

Getting to Your Digital Twin

A Journey From Assessment to Implementation



RIZING

Getting Your Digital Twin

- 1 Rizing solution expertise
- 2 Getting to know the challenges
- 3 Assessments
- 4 Key considerations on your digitization journey
- 5 Implementation roadmap
- 6 SAP as a home for your digital twin
- 7 Q & A and Closing

Your Host Today



Andy Startin
Market Unit Director UKI,
Rizing

Your Speakers Today



Shubham Rajvanshi
Asset Information Expert
and Client Partner,
Enterprise Asset
Management, Rizing



Harm-jan Smit
Solution Architect,
Enterprise Asset
Management, Rizing

Who We Are and What We Do

Leading global SAP® consulting services, initially founded

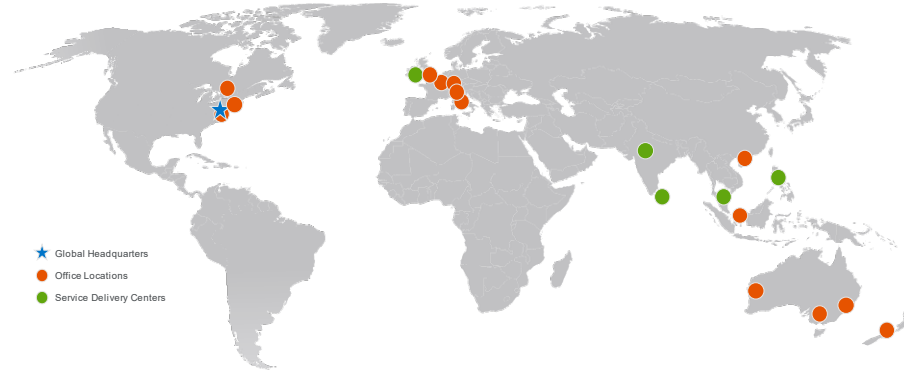
2005



In-house Digital Development Centers (DDC) in Malaysia, Bangalore, Sri Lanka, and the Philippines

1,250+

Employees worldwide



- | | | | | |
|--|--|---|--|---|
| ★ Stamford (CT), USA | ● Dublin, IRL | ● Munich, DEU | ● Hong Kong, HKG | ● Perth, AUS |
| ● New York (NY), USA | ● London, GBR | ● Milan, ITA | ● Manila, PHL | ● Melbourne, AUS |
| ● Boston (MA), USA | ● The Hague, NDL | ● Bangalore, IND | ● Kuala Lumpur, MYS | ● Sydney, AUS |
| ● Montreal, CAN | ● Walldorf, DEU | ● Colombo, LKA | ● Singapore, SGP | ● Wellington, NZL |



HCM



EAM



CONSUMER INDUSTRIES



GEOSPATIAL SOLUTIONS

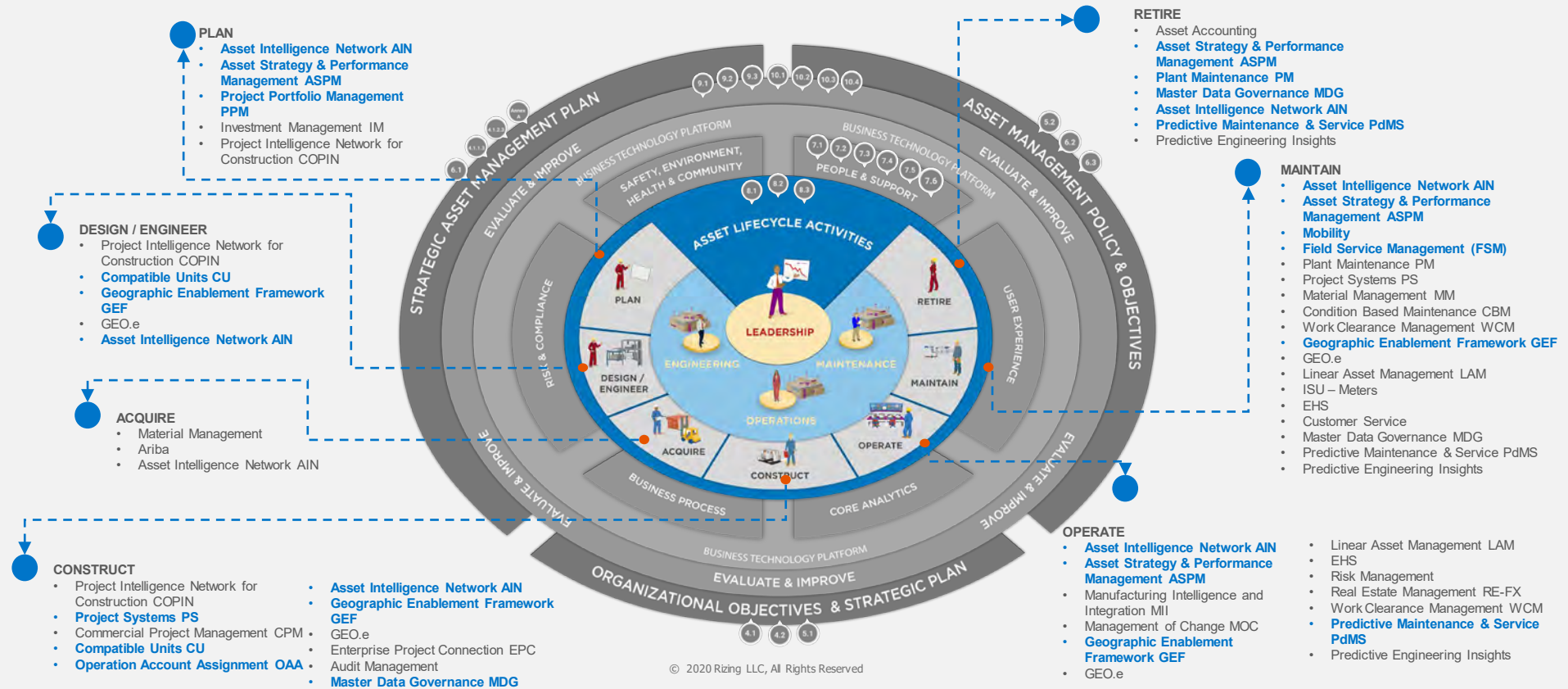
A global line of business, focusing exclusively on SAP Enterprise Asset Management



