

The Reliability Playbook

A digital approach to RCM

# How to build, deploy, and sustain optimal maintenance strategies effortlessly

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# Introduction

Effective asset reliability management has long been a challenge for organizations. While early efforts focused on simplifying complex tools and processes, it became clear that the real barrier wasn't complexity but the lack of ongoing strategy management.

Many organizations treat strategy management and work management as the same, leading to inconsistent results, underperformance, and costly failures. Without a structured approach to continuously manage and optimize reliability strategies, asset performance suffers. This gap has driven the need for Asset Strategy Management (ASM) an end-to-end process that ensures reliability strategies are actively maintained, improved, and aligned with operational goals to drive better outcomes.



ASM is also a core pillar of an integrated approach to Asset Performance Management which seamlessly connects asset condition, health, and strategy to work execution, and creates an integrated ecosystem that enables organizations to demonstrate compliance, reduce risk, manage costs, and deliver predictable performance.

In the following chapters, we'll deep dive into ASM. We'll investigate some of the most common challenges facing reliability and maintenance teams today, why they exist, and how ASM can help you overcome them. You'll also see how successful teams are already implementing ASM to move faster and accomplish more with less.

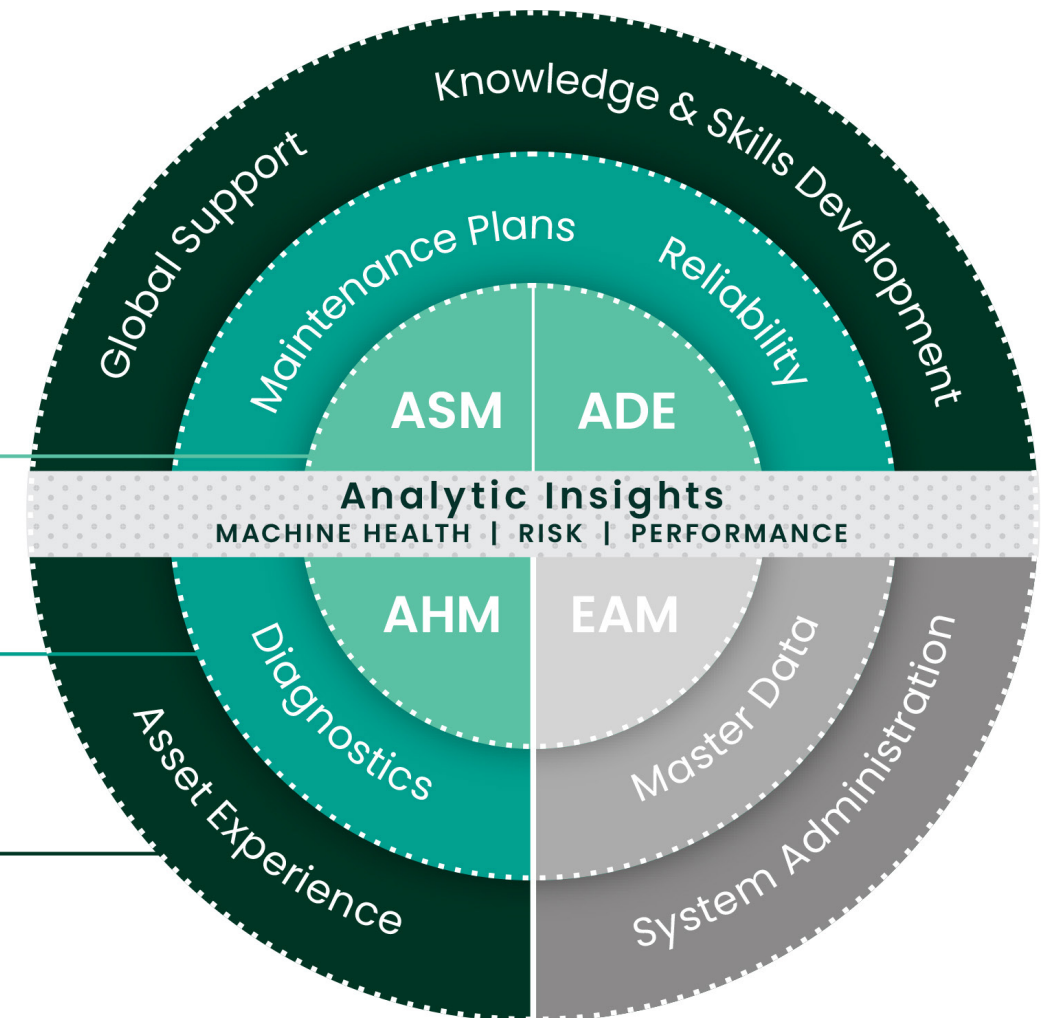
### Integrated APM solutions

AHM = Asset Health Management  
 ADE = Asset Defect Elimination  
 ASM = Asset Strategy Management  
 EAM = Enterprise Asset Management

#### Connected Technology

#### Content and Knowledge

#### Support and Expertise



# What is Asset Strategy Management?

Reliability should be easy. We care for our assets so they perform as expected when we need them, at reasonable cost and within an acceptable risk level.

However, the modern reliability landscape is full of noise and complexity. There are new technologies, and connected devices, but also pressure on resources and performance levels.

ASM provides a proven solution which will help you cut through the noise and adopt a digital approach to reliability centered maintenance.

Enabled by people, technology and data, ASM is a process that connects physical assets and independent plants and sites to a central system, allowing you to effectively develop, implement, maintain, and optimize asset reliability strategies.

Implementing an ASM program also helps you ensure the optimal strategies are always deployed – even as your organization’s operating environment or performance needs change.

## What ASM ultimately delivers is:



a reduction of failures, downtime, and risk,



thereby increasing performance



and lowering the cost of operations.

