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Real-time operations visibility for consumer product manufacturers

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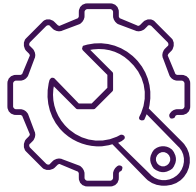rob.kambach@aveva.com

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The world is changing

- **Enabled by Industry 4.0**
  56% of companies that hadn't implemented Industry 4.0 technologies prior to COVID-19 found themselves constrained in their ability to respond to COVID-19 in the absence of digital technologies to support them.

- **Sustainability driven by digitalization**
  89% of industrial companies are investing in digital solutions to drive sustainability, with a focus on collaboration tools, real-time data, and predictive analytics.

- **65%**
  Of decisions are more complex than they were two years ago

- **30-50%**
  Organizations are not where they want to be for data discovery and integrity

- **3%**
  Organizational cost in annual profits due to poor operational decision-making

- **20-30%**
  Productivity gain can be achieved through digital collaboration

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The drive to **unify**

Transform operations by increasing visibility of and accessibility to context-driven actionable information

Achieving value from data

To remain competitive, decision makers require an enhanced layer of intelligence to ensure that an organization's data works in service to organizational goals.

Collaboration challenges

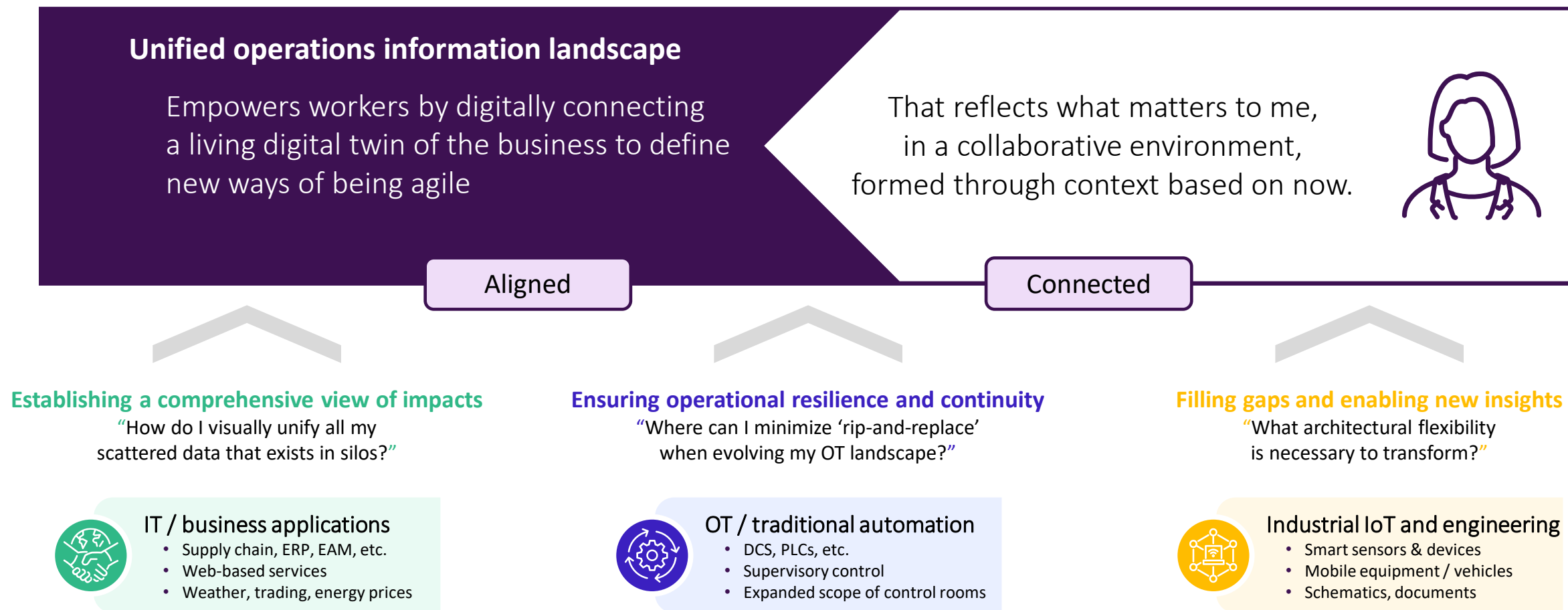Organizations lack collaboration across different departments, information is dispersed in multiple systems and data sources, and decision makers lack timely visibility into operations performance metrics.

Ideal solution

According to research by McKinsey, cross-functional operations transformations typically outperform their single-function counterparts by between 30 and 40 percent.

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Convergence of information necessitates change

Is there an end-state vision? How will you operate? How will teams work?

Unified operations information landscape

Empowers workers by digitally connecting
a living digital twin of the business to define
new ways of being agile

That reflects what matters to me,
in a collaborative environment,
formed through context based on now.

Aligned

Connected

Establishing a comprehensive view of impacts

"How do I visually unify all my
scattered data that exists in silos?"

