

The background of the image is a deep purple with a network of glowing, intersecting diagonal lines in shades of cyan and magenta, creating a sense of dynamic movement and digital connectivity.

AVEVAWORLD

ACCELERATE INDUSTRIAL INTELLIGENCE



Mr. Parag Kale

Director Engineering Services - Europe
Consumer, Retail, Logistics (CRL) and
Services, Utilities, Resources, and
Energy (SURE)

Parag Kale leads strategic client engagements within Infosys' Engineering Services practice, based in London, shaping and driving digital transformation initiatives across Consumer, Retail, Logistics (CRL) and Services, Utilities, Resources, and Energy (SURE) Europe.

He works closely with global enterprises to deliver outcome-led programs, leveraging platforms such as AVEVA to advance industrial intelligence, helping organizations drive smarter operations, faster decision-making, & sustainable business outcomes. At AVEVA World Milan, he is leading Infosys' engagement with clients and partners.



**Mr. Pradeeban
Muthukrishnan**

Digital Manufacturing Leader,
Engineering Services - Europe (Life
Sciences & Pharma, Retail CPG,
SURE)

Pradeeban Muthukrishnan is a Digital Manufacturing leader with 17+ years of experience delivering Smart Factory and Industry 4.0 transformations across Life Sciences, Automotive, CPG, Hi-Tech, and Energy & Utilities—helping organizations convert connected operations data into actionable, outcome-driven execution across Europe.

He brings deep expertise in solution/enterprise architecture for industrial platforms—spanning SCADA, MES, manufacturing operations, and IT/OT integration—with extensive hands-on experience across the AVEVA portfolio of solutions. He is focused on scaling manufacturing digitalization in Europe through strong customer engagement, solution leadership, and measurable, outcomes-driven execution—aligned to the AVEVA ecosystem vision of accelerating industrial intelligence from data to action.

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\$19.8 Bn

Revenues

330,000+

Employees

63+

Countries

159+

Nationalities

98.3%

Repeat Business

\$500 Mn

Innovation Fund

Global LEADERSHIP

TIME

Only Indian HQ company in World's
100 Best Cos.

