

# Digital Platform as PMO for Mega Projects

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Wrench Solutions



# Introduction Manesh & Wrench Solutions



Contact me

- With hands-on domain knowledge based on over 20 years of experience in the digitization of the EPC industry.
  - He has spearheaded the successful adoption of SmartProject technology across landmark projects in Oil & Gas, Infrastructure, and Real Estate for some of the world's largest global players.
- Holds a B.E. in Mechanical Engineering from NIT Silchar and a Post Graduation MBA from Cochin University.
- Manesh balances the pioneering Wrench spirit with a relentless sense of practicality and realism and combines his knowledge of what is possible through digitization with his experience of where the limits of digitization lie to give his clients long-term value



## Introduction Sajith R Nair - Domain Expert

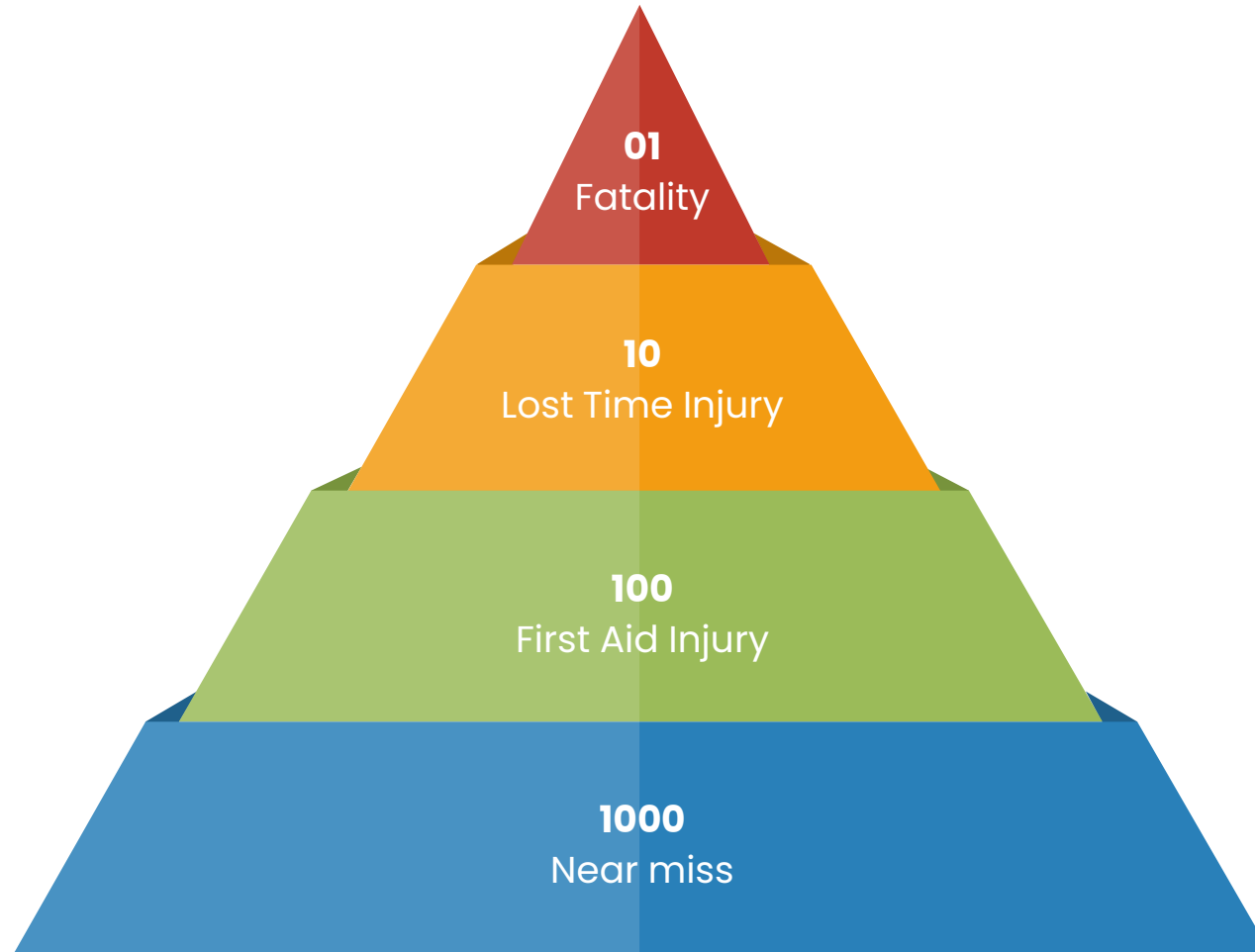


Contact me

- He has deep domain expertise in EPC who worked with major EPC Contractors and owner organizations in the Oil & Gas sector, including Petrofac, KNPC, KIPIC, Chevron, Almeer, BPL Ltd, etc..
- Graduate Engineer and certified Project Management Professional from PMI who carries 30 years of industry experience
- Sajith is managing relationships with Wrench's global customers in the Energy sector, assisting them to utilize the full capability of Wrench-SmartProject and derive maximum value from their investment.



