



EVOLUTION OF ASSET MANAGEMENT STRATEGIES

Taking the Plunge from Pre-emptive to
Predictive in the era of Digital Utility 4.0

Around the world, asset-intensive utilities have been investing billions of dollars to operate and maintain a diverse range of their asset portfolios. The traditional ways of managing the assets are neither cost-effective nor are they optimising the maintenance operations and reliability. The utility organizations are unable to prioritize their capital investment decisions on assets and maintenance in alignment with their corporate strategy.

Throughout this journey over the last few decades, utilities firms have evolved their asset management strategies and will continue to evolve. This is necessitated due to the pressure on their existing asset management solutions such as aging infrastructure, regulatory compliances and other challenges.

According to Anatomy of Asset Management @Copyright by the Institute of Asset Management:

The Asset Management is NOT just about the Assets! It's all about extracting value more than what you do to assets. It is about using the assets to deliver value and achieve the organisation's business objectives.

It is not easy to evolve and change constantly. Change may come from assets themselves, the context in which they are operated in, or the systems used to manage them. There are quite a few asset management challenges that have been encouraging many utilities to adopt new digital technologies and solutions for intelligent asset management:



Aging assets and workforce: More than 25% of electricity infrastructure is of an age and condition where their fitness is a real concern. As the system ages, maintenance and operating cost increases and asset reliability decreases.

Increased regulatory scrutiny: The regulatory landscape is shifting. Utilities are facing increased pressure from regulators to improve the asset reliability within a restricted budget.

Grid complexity and reliability: The power utility industry is moving from centralized to de-centralized energy generation. Increased number of DERs (distributed energy resources) and renewable energy sources are connected to the energy grid, and the grid becomes more complex to operate and its reliability is a concern.

Augmented use of artificial intelligence (AI):

Utilities are increasingly finding the value of AI and machine learning to improve asset inspection and load forecasting. The use of drones and AI is helping to improve the inspection of transmission and distribution assets.

Physical and cyber-attacks: There have always been threats of asset damage and disruption in the energy grid operations in the power industry infrastructure through physical and cyber-attacks.

Net zero neutrality: Utilities are under pressure from all quarters, including lawmakers, regulators, consumers and investors over the issue of carbon emissions and to achieve Net Zero ratings. That has now become a business imperative.

Utilities need to redefine their asset management strategies to evolve from the pre-emptive to the predictive approach in the age of Digital Utility 4.0. This is the time for a more balanced, cohesive, and pragmatic approach to intelligent asset management.

Here, I am sharing some thoughts that can help utilities to redefine their asset management strategies using technological advancements:

Real-time Assets Insights: Digital technologies, IoT and communication devices, and sensors provide data on the actual real-time asset condition that enables the utilities in better monitoring, tracking and control of assets remotely, to optimize maintenance costs and improve asset availability.

Smart Asset Management: Smart Asset Management model based on big data analytics and AI improves the operational performance in a number of ways. The deployment of Smart Asset Management solution can reduce utilities capital and operations and maintenance (O&M) spend by 20% or more (Belmont report 2020).

Connected Field Workers: Utilities struggle in field operations and maintenance activities due to real-time connectivity issues with field technicians. An advanced and integrated field-force management system is essential to eliminate this challenge for utilities.





Asset Performance Management: Asset Performance Management (APM) is a step ahead of predictive maintenance. In fact, it includes predictive maintenance, condition monitoring and RCM. APM enhances the Enterprise Asset Management (EAM) foundation by the use of AI, advanced analytics and real-time data from sensors and devices.

Intelligent Grid: Intelligent grid allows utilities to monitor, analyse, control, and communicate within the supply chain to improve efficiency, reduce energy consumption, and cost, and maximize the transparency and reliability of the asset network.

Artificial Intelligence: Artificial intelligence and machine learning applications accumulate the information from pattern/experience and use it to predict the probable asset failures. Image Interpretation by AI has become an essential predictive maintenance tool for any asset inspection program. It is widely used for substation surveys and safety checks before planned maintenance work.