RIZING



OUR SOLUTION EXPERTISE ACROSS THE ENTIRE ASSET LIFECYCLE





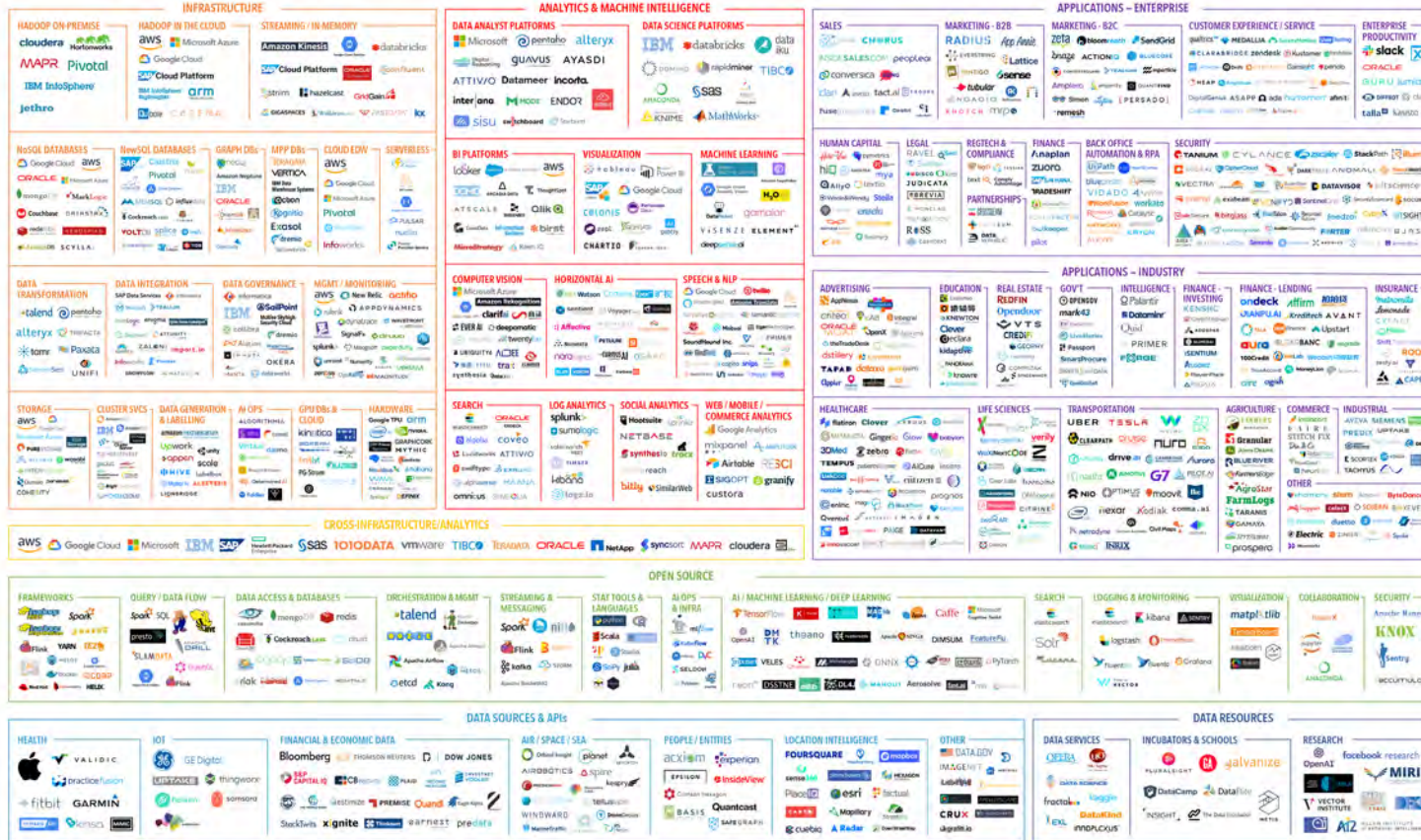
Getting to know the challenges

Shubham Rajvanshi

Are You Facing These Challenges?

BUSINESS	<ul style="list-style-type: none">• Lacking the capability to realize improvements and track value realized• Inability to demonstrate technical integrity to authorities• Lacking the visibility on performance (root causes for problems)
PEOPLE & SKILLS	<ul style="list-style-type: none">• Insufficient availability of competent resources• Not enough knowhow & skills to raise maturity levels• Not exploiting the system's capabilities to its full extent
PROCESS	<ul style="list-style-type: none">• Lacking the transparent processes which are not aligned to Industry Standards• Lacking the Asset Information Governance Process• Lacking the structured approach and implementation plan
TECHNOLOGY & DATA	<ul style="list-style-type: none">• Lacking the utilization of the existing technology to its full potential• Inaccurate Asset Data & Information (As Built lacking)• Failing to consider IT landscape complexity

IT Landscape Complexity – It's a Big World



Industries Trends



OIL & GAS	CHEMICAL	UTILITIES	TRANSPORTATION	DEFENSE
Portfolio Diversification	Higher Productivity with automation, analytics	Customer Engagement (Digital experience, Covid-19 impacts)	Collaboration across all stakeholders to manage the asset	Faster and More Efficient Projects
Fixed & Operating Cost Reduction	Faster and Efficient Projects	Asset Age and Reliability (Asset Age, Increasing Asset Base, Asset Complexity)	Portfolio & Project Management	Fixed & Operating Cost Reduction
Managing the fluctuations (Low price, Mismatch in supply and demand)	Faster adaption to changing market demands	Grid Resiliency (De-Carbonization and Renewables, Electric Vehicle Expansion)	Geospatial Asset Management	Mobility
Rise of environmental & socially responsibility	Lower Carbon Footprints	Climate Resilience (Increased Investment Required)	Climate Resilience (Increased Investment Required)	Regulatory Compliance
Adaption of new entrants and disruptive technologies	Sustainability, Circular Economy	Performance based regulations	Sustainability	Increased Operational Efficiency & Workforce Productivity
Higher operational efficiency and workforce Productivity	Increased Assets Reliability	Aging Workforce and Mass Retirements (Lack of Skilled Replacements)	Increase travel capacity on existing infrastructure	Digital Twinning
Increased Safety (Workers, Cyber, Process)	Increased Safety (Workers, Cyber, Process)	Increased Safety (Workers, Cyber, Process)	Increased Safety (Workers, Cyber, Process)	Increased Safety (Workers, Cyber, Process)

Common Initiatives Across Industry Segments

Oil & Gas

Chemical

Utilities

Transportation

Defense

Integrate Geographically Distributed Assets
Process harmonization & alignment across the organization
Supply Chain Optimization
Optimize STO Planning, Scheduling & Execution
ICS Cyber Security
Improve asset performance: Overall Equipment Effectiveness, Availability Utilization
Clear view of Asset Health: Condition and Reliability
Inventory Management – MRO Spares optimization
Integrated Maintenance, Mobility



*“Digital Twin
with Accurate and
Real-time Data
is critical to
achieve the goals”*

Digital Twin (Real Time Reflection of Physical Asset)



Trusted Digital Twin with real-time & accurate data

- Physical and Location Data
- P&ID's, Engineering Schematics
- 3D Model
- Process, Production
- Maintenance & Materials
- Finance & ERP

Common Data Model

Optimize & Innovate





Assessments

Shubham Rajvanshi

Where to Start, Keeping the Doors Open for Future Innovation?

Why do you need to transition?

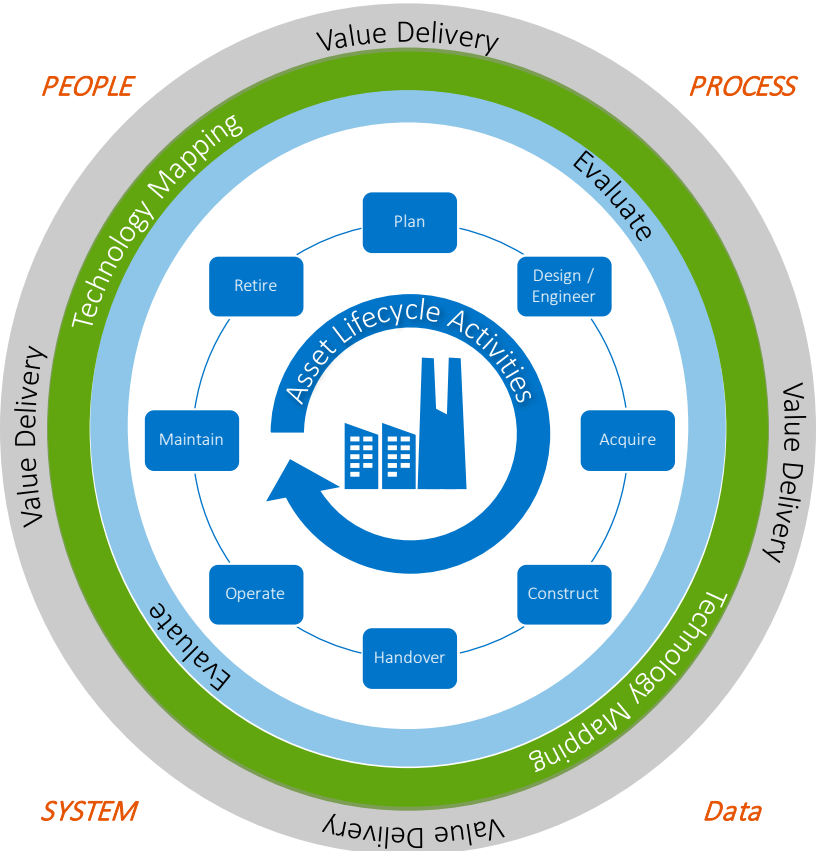
Evaluate

What is required to transition?