TRUST built on VALUES

2025 WORLD'S MOST
ETHICAL
COMPANIESTM
ETHISPHERE

5th consecutive
year in a row

PEOPLE & LEARNING first



In 22 Countries



World's largest Corporate University

Leading SUSTAINABILITY



Carbon neutral 30 years ahead of 2050
target

Trusted by
Manufacturing
Clients in Europe



#1

In Manufacturing sector in Europe
amongst Indian IT peers

Top 3

In Manufacturing sector in Europe
overall

60%

Of our Manufacturing footprint is in
Europe

Engineering has evolved with Product Development being at Core



Core Engineering augmented with Digital Solutions

Early Innovation & Market Research

Research to drive user needs to business adoption

Enterprise Engineering & Collaboration Implementation

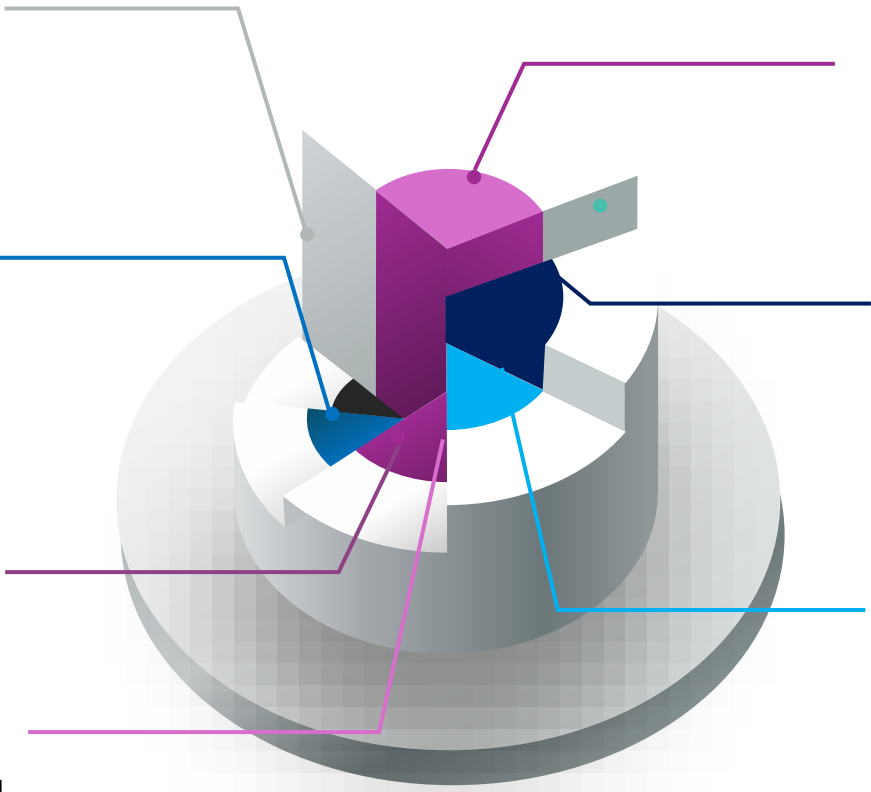
PLM, CPQ, MES/MPS, LIMS

Embedded Systems

Avionics, Connected cars, telematics, Embedded Hardware and Software

Design Engineering

Mechanical & Piping, Electrical & Instrumentation, Civil & Structural-BIM, Process & Control Engineering



IOT Solutions

Industrial IOT, Consumer IOT, Smart Spaces

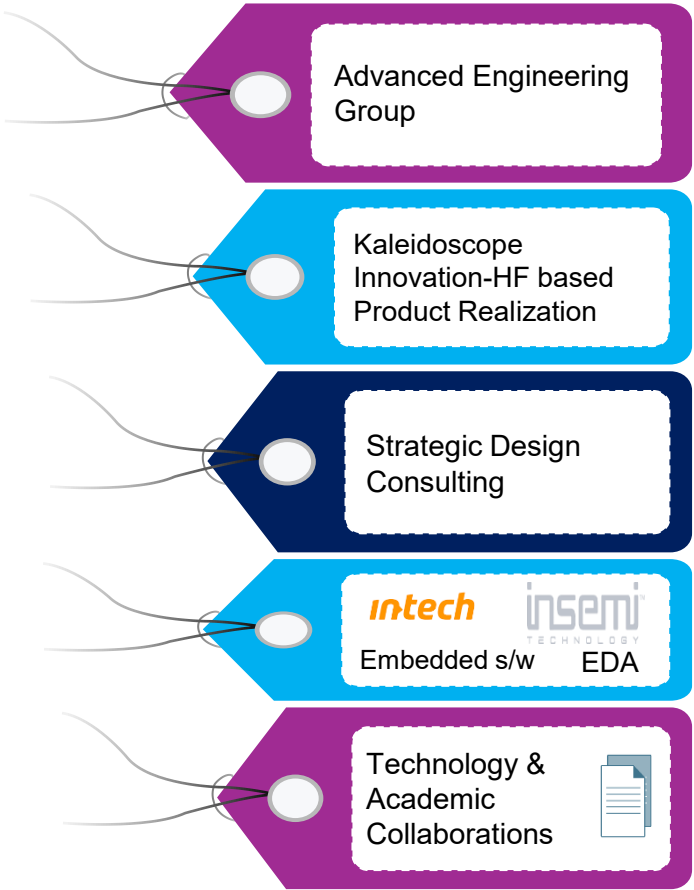
Networking and CC

Contact Centers, Networking Solutions

Software Product Development

DevOps Solutions, Mobile Applications, UX solutions

Enabled by....