# Safety Moment



# PMO Role & Conventional approach

- Project Management Office is the third eye of the Owner in managing the business of Project execution.
- PMO to analyse the project performance and update the Owner on the Health of the Project
- Aids Owners in making informed decisions in time
- PMO receives input from PMC and major Contractors
- PMO analyses and reports the Project KPIs to the Owner
- Reports shared through E-mails or shared drives.
- Monthly/ biweekly reporting is the general trend



# Digital Platform as PMO for Mega Project

## Mega Project

- Multiple Owners
- Multi Location
- Project cost more than USD 3 Billion
- Duration exceeding 4 years

## PMO

- Monitor the project for the Owners
- Capture data from all locations and Contractors
- Collate and report in real-time
- Forecast outcomes

## Technology

- Digital platform utilizing Cloud technology
- Accessible from anywhere at any time
- User security as required
- Interactive

# Digital Platform as PMO

## Challenges

- *Contractor wanted to show what is done. Owner wants to know what is to be done*
- Owners from different Companies formed a SPV to execute Project
- Multiple Contractors with different types of Contracts
- Different reporting formats by Contractors
- Varying requirements from Owners on reporting
- Getting acceptance from all stakeholders on a common platform
- The quantum of data to be handled
- Resource requirements to collate data and report.
- Availability of reports in time to decision makers from various Contractors



# Digital Platform as PMO

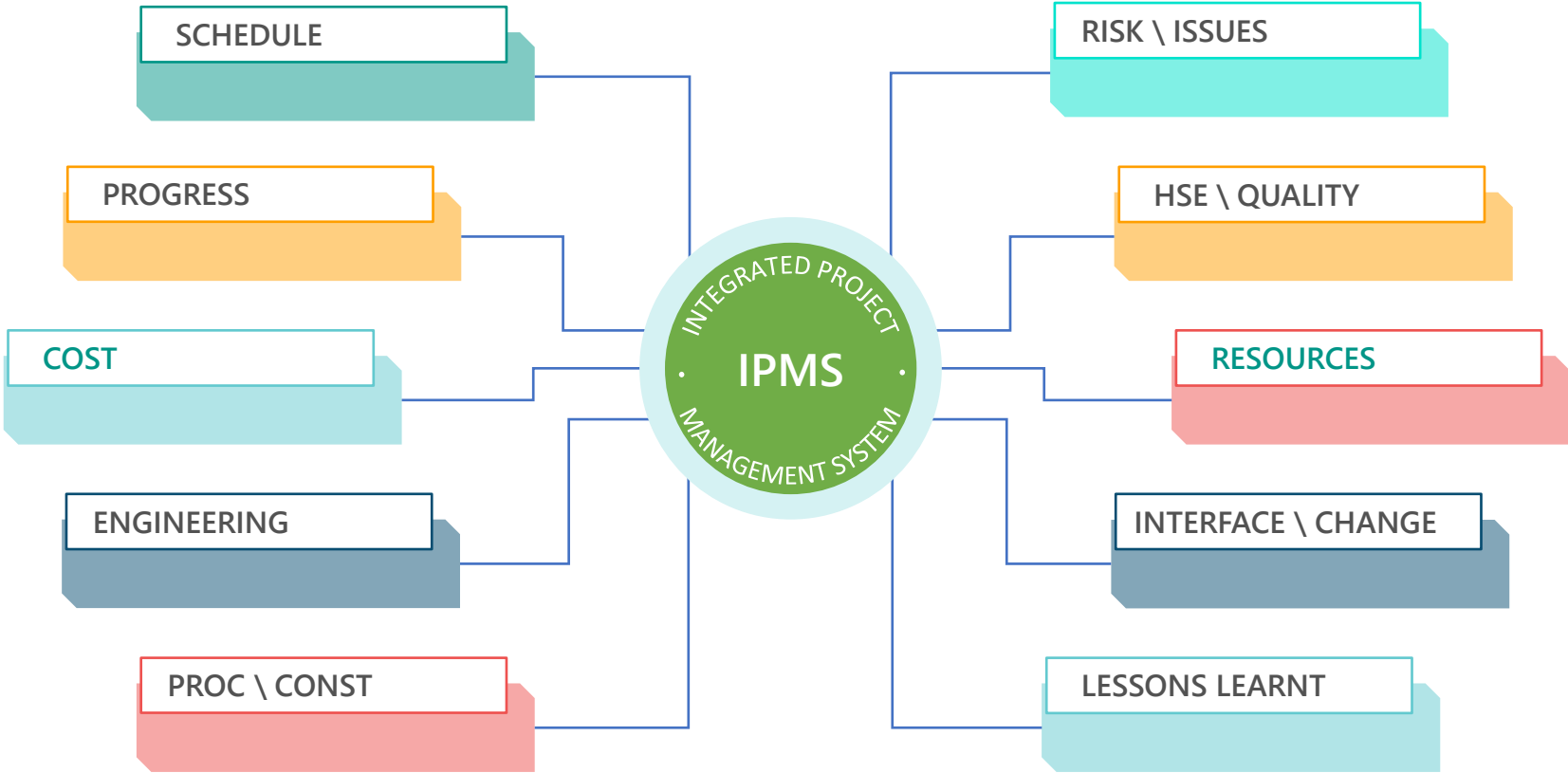
## Approach

- Understand the scope and complexity of the project
- Capture and define stakeholder requirements
- Establish the structure of capturing and reporting progress
- Establish the timeline for reporting from each location and Contractor
- Select a proven digital platform for collating and reporting
- Ensure Security of Data shared and stored using Cloud
- Ensure availability of real-time status to decision makers
- Ensure accessibility to Stakeholders
- Flexibility to integrate with the existing reporting structures of various Contractors