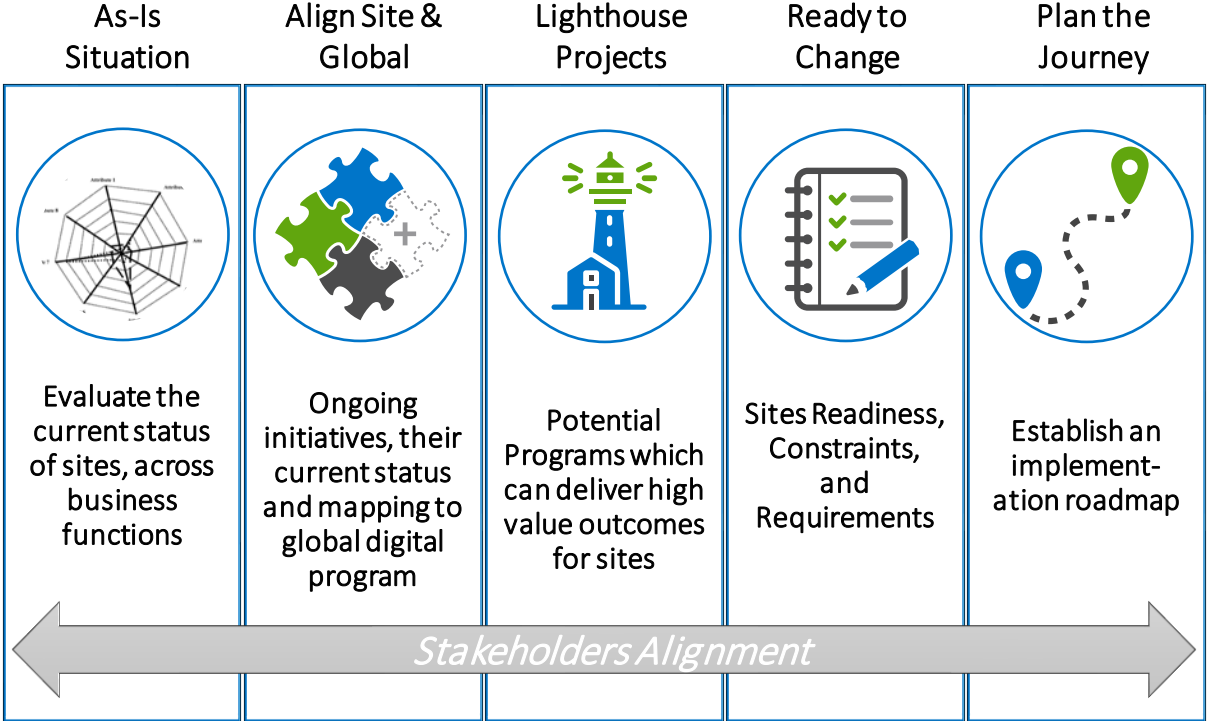
Technology Mapping

How is required to transition?

Value Delivery



Objectives of Site Assessment



Four Pillars for Assessment



People



Process



Technology



Data

Types of Assessments: Where Do You Want to Focus? **RIZING**

HOLISTICVIEW:

ASSET MANAGEMENT ASSESSMENT

- Scope as defined in ISO 55000
- Covers all People, Process, Systems and Data within the scope of the Asset Management domain

SPECIFIC ASSESSMENTS:

EAM SAP ASSESSMENT

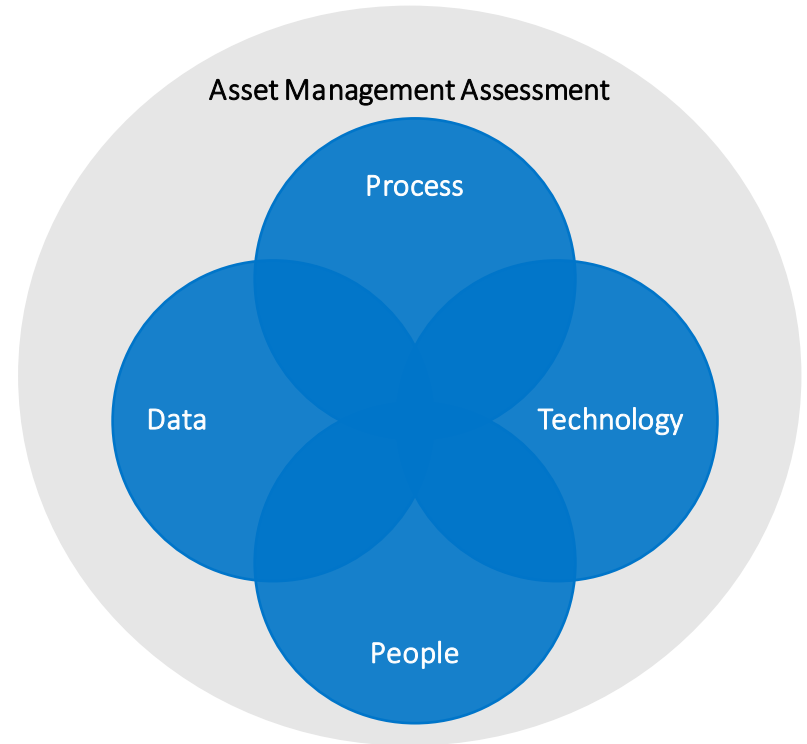
- Assessment focusing on Asset Management from an SAP EAM system/solution point of view.
More SAP IT focused and less business.

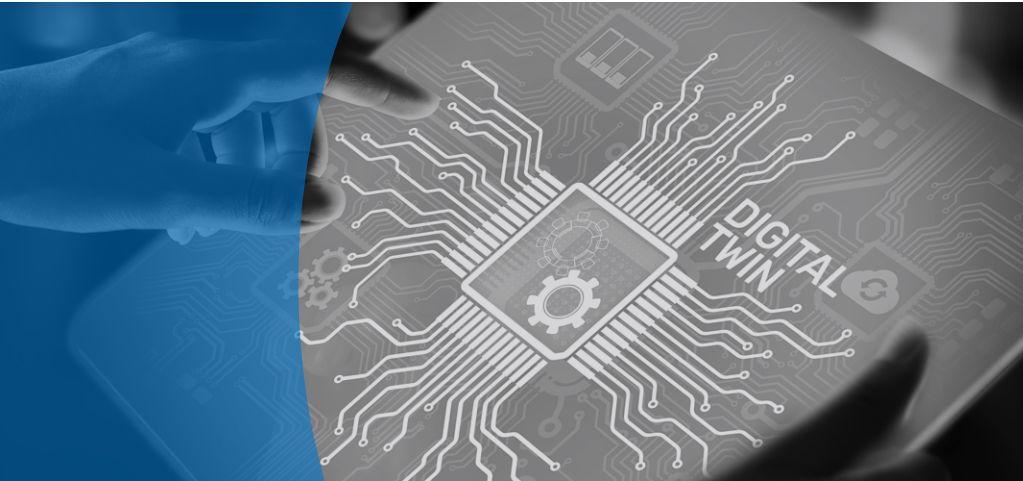
MASTER DATA ASSESSMENT

- Assessment focusing on Asset Data (and Documents) and the Data Governance processes.

CUSTOM ASSESSMENT

- Assessments based on client specific requirements, such as
 - Inventory Management Assessment,
 - Maintenance Process Assessment,
 - Specific Data Type Assessment - Asset Register, FLOC, etc..

