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Performance-based Asset Management for Long-term Business Value and Sustainability

Best Practice Guide

Reimagining Asset Management

While major global and market disruptions caused organizations to pause their existing operations and plans, it also created opportunities and space for industries to reflect, reimagine, and retool their entire operations. For asset-intensive organizations, that meant honing in on their most valuable equipment and business-critical practices, and finding both short- and long-term strategies to shore up resilience and sustainability in the face of unrelenting change.

Sustainability plays a critical role in successful operations. However, for many businesses, achieving sustainability will require them to consider far more than resource consumption and the financial bottom line. Instead, many are stepping back to take a broad inventory of performance in the context of social, environmental, and governance (SEG) pressures.

All of these factors are coalescing to make sustainability an imperative business metric across all decision making.

APM and the Promise of Sustainability

Failure to address long-term sustainability issues can be extremely costly. Reputational risk aside, organizations that lack a business plan that protects their most expensive investments will find it more costly and more difficult to acquire capital.

A sustainably maintained and well-documented physical asset system represents more value on balance sheets. On the ground and in the field, those investments hold tremendous value in terms of performance, safety, and market standing. That's why the traditional approach to enterprise asset management (EAM) is evolving toward asset performance management (APM). APM harnesses the power of automation, IoT, emerging technologies such as AI and ML, and the resulting volumes of accessible sensor data to provide unprecedented strategic insights.

From Traditional to True Asset Sustainability

Some organizations may believe they already have a sustainability mindset built into their traditional asset management practices. However, the reactive approach, where equipment is only fixed when it is broken, is a regressive one that ignores ongoing asset condition assessment. A new dimension of asset management creates the foundation for a prescribed maintenance structure and system that protects an organization's largest capital investments in cases of both daily maintenance and unexpected disruptions.

APM tracks each asset's condition in real time. Predictive modeling creates alerts around an asset's condition, providing alerts about risks or deterioration both in real time and before they happen. APM essentially tracks the entire life of an individual asset while capitalizing and synthesizing vast amounts of information captured from connected networks across financial and any other business-critical systems.

APM creates a culture of maintenance maturity and asset sustainability by enabling:

- Predictive and risk modeling
- Automated workflows for prescriptive maintenance
- The capture, consolidation, and analysis of large amounts of asset data over time
- Performance failure analysis and modelling under varied conditions
- Ability to identify which key components should remain in inventory, and which are not necessary

In its 2021 study, *Delivering on the promise of sustainability,*[1] Accenture describes a practical framework for incorporating SDG (Sustainable Development Goals) into business practice, with a clear responsibility for the C-level executives. It cites good reasons for this focus: "Companies with high environmental, social and governance performance have outperformed their peers, achieving 3.7x higher operating margins and generating 2.6x higher shareholder returns."

Embrace Maintenance 4.0

Business continuity depends on dynamic, real-time information gathering and analysis to predict and prescribe asset condition and maintenance. It also requires flexibility and responsiveness to any and all emerging opportunities. Businesses and organizations can expect a not-so-distant future where traditional EAM evolves to an APM system that consistently innovates through technologies such as AI, ML, and the mobile sharing of information across the enterprise.

From Reputation to Ratings: Resilience Matters

A well-run company with clearly defined sustainability goals will be perceived well by the general public and the stakeholders. It's also good business. Activist investors, shareholders, and even citizens are putting pressure on corporations to accelerate carbon reduction initiatives.