# Project Performance measurement Parameters



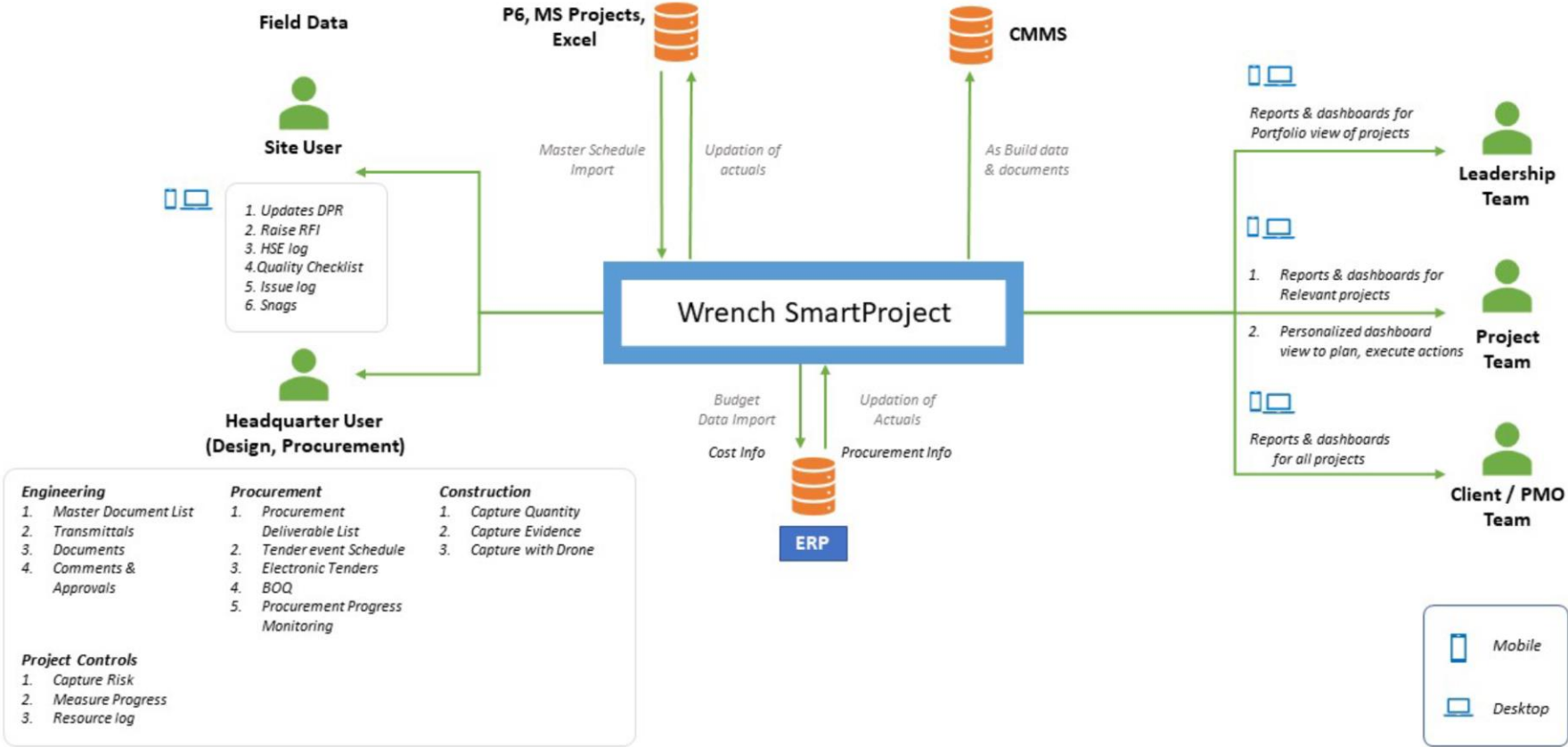
# Digital Platform as PMO

## Wrench Smart Project

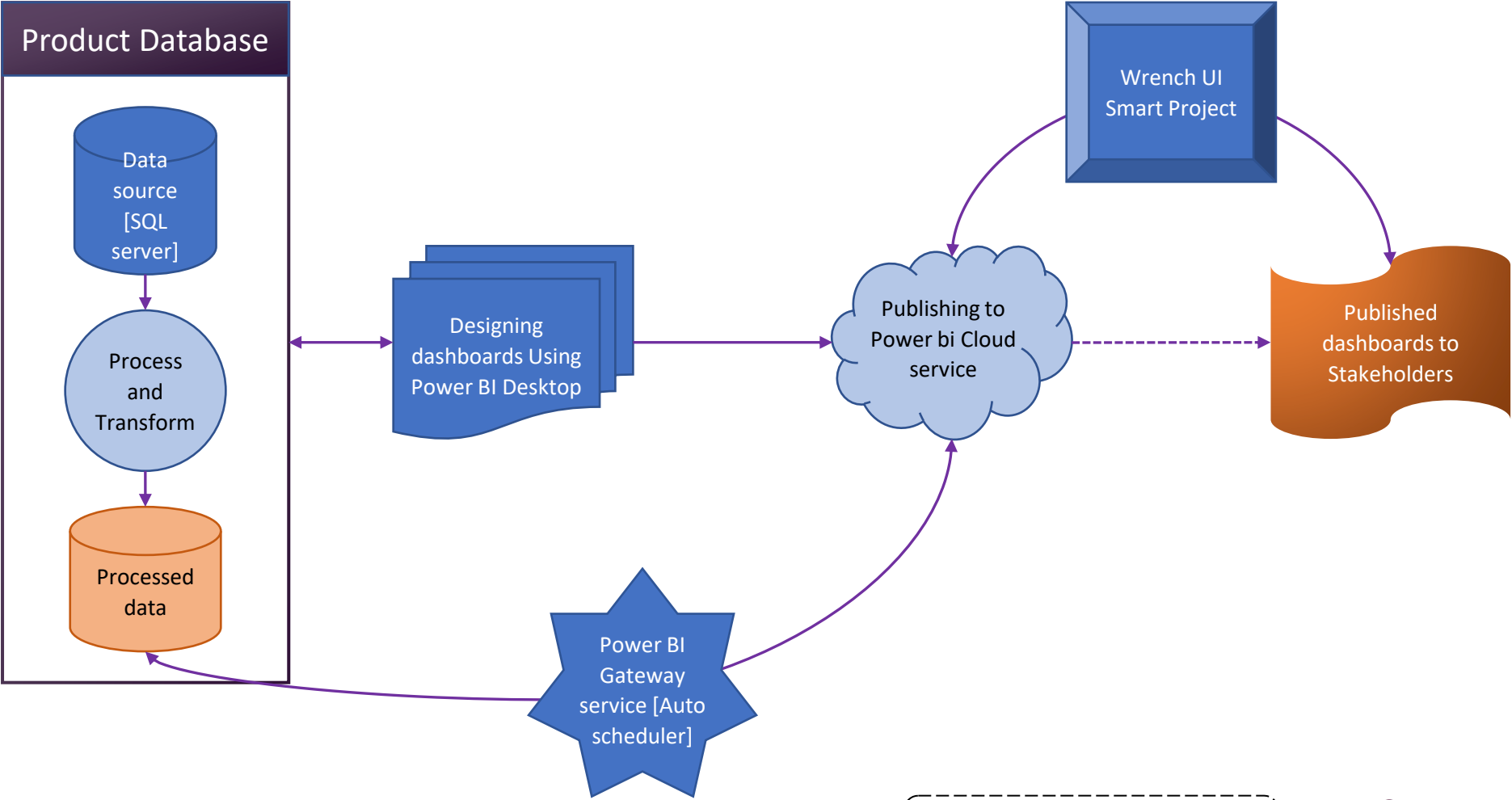
- Wrench smart Project selected as the Digital Platform for the project after evaluating multiple options by the Owners and PMC.
- Smart Project is hosted in MS Azure Cloud
- Accessible by authorized users through desktops and cell phones
- Deployed in 29 countries across the globe
- Utilized by more than 10,000 projects worldwide for real-time monitoring of project performance
- All the work processes are automated, and visualizations are generated with minimal manual interventions



