frames** to capture data related to spill event.
- Build PI Vision displays to **view relevant data** for the spill reducing review time
- New front end application to assign spill events to appropriate permits to ensure high quality reporting.

OUTCOME

Reduced reporting effort with improved consistency plus potential interventions.



Pharmaceuticals industry

Operational Equipment Efficiency (OEE)

BUSINESS CHALLENGES

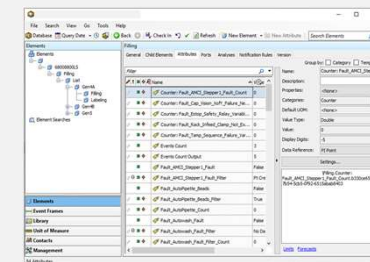
During a worldwide pandemic, a pharmaceutical industry client's peak manufacturing capabilities was measured between 60% and 70%. Efforts to identify root causes were extremely difficult and laborious as the programmable logic controllers (PLCs) at each manufacturing station could not provide any additional context. The manufacturing teams relied on manually-captured data entered into a spreadsheet to then calculate various operational equipment efficiency (OEE) metrics. These spreadsheets were used to rectify issues during station operations and shared vendors to address any machine-level issues. The client was in desperate need for real-time visibility along with notifications to alert the manufacturing team of anticipated equipment failures or unexpected shutdowns.

SOLUTION

- Deployed an OSIsoft PI System to capture and store real-time equipment data for multiple "Lab in a Tube" (LIAT) manufacturing stations with the PLCs as the primary data source
- Implemented PI Asset Framework (PI AF) hierarchy, leveraging templates to provide comprehensive data contextualization with OSIsoft BI integration tools
 - Templates built using Agile methodology to provide station-specific customization, enable rapid deployment of future stations/sites
- Analytics created to supplement custom, in-house OEE platform to enhance understanding station downtime causes, including current machine and equipment status and reason codes
 - High-level information displayed on OEE platform with PI System storing granular activity for further investigation
 - PI Event Frames enabled client to categorize and rank equipment issues based on criticality or frequency

OUTCOME

- Using the PI System, client was able to collect and historize real-time data for the first time in the diagnostics space
 - Enhanced existing HMI systems, improving operational visibility and enhancing
- PI AF hierarchy, combined with custom OEE analytics, positioned client to perform future roll-up calculations from local to global domain while reducing time required for future LIAT station additions
 - Asset and equipment models available for the first time, embracing the client's business model for enterprise-wide asset visibility
- Efficient use of integrated BI tools led to decommissioning of legacy spreadsheets and reports



Global multisite pharma

High quality maintenance and development

BUSINESS CHALLENGE

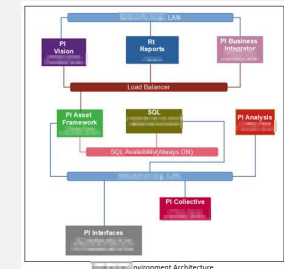
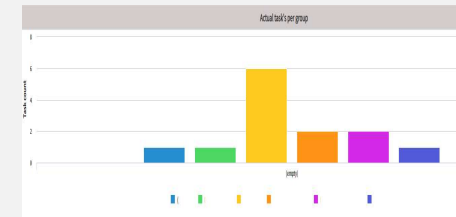
- The daily business requires all kind of real time data, the Global PI Architecture collects all such data in central server and exposes through different ways to different areas (RT Reports, PI Vision, PI Business Integrator Views)
- The high availability architecture requires good understanding of the out of the box solutions and fast solution knowledges
- The Pharma industry restrictions and processes are mandatory to understand

SOLUTION

- The batch generation is a base production process step for all the sites
- **Event Frames, Analytics, EF Gen** and **Notifications** to capture data related to production events.
- Build PI Vision displays, PI Business Integrator Views to **view relevant data** for the spill reducing review time
- RT Report used to ensure high quality GxP compliant reporting

OUTCOME

Ensured a fast solution of the different OSIsoft provided out of the box solutions
Excellent collaboration with different site engineers and data ingestion user to help the clients into achieving the targeted goal



Chemical industry

Multi site migration planning and execution

BUSINESS CHALLENGE

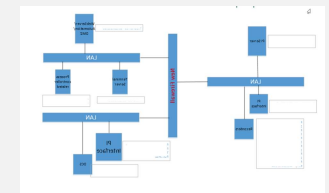
- The client had decided to transfer a couple of sites under a new ownership. This required hard separation of different equipment, building and software solutions.
- The discovery, planning, execution and maintenance of the separation was required in this project.
- OSIsoft PI solution was part of this separation in different sites, from different continents.
- The goal was to not cause any disruption/ interruption in the day to day work of end users.

SOLUTION

- Pre-migration POC to ensure the success of the migration
- Step by step plan creation involving Networking, Engineers, Operation personal for each site separately.
- Execution of the plan, solution providing for the different unplanned issues
- End to end testing of the newly installed software with the customer.
- Personalized installation kit created and deployed on customer PC's.

OUTCOME

The created plan was 100% executed, the migration was successfully in all sites leading to customer satisfaction and ZERO disruption in the daily work of the enterprise.



Step	Task	Task ID	Task Type	Task Status	Task Owner	Task Due Date	Task Priority	Task Category	Task Sub-category
1	Pre-migration POC	1.1	Discovery	Completed	PI Team	2021-01-15	High	Discovery	Pre-migration POC
2	Step by step plan creation	2.1	Planning	In Progress	PI Team	2021-02-15	High	Planning	Step by step plan creation
3	Execution of the plan	3.1	Execution	Not Started	PI Team	2021-03-15	High	Execution	Execution of the plan
4	End to end testing	4.1	Testing	Not Started	PI Team	2021-04-15	High	Testing	End to end testing
5	Personalized installation kit	5.1	Deployment	Not Started	PI Team	2021-05-15	High	Deployment	Personalized installation kit

```

Exported Known Servers Table - 5/15/2021 10:10:10 AM
[NAME_SERVERS]
COUNT = 4
[PI_SERVERS]
1 = PI-SERVER-01
2 = PI-SERVER-02
3 = PI-SERVER-03
4 = PI-SERVER-04
[PI_PATHS]
1 = PI-Path-01
2 = PI-Path-02
3 = PI-Path-03
4 = PI-Path-04
[PI_PORTS]
1 = 5450
2 = 5450
3 = 5450
4 = 5450
[PI_USERS]
1 = pi-admin
2 = pi-admin
3 = pi-admin
4 = pi-admin
[PI_DEFAULT_SERVER]
1 = TRUE
[PI_ALLTAGS]
[PI_TYPER]

```

accenture

INDUSTRY X

Thank You

