Unlock the Next Level of Asset Management Efficiency with APM



"Your success...is based on your ability to change faster than your competition, customers, and business."

Mark Sanborn, leadership speaker and best-selling author

The way businesses are run is changing, and that includes how physical assets are managed. Advances in technology, changing needs, and a greater focus on sustainability are driving a continuous evolution.

Enterprise asset management (EAM) strategies–and the roles of the people who oversee them–look very different today than they did even a few years ago. Organizations are paying more attention to how machines, fleets, and other assets can be managed to contribute to overarching business goals.

Current EAM practices will be enhanced to better support this broader philosophy. So what can professionals in asset management do now to support this change?

This IFS paper will dive deeper into what asset performance management (APM) is, where it came from, how it works, and how the APM capabilities within IFS Cloud EAM can support your organization's unique mix of business objectives.



Improving the status quo

There is certainly no lack of data available for making decisions. What's lacking is a roadmap on how to use information and predictions to improve the status quo.

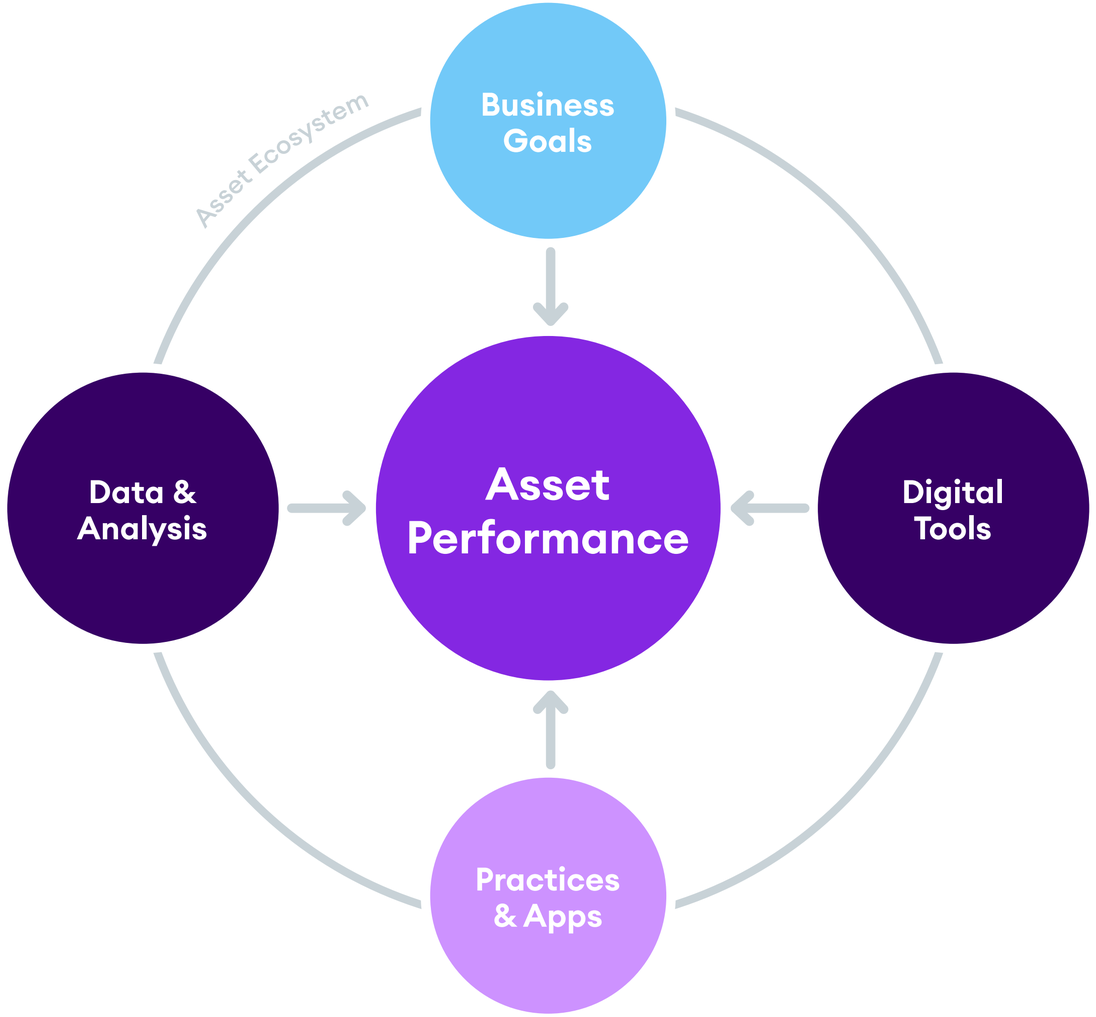
Asset performance management (APM) is the missing link and the right next step in the asset management journey. APM doesn't replace EAM; it is (or should be) a building block within the asset management systems and processes already in place–a way to get to the next level of efficiency and reliability. It's a business mindset or discipline as opposed to a one-time project–backed by a continuous loop of feedback that enables better decisions. With the right tools and clarity on business objectives, APM helps ensure the accuracy of predictions concerning asset health which leads to better asset utilization, productivity, and profitability.