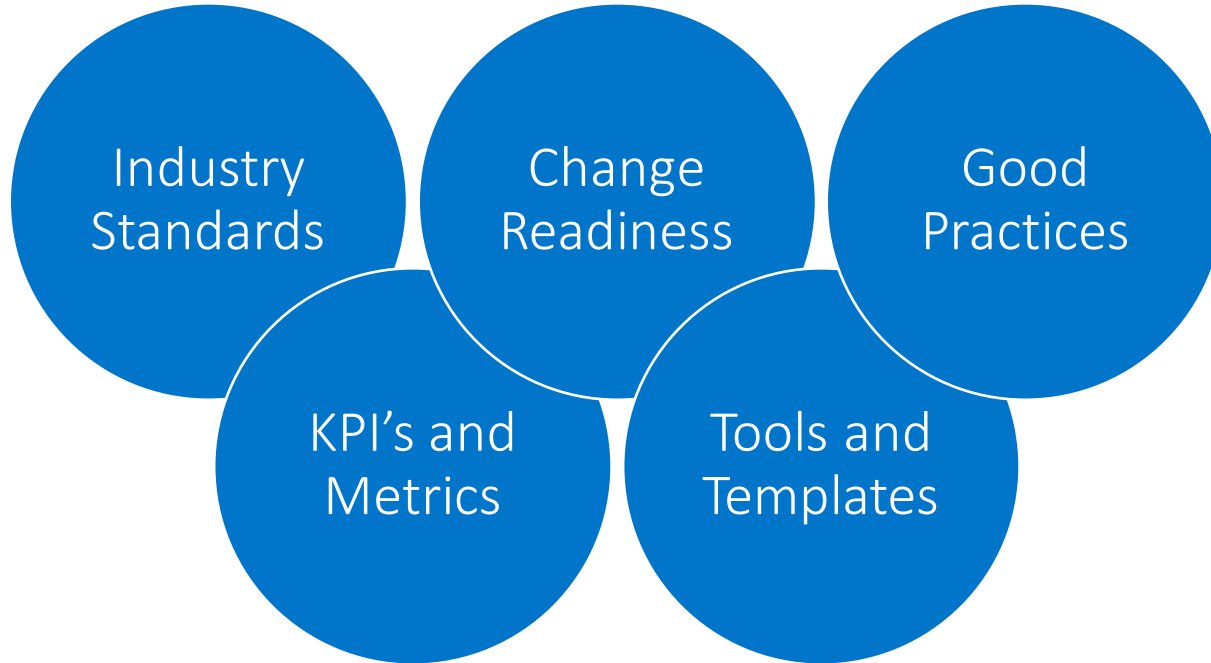




Key considerations on your digitization journey

Harm- Jan Smit

What do we need to consider during transition?



Industry Standards, across segments

CATEGORY	OIL & GAS	CHEMICAL	UTILITIES	TRANSPORTATION	DEFENSE
Asset Management	ISO 55001	ISO 55001	ISO 55001	ISO 55001	ISO 55001
Data Model & Dictionary	ISO 15926, CFIHOS	ISO 15926, CFIHOS	ISO 15926, CIM, CFIHOS, ISO 24516,	ISO 15926, CFIHOS, ISO 22163	ISO 15926, CFIHOS
Occupational Health and Safety	ISO 45001	ISO 45001	ISO 45001	ISO 45001	ISO 45001
Reliability	ISO 14224	ISO 14224	ISO 14224	ISO 14224	ISO 14224
Materials Management	MESC, eCLAS	MESC, eCLAS	MESC, eCLAS	MESC, eCLAS	MESC, eCLAS
Engineering	API / ASME / DIN / DEXPI	API / ASME / DIN / DEXPI	API / ASME / DIN	API / ASME / DIN	API / ASME / DIN
Environmental Management	ISO 14001	ISO 14001	ISO 14001	ISO 14001	ISO 14001
Automation	ANSI/ISA-95	ANSI/ISA-95	ANSI/ISA-95	ANSI/ISA-95	ANSI/ISA-95

Application of Industry Standards

(REF.: ENU INDUSTRY SEGMENT)



14224

Connecting all stakeholders throughout the asset lifecycle

Asset Lifecycle



Product lifecycle "PLM"



Manufacturer
Supplier
EPC



15926

Owner/operator
Service provider
Dealer



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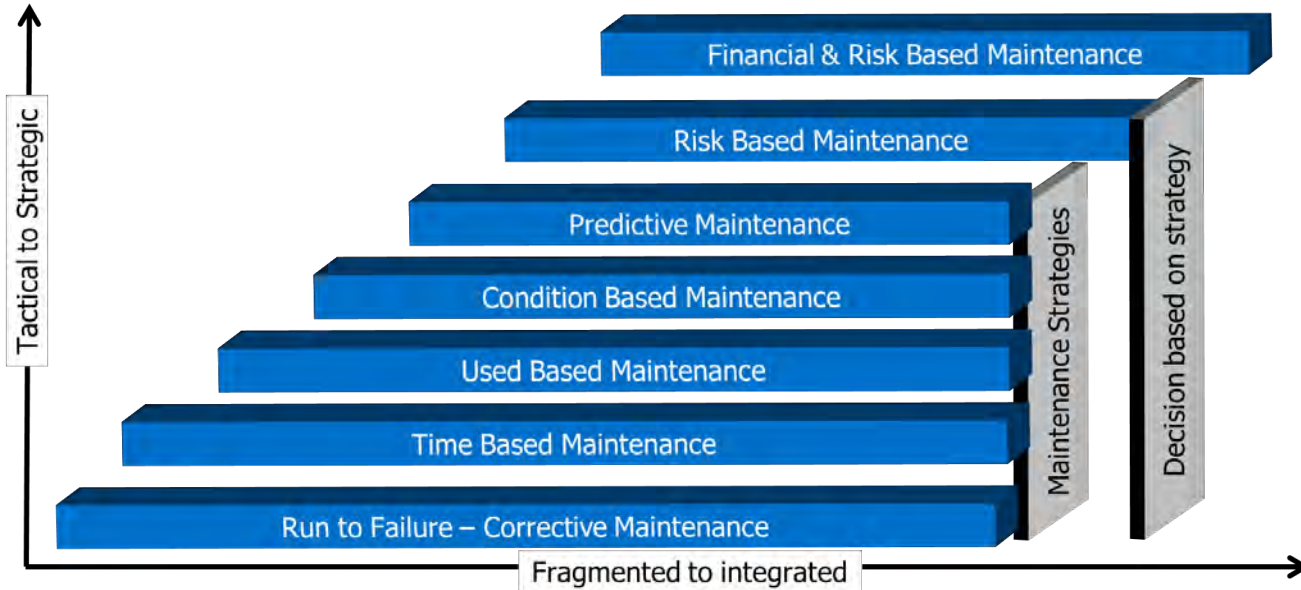
IT



OT

Connecting IT with OT

Climbing the Asset Management maturity ladder



Specific improvements, to address specific demands

Asset Management Assessments (or Assessments on subtopics) are an integral part of continuous improvement within any organization in order to climb the maturity ladder.

