1898 & CO.
PART OF BURNS McDONNELL

WHITE PAPER

How AIP Software Fills a Critical Capability Gap for Manufacturers

By Nick Xenakis

Manufacturers face a more complex, dynamic and competitive marketplace than ever before. Crises ranging from the COVID-19 pandemic to the war in Ukraine have vividly demonstrated the imperative for greater agility in operations, supply chain management and financial planning.

Asset investment decisions have a critical impact on profitability and competitiveness. For this reason, manufacturers recognize that ongoing digital transformation of asset management practices and considerations for new ways to be more efficient and accurate in project selection, while mitigating risk, is a business imperative.

Even as digitalization accelerates, manufacturers have limited capabilities for analyzing asset investment decisions over a longer strategic time frame of one to five (or more) years. Millions of dollars of strategic capital is allocated each year, yet many manufacturing organizations are still reliant on manually generated spreadsheets for determining their long-term capital plans and prioritizing spend accordingly.

Asset investment planning (AIP) software has emerged as an important resource to address this critical capability gap. By integrating asset data from across the organization, AIP software can help model alternative investment scenarios, deliver holistic risk analysis, and extend digitalization to strategic capital expenditure (capex) planning.

A Rapidly Evolving Digital Asset Management Ecosystem

As manufacturers navigate a new status quo defined by rising costs, unpredictable geopolitics and highly complex supply chains, digital solutions for asset management have already proven that they will have a critical role to play. More advanced capabilities in maintenance planning, asset life cycle management and performance monitoring contribute directly to agile asset decision making. In this context, more and more organizations are turning to a variety of solutions:

- **Enterprise resource planning (ERP) software:** Referring to a comprehensive suite of tools that can be used to manage nearly all activities in a manufacturing business, including production planning and scheduling,

inventory management, quality control, sales and commercial relationship management, and asset management functions. ERP systems generally offer a valuable breadth of functionality and maintain a general database of attributes such as age, financial history and equipment identifiers.

- **Enterprise asset management (EAM) software:** EAM refers to software designed to offer full life cycle management of assets, including registration, maintenance, repair and replacement information. EAM software is designed to optimize equipment utilization, minimize costs, and maximize overall equipment effectiveness (OEE) over the course of an asset's life span.
- **Computerized maintenance management systems (CMMS):** CMMS applications are designed to assist with maintenance management processes such as work order tracking. A CMMS may be tightly interwoven with (or even a subsystem within) EAM software.
- **Asset performance management (APM) software:** APM software provides analytics for real-time decision making, including monitoring, and optimization of asset performance against benchmarks. APM systems typically integrate with EAM and CMMS systems and help manufactures become more predictive with maintenance strategies.

A difference of only a few percentage points in the OEE of production equipment can have a dramatic effect on profitability, and all of these asset management tools offer value to improve availability, performance and quality.

What Is Asset Invest Planning (AIP) Software?

AIP software provides an engine for formalizing, unifying and rationalizing investment decisions across the organization, seeing that decisions align with long-term business strategy. Key elements of AIP solutions include asset and facility risk assessment, consolidated views of organizational investment requests, prioritization algorithms and economic analysis, blind spot reporting, approval workflows, and integration into visualization and project delivery systems.

In the absence of dedicated AIP capabilities, manufacturing organizations rely on ad hoc, siloed and cumbersome methods to identify and prioritize investments. Traditional methods, including spreadsheets or SharePoint sites used to consolidate and evaluate spend requests, fall short in evaluating critical variables like health, useful life and book value, or won't directly factor more strategic data, such as from environmental or energy management system reporting. Data remains isolated across these various systems, with no consistent prioritization process, and manufacturers often resort to subjective or qualitative means to fill in the gaps.

In many cases, risk and prioritization variables are assessed by site employees using an A-F asset health grade or 1-10 investment priority, for example. This approach, highly dependent on who did the assessment, leads to inconsistent prioritization practices by confining the organization's asset investment strategy to the realm of tribal knowledge. Individualized scoring practices will only become more troublesome in the face of staff turnover, mergers and acquisitions.

