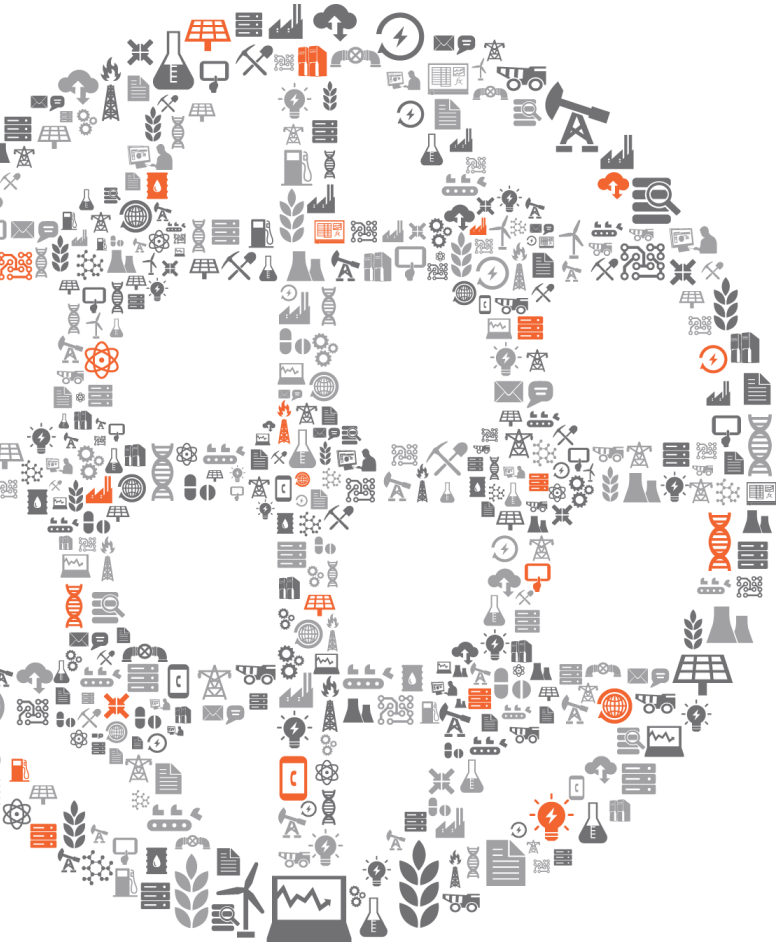


Reimagining the Journey of INTEGRATED OPERATIONS via Pl System

Presented by **Mohd Haris Shukri**

Business Challenge

- Many assets that are working in silo mode
- No transparency and visibility of real time data
- Wasted opportunity of to allow a maximized data usage for analysis, planning and optimization
- Lacking of data integration, where there is no real capability of information to be brought up to the next level of hierarchy, which is allowing other systems to consume and use the collected data

