



+ Utility asset management

Capability statement

HATCH

Facing today's challenges

Aging Infrastructure. Regulatory Constraints. Cybersecurity. Evolving Technology.

In the past four decades, consumer power needs and requirements have rapidly evolved. Today, utilities and operators face more challenges than ever, such as rising power supply costs, the emergence of alternative sources, and educated consumers who play an active role in the decision-making process.

Our approach

To thrive in this complex shifting environment, utilities and operators must optimize the value generated from their operations and maintenance budgets. In short, you need to do more with less. Whether you are quantifying risk, prioritizing tasks, or planning for the future you need

to optimally analyze the data that is available at your fingertips to identify actions that will create meaningful impact to your organization. We believe in the power of data and the critical role it plays in risk and value based decision making. Monitoring and managing your assets by leveraging a systematic approach will extend the lifespan of your assets and help you plan more effectively while reducing the overall risk to your operations. Our asset management approach is designed to help you determine whether you maintain, upgrade, retire, or replace your assets, or delay action.

Our main areas of offerings include the following segments of Asset Management.

Hatch's key utility asset management offerings

Strategic Asset Management	Asset Performance & Lifecycle Management	Asset Investment Planning	Digital Asset Management Solutions
AM Frameworks & Mechanisms	Asset Reliability Forecast	Demand Analysis & Value Framework Development	EAM & ERP Platform Support
New Technology AMPs	Performance Modelling (Failure Curves)	Capital Program Support & Investment Scheduling	AIP & APM Software Integration
ISO 55000 Maturity Assessments	Asset End of Life Interventions & Extensions	Risk and Value Based CAPEX & OPEX Planning	Data Governance (ISO 14650)
Data Roadmaps (ISO 55000 aligned)	Health Indexing & Predictive Analytics	Grid Modernization Capital Investment Support	Gap Assessment

Key expertise

Strategic asset management

Our comprehensive approach considers financial value and regulatory compliance to help you develop and implement a strategy that maximizes asset value while minimizing risk. We work with you to develop a plan that aligns with your goals, incorporating risk-based decision-making and asset lifecycle management principles.

This includes:

- Conduct regular performance evaluations and reviews to measure the effectiveness of the asset management plan and identify opportunities for continuous improvement.
- Develop contingency plans and risk mitigation strategies to address potential threats to the assets.
- Continuously monitor and analyze market trends and asset conditions to identify potential opportunities for optimization.