Enterprise Asset Management solutions are no longer adequate to meet all advanced asset management needs. Utilities must think about more comprehensive, intelligent, IoT-enabled and integrated suite of solutions that can support innovative sights of end-to-end holistic asset management.

SAP's Strategy delivered through SAP® Intelligent Asset Management Solution

SAP® Intelligent Asset Management solutions bring together the domains of EAM and APM, and through process integration that closes the loop across strategy, planning, and execution. SAP Intelligent Asset Management solutions

are part of SAP's Intelligent Enterprise strategy, offering a fresh rethinking of how maintenance and service operations can be integrated across the enterprise from design to operate, with a digital thread through R&D, manufacturing, supply chain, maintenance, and service.

Architecturally, SAP Intelligent Asset Management solutions include maintenance management capabilities of SAP S/4HANA® EAM application integrated with APM solutions built on SAP Business Technology Platform (SAP BTP) (including **SAP One Domain Model** with the SAP Master Data Integration service), providing a harmonized data model that is shared across the different solutions.

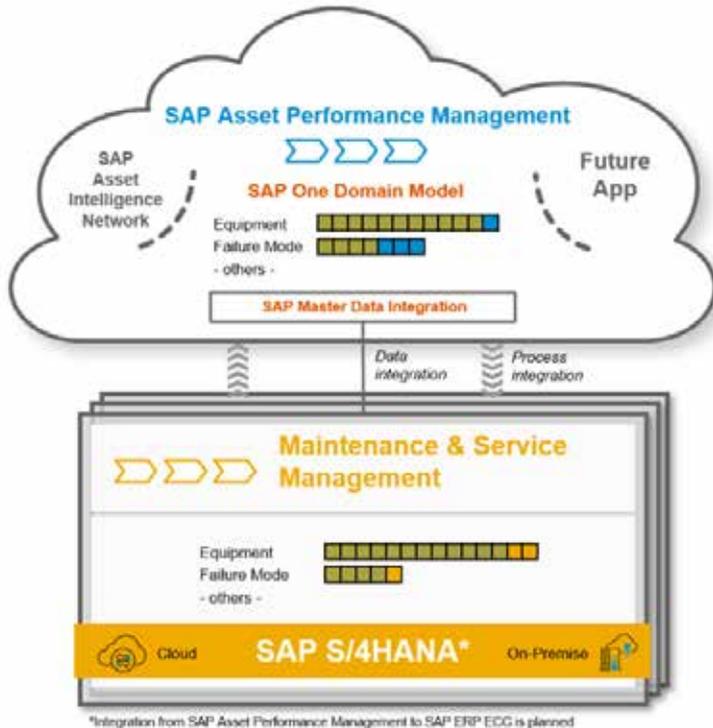


The **Seamless integration** between SAP APM (Asset Performance Management) with SAP EAM (Enterprise Asset Management) is the most important aspect of both the individual solutions. The convergence of APM and EAM allows the utilities to respond to dynamic operating conditions. APM planning drives recommendations that update policies in EAM for execution, while closed-loop feedback allows for continuous review and optimization of maintenance strategies.

SAP Asset Performance Management is meant for the utilities and customers that operate and service industrial assets and want to run outcome-based operations with focus on high asset availability, resilient and safe operations.

SAP Asset Performance Management enables:

- Risk-based maintenance processes
- The move from preventive to more condition-based and predictive approaches
- Seamless integration with Maintenance and Service Management to connect strategy definition, recommendations, and mitigation actions
- Measurement of efficiency and effectiveness of maintenance programs



Key Business Benefits

- Improved asset and operational efficiency
- Boost to asset and human productivity
- Improved asset availability and reliability
- Common asset collaboration platform availability
- Detect and predict equipment failures proactively
- Optimize return on assets investments
- Simplify and clarify maintenance and service strategies

Utilities are moving from the traditional to a predictive approach with an integrated EAM and analytics based APM program that can improve the asset reliability and operational metrics. In my view, these intelligent asset management solutions will deliver more qualitative benefits and translate into monetary value, resulting in substantial cost savings for implementing digital APM strategies compared with traditional methods of asset management. I will be explaining the niceties of IAM Solutions in subsequent blogs in this series.

For further information, feel free to reach out to



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