

A man wearing a yellow hard hat and a high-visibility yellow vest over a light blue shirt is looking at a tablet. He is in an industrial setting with various pipes and machinery in the background. The image has a purple tint.

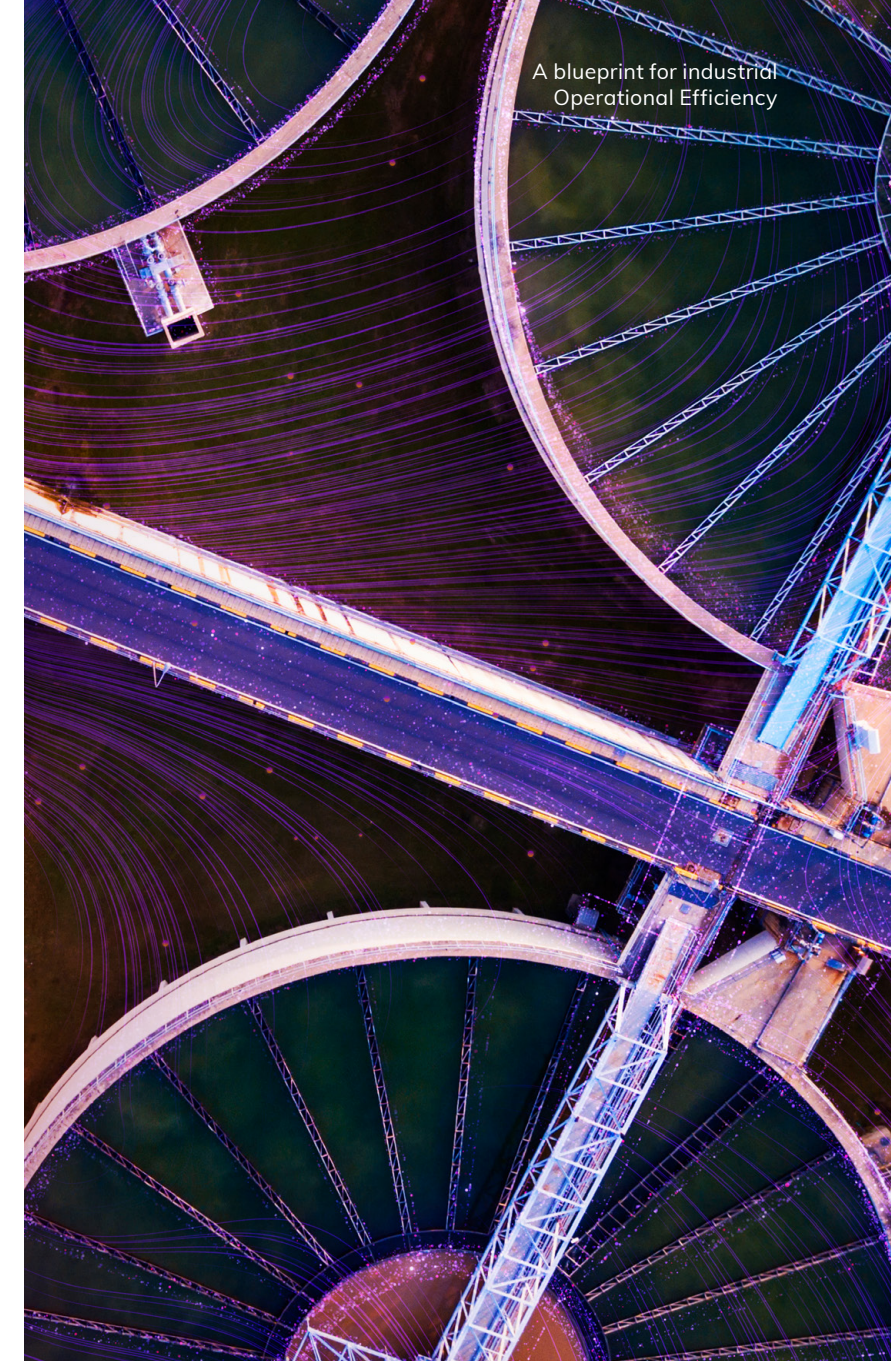
AVEVA

A blueprint for industrial Operational Efficiency

**Embracing Operational Excellence
to thrive in an increasingly
complex environment**

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Executive summary

Digital transformation is opening doors that lead to efficiency improvements across every industry. From connected infrastructure to smart factories to the mobile workforce, organizations are applying technology to solve the myriad of problems that stand in the way of sustainable, efficient operations. Implementing the right Operational Efficiency strategy is crucial to maintaining a competitive advantage.