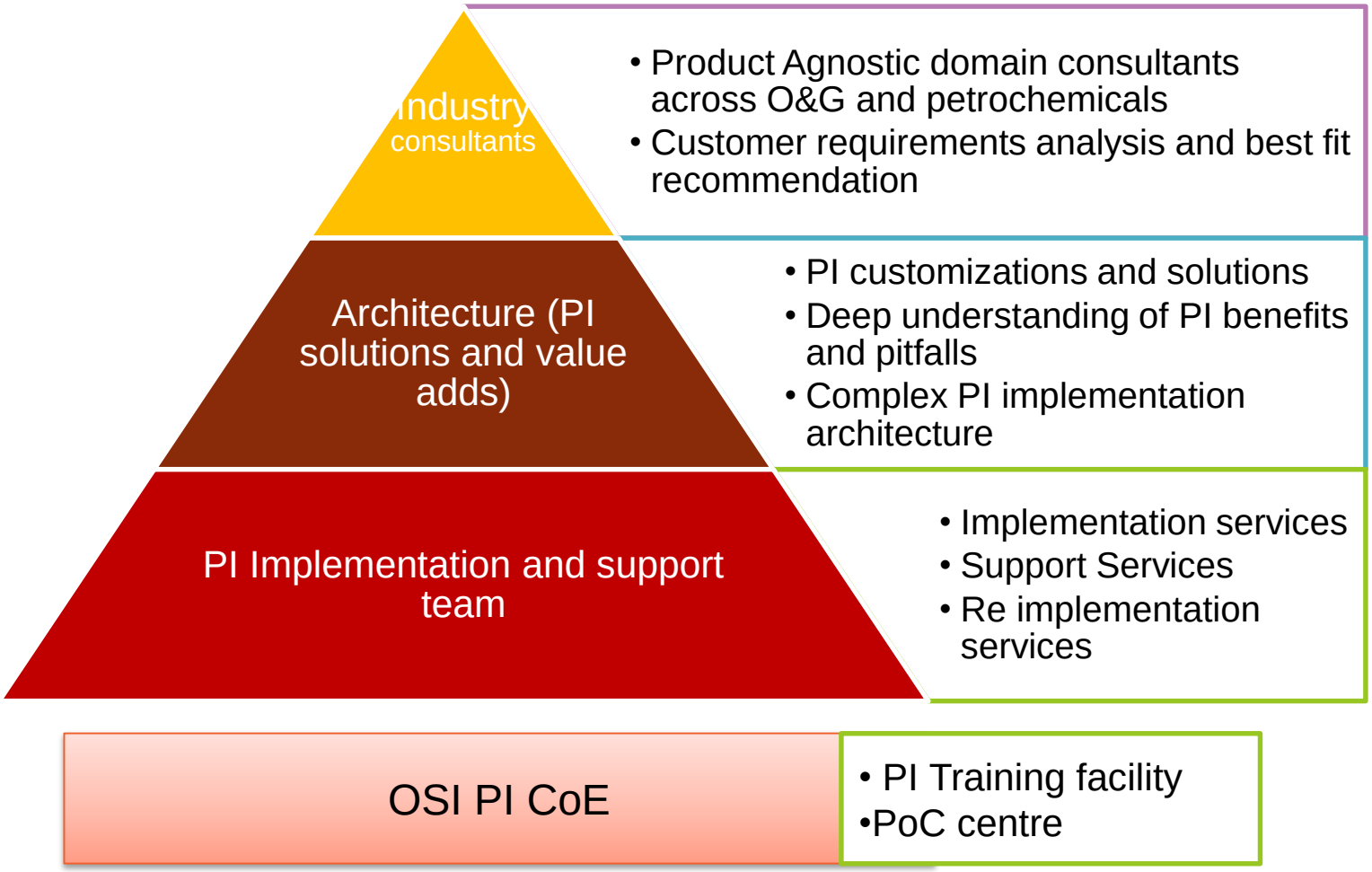
Background

- Major oil and gas company that have installations and productions around the globe
- Many assets that are either having a silo or no real time data historian
- A lot of planning, decision making and analysis are using offline data, based on chains of reporting practice

