

WHITE PAPER

The information-sharing community: Why real-time data-sharing is critical for industrial operations

Data-sharing is no longer optional – it's essential for maximizing digital transformation initiatives and laying the groundwork for future success.

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Executive summary:

Industrial operations have turned to digital transformation to combat recent market and economic pressures. While some efforts have been successful, the post-pandemic challenges of high turnover, supply-chain disruptions, and rising costs, coupled with the push for economic recovery, have exposed numerous weaknesses – leaving many industrial organizations scrambling to find new digital solutions to succeed in an uncertain world.

The companies that use data and digital transformation to discover new efficiencies, boost productivity, operate sustainably, and increase customer satisfaction will be the ones that succeed during the next decade. However, industrial organizations can only go so far using their own resources. The future – and success – lies in collaborating with external stakeholders to assemble the necessary data to make informed decisions about assets and processes that increase both efficiency and profitability. And collaboration requires real-time, sophisticated, and simplified data-sharing.

Companies that take proactive steps now to tap into the power of ecosystems can secure a significant competitive advantage.
- McKinsey & Company

By easily sharing data in real time with vendors, service providers, supply-chain partners, analytics companies, and more, industrial operators can expand their network of information and work together to discover new opportunities, optimize equipment and processes, and gain or maintain competitive advantage. Now, thanks to new tools and solutions, creating secure, real-time data-sharing communities is possible, helping companies achieve an efficient, agile, and sustainable future.

To share or not to share?

Industrial operations, by nature, is equipment-heavy and comprised of complex supply chains. Keeping assets and processes running efficiently and profitably requires specialist knowledge, which often resides outside of the organization. However, partners are only as effective as the information they have, and stale or inconsistent data doesn't allow them to maximize their expertise. Partners need access to reliable, relevant data in real time to keep operations running at optimal levels and enable effective change.

Traditionally, IT departments don't sanction real-time data-sharing due to the cost of setting up secure networks or VPNs, as well as the complexity of building and managing multiple data access methods. But here's the problem: Users are sharing data anyway, using slow, unreliable methods that introduce security vulnerabilities – and they're doing so without IT permission.

The who's who of external stakeholders

With simplified access to real-time data:

- **Equipment vendors** can easily monitor critical assets, helping companies increase operational resiliency and reduce unexpected downtime.
- **Industrial service providers** can perform specialized operations tasks outside the scope or expertise of internal staff.
- **Supply-chain partners** can monitor materials levels and deliver just-in-time inventory to support production.
- **Analytics companies** can use data, AI, and machine learning to uncover business opportunities or risks.

Whether users are giving external stakeholders access to the organization's VPN, sending static spreadsheets via email, giving external users enterprise-enabled laptops or on-site data access, or creating client keys to share data via API, any methods that circumvent IT create serious security and compliance risks.

So, what do some IT departments do to thwart unsanctioned data sharing? They build one-off custom solutions for each user type, which are costly, time-consuming, and difficult to maintain. The result is a complicated patchwork of individual access permissions.

Changing the sharing mindset

In today's fast-paced world, industrial operations cannot continue using slow, inaccurate data-sharing methods or support multiple, custom data access solutions. Creating real-time data-sharing communities is essential, and doing so will free users to discover more ways to gain value from operations data.

McKinsey & Company states that "industrial ecosystems for data sharing have the potential to power tremendous growth, helping companies optimize existing processes and making new products and businesses possible."

“In a connected world, sharing data can be a powerful enabler for all sides: the parties who supply data and the providers developing new services or even disrupting markets with more attractive offerings.”

- McKinsey & Company

While it's clear that real-time data sharing is important, making use of operations data has never been easy. Sequential, or time-series, data is unique from other data types and requires different storage and processing technology. Companies must also protect and maintain full control over operations data and the underlying physical control systems, and data must be shared in real time to be relevant. Modern data-sharing requires modern solutions that don't circumvent IT, but rather work with IT departments to easily share industrial data with external stakeholders in a cost-effective, secure way.

The benefits of data-sharing

Once companies overcome the technical hurdles, they recognize that the benefits of data-sharing aren't only unidirectional. Participating in a connected ecosystem that supports deeper understanding and real-time collaboration between business partners brings additional value. A bidirectional data flow allows all data users to add their own analysis, data, and interpretation to the original data set and share that information with the other partners. This bi-directional flow creates a secure, real-time, and dynamic data repository where authorized parties all have access to the same reliable set of information at the same time.

This single source of truth eliminates data silos, fosters deeper collaboration between internal and external stakeholders, deepens analyses and monitoring capabilities, and allows external organizations to be true partners—continually finding new ways to add value.

Real-time data-sharing allows all parties to do more with operations data—and maximize results. When internal and external stakeholders come together to create real-time data-sharing communities, industrial operations can improve decision-making, become more efficient, accelerate time-to-value for data analysis projects, improve sustainability, and deepen relationships, trust, and transparency.