Leading organizations need to empower workers to continuously improve the efficiency and productivity of their operations and adopt an operations strategy that eliminates silos, powers supply chain agility, increases asset reliability, and optimizes efficiency.

This e-book provides proven strategies to transform your operations from edge to enterprise:

- The significance of Operational Efficiency
- The operational challenges that industries face in today's marketplace
- The opportunities presented by digital transformation
- How AVEVA can boost Operational Efficiency and sustainability through situational awareness, reducing waste, and optimizing asset performance

Introduction: the significance of Operational Efficiency

More than anywhere else in an industrial organization, operations teams are where real value is generated. Getting anything made, moved, supplied, or powered depends on operations. Working toward a goal of Operations Excellence is a major driver of business success. Three key components of Operations Excellence are efficiency, reliability, and agility.

As we highlight Operational Efficiency, we begin with a straightforward definition: the ratio of a plant's output versus its input. To focus on Operational Efficiency means to find ways to get more with less.

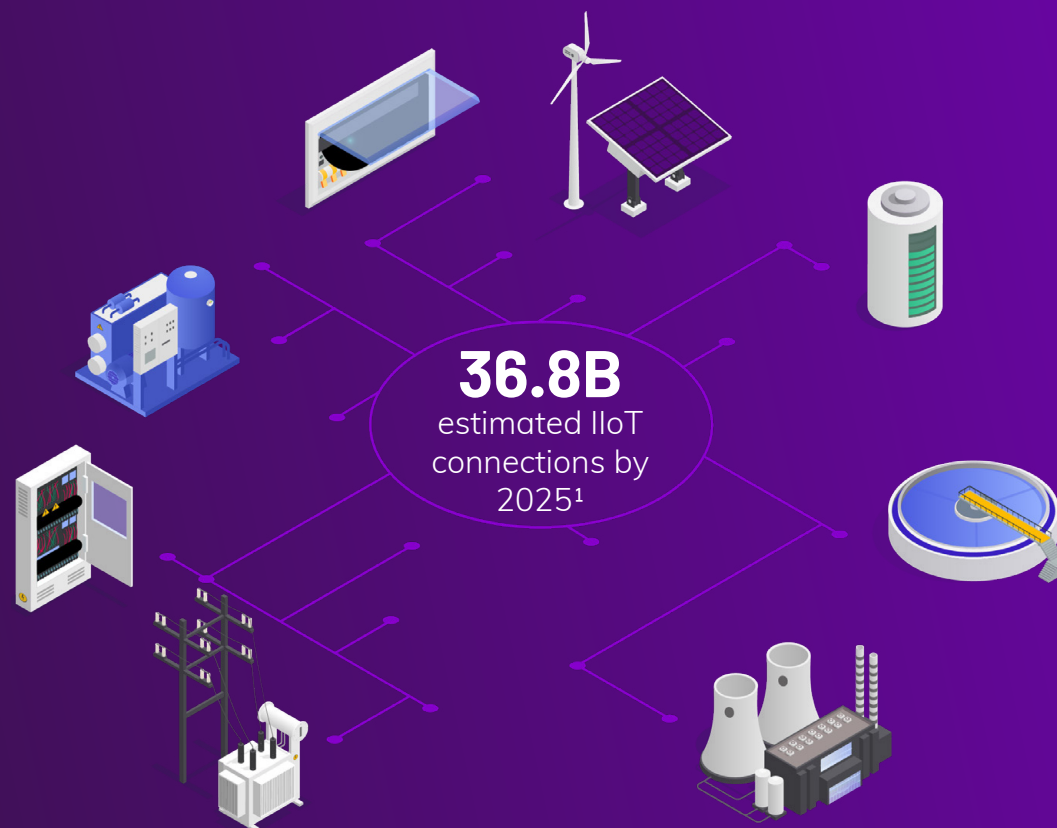
While simple to define, Operational Efficiency has a complex role in a world where industrial processes are continuously being optimized. Industry 4.0 and smart manufacturing has ushered in a rapid acceleration of digital technology to industrial practices, including the full integration of smart technology and automation. The shift to the cloud is opening up opportunities through real-time access to data, new cyber security standards, and increased capabilities for remote collaboration.



Industry as a whole is continuing to adapt to a post-pandemic world, while responding to sustainability challenges and regulatory pressures.

These changes bring together the underlying technologies of Information Technology (IT) and Operational Technology (OT). These disciplines are converging, as industrial equipment adopts advanced networking and software capabilities that were once the exclusive domain of IT.