# The challenges of building, deploying, and sustaining optimal reliability strategies.

Assets operate in a dynamic environment. There are changing environmental conditions, changing operating duties, ageing assets, changing costs, and even changes in the performance we expect from our assets. It is important then that the asset strategies we implement are updated to reflect these changes. In other words, the strategy needs to be managed.

For reliability managers already busy putting out day-to-day fires, this can present a number of challenges. Many of these challenges relate their inability to leverage data – and specifically reliability content – across their organizations. This compounds the time it takes to build, deploy, and manage strategies and can result in ad hoc strategy development where changes are made without any structure, consistency, or justification.

Diving deeper into these challenges will help to illustrate how ASM makes it much more feasible for organizations to sustain the optimal reliability strategies.



# 1 Unstructured data

Large, multisite organizations share a common challenge in that data is fragmented across many sources, restricting visibility into potential improvements and complicating things like the comparison of like assets and plans.

Specific data challenges include:

- A lack of, or inefficient data governance procedures to mandate the capture and recording of specific data
- Lack of guidelines and requirements that support consistent master data
- Inconsistent asset hierarchy driving different maintenance plan structures for like equipment
- Strategy development or review processes that are disconnected from the master data generation process and implementation

ASM can help rectify these challenges by providing a process and system that centralizes data.

— CASE STUDY

# Standardization of master data keeps SAP migration on track

## Overview

A top-20 producer in North America with conventional, cultured, frozen, and shelf-stable product groups across 13 manufacturing plants needed to migrate from its existing CMMS to SAP-PM.

The producer faced several challenges, including:

- Incomplete asset hierarchy & inconsistent nomenclature in existing CMMS
- Task Lists and Work Instructions in PDF documents with inconsistent document formats
- Inability to migrate master data to SAP in time to meet SAP configuration, testing, and go-live deadlines
- Risk of not migrating all data, resulting in incomplete information and assets without maintenance schedules

## Solution

Our team was able to help the producer keep its SAP migration on track by enabling it to standardize its master data, quickly and efficiently. The solution involved several key activities, including:

- SAP hierarchy and PM data standard developed to drive consistent, complete master data across the organization
- Existing hierarchy converted into SAP load format per the data standard
- Plants walked down in person to complete missing hierarchy as needed
- Existing PM tasks and instructions pulled from PDF documents into Cordant™ Asset Strategy
- Improved Task List and Work Instruction documents generated in standard format using Cordant™ Asset Strategy Document Generation capability for load into SAP-PM