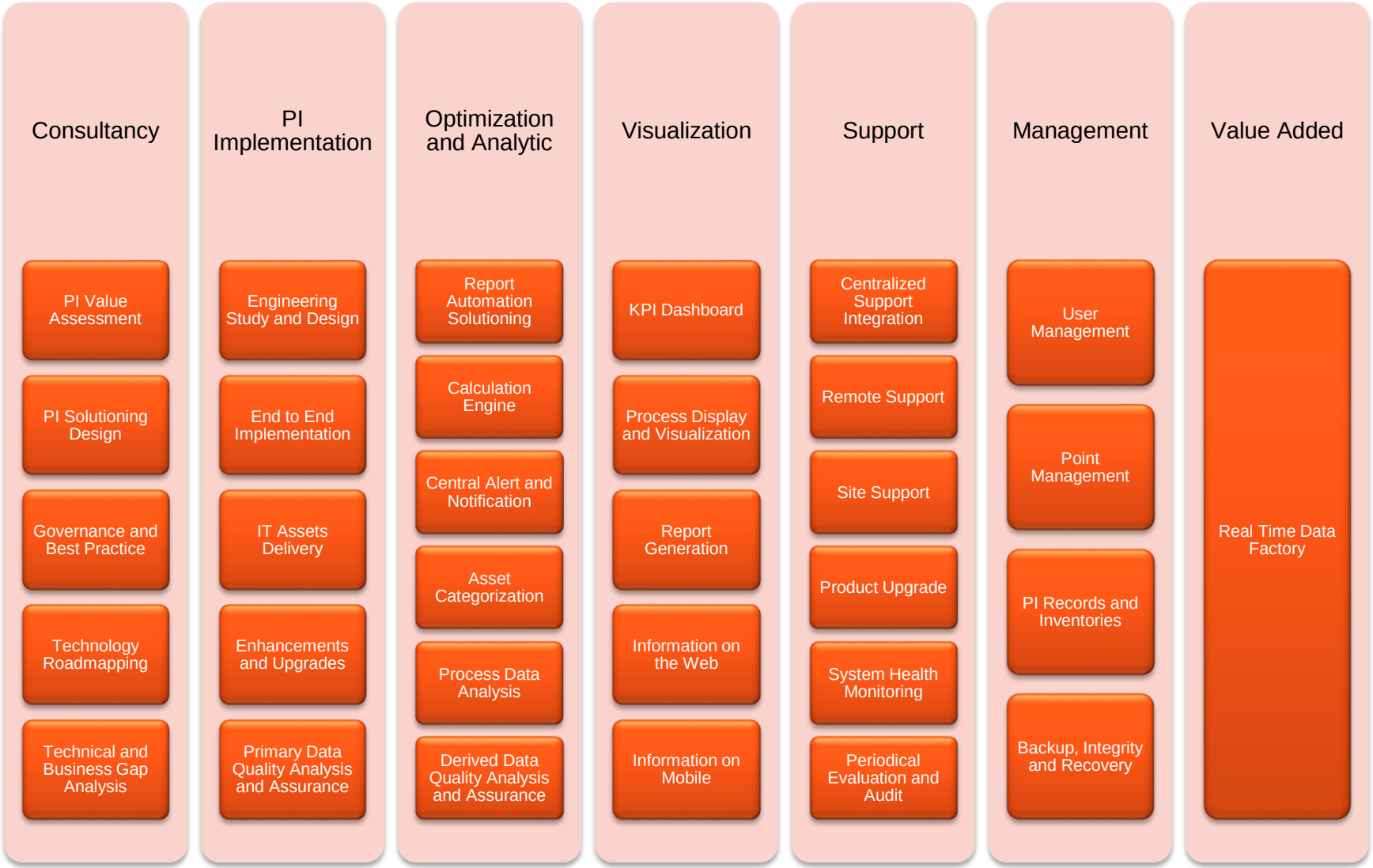
Objectives

- To have a centralized PI System, where all real time data are available at different layers and areas
- To break down the operation silos
- To support and provide information for integration operation, such as supporting knowledge management, provide data capability for collaborative work environment, cross discipline cooperation
- To allow full consummation of data by decision making, analysis, planning and optimization tools