The number of Industrial Internet of Things (IIoT) devices is expected to more than double to 36.8 billion connections by 2025.¹ For organizations that fail to transform, the downsides will be significant. Gartner estimates that poor operational decision making can compromise 3% of profits.²



Operational challenges in today's marketplace

In an increasingly volatile environment, industries face significant impacts on their supply chain and consumer habits. Business continuity, agility, and resilience in operations are essential to ensure sustainable business growth.

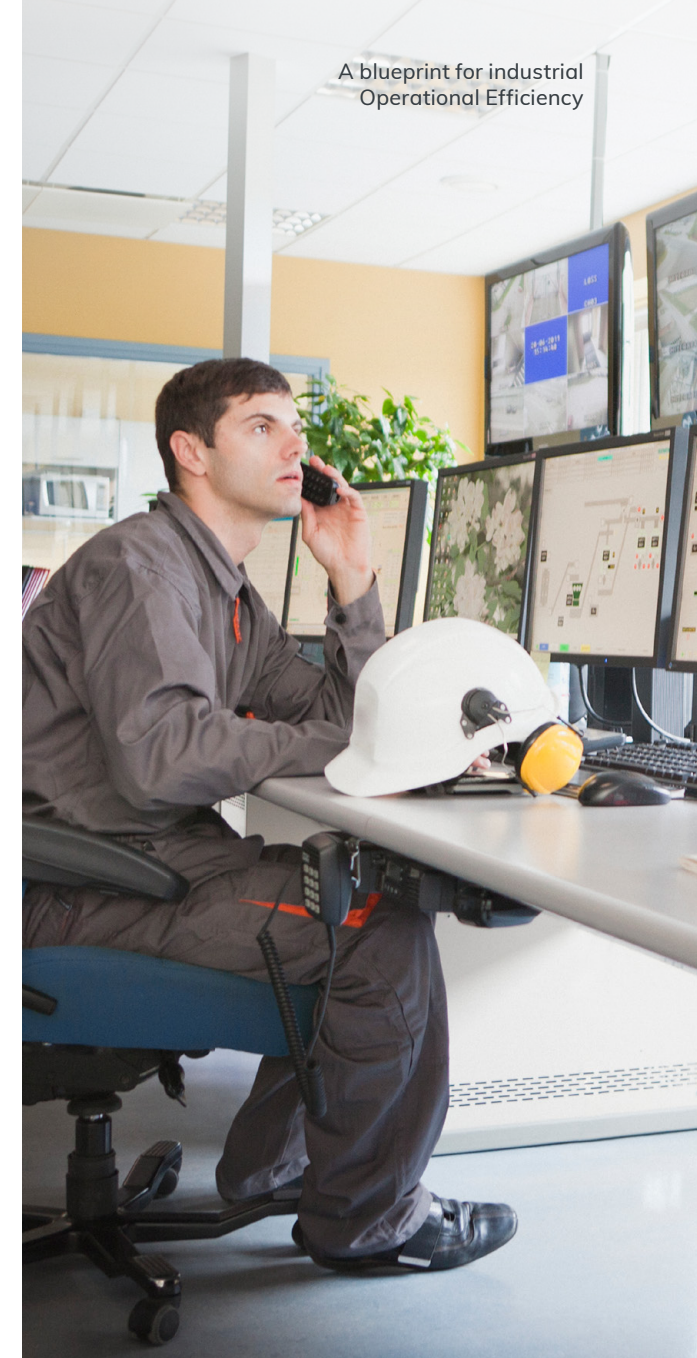
Additionally, most organizations now face competitive pressures, as new players enter the market and existing players expand their portfolios. Moving forward is essential, and Operational Efficiency is a key competitive differentiator.

At the same time, regulations are growing more complex. Industrial companies' responsibilities to evolving environmental challenges, quality standards, and safety, are also growing. Operations must rise to these challenges.

As a new generation of employees enter the workplace, many organizations have to navigate a cultural shift in mindset. Buyer perceptions, company priorities, and a change in workforce capabilities and goals, play a role in prioritizing operational needs and decisions.

Users will expect enterprise-wide visibility and real-time decision support as organizations strive towards Operational Excellence in an increasingly challenging marketplace. Faced with critical decisions, they will want access to tools that can maximize asset reliability and availability. Collaboration and agility are not just abstract concepts, they are now essential for teams to meet changing business requirements.