### Key results



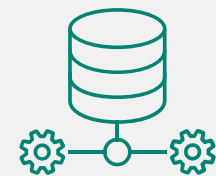
SAP migration on track



Asset performance no longer at risk



Complete, consistent master data



PM Master Data in Digital Format, enabling future maintenance strategy optimization



## 2 Pressures on time and resources

It is not uncommon for organizations to have tens or hundreds of thousands of assets and a corresponding number of strategies. What organizations don't have is time or resources to regularly review and optimize those strategies, at least not in a traditional manner.

Another challenge is that organizations lack a formal process to trigger or manage strategy reviews. So, there is no mechanism to kick start the strategy review and no way to identify which assets the reliability team should focus on. In these cases, a reactive maintenance culture can set in where people are more focused on fixing failures than trying to prevent them.

CASE STUDY

# Streamlined data management improves speed, quality, and cost of capital-project maintenance builds

## Overview

Pressure on time and resources was an ongoing challenge for a super-major oil and gas producer whose capital-project maintenance builds were costing too much and taking too long using a traditional maintenance-build approach. The company was experiencing continual overspending, missed deadlines, and maintenance strategies that didn't deliver the needed performance and reliability.

## Solution

The oil and gas producer chose to work with our team of experts and Cordant™ Asset Strategy to complete their capital-project maintenance builds moving forward. ARMS Reliability provided a technical solution that halved the costs associated with maintenance builds and significantly simplified the process of completing them.

The Cordant™ Asset Strategy approach provided a single environment in which to complete maintenance builds, streamlining file management and eliminating the need for unstructured applications like Excel. Team members no longer had to deal with the inefficiencies, errors, and confusion that inevitably arose around sharing multiple files, versions, and file locations.

Cordant™ Asset Strategy also substantially reduced the number of contractors necessary to complete maintenance builds and created a full client-specific maintenance build library, leveraging their existing operations equipment-strategy library to offer operational context and to utilize their current best asset strategies.

After a successful pilot, Cordant™ Asset Strategy was ultimately rolled out to the client's whole capital-projects portfolio of 5-10 major projects running simultaneously around the globe.

## Key results



5-10x more efficient in building maintenance strategies



Visibility of whole maintenance-build process and outputs in real-time



Retention of maintenance-build intellectual property – easily comparing projects and regions

### 3 Lack of access to subject matter experts

Reliability, particularly at a site level, often relies heavily on subject matter experts. However, what happens when those experts leave and take their knowledge with them?

Organizations need to have a process and system in place to capture strategy-related content, so that when experts leave, important knowledge can be retained. This includes insight into past strategy-related decisions which can inform future improvements. It also critical to maximize the available time from subject matter experts who are typically in demand. The right structure to asset review and data collection and refinement is key to ensure that the work is completed in an efficient but effective way.

Of course, capturing the knowledge of your best subject matter experts is not only important in case they leave; it can allow you to make that knowledge available for all to use. For example, if an optimal strategy is defined for an asset at one site, it can be leveraged across all others.

— CASE STUDY

# Sharing of expertise drives uplift in asset performance

## Overview

One of the world's largest gold mining companies engaged our team to address its lack of access to subject matter experts and inability to leverage best practices across sites.

The company had multiple sites in different countries which have historically operated in silos. The remote nature of some sites made it difficult to hire reliability experts and those the company did employ often worked rotating 14-day shifts—taking their knowledge with them whenever they left.

## Solution

Our team has been working with the company on a phased approach to help it build and better leverage its asset management knowledge and expertise.

The project has included working site-by-site to mature the company's asset management capabilities and optimize its asset strategies.

All strategy related content will ultimately be captured in Cordant™ Asset Strategy, enabling the business to leverage experts and pockets of excellence across sites.