Advanced Engineering Group

Kaleidoscope Innovation-HF based Product Realization

Strategic Design Consulting

intech **insemi**
Embedded s/w EDA

Technology & Academic Collaborations



30+ Years	330+ Clients	20+ Countries	30+ Labs
20000+ Engineers	37% Women	100+ Patents	50+ Proprietary Solutions

Accelerating Industrial Intelligence: From Connected Data to Actionable Outcomes



Industrial Intelligence: Forces Reshaping Industrial Operations



Complexity

73%

of industrials sites run 5+ disconnected data systems (LNS Research)

- OT/IT convergence creating 200B+ connected devices by 2030
- Average plant runs 15+ discrete monitoring tools
- Integration debt costs \$500K–\$2M per site annually
- Siloed data causes 23% of unplanned downtime events



Speed

68%

say slow decisions cost them >\$1M/yr (Forrester 2024)

- Decision latency averages 4–6 hours in most plants
- Real-time markets punish 24-hour reporting cycles
- AI-augmented decisions are 3× faster than manual
- Competitive window for optimisation: minutes, not days



Sustainability

43%

of Scope 1 emissions are addressable with real-time data

- EU CSRD mandates granular operational emissions data
- Energy waste averages 20–30% in unoptimised plants
- Carbon price exposure: \$80–\$150/tonne by 2030
- Real-time loop cuts energy cost 8–15% in 90 days

Industry loses \$1 trillion/year to unplanned downtime. The window to act is now.

Industrial Intelligence: THE DATA PARADOX

More Data. Less Confidence.

2.5 TB

of process data generated
per plant per day on average

< 1%

of that data is ever
analysed or acted upon

62%

of executives say data does
NOT improve decision speed

Why the paradox exists

■ Data silos

OT, IT, and business systems never connected

■ Context gap

Raw sensor values stripped of operational meaning

■ Alert overload

Thousands of alarms — no triage, no priority

■ Manual analysis

Experts spend 80% of time gathering, not deciding

■ No feedback loop

Decisions made; outcomes never measured or fed back

Industrial Intelligence: Where Industrial Data Creates Financial Value

+ Reliability

\$1.5–3M

Annual savings per site
from predictive maintenance

+ Energy

8–14%

Energy cost reduction
via real-time optimisation

+ Throughput

+4–7%

Production yield uplift
from process optimisation

+ Quality

30–50%

Reduction in quality
escapes and rework costs

+ Workforce

3×

Faster operator onboarding
with digital knowledge

+ Sustainability

15–20%

Reduction in Scope 1 & 2
emission intensity

** Stage distribution figures are directional estimates based on industry experience across domains*

Industrial Intelligence: WHERE ARE YOU?

The Four-Stage Industrial Intelligence Maturity Model — And Why the Gap Is Compounding

1 CONNECTED	2 CONTEXTUAL	3 PRESCRIPTIVE	4 AUTONOMOUS
Most Industrials OT/IT data flows exist. Historians connected. Data lake may exist. No semantic model. No intelligence layer. Data is accessible — not actionable. PREREQUISITES - Unified data pipeline in place - SCADA/historian accessible - Basic OT/IT connectivity <i>Stuck here? You don't have a data problem. You have a context problem.</i>	Many are Crossing Asset ontology maps tags to functional hierarchies. First ML models trained. Insights generated — but as reports, reviewed after the fact. PREREQUISITES - Asset ontology defined (ISA-95) - OT + IT + ET correlated - First ML models trained <i>Most digital transformation programmes stall here.</i> <i>Context layer built — but insights never reach the operator in time to act.</i>	~15% LEADERS ARE HERE WHERE LEADERS ARE NOW AI generates prescriptive recommendations with financial impact scores. Operators receive: what, why, what to do — in plain language, in one click. PREREQUISITES - Prescriptive AI models deployed - Workflow integration (CMMS, ERP) - GenAI explanation layer active <i>Most valuable stage for near-term ROI.</i> <i>3-7x ROI in Year 1. Target this in your 90-day pilot.</i>	~5% Frontier leaders AI agents execute within governed safety envelopes — no human approval needed. Humans shift from decision-makers to governance-setters. PREREQUISITES - Autonomous action registry - Safety boundary governance - Continuous model retraining - Full audit & override capability <i>Do not start here. Build the backbone, context, and prescriptive AI first.</i> <i>Governance prerequisites are non-negotiable.</i>

* Stage distribution figures are directional estimates based on industry experience across domains

Industrial Intelligence: Framework for Closed Loop Autonomous Operations

The objective: Every data point connected to a measurable outcome.