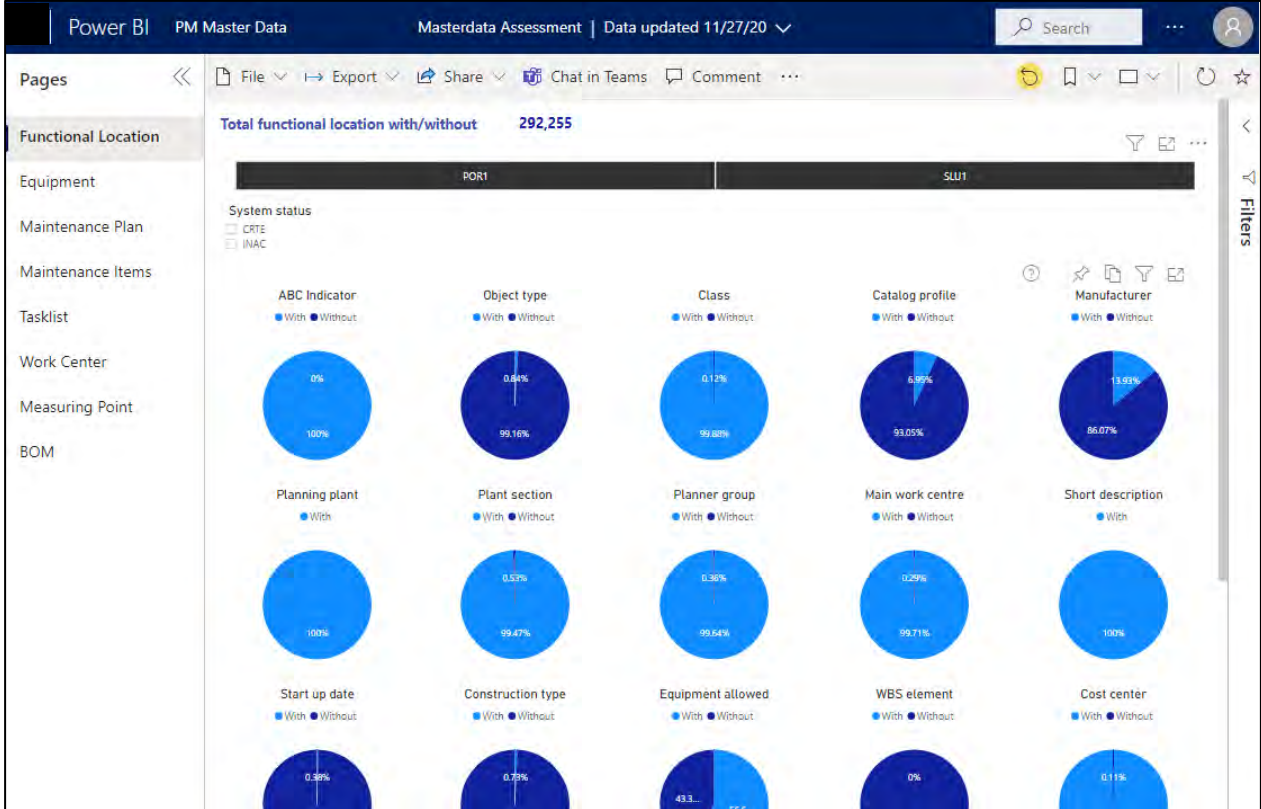
Large organizations would develop their own internal assessments and even measurement/benchmarking tools to drive continuous improvement. From Rizing perspective

- External look and benchmarking
- Relatively low effort/cost activity
- Can/need to be repeated
- Creating buy-in for consecutive improvement activities

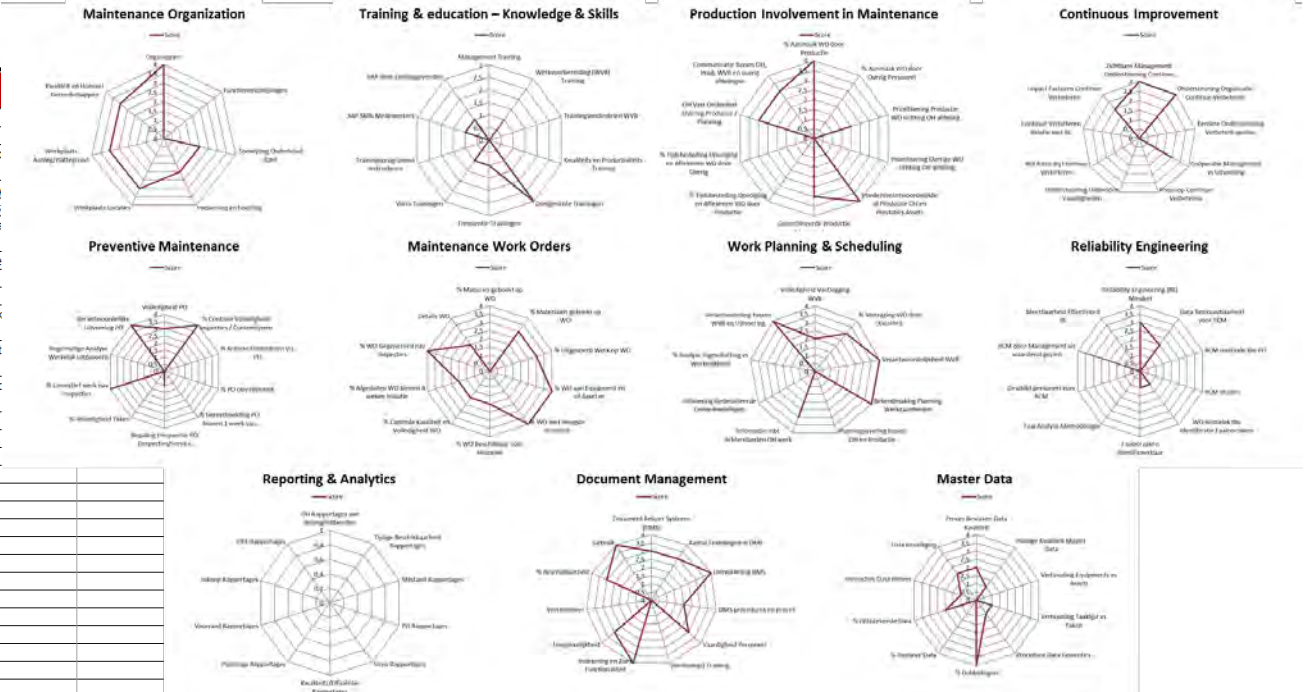


“There is so much to improve, so where should I start? Without closing doors on future innovation.”

Master Data Dashboard



Nr	Question
4.1. System Overview	Which systems are used? (all)
	Release calendar?
	What systems do you currently have in place and manage Maintenance data?
	Is there a standard system or multiple systems?
	Are your systems on common databases?
	Do your systems use a common computing environment/architecture?
	Is 24 hours/day access to the system a requirement?
	Amount of customizing present
	Integration requirements
	How many "custom" excels are used to manage assets?
	How many "customized" tables, transcript reporting are used?
	DTQAP (OTAP) – How many tiers/instances?
	Releases
	Modules
	Enhancement pack
	Industry solutions activated
	Application interfaces
	User interface
Integrations	Material Management
	Finance and Controlling
	Work Prep/Planning/Scheduling
	Human Resources
	Quality Management
	Project systems
	Production Planning
	Document Management
4.2 Master Data	Mobility requirements
	IoT / ASPM / AIN / PdMS
	GIS
	Other
	Organizational Structure
	Functional locations
	How many structure indicators are used?