EAM's historical focus has been on maintenance, work orders, and spare parts–aiming for the highest equipment availability and the lowest cost. But these two goals are mutually exclusive. A significant investment in reliability-centered maintenance (RCM) to ensure uptime, for instance, is not consistent with cost-cutting.

APM's stance is that each organization has to weigh equipment availability, costs, and other factors like safety, risk, and sustainability to determine their preferred strategic mix. Once they do, APM provides the data and insights to enable the optimal use of complex assets within the framework of the business priorities. Extracting maximum value out of physical assets before they become unusable or obsolete is how asset professionals will contribute to overall business success, and APM's insights will be the way they get there.

What exactly is APM?

APM aligns with ISO 55000 principles in terms of optimizing asset performance, managing risks, and balancing costs throughout the asset's lifecycle to achieve organizational objectives.



Experts don't necessarily agree on how to define APM, but they do agree that it is a logical step in the evolution of asset management.

Gartner

APM encompasses the capabilities of data capture, integration, visualization, and analytics tied together for the explicit purpose of improving the reliability and availability of physical assets. APM includes the concepts of condition monitoring, predictive forecasting, and reliability-centered maintenance (RCM).

Deloitte

APM programs, which connect data and trigger actions via systems across the business, can play a major part in driving improvements in equipment reliability. A mature APM program typically merges the digital and physical–or information technology (IT) and operations technology (OT)–to provide maintenance teams with troves of data that can support multiple maintenance strategies, depending on the asset and its level of criticality.

ARC Advisory

APM is an approach to managing assets that prioritizes business objectives in addition to traditional asset reliability and availability goals. APM has become a primary enabler of digital transformation for asset management among industrial companies. Modern APM combines traditional asset management practices with new digital technologies for transformation advances in reliability, maintenance execution, and business performance.

The key takeaway is that APM is part of a broader strategy that focuses on organizational business objectives in addition to the more traditional goals of asset management: equipment reliability and availability. APM ties together sources from across the organization, creating a continuous stream of feedback. When this data is fed into the system, APM's algorithm learns and gets smarter over time, resulting in more precise predictions on which to base decisions.

The current reality in asset management

Maintenance practices have evolved as technology and business goals have changed. But many organizations are still using reactive or preventive maintenance approaches, unable to fully leverage the benefits of data-driven maintenance strategies.

Most organizations are using some combination of these practices:

Maintenance 1.0

Traditional reactive maintenance, characterized by fixing assets after they break down.

Key Characteristics
Run-to-failure, labor-intensive work, and limited data collection and analysis

Limitations
High costs, frequent downtime, and shorter asset life

Maintenance 2.0

Preventive maintenance, involving scheduled maintenance activities based on time or usage.

Key Characteristics
Regularly scheduled maintenance, basic data analysis, reduced downtime

Advancements over 1.0
Improved asset reliability, reduced maintenance costs, longer asset life

Maintenance 3.0

Condition-based maintenance, using real-time monitoring and data analysis to identify asset deterioration.

Key Characteristics
Advanced sensors, data-driven maintenance decisions, further reduction of downtime

Advancements over 2.0
More targeted maintenance, reduced costs, and improved asset availability

Maintenance 4.0

Predictive maintenance and data-driven approach.

Key Characteristics
Leveraging a beginning APM approach that uses advanced analytics, IoT, and machine learning to predict and prevent asset failures

Advancements over 3.0
Enhanced accuracy in predicting failures, further cost reductions, increased efficiency, and optimized maintenance schedules



The Future: Maintenance 5.0 and APM

Maintenance 5.0 will be characterized by automation, artificial intelligence (AI), and other technologies–but the key will be insight. Even small companies will be able to reduce downtime, optimize maintenance, and extend asset life with the right data, leading to significant cost savings, better decision-making, increased competitiveness, and improved compliance and risk management.