# User / Information flow



# Dashboard Architecture



# Integration with other Applications

Description	Tools	Integration Touch Points
Document Management	MS SharePoint, ACONEX, Documentum, ProjectWise, BIM 360	<ul style="list-style-type: none"> <li>- File transfer</li> <li>- Document metadata</li> <li>- Document List</li> <li>- Document Lifecycle Status</li> <li>- Document Transmittal</li> </ul>
Planning	MS Project, Primavera	<ul style="list-style-type: none"> <li>- WBS Levels, Activities, Planned dates</li> <li>- Actual dates updates ( output)</li> </ul>
Business Analytics	MS PowerBI, Tableau	<ul style="list-style-type: none"> <li>- Dashboarding</li> </ul>
Design tools	AutoCAD, MicroStation, Revit, BIM 360, Inventor, Navis Works	<ul style="list-style-type: none"> <li>- Bilateral Metadata</li> <li>- X refs/ federated files</li> <li>- 4D management</li> </ul>
Review Tools	Rasterex, Bluebeam, Share Point	<ul style="list-style-type: none"> <li>- Comment Management</li> </ul>
ERP/ CRM	SAP, Oracle, InforERP, Salesforce	<ul style="list-style-type: none"> <li>- Project registration</li> <li>- Procurement Management</li> <li>- Budget information</li> <li>- Invoice information</li> </ul>