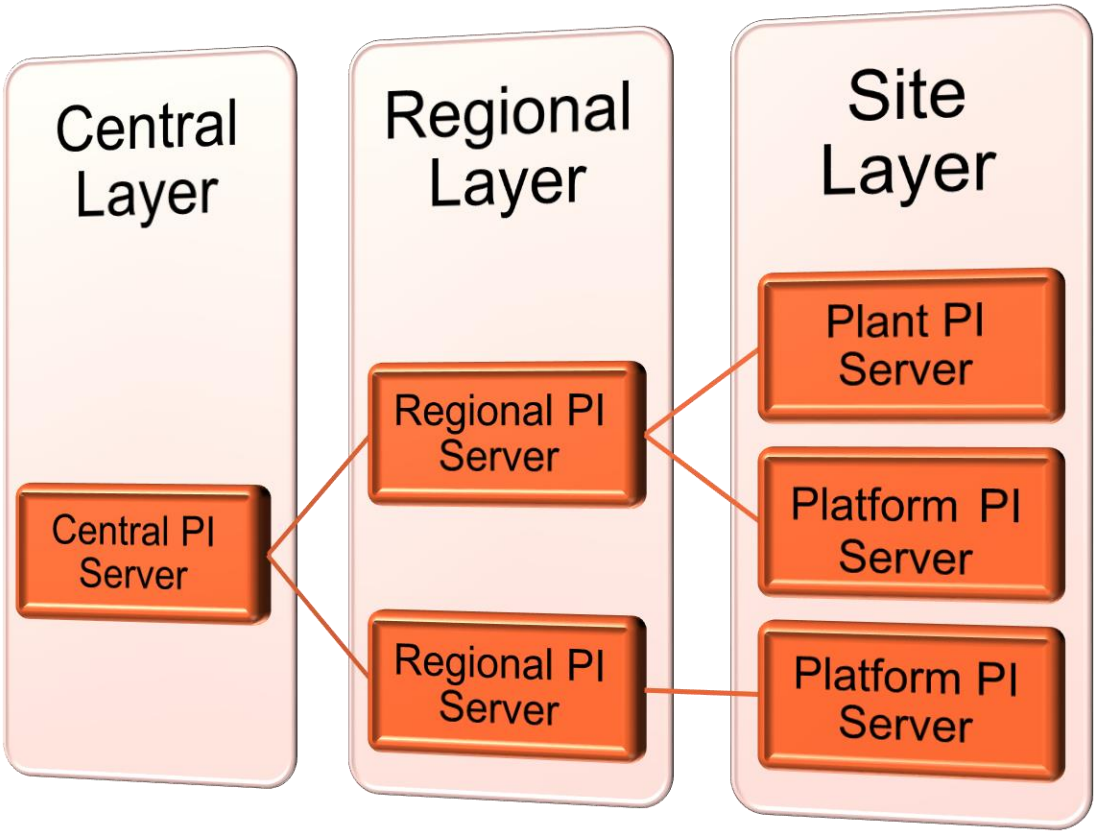
Overview

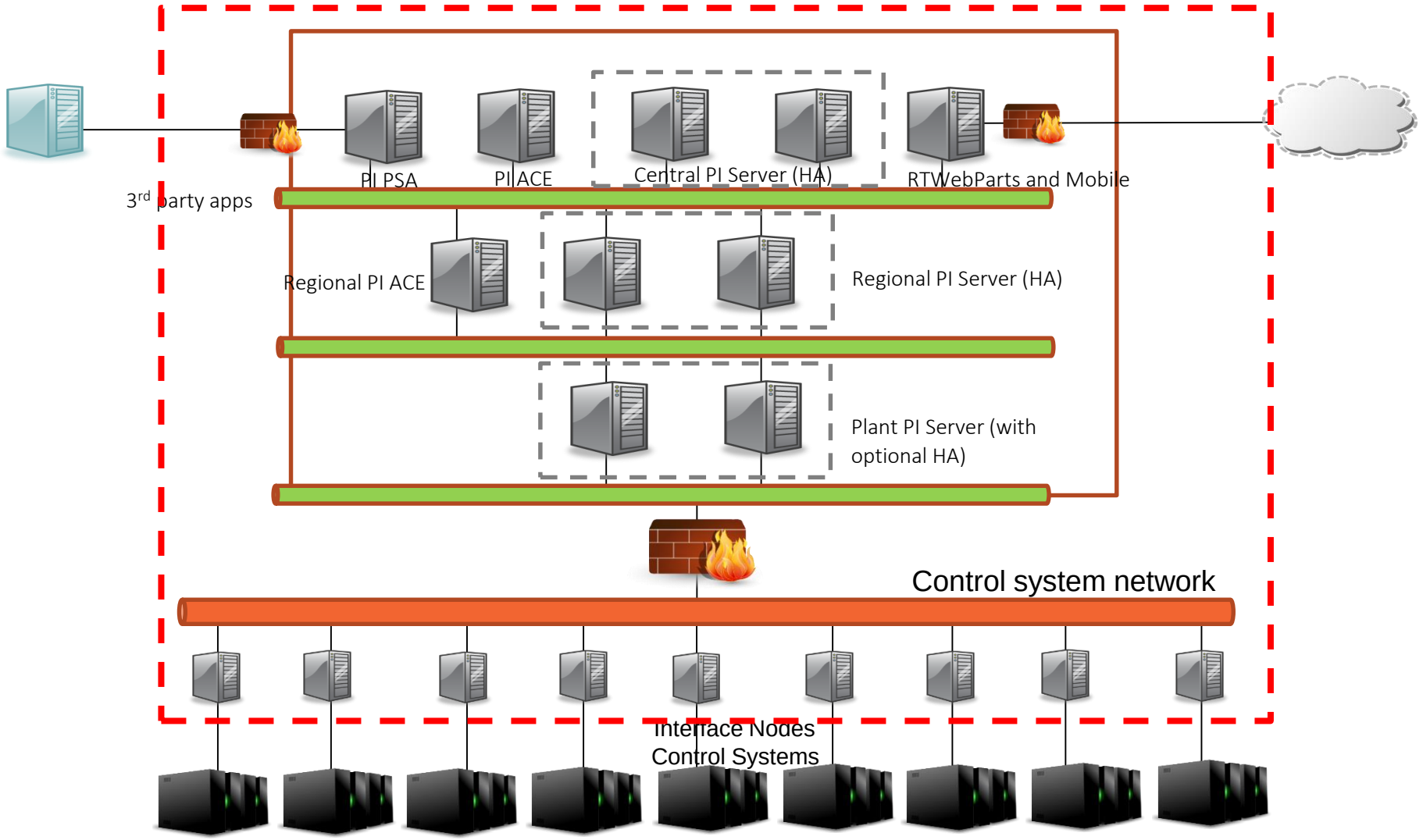

Industry consultants
• Product Agnostic domain consultants across O&G and petrochemicals
• Customer requirements analysis and best fit recommendation
Architecture (PI solutions and value adds)
• PI customizations and solutions
• Deep understanding of PI benefits and pitfalls
• Complex PI implementation architecture
PI Implementation and support team
• Implementation services
• Support Services
• Re implementation services
OSI PI CoE
• PI Training facility
•PoC centre