### Key results



Development of content and strategies that can be re-used across sites



Uplift in asset performance

## 4 Failure to implement

When RCM first began to hit its stride, organizations were quick to invest in the task of developing maintenance strategies. But, according to research<sup>1</sup>, a massive 66 percent of corporate strategy is never implemented.

One of the issues here is that not all organizations have a line of sight into the field to know whether strategies are being implemented and, even if they are implemented, that's really just the first step.

The dynamic nature of the operating environment means that organizations need to frequently adjust their strategies to account for things like changes to performance targets. They also need good governance to ensure strategies are implemented in a consistent manner and not changed without a formal review.

<sup>1</sup> Johnson, Lauren K. "Execute Your Strategy - Without Killing It." Harvard Management Update, No. 9, 2004: 3-6

— CASE STUDY

# Cordant™ Asset Strategy reduces costs and improves governance of deploying asset strategies

## Overview

A global resources company headquartered in Australia needed a better way to build, deploy, and update its asset strategies. The company relied heavily on manual processes for asset management before adopting Reliability Centered Maintenance (RCMCost). However, the solution was deployed to just one site and not connected to the company's CMMS.

As a result, there was still significant manual effort involved in deploying and updating strategies.

## Solution

The resources company engaged our team to help it transform its approach to ASM, leading to implementation of Cordant™ Asset Strategy. We worked closely with the company's engineers to help them build and deploy best practice strategies using Cordant™ Asset Strategy. In addition, Cordant™ Asset Strategy was deployed to two initial sites and integrated with the company's CMMS to support faster creation of work orders.

The program of work is still underway with plans to rollout Cordant™ Asset Strategy to additional sites globally. However, the program has already delivered a number of benefits including significant cost savings as a result of the ability to deploy strategy updates to multiple assets at once. Governance has also improved with Cordant™ Asset Strategy enabling the company to track when and why strategy updates were made.

## Key results



Thousands of dollars saved through more efficient building and deploying of asset strategies



Improved governance

## 5 Inability to scale process

To reap the benefits of reliability, you need the best strategies in place across all assets at all sites. However, this is next to impossible to achieve without a scalable process. Instead, organizations often end up with multiple strategies for the same asset type, even when those assets are performing the same duties under the same conditions.

Clearly only one (if any) of those strategies can be the optimal strategy, and much time is wasted by different sites designing different strategies for like assets.

The opportunity to rapidly make a change to an asset strategy, based on new information, is also lost when there are dissimilar strategies on like assets. This translates to lost opportunity, as any improvement initiative is deployed on only one asset, instead of the entire asset base.

CASE STUDY

# How Icon Water achieved a sustainable approach to asset management

## Overview

Icon Water owns and operates assets worth over \$2.2 billion, comprising the Australian Capital Territory's (ACT's) network of dams, water treatment plants, sewage treatment plants, reservoirs, water and sewage pumping stations, mains, and other related infrastructure.

As a regulated utility, IcoWn Water has a responsibility to ensure effective asset management and provide the right balance of cost and performance for ratepayers.

## Solution

When Icon Water engaged with Our team, it had less than six months to build its remaining strategies and then package and load all work orders. To meet this timeframe, the company brought in our experts to work alongside its planners to develop strategies and ensure the most efficient approach for packaging work orders.

Augmenting their existing strategy data with the Cordant™ Asset Strategy component strategy library, they were able to quickly develop strategies based on information like asset type, duty, process, criticality and environment, and then optimize these in line with Icon Water's reliability goals and operating environment.

Once strategies were complete, Cordant™ Asset Strategy was used to automatically package work orders – saving a huge amount of manual effort and helping Icon Water meet its project timelines.

### Key results



700,000 asset strategies developed in 14 weeks



Efficient Master Data generation with 20,000 work orders or activities loaded to the WAM



Leading practice approach meeting with ISO 55000



## 6 Difficult to create an enterprise view

For organizations using spreadsheets to manage asset strategies, it's common to have a different spreadsheet at each site. This limits the ability for organizations to leverage best practice across sites and makes it difficult for leaders to achieve a consolidated view of what's happening across the enterprise.