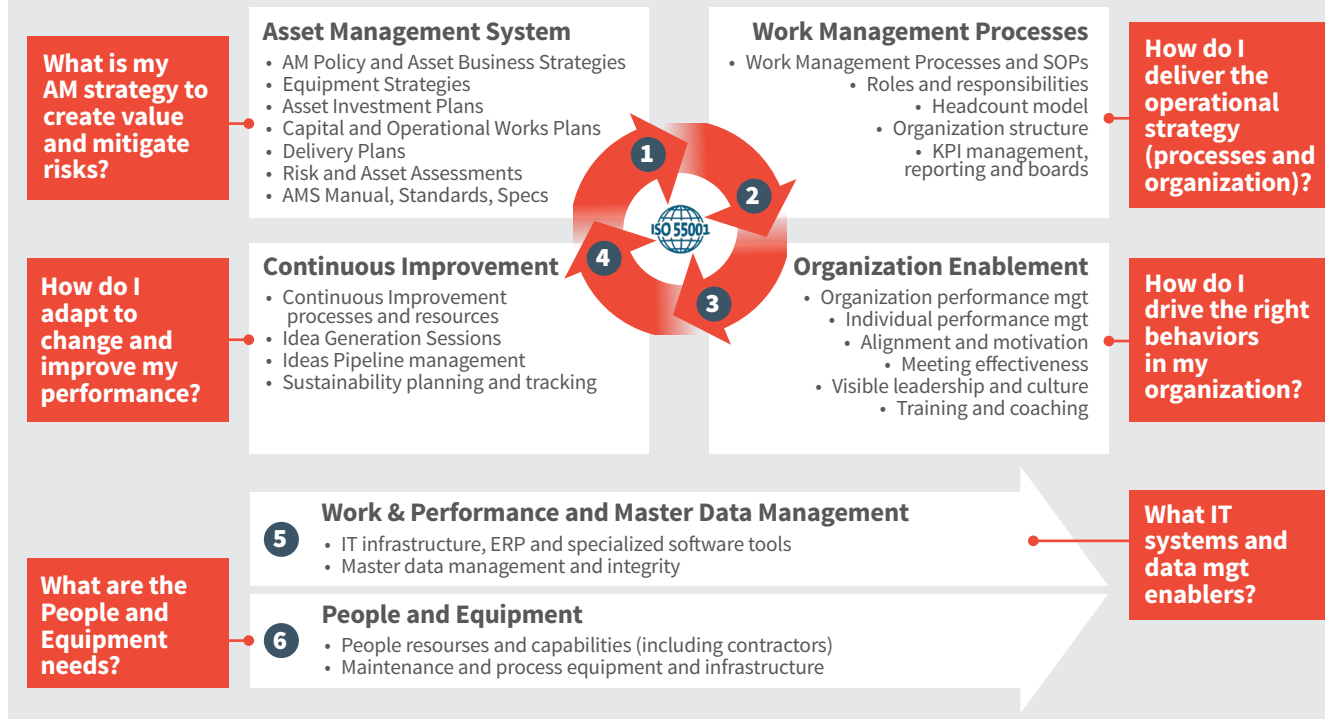
Our tailored Asset Management Frameworks and Mechanisms (AMFM) establish a structured and systematic plan, including asset inventory, condition assessments, lifecycle projections, and risk assessments.



We help define asset management policies, procedures, plans, and processes, aligning with ISO 55000 standards, from design to decommissioning/disposal.

We perform maturity assessments against ISO 55000 standards to evaluate your current practices, identifying gaps and opportunities for improvement. We provide a comprehensive report outlining strengths and weaknesses, developing a roadmap for continuous improvement. We value the importance of data in Asset Management and provide Data Roadmaps to effectively manage asset data, aligning with ISO 55000 principles.

Hatch utility AM program development framework



Asset performance & lifecycle management

Our services in asset performance and lifecycle management are designed to help optimize operations, extend the life of assets, and minimize downtime. By utilizing advanced analytics and predictive modeling, our Asset Performance Management (APM) software can predict potential equipment failures before they occur, allowing you to plan for maintenance and repairs in advance. Our asset reliability forecasting, modelling, and projection services are designed to predict potential equipment failures before they occur.

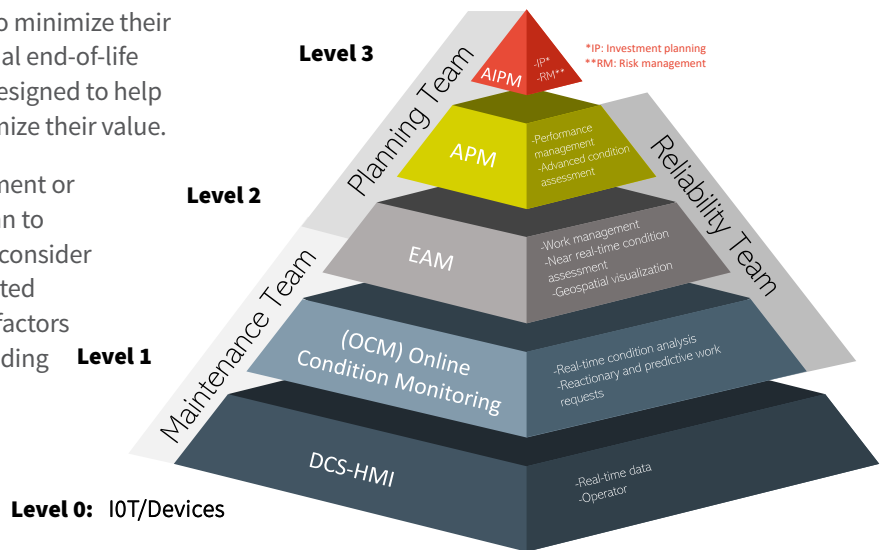
We perform asset failure curves modelling and impact of failure determination to identify the root causes of failures and develop preventive measures to minimize their impact on your operations. Our asset optimal end-of-life interventions and extensions services are designed to help you extend the life of your assets and maximize their value.