Maintenance tasks such as inspections, repairs, and cleaning will be performed by autonomous machines and robots, improving efficiency and safety while reducing the need for manual labor.

Algorithms and machine learning methods will process vast amounts of data, detecting patterns and forecasting asset performance, maintenance needs, and possible malfunctions.

The adoption of digital twins will grow, with businesses employing virtual models of tangible assets to evaluate asset condition, anticipate breakdowns, and fine-tune maintenance plans.

Organizations will expand their use of edge computing, which involves analyzing data near its origin, like sensors and IoT devices, instead of sending it to a data center or the cloud. This practice will enable faster decisions and reduced latency.

As environmental concerns continue to grow, Maintenance 5.0 will focus on sustainable practices, such as maximizing resource efficiency, minimizing waste, and reducing energy consumption. A key principle of **Industry 5.0** is the systematic reduction of waste.

APM, though squarely in the middle of asset management's ascendance to Maintenance 5.0, is more than just advanced maintenance. APM leverages all of the technologies discussed here to determine an overall risk ranking, not only in terms of operational reliability and output, but also with respect to safety, health, and the environment. APM ingests data and returns predictions.

According to Deloitte: "Perhaps the **most transformative aspect of APM** is how it can connect systems across the business, from enterprise resource planning (ERP) to safety and quality, to inventory management." But the firm cautioned: "Because asset performance is affected by variables in operations and material supply, companies that fail to connect APM with other technologies and data in the enterprise-wide digital supply network (DSN) will not be able to harness its full value."

When done right, APM helps achieve business objectives such as financial results, sustainability goals, safety and compliance, and other broad measures through maintenance, operations, and asset investment decisions.



MaxGrip

Mark Mulder, the CEO of MaxGrip, an IFS Ultimo partner, provides an example of a client who intended to adopt APM but didn't see the efficiencies they expected because they continued to follow old processes in addition to the new ones.

"Companies need to see and go beyond APM technology implementation. A multi-site client had already installed predictive analytics technology but did not see any business value. When MaxGrip consultants looked into the case, they found that the technology was used as was intended (for condition monitoring), but that the client continued to work in their usual way to do preventive maintenance. So, we worked with them to do a deployment for maximum business value that includes the strategy and execution of how processes change and have people adopt a new way of working."

Mark Mulder, CEO of MaxGrip

End-to-end, connected APM

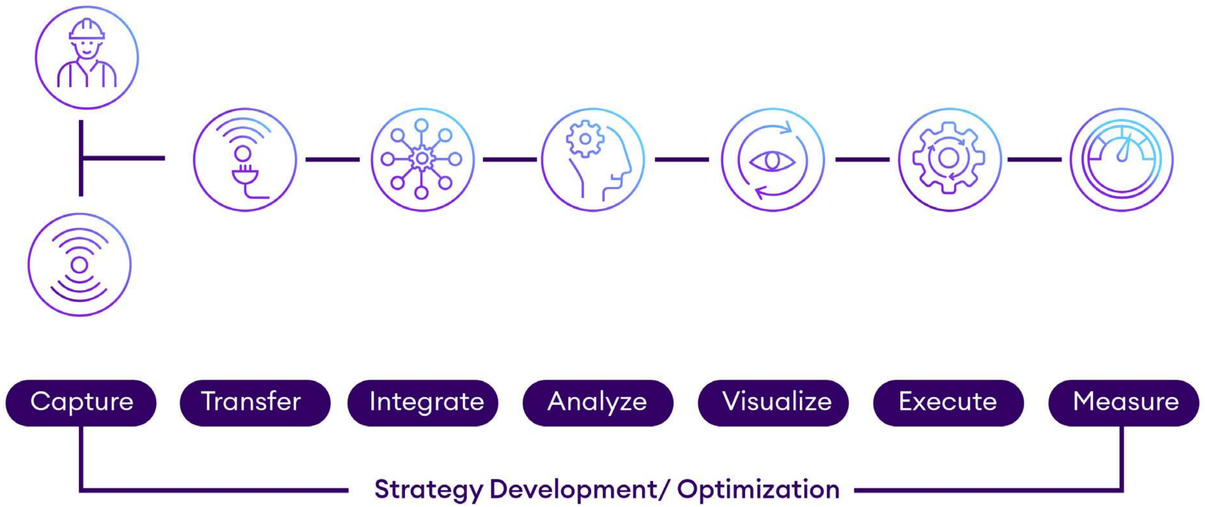
Organizations need an effective, scalable, and flexible solution for managing asset performance, risk, and lifecycle, as well as a system that integrates with existing processes. The lack of a unified solution leads to disjointed workflows, limited visibility and control over assets, and increased inefficiencies.