Henkel used AVEVA to drive 16% in energy efficiency gains, saving **€8 million** per year.⁴



All of this change is happening amidst a wave of technology trends that are driving digital transformation across the board. Cloud computing has brought new levels of scalability and flexibility to technology infrastructure. Mobility strategies are more important than ever as remote workers are required to securely connect to operations systems from anywhere. Modern mobility tools can deliver notifications when and where attention is needed and provide information access to support real-time decisions, continuous improvement, and planning.

Mobile connectivity and cloud computing are rising at the same time as an exponential increase in the amount of available data. The connected machinery of IIoT, combined with edge computing architecture, is enabling companies to deliver real-time insights where they're needed most. The massive amounts of data generated are powering Big Data strategies, Machine Learning, and AI applications.

As data and connectivity grow more important, security will continue to be a major concern. Industrial organizations face the constant threat of cyber attacks, as well as regulatory responsibilities to protect sensitive data and critical infrastructure.

With so many new challenges to face simultaneously, rapid change is now a normal state for operations teams. This change creates opportunities to reinvent old processes and make significant strides towards Operational Excellence.



Poor operational decision-making compromises **> 3% (\$544B) of profits annually**



Average impact of unplanned downtime in the process industries alone is **\$20 billion**



67% of manufacturers cite skilled worker shortages as a top challenge



Efficiency opportunities through digital transformation

Sometimes digital transformation is used as a catch-all term for any steps to modernize an organization with technology. For operations, it has a very real meaning to introduce modern automation to a plant and to modernize older systems. Given the challenges facing industries, digital transformation cannot be treated as optional. It is now a business imperative. Gartner says 69% of Boards of Directors accelerated their digital business initiatives following COVID-19 disruption.⁷

Viewed strategically, digital transformation is a multi-step journey to Operational Excellence, which includes Operational Efficiency. Transformation is different from making incremental changes to existing systems. Digital transformation involves adopting entirely new operating processes – where every individual is empowered to drive the organization forward and increase profitability and efficiency.

To transform in ways that drive Operational Efficiency, operations teams must be armed with greater levels of insight and intelligence to monitor and control operations. They should be empowered to take steps to improve the availability and reliability of assets. They should also be able to make data-driven decisions, based on an accurate and holistic view of operational execution and performance.

These transformative tools help fulfill organizational goals, such as serving the end customer, improving the supply chain experience, finding efficiency and value leaks, and discovering cost reduction opportunities.

Supporting efficiency with a Digital Twin strategy

A 360° Digital Twin is a software representation of a real-world system, built to help understand issues and improve reliability. A problem on the shop floor or in the field can be replicated, diagnosed and potentially solved virtually first, using a digital model.

How AVEVA boosts Operational Efficiency

At AVEVA, we believe that major improvements in Operational Efficiency are possible when connected workers are empowered with insights into their asset behavior and operations impact.



Situational awareness

Situational awareness – a real-time view into operations – leads to improvements in safety, efficiency, and overall effectiveness. Operators respond faster to abnormal conditions. They understand the context of their decisions and get insights that drive action. All of this can happen across multiple workspaces, from the control room to mobile devices, meeting the expectations of today's workforce.

AVEVA's software supports situational awareness through closed-loop process controls. From decision, to action, to reality, users experience role-specific applications, with severity-based alarming and playback capabilities for analysis. An emphasis on situational awareness helps users better understand their perception of data and the environment, to obtain better situational awareness, and project future operational states and events.

Water operations in Pima County, Arizona used AVEVA to improve situational awareness. The result was a **50% increase in Operational Efficiency**, along with a 10% reduction in overall energy consumption.³





Reducing waste

There are two beneficial outcomes of reducing waste and value leaks in industrial operations: improved efficiency and enhanced eco sustainability.

Empower your workforce to reduce all forms of waste such as productivity and quality losses, as well as the reduction of physical waste, emissions, and resource consumption.

Visibility into key performance indicators (KPIs), lean tools, and easy data access help your teams to engage and continuously drive operational efficiency and sustainability. Identify best practices through benchmarking and quickly standardize them across your business. Advanced analytics and process control allows organizations to attain a wealth of new opportunities for efficiency improvement, to minimize the consumption of natural resources and to reduce their environmental impact.