We determine the optimal time for replacement or upgrades and develop a comprehensive plan to minimize downtime and costs. Our experts consider factors such as equipment condition, expected lifespan, environmental constraints, safety factors and potential cost savings when recommending end-of-life interventions or extensions whereas our asset condition assessments, based on health indexing, provide insight into equipment health and improvement areas.

The below failure curves represent the:

- Data-driven based asset failure curve intelligence to improve the value-based asset management process.
- By implementing this data-driven approach, organizations can gain greater insight into the performance of their assets, identify potential areas of risk, and develop strategies to mitigate these risks.
- Ultimately, this can lead to improved asset performance, increased efficiency, and reduced costs over the asset's lifecycle.

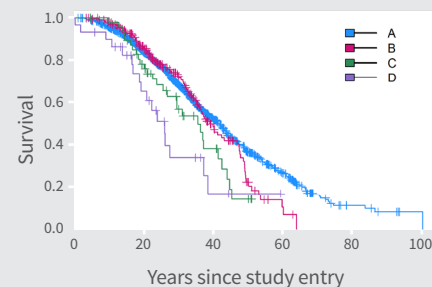
Hatch asset intelligence elements



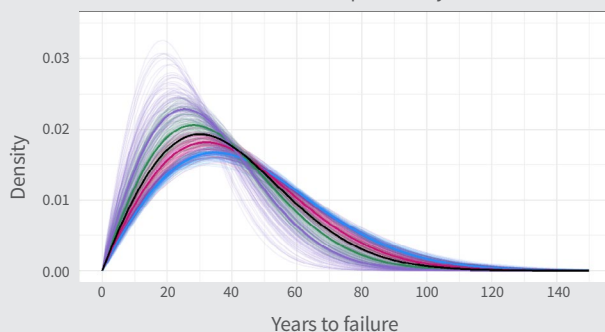
Asset failure curves modelling

Condition bands based on Normalized Health Index:
 $NHI = HI / Age \times 10$

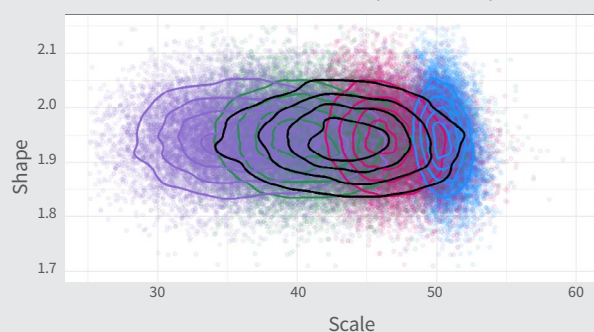
Condition Band				n	events	Shape	Scale
A:		NHI	<1.5	4490	163	2.491	156.845
B:	1.5<	NHI	<3	1117	59	2.491	108.009
C:	3<	NHI	<4.5	731	26	2.491	69.508
D:		NHI	<4.5	251	37	2.491	20.387
Group MLE (All):						1.789	200.215