This lack of visibility ultimately impacts decision making and makes it difficult to prioritize resources to manage cost and risk.

— CASE STUDY

# Cordant™ Asset Strategy delivers consolidated view of performance to support data-driven decision making

## Overview

One organization was driven to create an enterprise view as part of an initiative to align to the ISO 55,000 international standards covering asset management. The organization was a vertically integrated utility, providing electricity, natural gas, and renewable energy and operating multiple sites. It wanted to consolidate and leverage data from across sites to support risk-based and fact-based decision making. It was also challenged by life cycle costing of its assets and plant and wanted to improve its ability to forecast capital investments.

## Solution

Our team has worked with the organization to optimize its strategies and consolidate them into Cordant™ Asset Strategy. With Cordant™ Asset Strategy, strategies can be reviewed on an ongoing basis and modified easily as conditions change. Strategies can also be adjusted with a clear understanding of the impacts on cost and risk.

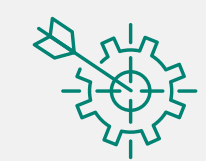
As part of the solution, we helped the organization connect a number of data points in Cordant™ Asset Strategy for complete visibility of how the site is operating and to more accurately forecast capital investments. These data points include equipment, strategy, health and safety, and risk-related information.

Performance data is additionally fed back into Cordant™ Asset Strategy to enable continuous improvement. For example, if equipment breaks down, the organization can capture relevant information to gain a better understanding of that equipment as it ages.

### Key results



Optimization of asset strategies, reducing risk exposure and supporting high levels of reliability



Millions of dollars saved in less than five years, exceeding targets

# Conclusion

While these case studies provide examples of how ASM can help solve specific challenges, it's important to point out that ASM is more than just a project. Instead, ASM is a process that helps you to continually manage asset strategies over time.

The benefits of ASM are wide-reaching and include:

## Optimized strategies

ASM can help you to optimize your asset strategies to deliver the best balance of risk, cost and performance, using all available information for each equipment type.

## Rapid strategy deployment

ASM gives you the ability to rapidly deploy new strategies or changes to existing strategies with a consistent structure, assured data quality, and seamless EAM integration to deliver immediate value through reduced risk and cost and improved performance.

## Enriched master data and consistency

With ASM, a generic equipment knowledge base completes your Master Data. Quality of Master Data improves over time and is always connected to the installed asset base.

## Data-driven continuous improvement

ASM ensures strategies are continually adjusted based on changes to your operating environment.

## Effective governance

ASM gives you greater visibility across assets and sites – and it helps you close the gap between the forecasted and actual performance of agreed strategies.

# What our clients say



We've had some fantastic results. We had projected to save a few million dollars over the next five years using Cordant™ Asset Strategy. to build asset strategies. But we've actually exceeded our projections. Cordant™ Asset Strategy. has helped us understand what our risk exposure is over the next 5, 10, 15, 20 years, and we've been able to pivot. We've exceeded our five-year prediction on this year alone. So, it's pretty exciting for us.

**Tom Hurley**  
ENMAX



As our asset base grows and our assets age, it is even more important for our maintenance strategies to be well planned and executed. By working with Baker Hughes, we are able to leverage industry best practice tools, so we can deploy the best possible solutions for our entire asset base, in the most efficient manner.

**Andrew Behn**  
Icon Water



You have an advantage with Cordant™ Asset Strategy, as typically working with RCM projects you identify the strategies but then struggle with implementation. This tool makes it much easier to transition strategies to execution.

**Reliability Advisor**  
Global Oil & Gas Producer

## Cordant™

Cordant™ Asset Strategy, completes the last digital mile connecting strategy with asset health and work execution for an unmatched holistic view of asset risk, performance and cost.

Backed by the industry's leading experts and powerful content libraries, the platform enables an Asset Strategy Management program that allows you to quickly build, deploy, and continuously align financially optimized maintenance strategies with ever-changing operational contexts. Rather than reacting, you'll have the enterprise-wide control and insight to plan for and deliver on mission-critical business outcomes.

[Learn More](#)