Framework

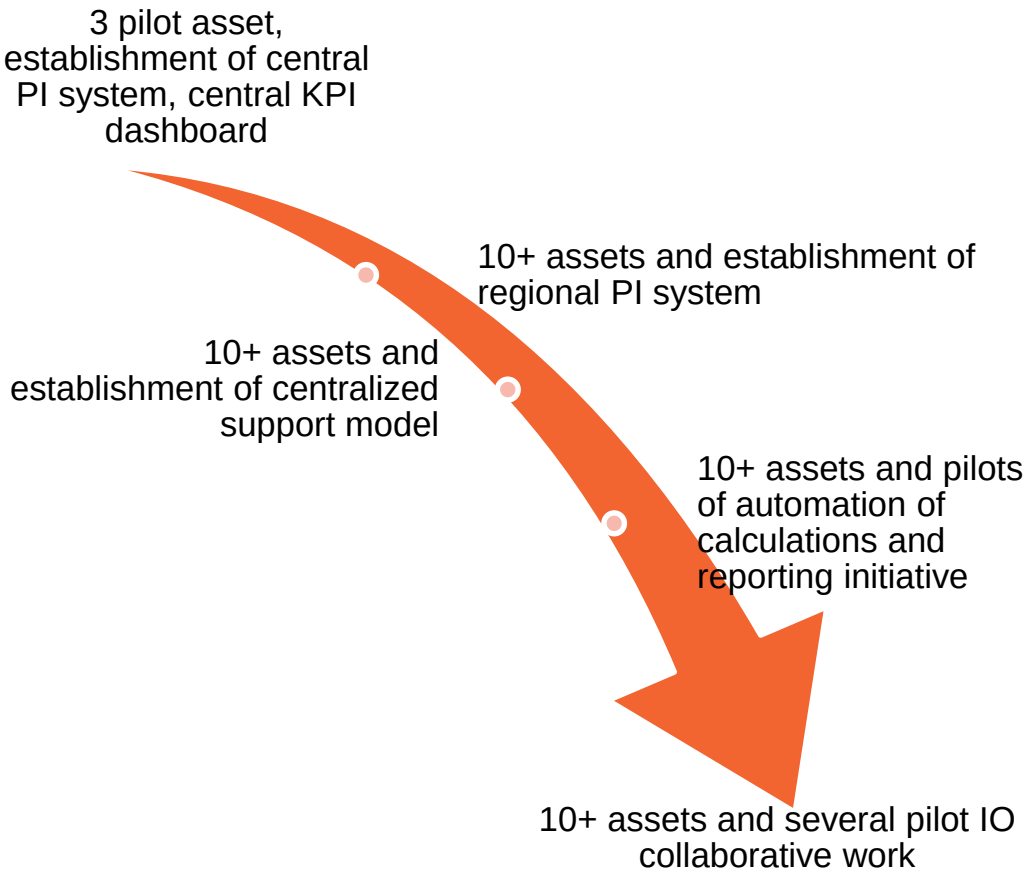

Consultancy
PI Value Assessment
PI Solutioning Design
Governance and Best Practice
Technology Roadmapping
Technical and Business Gap Analysis
PI Implementation
Engineering Study and Design
End to End Implementation
IT Assets Delivery
Enhancements and Upgrades
Primary Data Quality Analysis and Assurance
Optimization and Analytic
Report Automation Solutioning
Calculation Engine
Central Alert and Notification
Asset Categorization
Process Data Analysis
Derived Data Quality Analysis and Assurance
Visualization
KPI Dashboard
Process Display and Visualization
Report Generation
Information on the Web
Information on Mobile
Support
Centralized Support Integration
Remote Support
Site Support
Product Upgrade
System Health Monitoring
Periodical Evaluation and Audit
Management
User Management
Point Management
PI Records and Inventories
Backup, Integrity and Recovery
Value Added
Real Time Data Factory