Posterior distribution of failure probability

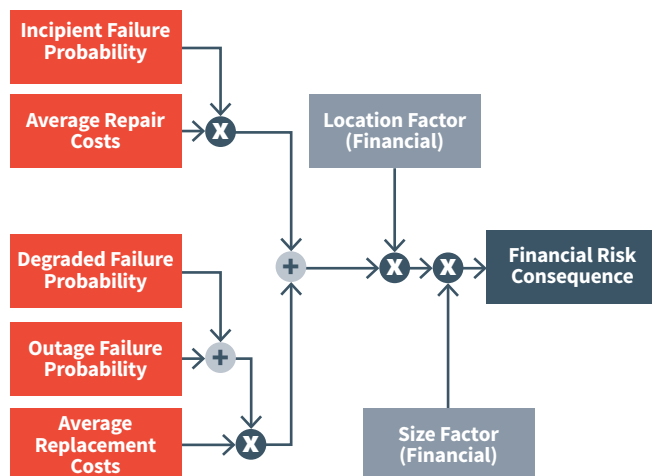


Posterior distribution of weibull shape and scale parameters



Asset investment planning

Our Asset Investment Planning (AIP) implementation support service offers a structured approach to optimize your investment decision-making process. Leveraging our expertise in asset lifecycle management, data analytics, and technology, we provide a comprehensive AIP that helps make informed investment decisions.