↻ Continuous closed-loop — each outcome retrains the model, compounding value over time

Benchmark: Organizations completing all 6 stages achieve 4-8x ROI vs. those stopping at stage 3 — Gartner Industrial AI Report 2024

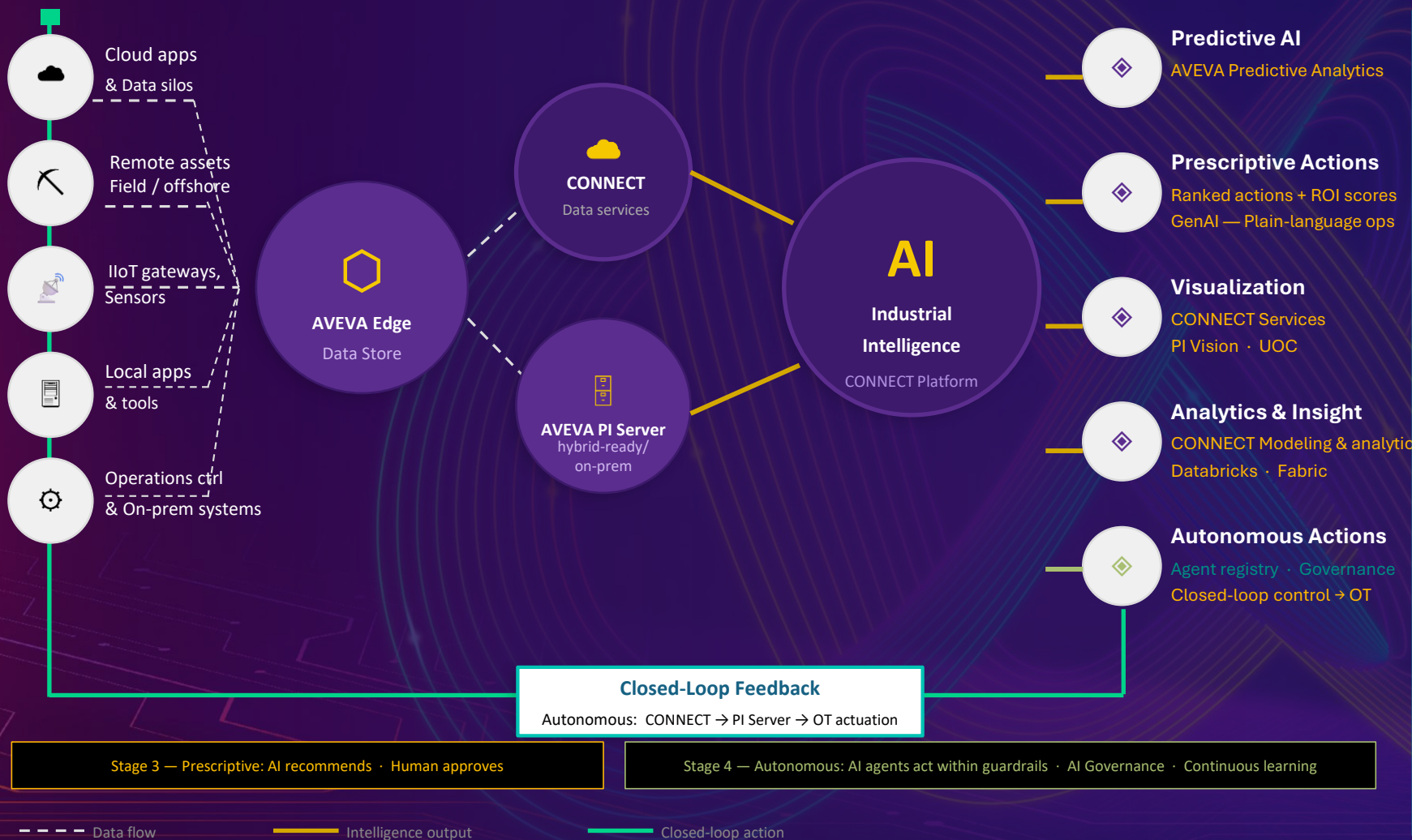
Accelerating Industrial Intelligence: AI ACCELERATION LAYER

What previously required 18 months of data science effort now takes 6–8 weeks with AI-assisted modelling and automated governance.