Please fill Self
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Implementation Roadmap

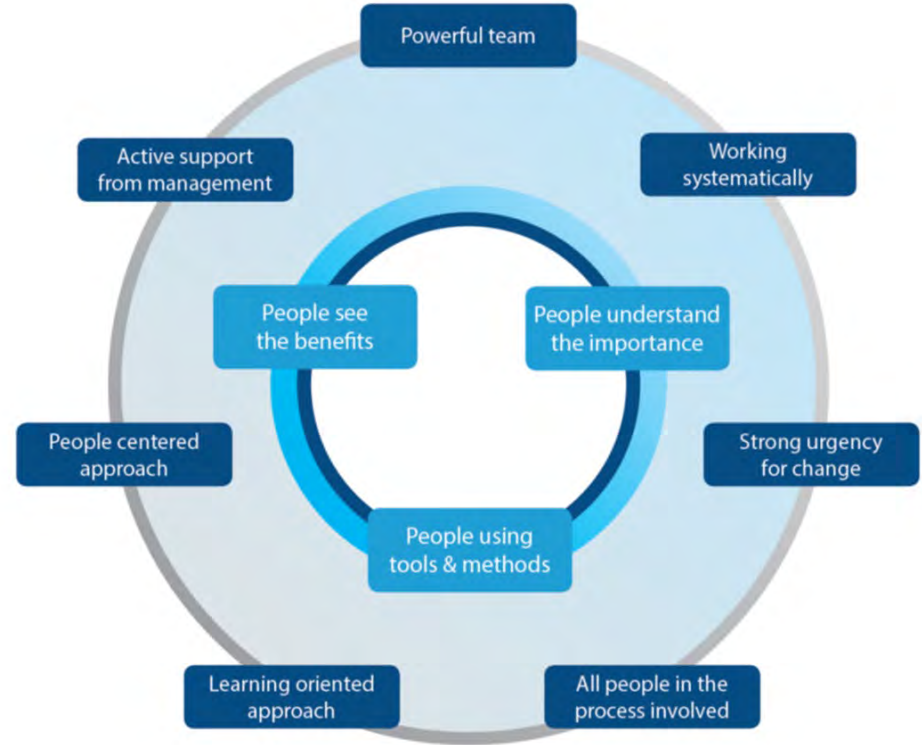
Harm- Jan Smit

Implementation Roadmap – A People-Centric Approach

At Rizing we believe that Change Management is not about some methods in a book, that you can follow, tick the boxes and results will follow automatically.

It is about realizing that change is all about People!

Taking this principle into account in everything we do, tapping into people's intrinsic motivation, from start to end of any project or program, that will make the difference.



Implementation Roadmap – Assess the Readiness

Considering the ongoing and planned individual initiatives, sites readiness, acceptability, training need and risk profile

INITIATIVE PIPELINE

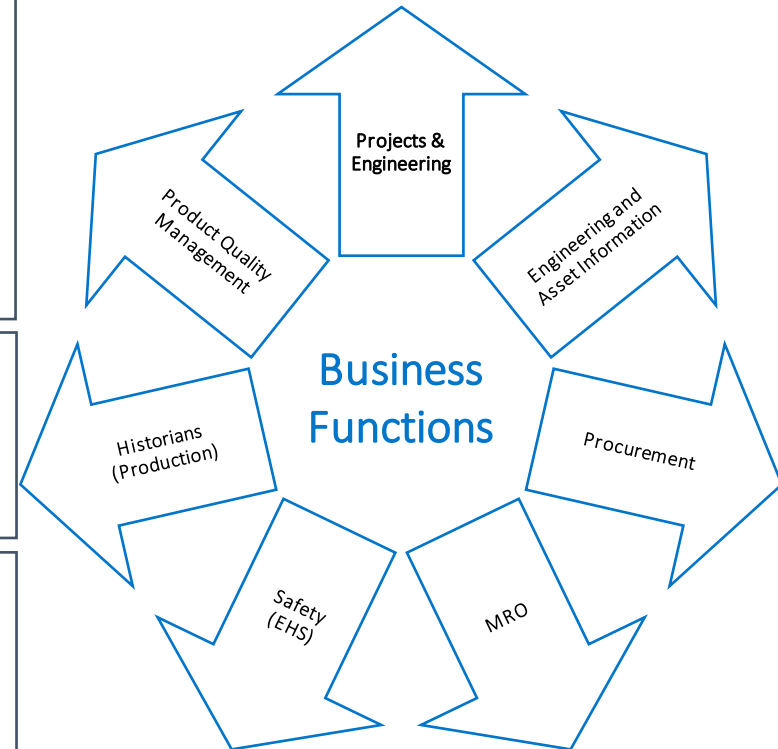
- Collect the **details** from Site Champion and Site Stakeholders
- Review the **business cases** and their current status/planning
- **Validation and alignment of cost** and benefits, along with Site Stakeholders
- **Analyze the initiatives** on consistency and overlaps, if any
- Identify and include the **potential improvement areas** for Business Functions, as applicable
- Align the **outcomes** with Site Champion

IMPLEMENTATION ROADMAP

- Collect the **Time and Resources** requirements of Initiative Pipeline
- Analyze the **initiative pipeline** from both the aspects: **Resources and Timeline**
- Share the **recommendations** to optimize

INITIATIVE CHARTERS AND REPORTING

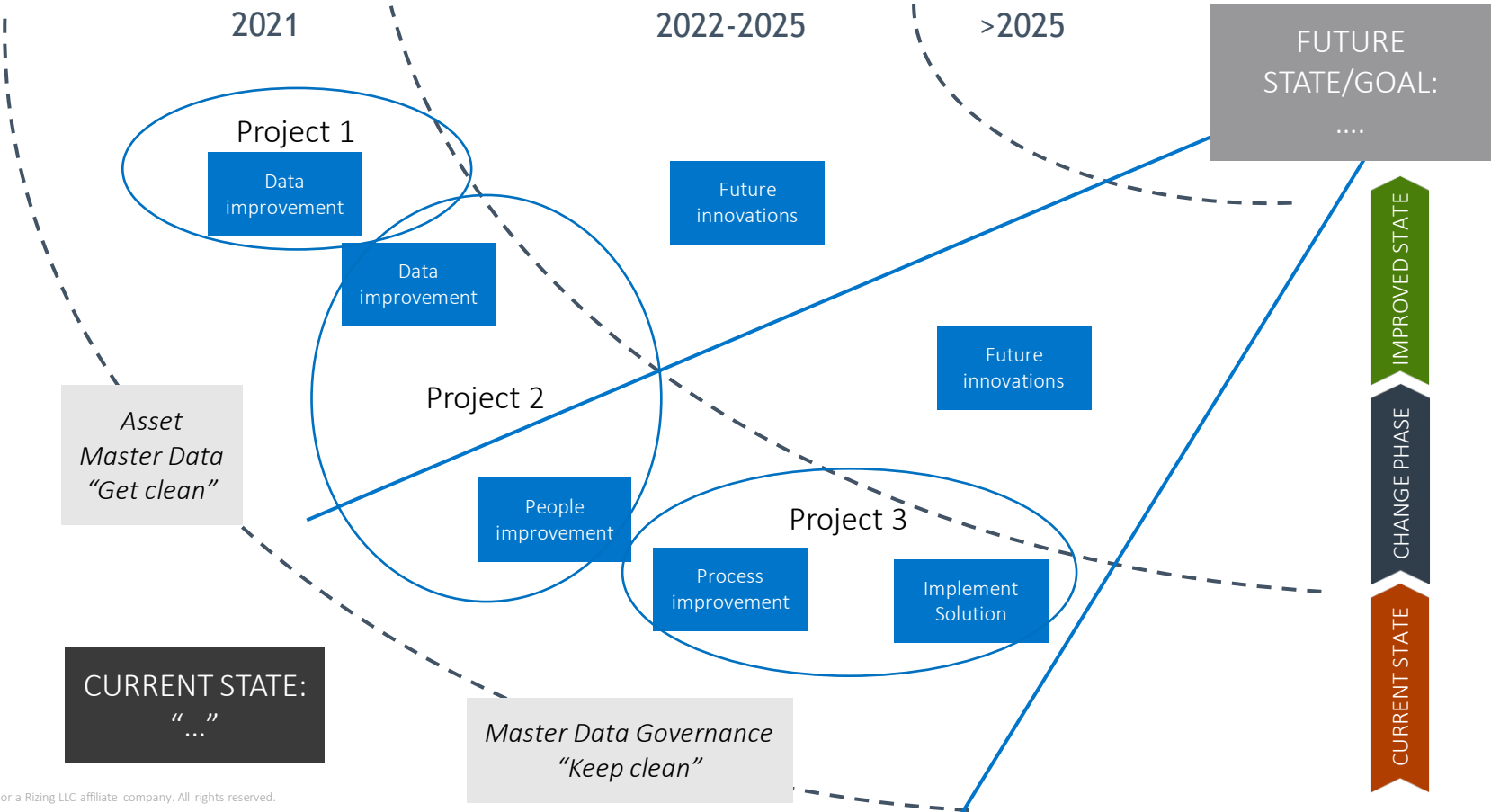
- Develop the **Initiative Summary and Charters**
- **Finalize, report, and present the outcomes** to Global/Site Stakeholders