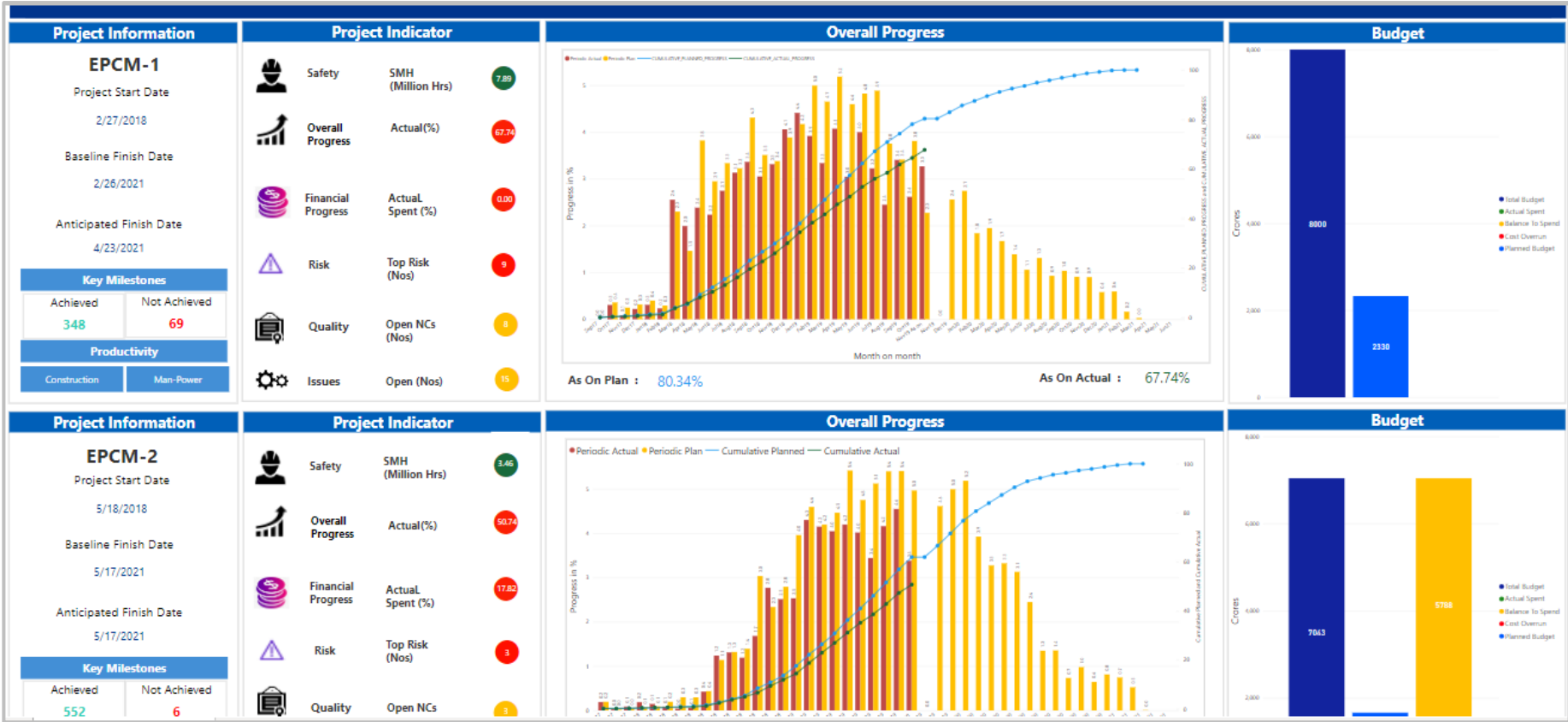


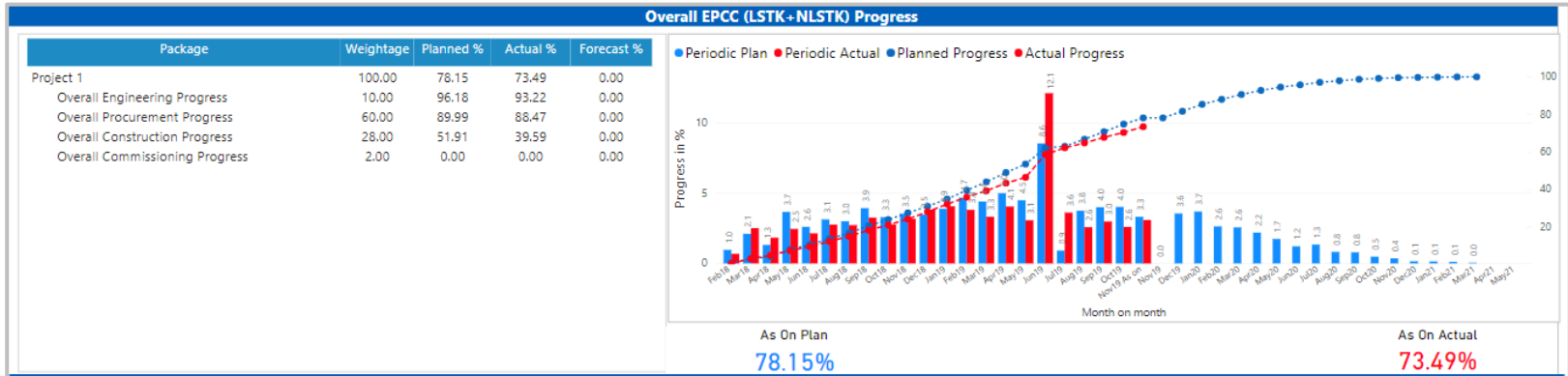
# Digital Platform as PMO

- Portfolio and Project Level Reporting
- Project Health Dashboards
- Progress Curves
- Drill Down reports(Location, package, Contractor Wise)
- Archiving of historical events in project.
- Site Pictures and Drone Videos
- Escalation and Alerts



# PORTFOLIO DASHBOARD





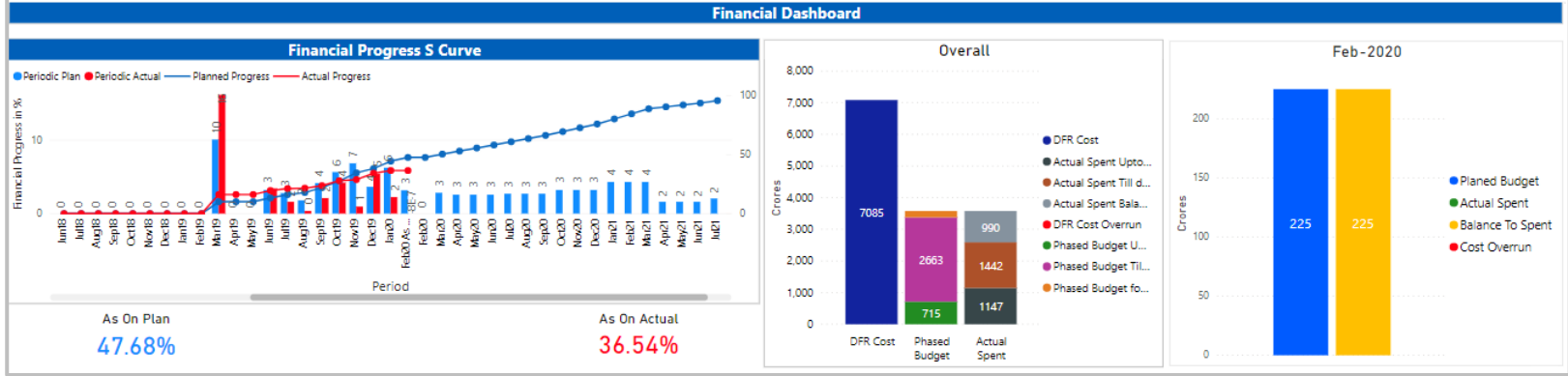
### Key Milestones Current Month

2/27/2018    11/18/2021

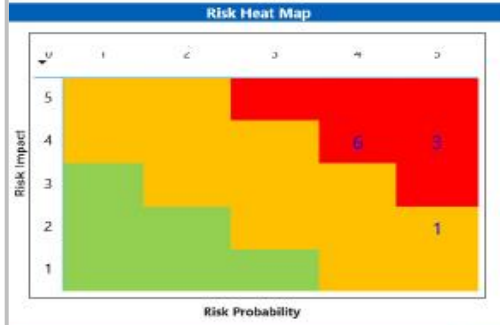
LSTK/NLSTK:  (Blank)       Off Track     On Track