New Belgium Brewing drove sustainable production with AVEVA, **reducing downtime by 50%** and reducing operating costs while achieving record production.⁶



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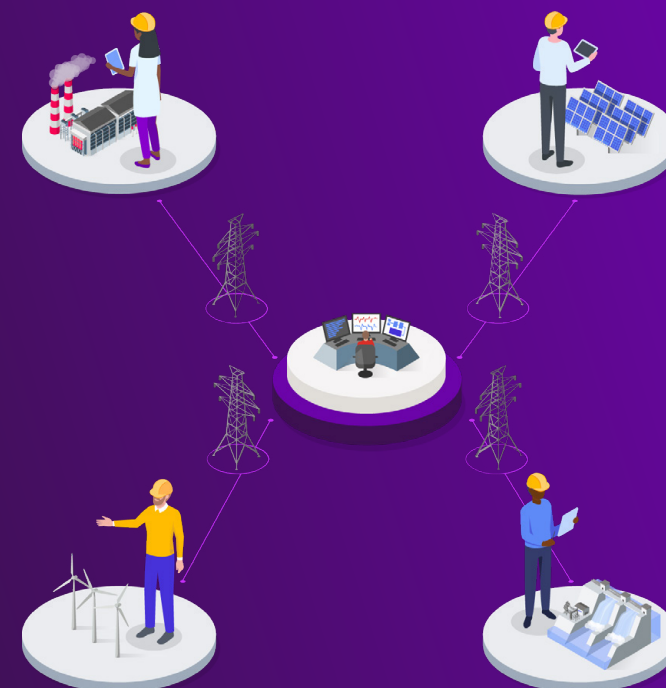


Prioritizing assets

Organizations drive safe and reliable operations by increasing overall equipment effectiveness and reducing unplanned downtime. Building an asset strategy in support of business objectives related to Health, Safety, and Environment (HSE) compliancy, productivity, and profitability provides clear insight into consequences, results, and benefits to the overall business strategy. This leads to smarter maintenance and operations.

Further efficiency gains can be achieved by the use of pre-built asset libraries, adding AI and Machine Learning to predict asset failures well before they occur, and utilizing prescriptive maintenance with the right guidance to minimize downtime and improve worker safety. AVEVA Asset Performance Management (APM) provides the backbone that holistically connects engineering and operations with a digital thread to maximize productivity and drive sustainable operations.

Duke Energy used AVEVA to empower people with early warning notifications of equipment problems, which have resulted in over **US \$65 million in savings**.⁵



Conclusion

Today every industry faces pressure to adapt and improve – and it takes creative thinking and innovation to solve the challenges and embrace the opportunities that come with it. Some of the most important changes are improvements to Operational Efficiency, the transformation to a smarter organization that is able to be agile, resilient, and competitive in the face of change.

Across every industrial practice, disruptions and cultural change have prompted companies to rethink how they engage their customers and how they empower their workers.

Digital transformation will continue to make the industry more efficient, and cloud continues to help accelerate opportunities for sustainable business growth. For many organizations this will mean setting goals to minimize waste and loss, safeguard product quality, safety and compliance, and productivity.

Additionally, companies will have to undertake a shift in culture and mindset: one that empowers workers with the insights they need to solve the present and future operation problems. And one that honors the evolving market conditions and consumer demands.

Establishing and following a clear vision will be the key to thriving in a competitive and uncertain environment. Partnering with vendors who share that vision will be a pivotal decision.

AVEVA offers solutions that can help you improve situational awareness, reduce waste, and maximize asset performance, on your journey to Operational Efficiency and Operations Excellence.

AVEVA offers solutions that can help you with:

- **Maximize return on asset investment**, by assigning the proper amount of maintenance to assets, in order to increase profitability and reduce the risk of asset failure while remaining compliant to regulations.
- **Empowerment of connected workers**, which empower stakeholders to react to different scenarios and identify opportunities for improvement.
- **Productivity and sustainability improvements**, with various lean tools that work towards the elimination of waste and value leaks like underutilization of resources, quality loss and rework, energy overconsumption and environmental impact.

[Learn more about Operational Efficiency](#)



Take the next steps



Explore our
solutions



Learn more about Operations Control

Set the foundation for improving efficiency by empowering your teams from Edge to Enterprise.



Contact us

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About AVEVA

AVEVA is a global leader in industrial software, driving digital transformation and sustainability. By connecting the power of information and artificial intelligence with human insight, AVEVA enables teams to use their data to unlock new value. We call this Performance Intelligence. AVEVA's comprehensive portfolio enables more than 20,000 industrial enterprises to engineer smarter, operate better and drive sustainable efficiency. AVEVA supports customers through a trusted ecosystem that includes 5,500 partners and 5,700 certified developers around the world. The company is headquartered in Cambridge, UK, with over 6,500 employees and 90 offices in over 40 countries.

Learn more at www.aveva.com

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