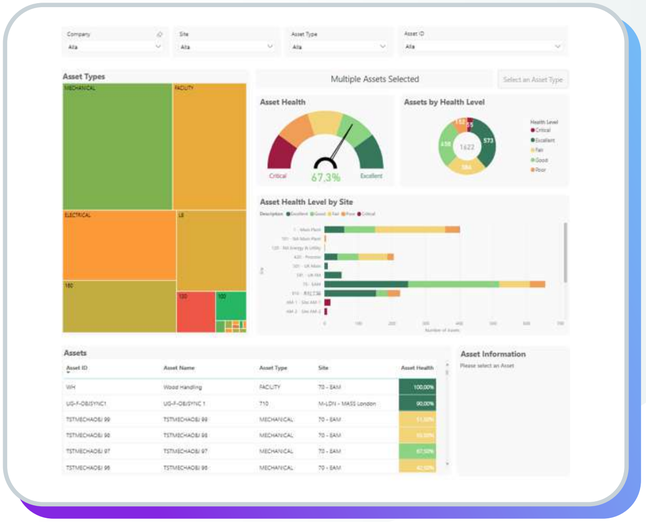
IFS offers a powerful APM solution built into IFS Cloud–a composable platform on which EAM and ERP can be seamlessly connected. Its APM capabilities include real-time monitoring, predictive analytics, and mobile applications, enhancing visibility, streamlining processes, and improving collaboration between teams.

A one-stop shop for APM, IFS manages data, predictions, and technology through its robust EAM solution. The solution supports the entire asset lifecycle, the supply chain, and the need for integration and analytics.

Asset Performance Management

Typical Process





IFS Asset Insights

IFS uses machine learning models to interpret organizational data. Its APM function includes:

- Time series analysis, where data is captured at regular rather than arbitrary intervals throughout a predefined duration
- Anomaly detection
- Failure prediction

The purpose is to precisely pinpoint the rate of equipment degradation and the most economical time to repair or replace it. As an asset's performance erodes, the quality of its output also declines while energy use and other costs increase.

Once the APM program determines that the asset will fail, it suggests an action and the appropriate time to take that action: repair, or create a work order; or replace, or create a purchase order. Once the connected worker takes the action, that outcome–even if it was wrong–is fed back into the AI to update its algorithm, ensuring the continuous finetuning of the accuracy of its predictions.

IFS EAM tracks and surfaces this information as asset-related metrics like mean time to repair (MTTR), asset longevity, cost, and measures that address health, safety, and the environment (HSE). It can also tie these things back to the assets' contribution to the company from a production standpoint, and often with regard to financial profitability or nonfinancial measures like order fill rates and quality metrics.

IFS is the only provider to offer resource optimization as an option in its APM solution. Mobile maintenance engineers spend a significant amount of their time – up to 20% – traveling and waiting, so the management of scheduling, skill requirements, expenses, and travel is a must in any efficiency effort–especially for distributed organizations.

Any APM solution should include a prediction engine and anomaly detection–but many serve up the results without the accompanying suggestions for how to address the issue. IFS provides that insight. Its approach to APM reflects its smart, connected, end-to-end approach to asset management overall.



APM: The next level of improvement

Data from across the enterprise–far beyond sources historically available to asset managers–represents the future of asset management decision-making. Asset performance management or APM solutions will help weave together these sources into a cohesive set of insights and suggestions.

Finding the next level of improvement in asset management has been a pursuit since Maintenance 1.0. At this point, most companies have progressed from doing maintenance tasks manually to digitizing and automating at least some of them. The next frontier is all about connecting systems across the enterprise through APM and using the resulting information to optimize asset health and performance not only at the equipment level but in a broader way that supports overall business priorities.

About IFS

IFS develops and delivers cloud enterprise software for companies around the world who manufacture and distribute goods, build and maintain assets, and manage service-focused operations. Within our single platform, our industry specific products are innately connected to a single data model and use embedded digital innovation so that our customers can be their best when it really matters to their customers – at the Moment of Service™.

The industry expertise of our people and of our growing ecosystem, together with a commitment to deliver value at every single step, has made IFS a recognized leader and the most recommended supplier in our sector. Our global team of over 5,500 employees every day live our values of agility, trustworthiness and collaboration in how we support thousands of customers.

Learn more about how our enterprise software solutions can help your business today at ifs.com.

#MomentOfService

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