Achieved / Not Achieved:  Not Achieved

WBS	Milestones	Plan	Forecast	Actual	Status	Remarks
AXDA001 - (121-D CO2 Absorber, 122-D2 CO2 Stripper) - M/s Godrej	Big Packed Towers (121-D,122-D2) - at Site	30-Oct-2019	11-Nov-2019		●	
AXDC002 Cr-Mo Reactors- (108-DA/DB/DC,106-D,109-DA/DB)	Cr-Mo Reactors- (108-DA/DB/DC,106-D,109-DA/DB) - at Site	30-Oct-2019	30-Oct-2019		●	
AXEA003 Big C.S. & S.S Heat Exchanger- (110-C,124-C1/C2,127-C,116-C)-06 Nos	H. Exchanger (Large) : - at Site	08-Nov-2019	08-Nov-2019		●	
AXEA025 Heat Exchangers (small) - 08 nos	H. Exchanger (Small) - at Site_1st (U-EA104,U-EA502,U-EA505(1/2, 2/2))	31-Oct-2019	15-Dec-2019		●	
AXEA091 Plate Heat Exchangers (108-C,109-C,112-C,201-C)	Plate H.Exchanger : - at Site	03-Nov-2019	03-Nov-2019		●	
AXGB002 Start up H2 Compressor	Start up H2 Compressor 175-J - at Site	03-Nov-2019	25-Dec-2019		●	
AXJE002 Chain Pulley Block	Chain Pulley Block-- at Site	29-Oct-2019	15-Dec-2019		●	
BYEE001 HP Carbamate Ejector (UEE101)	HP Carbamate Ejector (UEE101) - at Site	27-Oct-2019	08-Nov-2019		●	
BYGA001 Ammonia / Carbamate Feed Pump (U-GA101 A,B, U-GA102 A,B)	Ammonia / Carbamate Feed Pump (U-GA101 A,B, U-GA102 A,B) - at site	29-Oct-2019	24-Mar-2020		●	
BYGA003 Boiler Feed Water Pump (104J/JA)	Boiler Feed Water Pump (104J/JA) - at Site	30-Oct-2019	30-Jan-2020		●	
BYGA004 Feed Water Solenoid Valve (107IA/IB/IC/1A/1B)	Feed Water Solenoid Valve (107IA/IB/IC/1A/1B) - at Site	31-Oct-2019	15-Feb-2020		●	







#### Major Risks

Risk Category	Risk Element	Risk Score
Construction	Delay in WTP/DM plant civil works will delay mechanical erection & commissioning of DM plant	16
Construction	Delay in SS-2 civil readiness for electrical works and substation charging & commissioning of DM Plant	20
Construction	Delay in SS-1 building civil works and handing over to electrical for panel erection & Substation charging	20
Subcontractor Procurement	Delay in procurement & supply of 1st stream materials/equipments by BGR	16
Construction	Delay in intake system readiness will lead to delay in WTP/DM plant readiness	20
Construction	Delay in full fledge site mobilisation by fire fighting agency and start of fire water PH civil works	16
Construction	Delay in fire water system readiness for SY & CPP charging through contingency scheme	16
Construction	Delay in Continuous Filter water requirement from Jan'20 onwards may impact commissioning activities of LSTK plant	16
Construction	Continous DM water requirement for commissioning start of aux boiler by Jan'20 may impact commissioning activities of LSTK plant	16



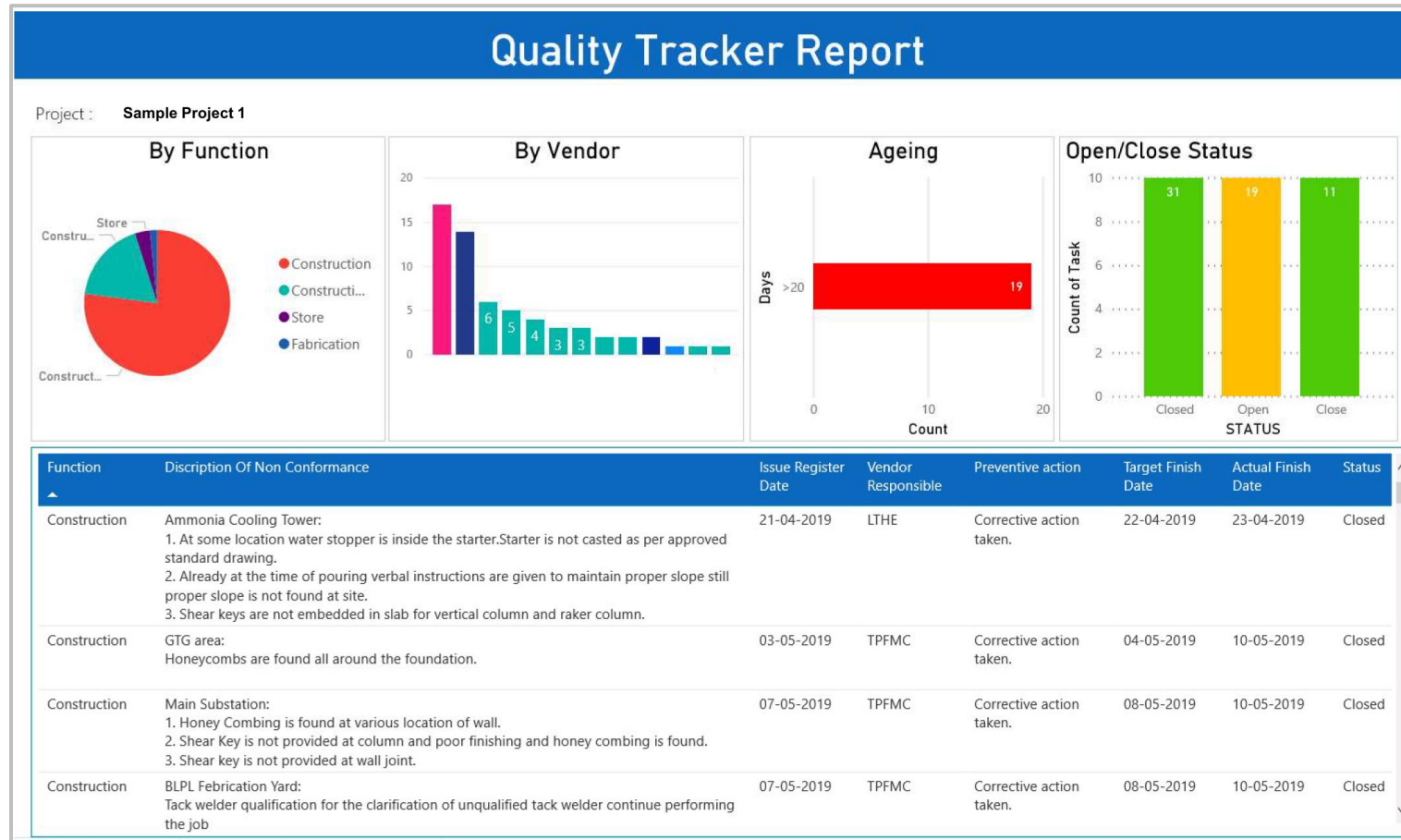
LI Location	Document Link	Last updated on
India-Dabhol	<a href="#">📄</a>	25-Nov-2019
India-Noida	<a href="#">📄</a>	25-Nov-2019
India-Vihavli	<a href="#">📄</a>	25-Nov-2019
India-Yamunanagar	<a href="#">📄</a>	25-Nov-2019
Japan	<a href="#">📄</a>	25-Nov-2019
Sweden	<a href="#">📄</a>	25-Nov-2019