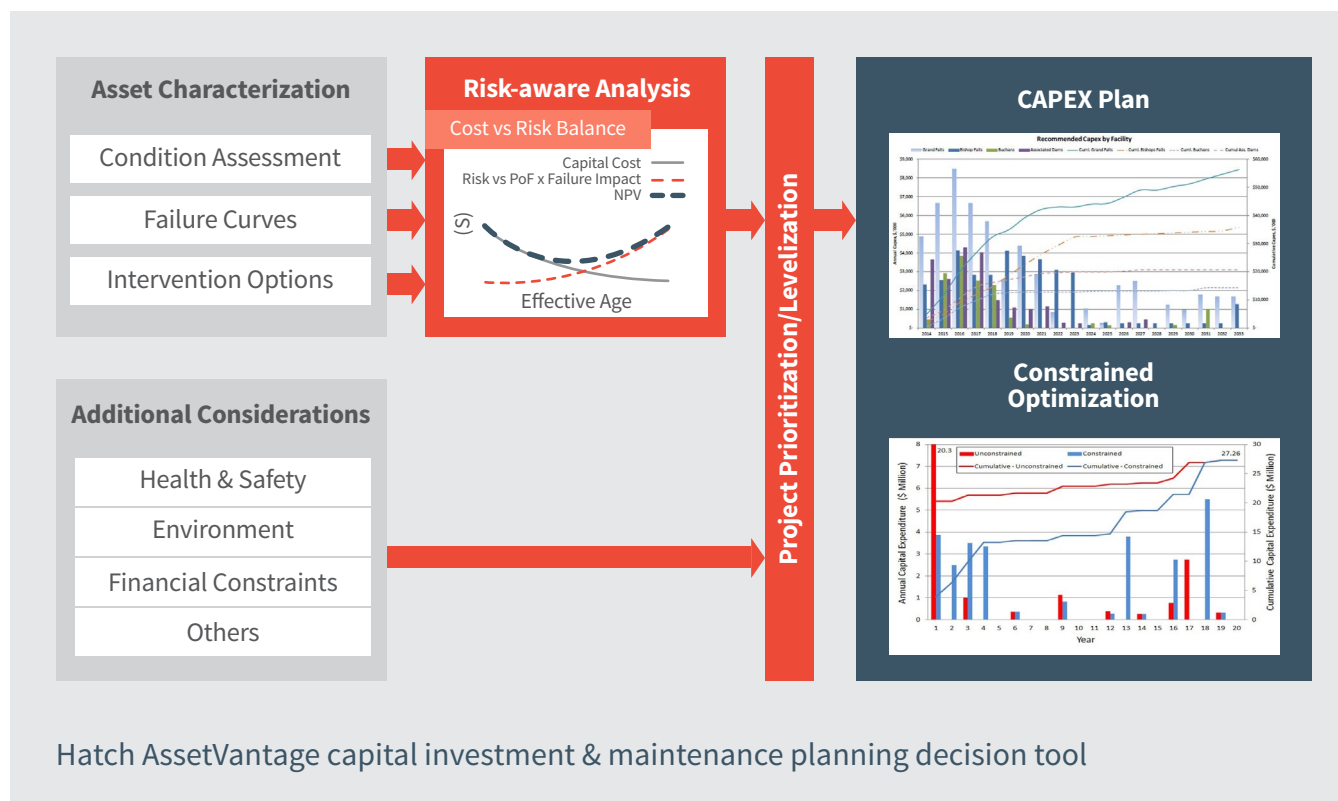


Risk-based value framework modelling

Our comprehensive solutions are carefully designed to achieve your objectives by optimizing your capital and operational expenditure (CAPEX/OPEX), developing risk-based value frameworks, evaluating CAPEX investment decisions, conducting demand analysis, managing risks, and modernizing your grid infrastructure. We consider a holistic approach to asset management, to identify areas where costs can be reduced without compromising peak performance levels.

Hatch's AssetVantage software serves as a risk-based decision support model for assessing CAPEX investment decisions. Using probabilistic risk-based analysis, AssetVantage evaluates and determines optimal strategies, which are then compared to other alternatives using net present value (NPV) computation.

Our expertise includes quantification techniques such as risk and intangibles pricing, condition monitoring programs, reliability engineering methodologies, and life cycle costing methods, which work together to ensure effective asset management. Modernizing your grid infrastructure is critical to improving asset performance and reducing maintenance costs.



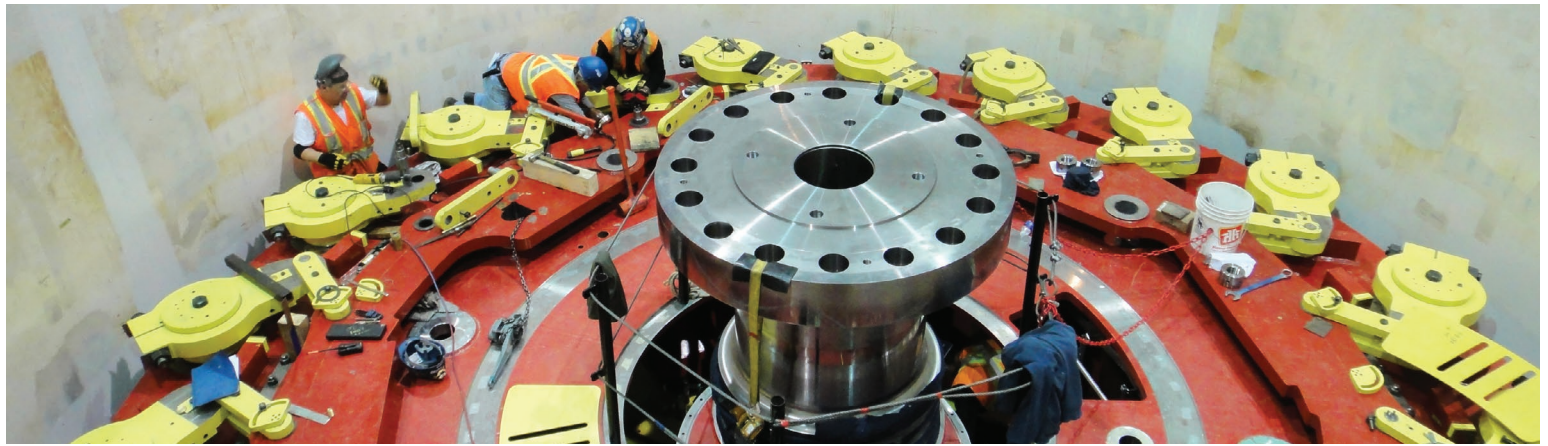
Digital asset management solutions

As a leading provider of comprehensive asset management solutions, we understand the crucial role of Digital Asset Management in achieving an organization's strategic objectives. Our proven expertise in seamlessly implementing EAM software, such as SAP S/4 HANA, Hexagon EAM, Oracle JDE, IBM-Maximo, and more, is backed by a team of seasoned experts. Additionally, we specialize in cutting-edge Asset Performance Management (APM) software solutions that leverage advanced analytics, machine learning, and predictive maintenance strategies.