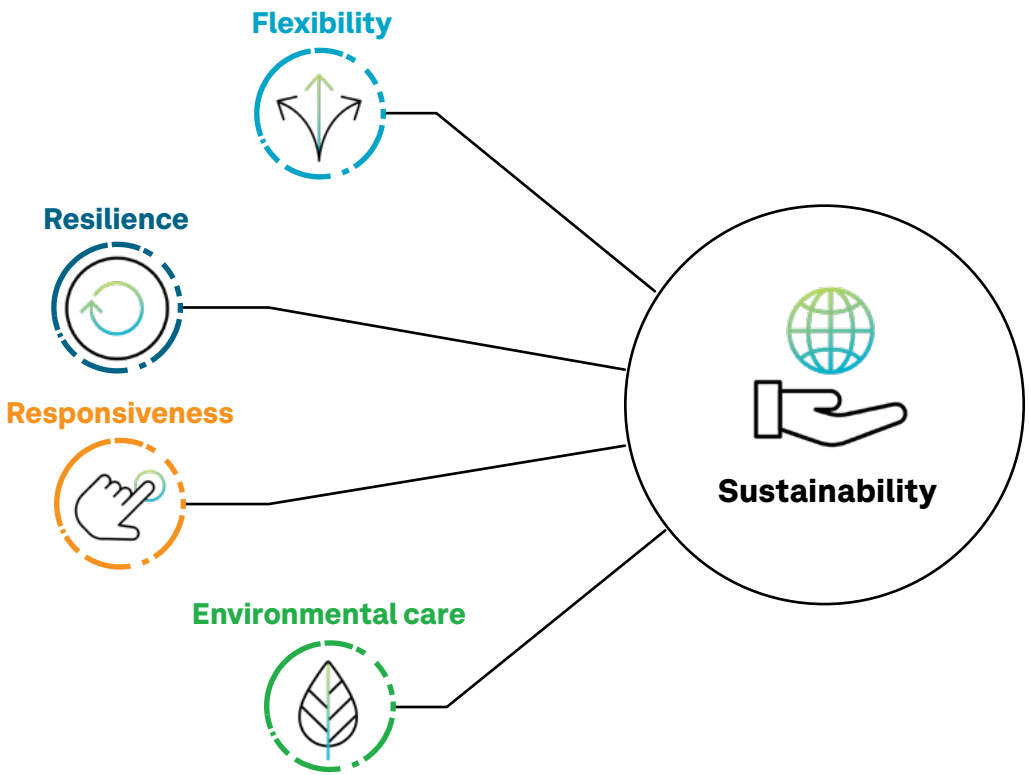
Also gaining market and leadership attention are recent actions by rating agencies. In 2020, Standard & Poors downgraded the credit rating of 900 companies based on social, environmental, and governance metrics.[2]

AIP and the Power of Analysis

Asset investment planning (AIP) is a data-driven capital plan that gives asset-heavy organizations the power to prioritize their capital budget efficiently, reliably, and sustainably. AIP enables organizations to model a variety of potential scenarios encompassing service-level objectives, asset criticality, forecasted condition, acceptable risk tolerances, and financial constraints.

Integrated with APM, AIP provides the necessary analysis of what assets to invest in, and whether those investments should be for repair, refurbishment, or replacement. It also provides information on optimal timing, directing the right resources to the most mission-critical asset at the right time.

The Top Ingredients for Sustainability



Flexibility

Robustness of asset management processes enable a solid framework where the organization can more easily adapt to changes—supported by asset performance management, ISO55000 compatibility, and asset investment planning

Resilience

Degree of effectiveness with which an organization can respond to disruptions—embodied by Cloud/Mobile workforce/ZDT upgrades

Responsiveness

How quickly an organization can react to emerging opportunites via Digital Transformation/innovation—embodies by augmented reality, hands-free workers

Environmental care

Ability to consider energy, emissions, CO2e, and carbon footprint, in an organizational strategy, including laws, regulations, and compliance for a long-term view

Defining Sustainability Broadly

The United Nations defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” This definition historically focuses on environmental impact, however, the recent pandemic revealed the need for a more holistic view, specifically for businesses and supply chains. In the realm of asset management, a sustainability definition for the coming decade may be “The ability for a business to manage its assets without compromising the ability of future generations to meet their own needs.”

A seven-point check on the elements of sustainability

1. Sensors and smart assets to provide an understanding of real asset resource consumption
2. An APM platform for data ingestion, processing, and analysis of EAM data sets
3. Emission factors for water, air, gas, electricity, and steam (WAGES)
4. Real-time, actual, utility costs of WAGES usage
5. Global Asset Sustainability (GAS) performance indicators
6. Commitment and culture of executing on actionable information
7. Spontaneous order gains

Embrace Existing ISO 55000 and EAM

Focusing time and financial investments on the evaluation and optimization of asset performance does not have to upend an organization's entire operation. Instead, moves toward AIP and a more sustainable future can take the shape of an evolution, relying on familiar ISO 55000 standards, EAM already embedded in the organization, and existing technology infrastructure.

Flexibility is key. ISO 55000 is an often-used framework used by many asset management organizations to professionalize practices for maintaining physical assets. Based on a regimented system of Plan, Do, Check, and Act, it applies to a broad range of sustainable practices:

- Clean water and sanitation
- Affordable and clean energy
- Decent work and economic growth
- Industry, Innovation, and Infrastructure
- Sustainable cities and communities
- Responsible consumption and production
- Climate action

On the Subject of Energy

Affordable, clean energy is capturing much of the global sustainability conversation and is the basis for growing regulations around the world. According to the US Department of Energy, an asset's total cost of ownership (TCO) involves resource consumption, predominantly electricity, which represents 95% of the asset TCO. Eliminating waste in this area can provide significant impact on operating expenditures in terms of WAGES.