#### Package Summary Report

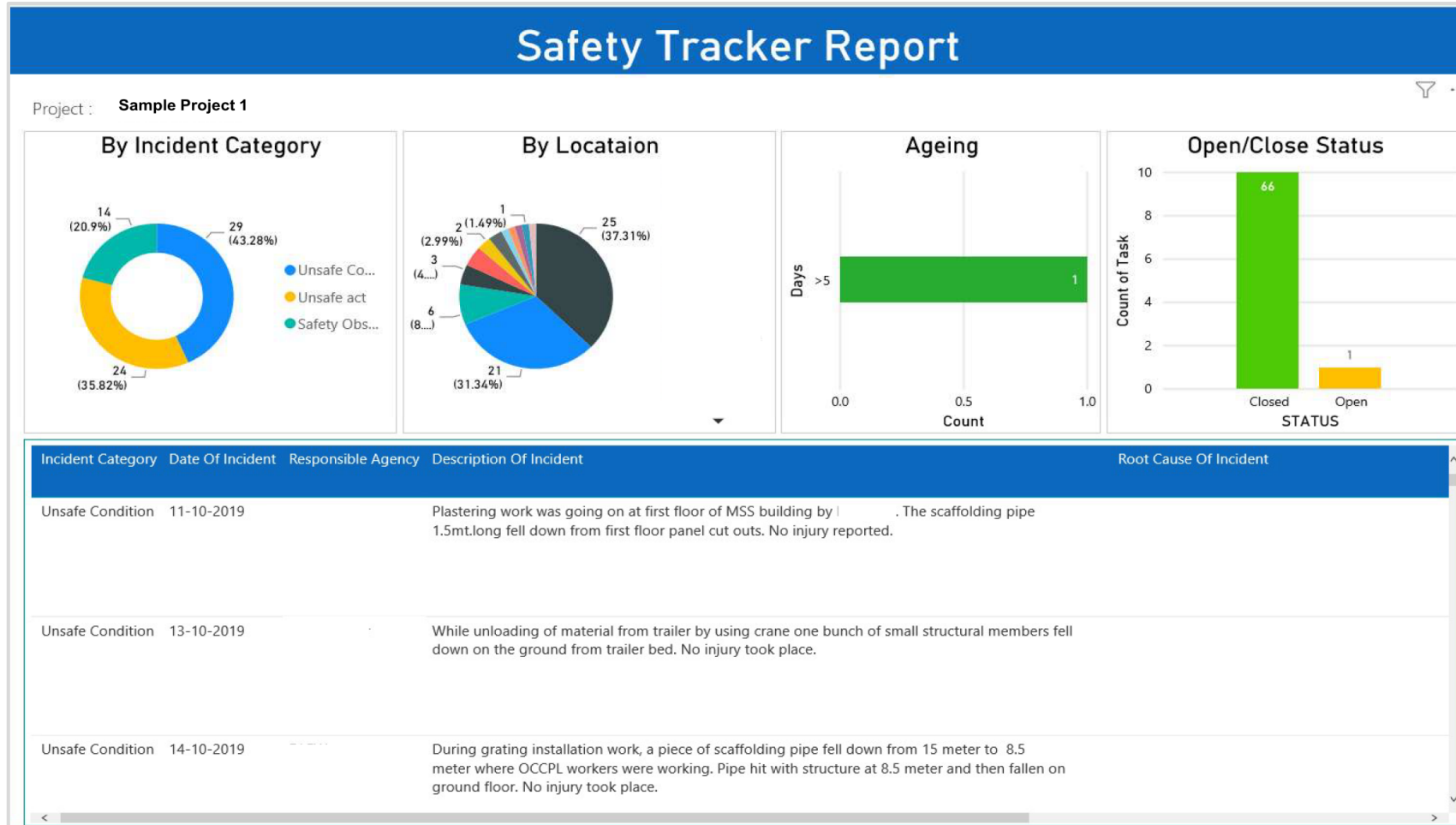
Particular(s)	Sub - Package	Plan	Actual	Name of Vendor	Report	Last updated on
LSTK	Ammonia, Urea, Common	0.00	0.00		<a href="#">📄</a>	22-Nov-2019
NLSTK	DM Plant	95.00	40.10		<a href="#">📄</a>	22-Nov-2019
	EBI Works	12.76	24.00		<a href="#">📄</a>	22-Nov-2019
	Effluent Treatment Plant	92.00	2.00		<a href="#">📄</a>	22-Nov-2019
	Inert Gas	100.00	38.00		<a href="#">📄</a>	22-Nov-2019
	Instrument Air/ Plant Air System	99.29	4.00		<a href="#">📄</a>	22-Nov-2019
	Mechanical Erection Works	28.07	9.00		<a href="#">📄</a>	22-Nov-2019
	OSBL Fire Fighting System	44.52	44.94		<a href="#">📄</a>	22-Nov-2019
	Piling Works	100.00	53.76		<a href="#">📄</a>	22-Nov-2019