While data-sharing can help industrial companies extract maximum value from their operations data, sharing alone doesn't reduce the learning curve associated with data analysis. Users must add context to raw data in order to allow users without domain knowledge to understand and use the data. When the data management system appends context to data streams, stakeholders from any functional area can use the data without the help of a data scientist. By eliminating the need to arrange and interpret data, users can quickly perform analysis and take action.

“More than 70% of global data and analytics decision-makers are expanding their ability to use external data; another 17% plan to in the next 12 months.”

- Forrester

The real-time information-sharing community

To make real-time data-sharing communities a reality, industrial operators must have the right solution in place. At a minimum, any data-sharing solution must allow companies to securely provide access to data from multiple locations and give them control over what data is shared with each business partner. However, that's just the start.

Solution adoption hinges on a simple user experience. All too often, the more secure the solution, the more cumbersome it is to use. Companies can't compromise the user experience in favor of security; the right solution must have both.

**The operations data-sharing checklist:
Beyond a secure, user-friendly experience,
any solution must:**

- Be designed to efficiently process time-series data.
- Collect data from multiple vendor systems and data sources.
- Aggregate and store real-time and historical data.
- Accommodate all stakeholders, not just one job type.
- Store contextual information along with data.
- Be accessible from any location and any device in real time.
- Support bi-directional data flow.
- Scale cost-effectively as organizations change and communities grow.

Hybrid architecture: The foundation of real-time data-sharing

Industrial organizations have traditionally used locally installed, on-premises software to collect and analyze data from critical physical assets in the plant. At some point during a company's digital transformation journey, it will make sense to expand the use of operations data beyond the operators and engineers in the plant. This is difficult to accomplish with a traditional on-premises data solution, sometimes referred to as a plant data historian. Getting started with data-sharing can be done incrementally, doesn't require a complete move to the cloud, and often works best when the on-premises solution is supplemented with a flexible, cloud-based component.

Industrial companies are at different stages of digital transformation, and their cloud adoption level depends on their industry, comfort level with cloud technologies, and the policies and regulations with which they must comply. Some are adopting SaaS for specific use cases and building a hybrid architecture—a combination of on-premises and cloud-based infrastructure.

For many companies, a hybrid architecture is the first step to creating a cloud-centric data model. For others, a hybrid model is the endpoint of cloud adoption. No matter the scenario, hybrid data management allows for on-premises data storage to support on-premises applications and use cases, while adding the cloud component increases the ability to quickly and easily share data inside and outside the enterprise.

Advantages of hybrid architecture for data management:

- Native integration between on-premises and cloud solutions.
- Move data to the cloud at your own pace.
- Similar self-service data access options.
- Scale capacity without limit, on demand.
- Ability to easily and cost-effectively share data.
- SaaS eliminates large, upfront infrastructure expenditures and requires far less IT support.
- Easier integration with other AVEVA SaaS solutions.

Overall, a hybrid architecture is a convenient, simple option for companies that need to securely share data externally and in real time. With the realities of today's operating environments, combining the two models is essential to managing the exploding volume of data. By adding an SaaS component, a company can also get by with less IT support. Better yet, creating a hybrid architecture doesn't require companies to stop using their current data management solutions. They only need to add a new component to become more flexible and responsive to new opportunities.

Conclusion

To stay competitive in the face of increasing market pressures, industrial companies must continually find ways to improve processes and asset performance – and they can't always do it alone. By sharing real-time data with external stakeholders and leveraging expertise beyond the enterprise, companies can maximize the value of their operations data and work collaboratively to find new solutions to improve operations. Not only will this allow companies to maintain or find new competitive advantages, but this data-driven approach to data analysis can also increase efficiency and time to value.

Companies can reduce the effort and cost of creating and maintaining data-sharing communities with an industrial-focused, cloud-based data hub. A vendor-neutral solution like AVEVA™ Data Hub provides self-service access to industrial data, organized in ways that users find most relevant, and supports bi-directional data flow. With the experience earned through decades of working with industrial organizations, AVEVA Data Hub can support secure data-sharing without the need to change the underlying data management infrastructure.

About AVEVA Data Hub

AVEVA Data Hub removes the complexities of industrial data-sharing, allowing users to share data in real time with stakeholders in remote locations or outside of the company network. A fully managed cloud service, AVEVA Data Hub is simple, scalable, and doesn't require additional IT staff or infrastructure. Now, companies can easily create data-sharing communities to unlock operational efficiencies, increase sustainability, and reach digital transformation goals.

About the author

Daniel has over 5 years of experience in B2B SaaS and cloud-based solutions. His team is responsible for communicating the value of performance data in achieving operational excellence and digital transformation. He is currently focused on how companies can make real-time operations data available to internal and external stakeholders and how cloud solutions can support wider use of operations data within a trusted community.

Are you ready to create real-time data-sharing communities?
Learn how to get started with [AVEVA Data Hub](#).