Architecture



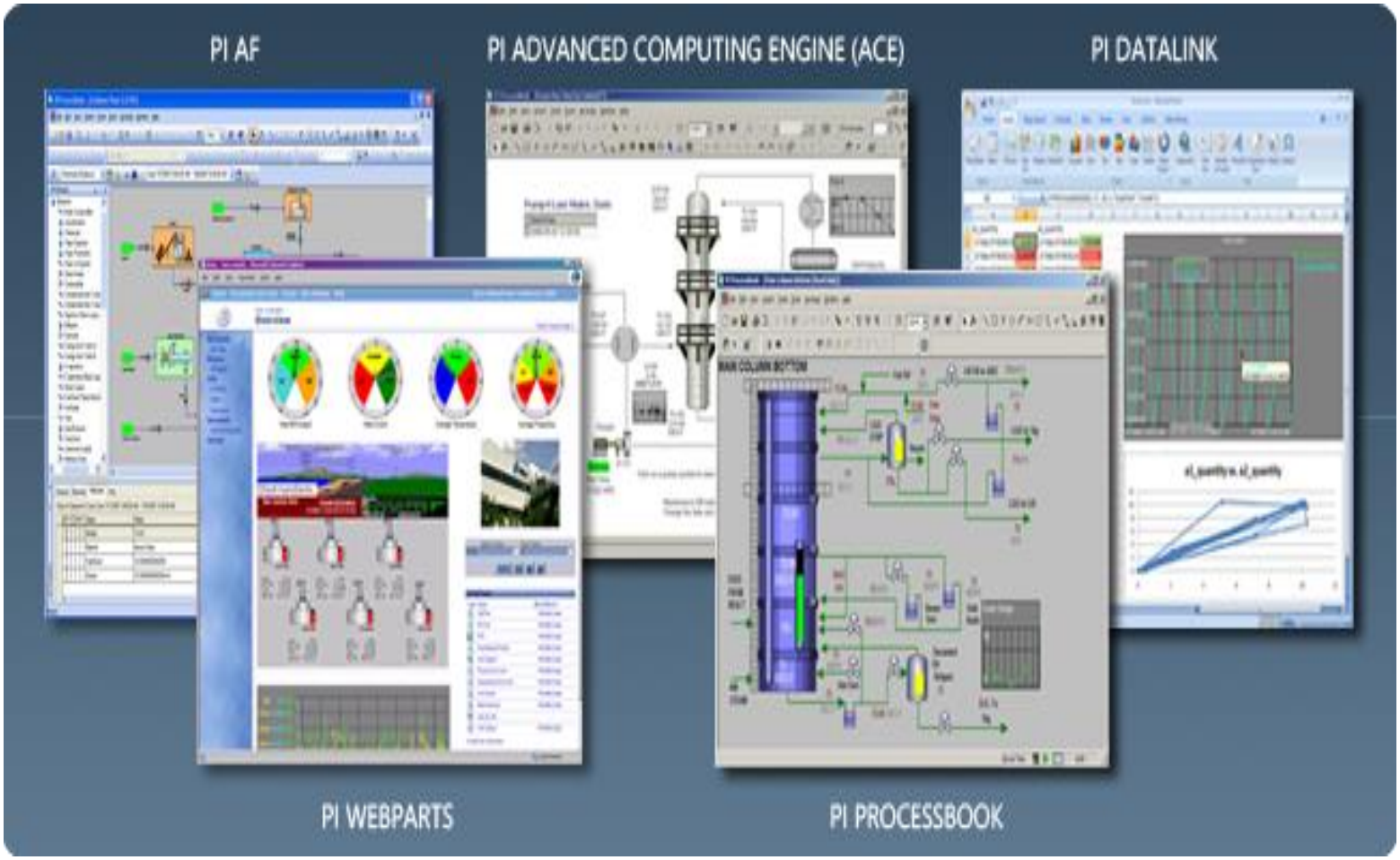

3rd party apps
PI PSA
PI ACE
Central PI Server (HA)
RTWebParts and Mobile
Regional PI ACE
Regional PI Server (HA)
Plant PI Server (with optional HA)
Control system network
Interface Nodes
Control Systems

Roadmap


3 pilot asset, establishment of central PI system, central KPI dashboard
10+ assets and establishment of regional PI system
10+ assets and establishment of centralized support model
10+ assets and pilots of automation of calculations and reporting initiative
10+ assets and several pilot IO collaborative work

Maturity Steps

PI


PI AF
PI ADVANCED COMPUTING ENGINE (ACE)
PI DATALINK
PI WEBPARTS
PI PROCESSBOOK

Usage Example

Process Data

Video Feed

Well Data

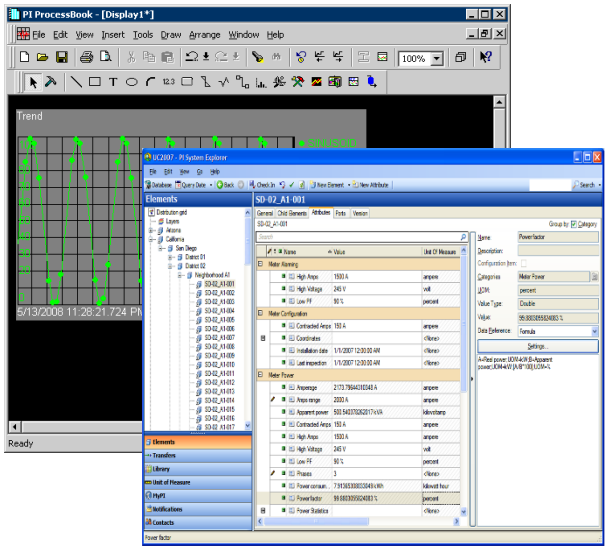
Drilling Data

Equipment Information

Engineering Documents

Better Visibility and Decision Making!!