Verdantix, a leading independent research firm specializing in asset management methodologies and solutions, notes: that "As assets become progressively more complex … the usability and effectiveness of Excel dramatically declines. Firms can no longer rely on outdated methods that are not designed to deal with complex technical assets, soft benefits and asset dependencies." When Verdantix surveyed operations, safety, maintenance and engineering leaders across 20 industries in 14 different economic regions, 48% of the 304 respondents indicated that their firms would be increasing the percentage of investment in AIP software by single or double digits in 2023-24.

Spreadsheets are simply no longer an adequate solution for analyzing the complex, time-sensitive investment decisions faced by manufacturers today. Decision-makers don't know what they don't know in terms of asset data and facility risk. With highly siloed systems, supply chain and finance leaders may lack awareness that certain asset attributes or health assessment methodologies even exist.

With assets aging, global events proving the fragility of complex supply chains, and sustainability objectives becoming more important than ever, the imperative to adopt more rationalized asset investment planning capabilities will only grow. As it does, manufacturers without a data-driven, systematic approach to rationalizing investment decisions will be at a disadvantage.

Core Capabilities of Asset Investment Planning Software

Effective AIP software should be more than a digitalized Excel file, and streamlined asset data integration is only the foundation of the value this software can provide. The information centralized in an AIP system can help generate new, valuable insights from work order history, equipment performance, asset health scoring and other data that traditional asset management tools can serve up. These insights are critical for generating more complete risk profiles of assets, projecting future needs, and prioritizing investments

accordingly. At the conclusion of a given round of investment planning, AIP software can be integrated with project execution systems to systematically translate investment decisions into action.

Categories that demonstrate some of the software's most valuable use cases:

Prioritize Long-Term Asset Investments

Using AIP software, manufacturers can run alternative investment scenarios to find the optimal asset investment strategy balancing cost, risks and added value. This comparative modeling enables true data-driven decision making and helps identify budget needs across future years.

Rapidly Assess New Investments

Whether stemming from natural disasters, geopolitical crises or the sudden disappearance of a trusted supplier, unforeseen disruptions can force capex plans to adapt quickly with reactive investment to mitigate disruptions. AIP software can help understand and quantify the risk of future supply chain disruptions, enhancing agility while rationalizing investments in assets that promote more resilient supply chains or operations.

Pinpoint Hidden Sources of Risk

Inadequate data-sharing between siloed systems and departments allows chronic sources of risk to linger. An AIP system provides a centralized solution for collecting facility and asset health data needed to generate a comprehensive survey of risk across the organization. This insight is vital for understanding the consequences of degradation or failure and prioritizing investments accordingly.

Improve Transparency of Capital Investment

By promoting more standardized, quantifiable investment decisions, AIP software directly promotes a capital planning process that is more transparent, justifiable and auditable.

Incorporate Sustainability Insights

Capital expenditures on assets can drive widely divergent outcomes in terms of energy usage, emissions, packaging reusability and process waste. AIP software has a critical role in aligning investment with sustainability strategy. Long-term asset planning is already complex, and the need to accommodate new sustainability regulations and hit aggressive net zero targets will only add to the vast number of accountabilities that must be incorporated into the investment planning processes.

For example, the Task Force on Climate-Related Financial Disclosures (TCFD) began as a voluntary set of climate risk reporting recommendations designed to promote more consistent practices. This framework is now maturing into a reporting mandate across a growing list of geographies including the European Union, Canada and Japan. Updated ISO 55000 series standards, along with a recently proposed SEC rule, also require climate-related risk reporting.

According to Verdantix, these rapidly evolving reporting requirements are leading firms to reevaluate processes, "with the intent of maximizing asset value while balancing risk, cost and performance. AIP software can operationalize standards and regulations to enable organizations to bring together financial and non-financial elements, supporting data-driven investment decisions and providing an auditable track of actions."