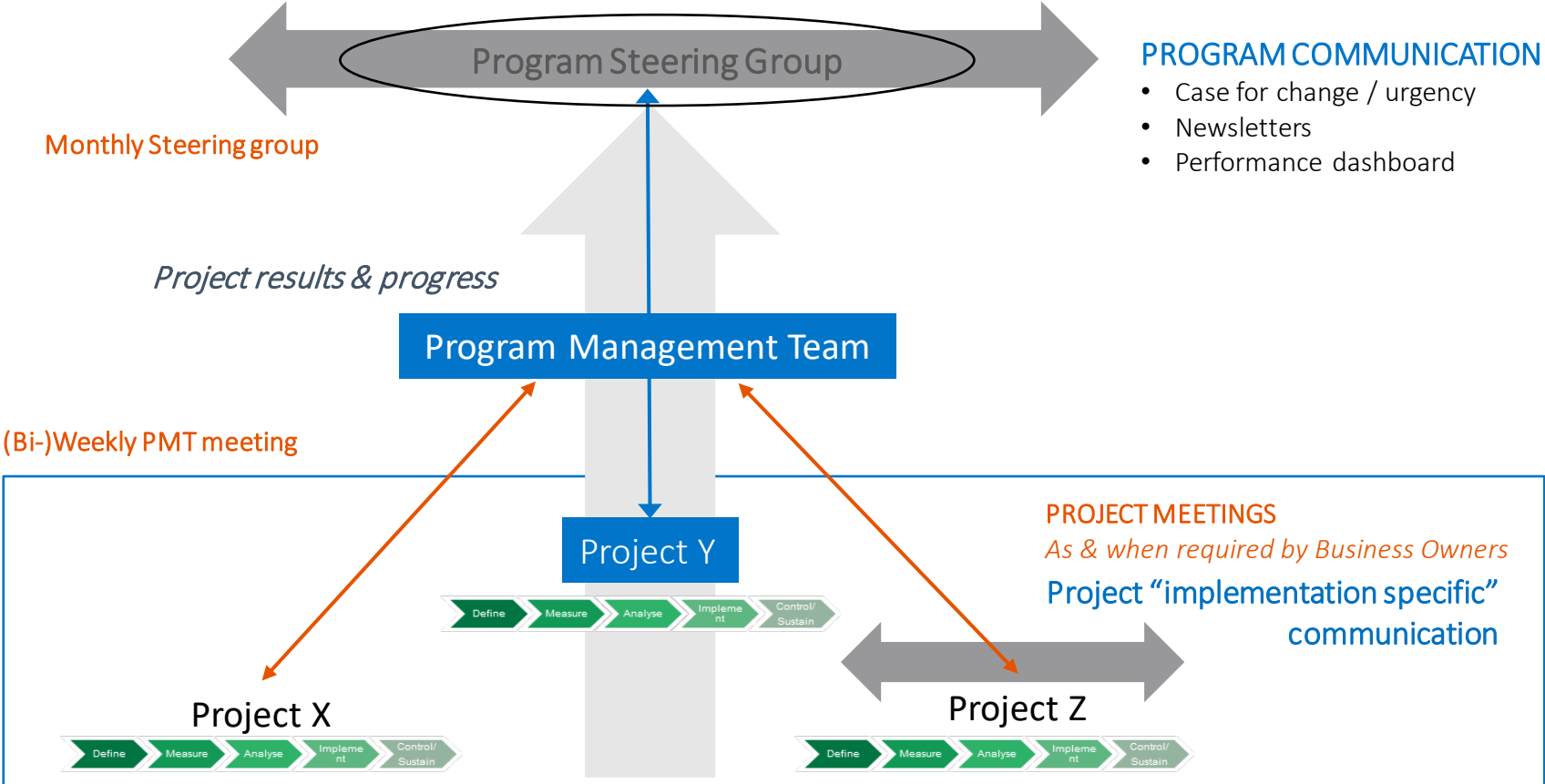
Where Do You Have the Opportunities?

Areas	Opportunities
Maintenance, Operations & Execution	<ul style="list-style-type: none">• Identify gaps in Maintenance Work initiation, Planning, Scheduling and Execution process. Develop improvement roadmap and it's implementation• Implement Operational Dashboards to visualize process performance• Utilize the mobility and other technologies for efficiency increase and better UX
APM & Predictability	<ul style="list-style-type: none">• Identify gaps in APM process. Develop improvement roadmap and it's implementation• Utilize the best available options like SAP IAM solutions like ASPM, PAI. Implement and configure the same, to meet the requirements
Projects & Turnarounds	<ul style="list-style-type: none">• Identify gaps in Projects & Turnaround processes. Develop improvement roadmap and it's implementation• Implement Operational Dashboard to visualize process performance• Automate the process utilizing the integrators for reducing manual efforts, and errors
Asset Data & Documents	<ul style="list-style-type: none">• Identify gaps in EAM Master Data and Data governance processes. Develop improvement roadmap and it's implementation• Implement Master Data Dashboard to visualize data gaps and data governance performance
Material Management & Logistics	<ul style="list-style-type: none">• Identify gaps in integrations between SAP PM, PS and MM processes. Develop improvement roadmap and it's implementation• Utilize the best available options like SAP IAM solutions – AIN. Implement and configure the same, to meet the requirements
Management & Leadership	<ul style="list-style-type: none">• Change Management• Increasing the adoption by involvement and organizing management coaching, trainings, workshops, etc.