Usage Example



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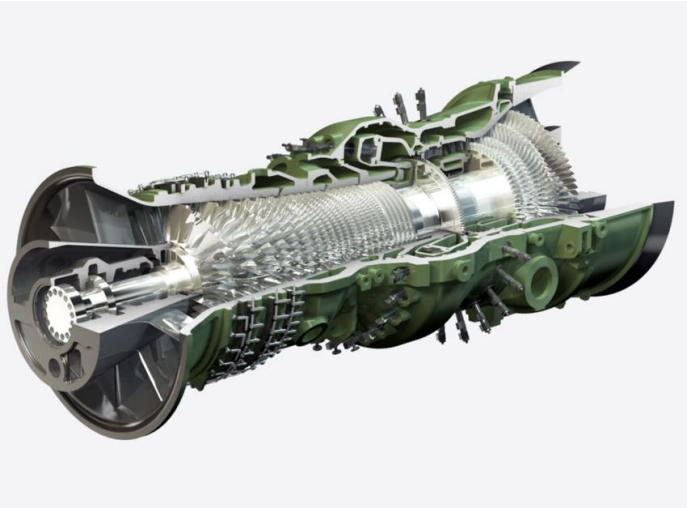

Real Time Data and
Asset Framework

Asset Management and
Maintenance

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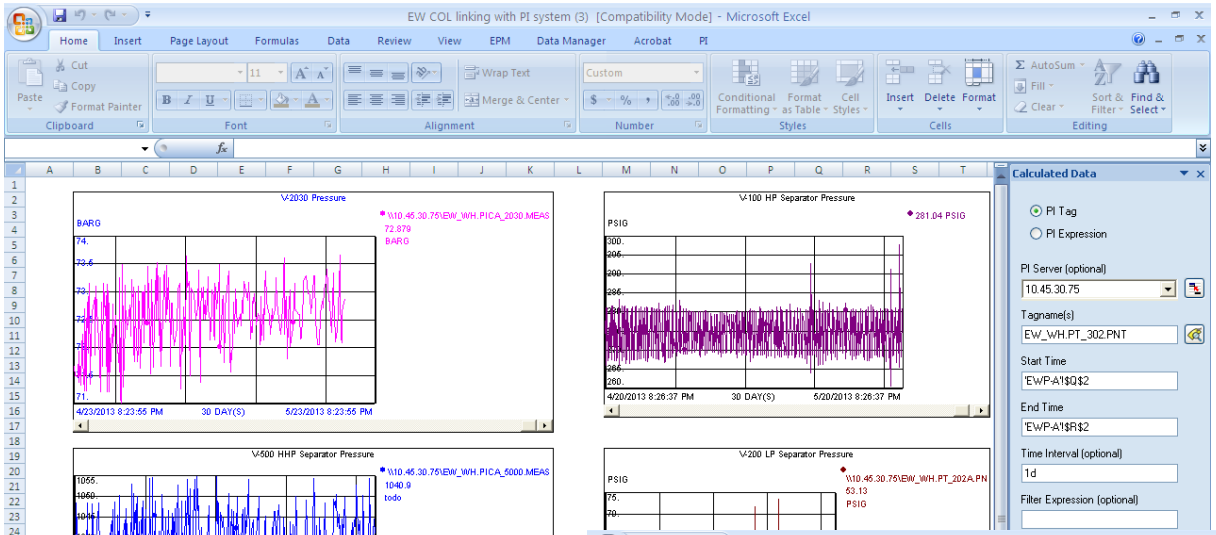
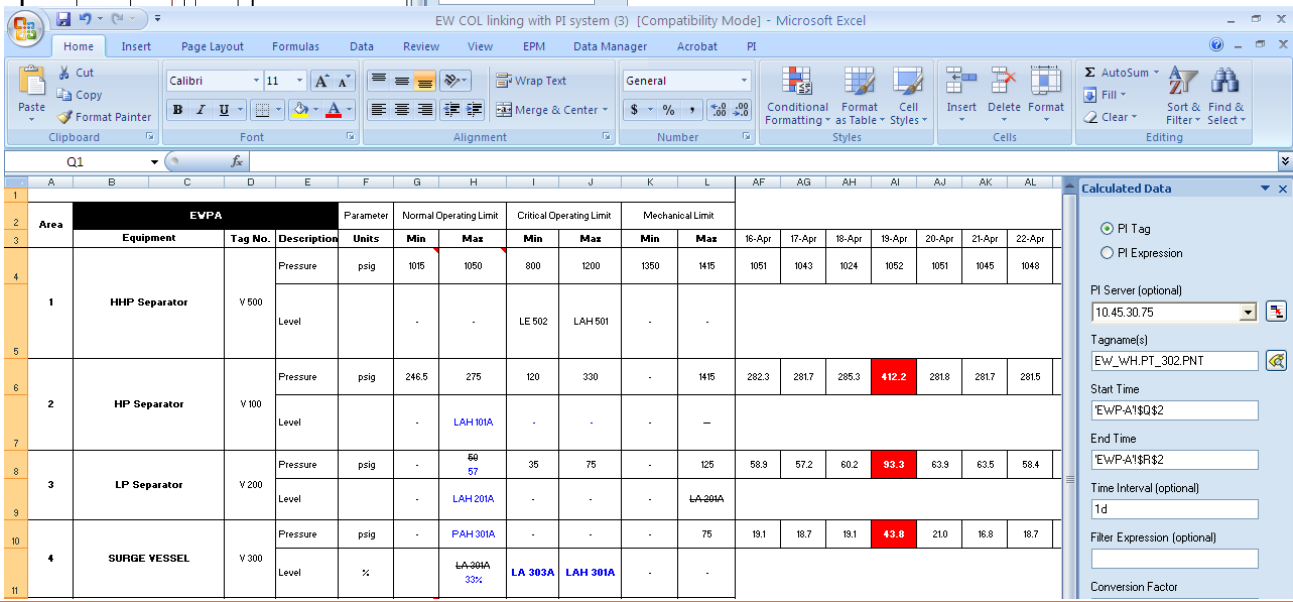
Predictive Asset Maintenance