DATA	CONTEXT	INSIGHTS	ACTION	OUTCOMES
WITHOUT AI Manual ETL pipelines. Weeks to build. Data quality issues found late — after corrupting models.	WITHOUT AI Experts manually map thousands of tags to hierarchies. One site with 50,000 tags: 3–6 months to contextualise.	WITHOUT AI Data scientists manually train, validate, deploy 4–8 weeks/use case. Models trained once, then decay as conditions change.	WITHOUT AI Operator reads dashboard, decides action, manually creates work order. Time-to-action: hours to days. Inconsistent across shifts.	WITHOUT AI Outcome measurement is manual. Nobody knows if the intervention worked. Models not updated. Organisation does not learn.
WITH AI Auto data quality scoring at ingest. AI tag mapping via pattern recognition on historian archives. Self-healing pipelines re-route around source failures.	WITH AI LLM reads P&IDs and equipment manuals — generates asset model draft. Human validates rather than builds from scratch.	WITH AI AutoML evaluates dozens of architectures automatically. Physics-informed neural nets cut data requirements. Continuous retraining triggered by drift detection.	WITH AI GenAI translates model output into plain-language recommendations by role. One-click work order routing. Autonomous execution in approved use cases.	WITH AI Every action result auto-compared to AI prediction. Discrepancies trigger model review. GenAI weekly performance narrative for management.
TOOLS AVEVA CONNECT Data Management · Azure Purview · Apache Kafka with ML-based anomaly filters	TOOLS AVEVA Asset Information Management · GPT-4 / LLaMA-based ontology builder · Neo4j knowledge graph	TOOLS AVEVA Predictive Analytics · Azure AutoML · TensorFlow / PyTorch physics-informed models · MLflow for model lifecycle	TOOLS GPT-4 / LLaMA operator interface · Workflow connectors · AVEVA Operations Control	TOOLS AVEVA Monitoring & Control · MLflow experiment tracking · Azure Monitor · GenAI reporting agents

** Figures are directional estimates based on industry experience across domains*

Accelerating Industrial Intelligence: Navigate Your Next With Infosys



How Infosys Enables Your Journey

End-to-end capabilities — from OT integration to Autonomous AI

01 OT-IT-ET Convergence

Field & Edge Layer

OT/IOT sensor/device onboarding & edge setup · Industrial Protocols
Unified namespace (UNS) · Data Contextualization · Edge Data Store
implementation · Machine Connectivity Framework

02 Data Foundation

Data Fabric Layer

AVEVA PI Server implementation · Asset Framework & ISA-95 ontology
Data Infrastructure on cloud · Historian migration & optimization cloud
· Industrial Knowledge Graph · Reusable Templates

03 AI & Analytics Platform

Intelligence Layer

CONNECT platform deployment · Predictive Analytics
Industrial AI assistant Implementation · Digital twin & Advanced ML

04 Prescriptive & Autonomous AI

AI Governance Layer

Prescriptive Analytics · Autonomous agent design & governance
Safety envelope & policy framework · Closed-loop control engineering

05 Enterprise Integration

Enterprise Layer

ET Integration · Industrial Data Fabric & Power BI
Sustainability & ESG reporting · Value realization & CoE setup

Use case: AI Powered Smart Maintenance Management for Production Plants/Assets



Smart Maintenance Management for Production/Plant Assets(1/2)



Client Context

A petrochemical company has launched a strategic initiative to harness advanced analytics and digital transformation. A key focus is the development of a **Smart Maintenance Management (SMM) system**, aimed at building a more **efficient, integrated, end-to-end reliability and maintenance framework** aligned with the company's vision.