Incorporating actual consumption and condition data also puts businesses and organizations at a competitive advantage. While taking a global look at sustainable operations, the cost and other impacts of reducing WAGES are front-and- center of consumption considerations. Reducing their use mitigates energy consumption, emissions, CO2 outputs, and overall carbon footprints and greenhouse gas emissions. Elimination of losses on WAGES also captures the attention of regulatory bodies.

An example can be found in the US Department of Energy's own site management. In FY 2019, DOE achieved a 4.8% energy intensity reduction from FY 2018 and a 41.2% energy intensity reduction from FY 2003, thanks to moves such as interior space redesign, energy meter and sub-meter installation, and upgrading its aging assets.[3]

Resilience and Responsiveness in the Cloud

Disruptions are everywhere, and at this point expected—from natural disasters, raging computer viruses, or as we are currently seeing, a global health crisis.

APM, sustainability, and the shift to Maintenance 4.0 all rely on flexibility and responsiveness. Moving to cloud-based solutions protects and maintains crucial technology infrastructure, fortifying organizations against unexpected and unwelcome business disruptions. It allows companies to maximize and scale asset management to promote productivity, capture information from across their asset portfolio, reduce downtime, and ultimately increase equipment lifespan and business continuity.

Looking forward, cloud-based solutions let organizations take advantage of the mobile revolution, helping not only manage parts and equipment in real time, but also tracking field work and staff, wherever they are.

This allows the smart application of APM, where leaders are all armed with the same data sets. Any changes in staff are strategic, based not on the bottom line or sheer headcount, but on hard data based on worker availability and appropriate maintenance skill sets. Labor costs are lowered without harming asset or service continuity.

Sustainability Means Optimizing Safety

Another major facet of APM is safety. IoT sensors evaluate equipment to provide invaluable performance predictions, warning of potential hazards like flammables and combustibles. The cross-functional connectivity of an APM system capitalizes on safe and smart practices across the enterprise, from the prevention of equipment failure itself, to scheduling the most qualified staff, to safely working in a range of weather climates and conditions. It uses that connectivity to deliver superior operating performance and guarantee a better workforce and production safety.

Visibility, Visualization and the Next Dimension of APM

The ability to view each asset and what affects its performance is made easier with digitalized facilities, including digital twins of its assets. This allows virtual monitoring of sensor points, including vibration, operating temperature, and throughput of coolant that can hone in on potential asset failure before it happens. From there, decisions on replacement, repair, or deferment can be made swiftly based on system recommendations. The system can also provide automatic access to any needed parts including where to find them, how many left are in stock, or if more components need to be ordered. It also provides visual instructions on how to replace them to avoid or limit the impact on the operational processes, and ultimately drive improved business outcomes.

Make Your Assets Perform Sustainably and Responsibly

- Understand your total cost of operation and maintenance with the only EAM solution that combines acquisition, installation, maintenance, and energy costs.
- Predict asset failure, perform maintenance when and how it's needed, and protect your operation.
- Detect and eliminate energy waste to reduce energy usage, costs, and environmental risks.
- Adjust your maintenance strategy based on performance, costs, impact, and benchmarking intelligence.
- Perform maintenance at the right time, not when the time is right, due to coordinated production and maintenance schedules.
- Know when to replace or extend asset life with a complete cost picture, including energy, in mind.
- Deploy APM in the cloud.

Learn More

1. Delivering on the Promise of Sustainability. Accenture. April 14, 2021.
2. The ESG Pulse: Sustainability-linked Bonds are Taking Off. June 8, 2021.
3. US Department of Energy 2020 Sustainability Report and Implementation Plan. August 2020

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About Hexagon

Hexagon is the global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Hexagon's Asset Lifecycle Intelligence division helps clients design, construct, and operate more profitable, safe, and sustainable industrial facilities. We empower customers to unlock data, accelerate industrial project modernization and digital maturity, increase productivity, and move the sustainability needle.

Our technologies help produce actionable insights that enable better decision-making and intelligence across the asset lifecycle of industrial projects, leading to improvements in safety, quality, efficiency, and productivity, which contribute to Economic and Environmental Sustainability.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 24,500 employees in 50 countries and net sales of approximately 5.5bn USD. Learn more at **hexagon.com** and follow us **@HexagonAB**.

About Progressive TSL

Progressive TSL are a sustainable cloud ERP technology company that support organisations across the globe looking to enhance their finance, supply chain, asset management and ESG systems and processes.

Progressive are Hexagon channel partners, with many years' experience of optimising HxGN EAM to meet the needs of organisations working in asset-intensive industries. Progressive's team of experienced consultants, overlay the HxGN EAM platform with Progressive's industry specific best-practice implementation framework to address the key drivers and processes necessary to maximise performance of their customer's assets.

To learn more please visit **www.progressive-tsl.com**.

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