# Quality Tracker



# Safety Tracker



# Risk Heat Map

Risk

Project : **BR S Curve-1: Overall Progress Contract Wise**
Risk Details

Risk Heat Map

	0	1	2	3	4	5
Risk Impact						
5					3	1
4	1			3	10	3
3				5	2	1
2		1		2	1	1
1		1				

Risk Probability

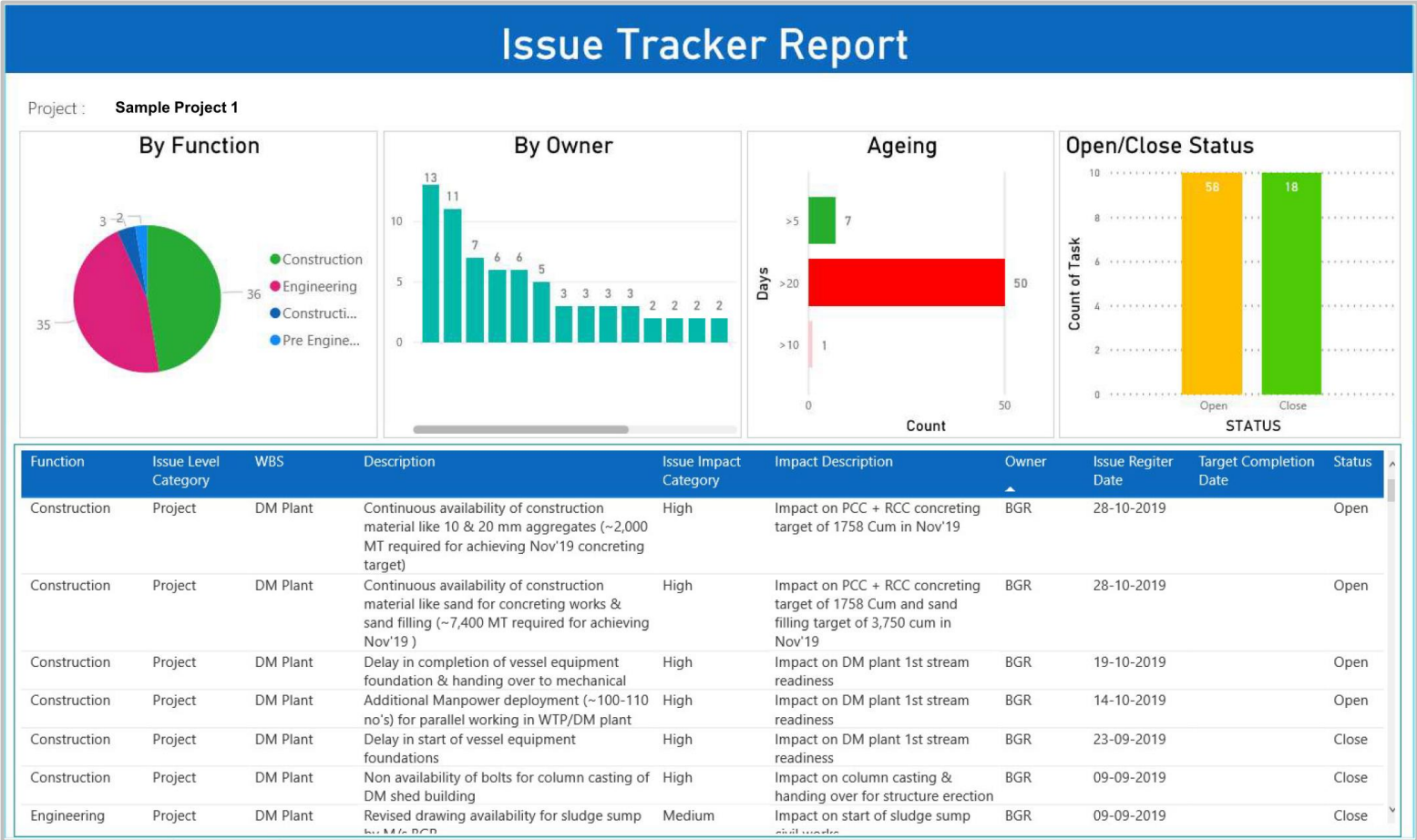
Top Risks

Risk Category	Risk Element	Risk Score
Construction	Accurate recording of actual quantities of work in light of contracted responsibility for quantity variations	20
Pre engineering	Because of delay in awarding contract for laying pipeline from Settling tank to RWPH, raw water may not be available by 16 Apr-20, leading to delay in 1st stream commissioning of RWTP & DM by 25 Apr-20.	16
Construction	Because of delay in submission of catch up plan by M/S Driplex, 1st stream commissioning of RWTP & DM may not be achieved by 25 Apr-2020, leading to delay in critical path of project.	20
Engineering	Because of slow engineering process of fabrication drawings of OSBL piperack, conveyor gantry, transfer towers, super structure of Bagging building and substructure drawings of wagon loading platform may lead to delay in mechanical completion by 28 Dec-20	16





# Issue Tracker



## Benefits

- Real-time update of the project status to all relevant stakeholders irrespective of the location.
- MIS reports are readily available
- Informed Decisions
- Minimum resources and manual intervention in reporting
- Almost zero downtime
- Restricted access to the contents (safeguarding confidential data)
- Availability of historical data instantaneously aids in finalising variations and claims
- Showcase the project performances to highly influential stake holders like ministries.



# Voice of the Users



There will be Work-of-mouth marketing for Wrench SmartProject from the users as all the users are pretty satisfied and convinced with the functionality and the features offered by Wrench.



The milestone trackers are accurate and help in tracking milestones across the three projects.



Wrench SmartProject literally worked as a 'digital PMO' for us during this difficult period.

“The flexibility of SmartProject when it comes to structuring workflows reports to our specific business process is in my view is the most value-added feature we got during this implementation, especially when compared to the more rigid framework of other products in the market I have seen



# Q&A





**THANK YOU**