Solution Approach

- SMM is expected to integrate all IT-OT-ET data sources into **Cognite Data Fusion** to build unified knowledge graph and fully contextualized asset and operational data
- Enhance the SMM program with the **capabilities of a maintenance co-pilot system** based on **AI, Generative AI**, and **automation** technologies.
- The copilot system will be able to answer queries on structured and non-structured (documents) data
- Users will interact with the system through Microsoft Teams
- **Agentic framework** is used to run different **maintenance operations workflows**

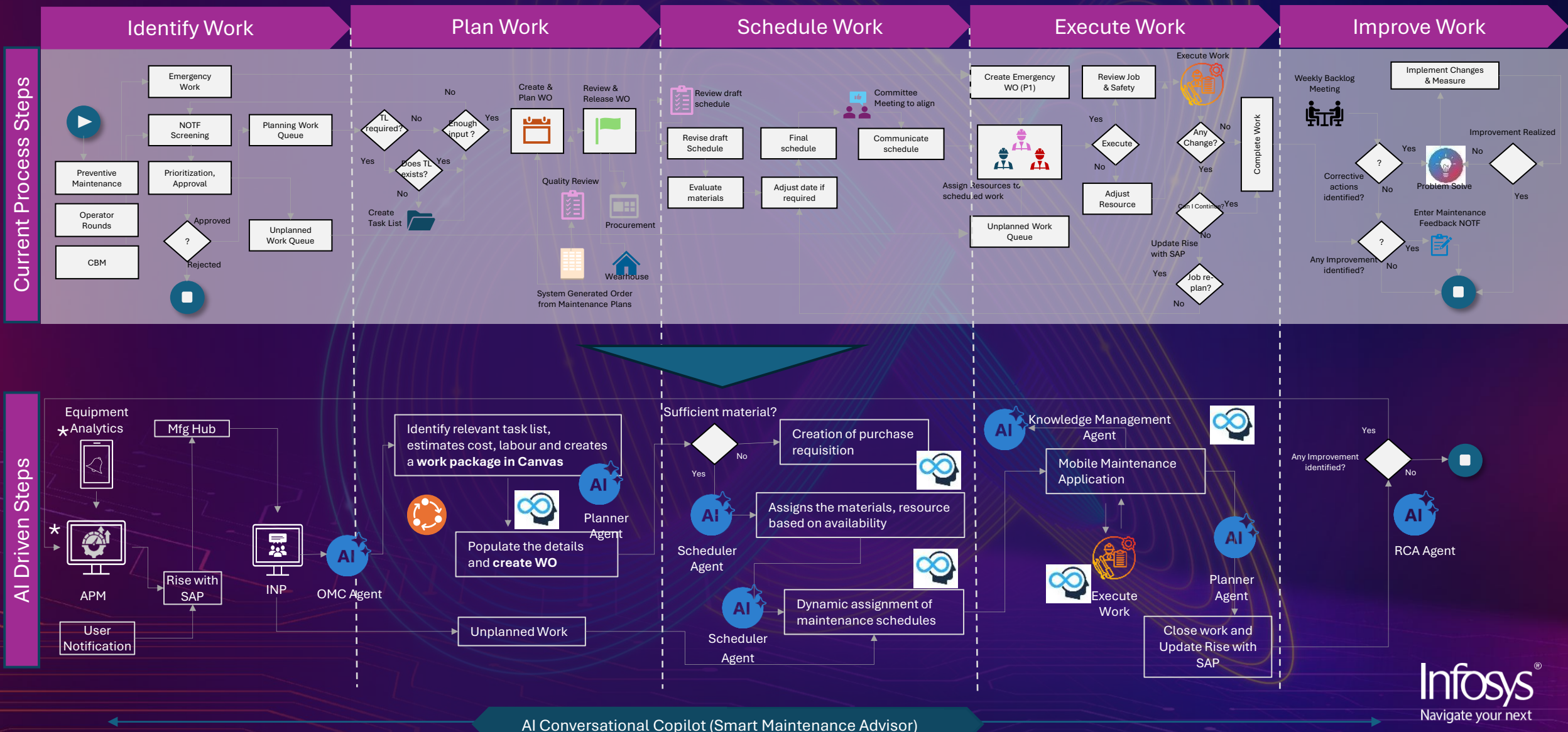


Business Outcome

- Better Operations Management: Helps in reducing the time for planning maintenance activities.
- Improved Decision Making: Users can fetch the required data for decision through chat interactions, reducing the need involvement of IT team.
- Research: Historical Analysis of data and trends can be made available quickly for improving design or operations



Smart Maintenance Management for Production/Plant Assets(2/2)





Thank You

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