AIP Software's Unique Value in Digital Asset Management

AIP software's unique value proposition centers on supporting multi-category decision-making by leveraging capabilities including:

1. The ability to aggregate pertinent data from various asset management systems (including ERP, EAM, APM, CMMS) in addition to manually capturing information from systems like Microsoft Excel in order to provide decision-makers with as many objective, data-driven inputs as possible.
2. Support for a unified standard across all capital assets within a manufacturer's operations (including buildings & infrastructure, utility, production, packaging, warehouse, and automation systems).
3. A pre-built risk framework and modeling template that can be adapted to custom thresholds, priorities and strategic goals.
4. The extension of asset management insights to decisions requiring longer time horizons of one to five (or more) years.
5. The ability to bridge the gap between spend ideation and project execution workflows.
6. Native or integrated visual reporting for generating and sharing asset management insights across the organization.

Who Uses AIP Software

AIP software integrates data sources across a manufacturing organization to improve decision making among a variety of stakeholders.

Important examples include:

Engineering Teams

From performing asset health assessments to justifying capital requests, busy engineering teams are already hard-pressed to keep up with asset management workflows. AIP software can help reduce decision variability through a standardized evaluation template and capital request submission platform. Engineers benefit from a rich context for prioritizing innovation spending while promoting the continued reliability of existing infrastructure. With AIP software, the efficiency gained in decision making allows more time for detailed engineering and execution phases.

Manufacturing and Supply Chain Professionals

Unplanned production outages or supply chain disruptions can directly result in lost sales and reduced profitability, but these risks can be difficult to quantify when justifying capital expenditures. AIP software provides a standardized approach for substantiating these requests against a specific risk standard, rationalizing and improving visibility for mitigation investments.

Finance

Corporate financial goals can be difficult to align with engineering and manufacturing priorities, and AIP software offers common ground for stakeholders to come to a shared understanding of strategy, risk and long-term capital priorities. With AIP software, financial analysis can be honed using a refined, defensible list of priorities. Financial professionals will also benefit from capital forecasts and spending plans that can be rapidly adapted based on market conditions or financial performance.

Executive Leadership

AIP software is the ideal tool for executive leaders seeking to synthesize granular organizational knowledge on operational risk with long-term strategy. The confidence gained in ongoing operations means more focus can be applied to company product innovation, maximizing productivity initiatives, and sustaining profitability even in tough business climates.

The Role 1898 & Co. has in Implementing Asset Investment Planning Software

An effective AIP software implementation plan is important for limiting cost while encouraging uptake, streamlining the transition, and quickly integrating data from different departments and locations.

1898 & Co. leverages experience in the food and consumer product manufacturing industry, including deployments of AssetLens AIP software at various stages of client maturity, to accelerate time to value for organizations at different stages of readiness. Through a programmatic approach, clients feel like 1898 & Co. provides an AIP playbook that can be configured to suit their business and scale alongside evolving data availability.

AssetLens AIP deployment begins with the configuration of an asset assessment and risk framework developed by 1898 & Co. Asset attributes, including data on health, criticality, useful life, financials and other strategic assessment methodologies, are collected and consolidated in the AssetLens platform. Data collection sometimes includes site visits, depending on information available in other asset management systems; however, most of the configuration and data entry takes place off-site. Implementation is typically conducted in a few months using an iterative method, and the program scales as the client's readiness adapts. With the assessment framework configured, clients are able to take advantage of the capital planning and prioritization functions of the AssetLens AIP platform rapidly. This approach has proven to be effective, optimizes transition costs, and sees that the value of the investment is upheld.

About Asset Lens

AssetLens is a powerful AIP solution delivered as a configured-to-suit software platform built by 1898 & Co. and implemented as an SaaS technology and enterprise planning program. AssetLens reflects the firm's experience, with over 150 pre-built asset templates for the food and consumer manufacturing industry and full customizability to unique business requirements.

About 1898 & Co.

1898 & Co. is a global business, technology and security consultancy serving critical infrastructure industries. We partner with clients to plan, secure and optimize their business. As part of Burns & McDonnell and our 120 years of industry experience, we understand the complexity of your asset-intensive business model, the trends impacting your industry, and the need to ground big ideas in operational realities. For more information, visit **1898andCo.com.**

571550-1023