Usage Example



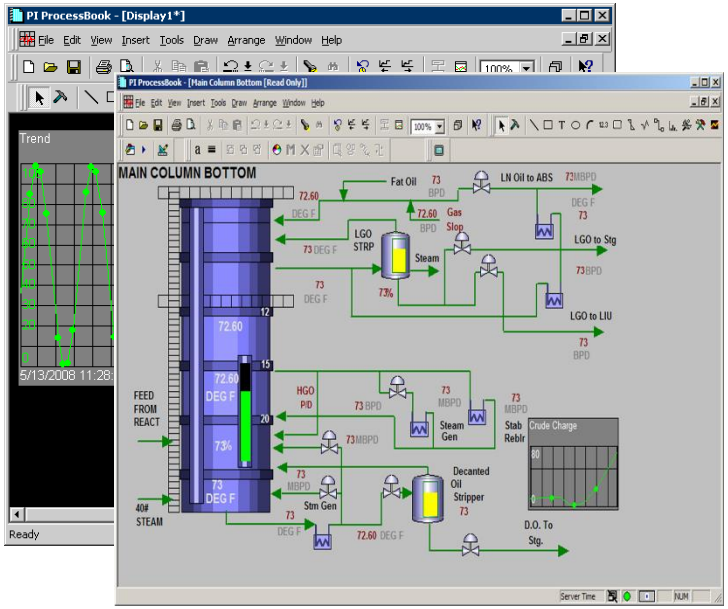
Trending of main equipment Critical Operating Limit (COL)



Area	EWPA			Parameter	Normal Operating Limit		Critical Operating Limit		Mechanical Limit		16-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	22-Apr
	Equipment	Tag No.	Description	Units	Min	Max	Min	Max	Min	Max							
1	HHP Separator	V 500	Pressure	psig	1015	1050	800	1200	1350	1415	1051	1043	1024	1052	1051	1045	1048
			Level		-	-	LE 502	LAH 501	-	-							
2	HP Separator	V 100	Pressure	psig	246.5	275	120	330	-	1415	282.3	281.7	285.3	412.2	281.8	281.7	281.5
			Level		-	LAH 101A	-	-	-	–							
3	LP Separator	V 200	Pressure	psig	-	~~60~~ 57	35	75	-	125	58.9	57.2	60.2	93.3	63.9	63.5	58.4
			Level		-	LAH 201A	-	-	-	~~LA 201A~~							
4	SURGE VESSEL	V 300	Pressure	psig	-	PAH 301A	-	-	-	75	19.1	18.7	19.1	43.8	21.0	16.8	18.7
			Level	%		~~LA 301A~~ 33%	LA 303A	LAH 301A	-	-							

Alert on any COL excursion for the day using conditioning feature of Excel PI Data Link

Usage Example



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Process Graphics and Trends

Onshore – offshore collaboration meeting

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Collaborative Work Environment

Mohd Haris Shukri bin Jahabar

Solution Architect

THANK YOU