Our APM software integration empowers you to monitor and analyze asset performance in real-time, proactively detect early warning signs of potential failures, and take preventive actions to avoid unplanned downtime. We take pride in seamlessly integrating your EAM solution with your ERP, providing you with a holistic view of your assets' performance, costs, and maintenance schedules. This integration enables you to make data-driven decisions, streamline business processes, and gain real-time insights, leading to improved operational efficiency, cost reduction, and overall enhanced performance. We help develop a data governance framework covering all aspects of data management, aligning with ISO 14650 standards, ensuring accurate, reliable, and secure data.

Hatch's strategic collaborations





Selected utility project experience

Development of ISO 55000 Aligned AM Roadmap & AM Plans

Project Objective: To establish an integrated Asset Management System for all power production and delivery assets.

Deliverables: Asset Management (AM) System Audit, five-year vision workshop, Gap Assessment and Roadmap, AM Framework and Plan Implementation, for all power production and delivery assets, AM Tools Identification and Deployment, Stakeholder Engagement Plan, Asset Performance Management System, Integrated Enterprise Data Management and Data Governance development.

Benefits: Improved efficiency and reliability, Cost savings, better asset utilization, and improved performance.

Asset Investment Planning Cost-Benefit Value Framework

Project Objective: Develop a value framework model for the Asset Portfolio.

Deliverables: Built around probability of failure (POF) and consequence of failure (COF), utilizing data from the utility and from CNAIM. The framework was integrated into Copperleaf's C55.

Benefits: Enhanced Asset Investment Planning, and Clear Road map to future investments.

EAM & ERP Development Support

Project Objective: Support in Implementation of EAM and ERP Platforms.

Deliverables: Providing technical expertise in selecting the most suitable ERP and EAM systems. Hatch is developing inputs for the ERP and EAM RFIs based on the desired system capabilities.

Benefits: Improved EAM, Increased Operational Efficiency, Regulatory compliance, and Cost Savings.

Predictive Analytics Integration into Copperleaf

Project Objective: Implementation of predictive analytics into Copperleaf solution.

Deliverables: Providing support in implementation of predictive analytics into Copperleaf solution, ensuring that the tool and analytics package is performing to expectations. Areas of support include input data quality, output applicability, gap definition, and establishing a plan moving forward.

Benefits: Optimize capital plans.

Asset Condition Assessment

Six separate Asset Management consulting contracts over eight years.

Project Objective: Develop Health index formulation for the asset portfolio.

Deliverables: Established a Health Index formulations for evaluating asset conditions and field audits, Included software evaluation, 74 asset classes for transmission, distribution, and substations.

Benefits: Health score formulation of assets, Improved asset management, Enhanced reliability, Informed decision-making, Increased efficiency, and Risk management.

Asset Failure Curve Development

Project Objective: Development of Asset Failure curves.

Deliverables: Failure curves were developed for distribution asset classes. Two methodologies were explored while leveraging utility-specific historic failure data: age- and condition-based probability of failure.

Benefits: Improved Risk based AM process.



About Hatch

Hatch is a global engineering, project management, and professional services firm. Whatever our clients envision, our professionals can design and build. With over six decades of business and technical experience in the energy, infrastructure, and mining sectors, we know your business and understand that your challenges are changing rapidly. We respond quickly with solutions that are smarter, more efficient and innovative. We rely upon our 10,000 staff with experience in over 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

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