Implementation Roadmap – Phased Approach

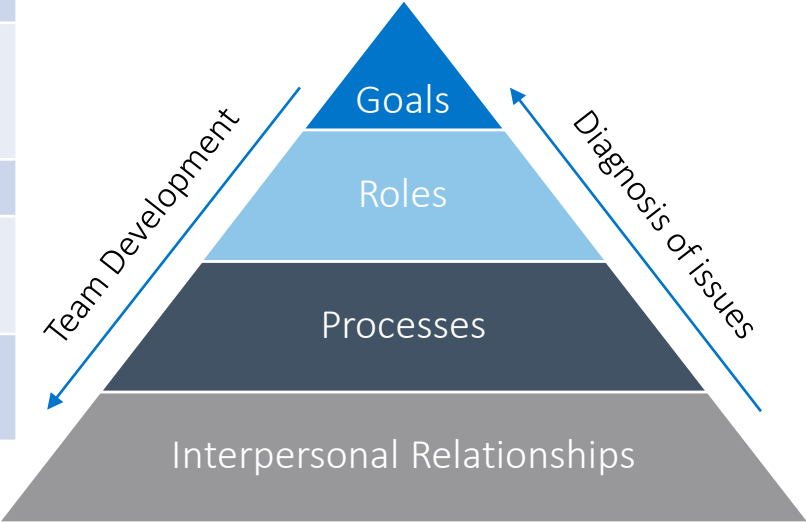


Implementation Roadmap – Governance

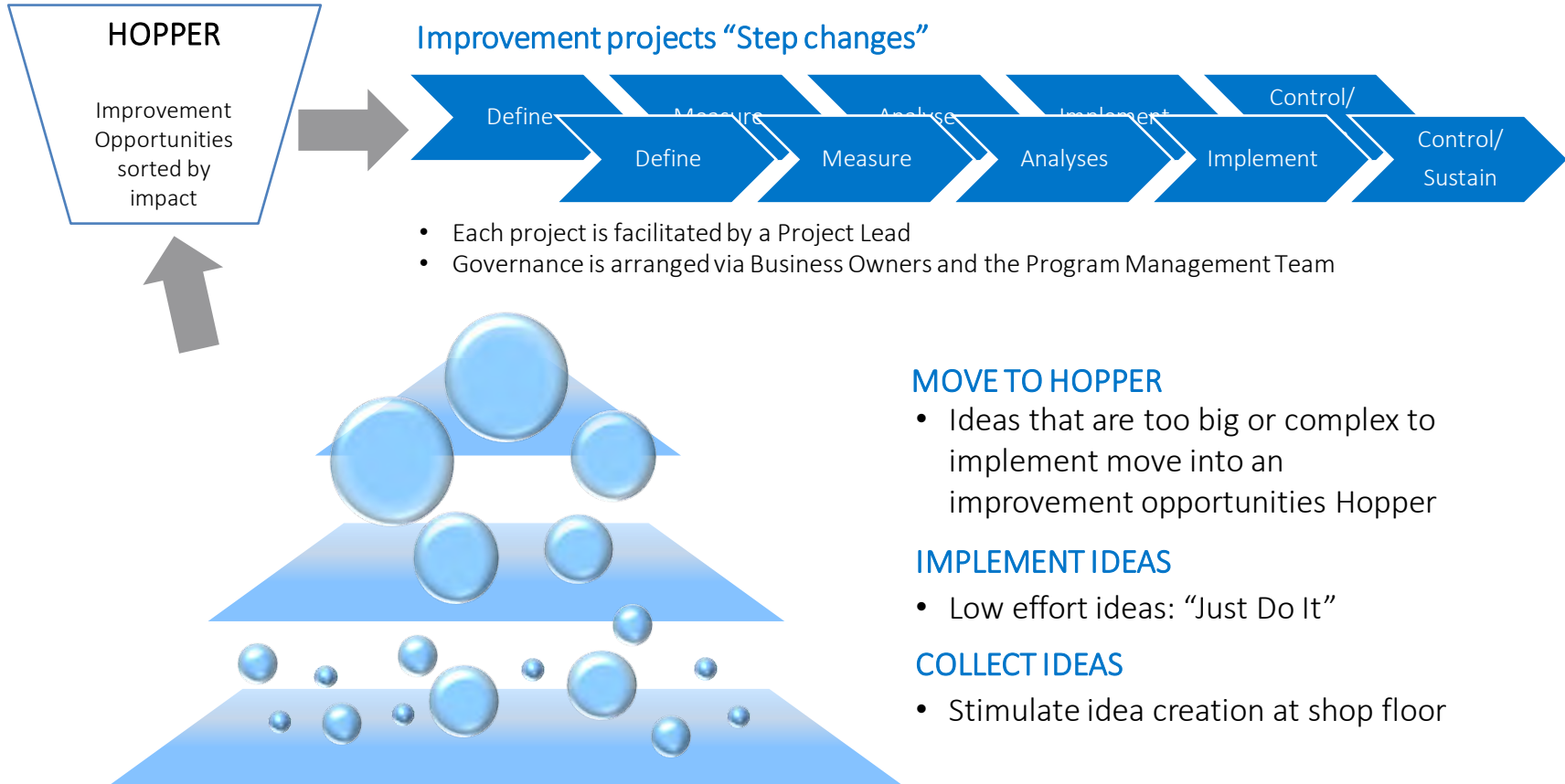


Implementation roadmap – GPRI model

WHO	GOALS	ROLES & RESPONSIBILITIES	PROCESS	INTERPERSONAL
CEO Board				
Sponsor				
Chairman Program Management Team				
Program Management Team (PMT)				
Program Manager				
Program Facilitation and Support (PF&S)				
Project teams				



Implementation roadmap – Continuous improvement





SAP as a home for your digital twin

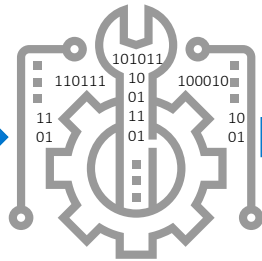
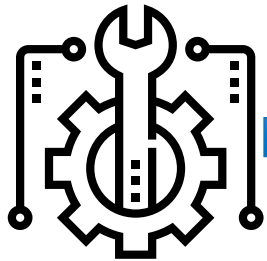
Harm-Jan Smit and Shubham Rajvanshi

SAP Intelligent Asset Management EAM based on the Digital Twin

Edge
IoT
Shop-floor systems

Intelligent Asset Management
SAP Leonardo
SAP Cloud Platform

Digital Core
SAP S/4HANA
(or SAP ERP)



Physical
Asset System

Digital Twin
(representing
the asset system)

- SAP Asset Strategy and Performance Management
- SAP Predictive Asset Insight (SAP Predictive Maintenance and Service & SAP Predictive Engineering Insights)
- SAP Asset Manager
- SAP Asset Intelligence Network
- Asset Central Foundation

- Maintenance Planning and Scheduling (MRS, RSH)
- Maintenance Execution (PM)
- Materials Management (EWM, MM)
- Project and Portfolio Management (PPM/PS)
- Environment, Health, and Safety (EHS)
- MDG-EAM and Asset Information Workbench (AIW)

Collect asset condition data

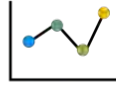
Analyze, predict, and share

Manage assets

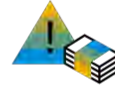
Asset Central Foundation – ERP Integration



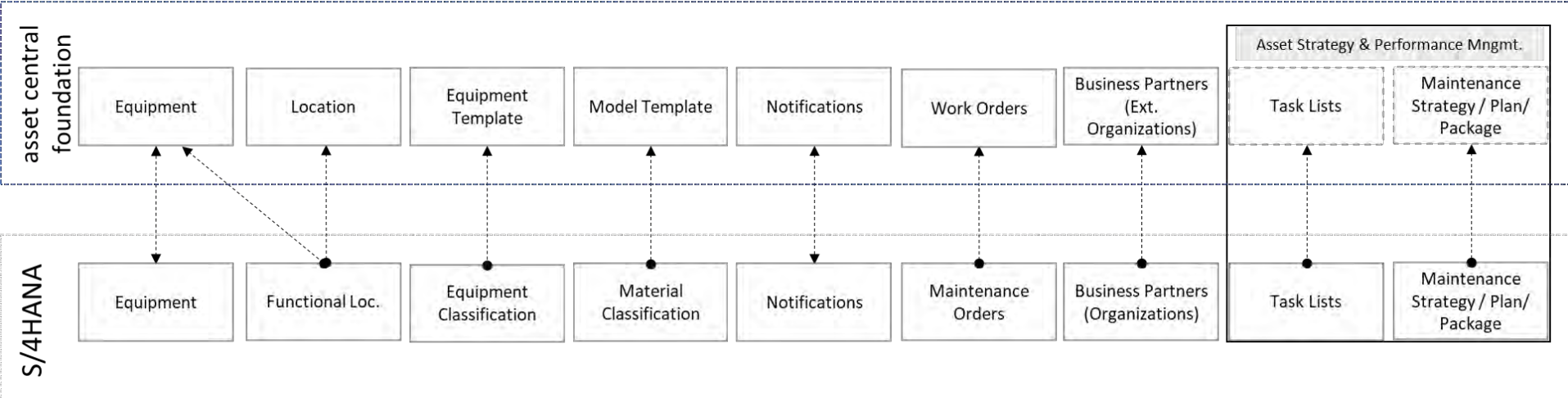
Asset Intelligence Network



Predictive Asset Insights



Asset Strategy & Performance Mngmt.



Get the best returns from your investments





QUESTIONS?



RIZING

Thank you!

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