IT / business applications
- Supply chain, ERP, EAM, etc.
- Web-based services
- Weather, trading, energy prices

Ensuring operational resilience and continuity

"Where can I minimize 'rip-and-replace'
when evolving my OT landscape?"

OT / traditional automation
- DCS, PLCs, etc.
- Supervisory control
- Expanded scope of control rooms

Filling gaps and enabling new insights

"What architectural flexibility
is necessary to transform?"

Industrial IoT and engineering
- Smart sensors & devices
- Mobile equipment / vehicles
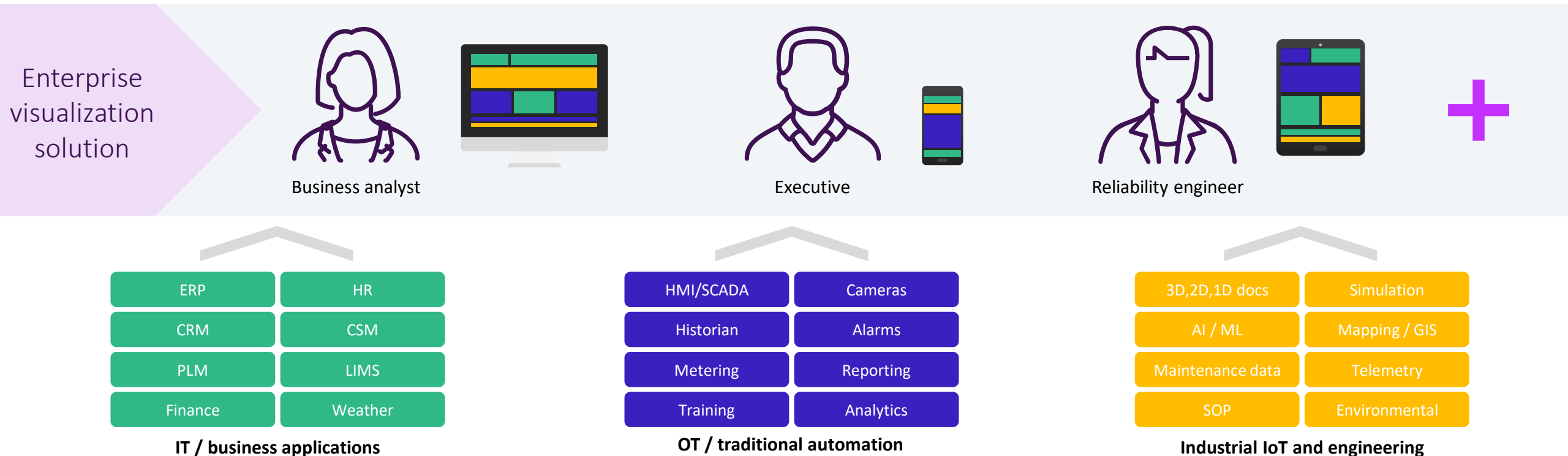- Schematics, documents

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360° view of operations through enterprise visualization

Unify a diverse set of data sources and types, regardless of device

Relate disparate data sources & systems in context to each other

Reduce effort to identify insights between applications and data types

Provide actionable information to operations, reliability, business, and other teams

Enterprise visualization solution

Business analyst

Executive

Reliability engineer

ERP	HR
CRM	CSM
PLM	LIMS
Finance	Weather

IT / business applications

HMI/SCADA	Cameras
Historian	Alarms
Metering	Reporting
Training	Analytics

OT / traditional automation

3D,2D,1D docs	Simulation
AI / ML	Mapping / GIS
Maintenance data	Telemetry
SOP	Environmental

Industrial IoT and engineering

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60+
Systems online

3,500+
Users

6
Industries

Begin your enterprise visualization journey…

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Types of enterprise visualization

Command center
#### Large structured team

Centralized operations facility or control tower with a comprehensive view of the supply chain from end-to-end that optimizes operational activities on a macro-level regionally or globally.

Remote operations center
Focused subject-matter experts

Experienced groups tasked with driving performance, coordinating operations, or responding to issues that are escalated by site-based personnel or automated notification systems.
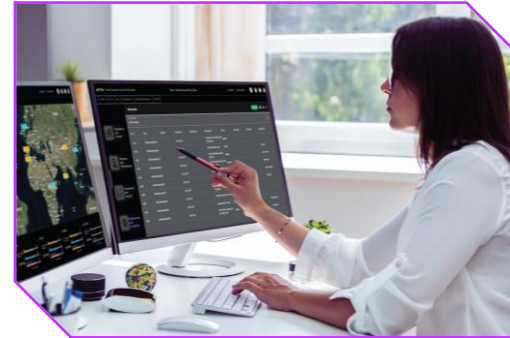
Casual user
Citizen analyst

Executive and strategic analyst use case emphasizing independent interaction and analysis of operations activities, KPIs, and associated information for decision support.

Remote workers
Roaming users

Internal and external users that need a holistic view of operations on the GO. Helping them understand the local situation in an enterprise perspective.
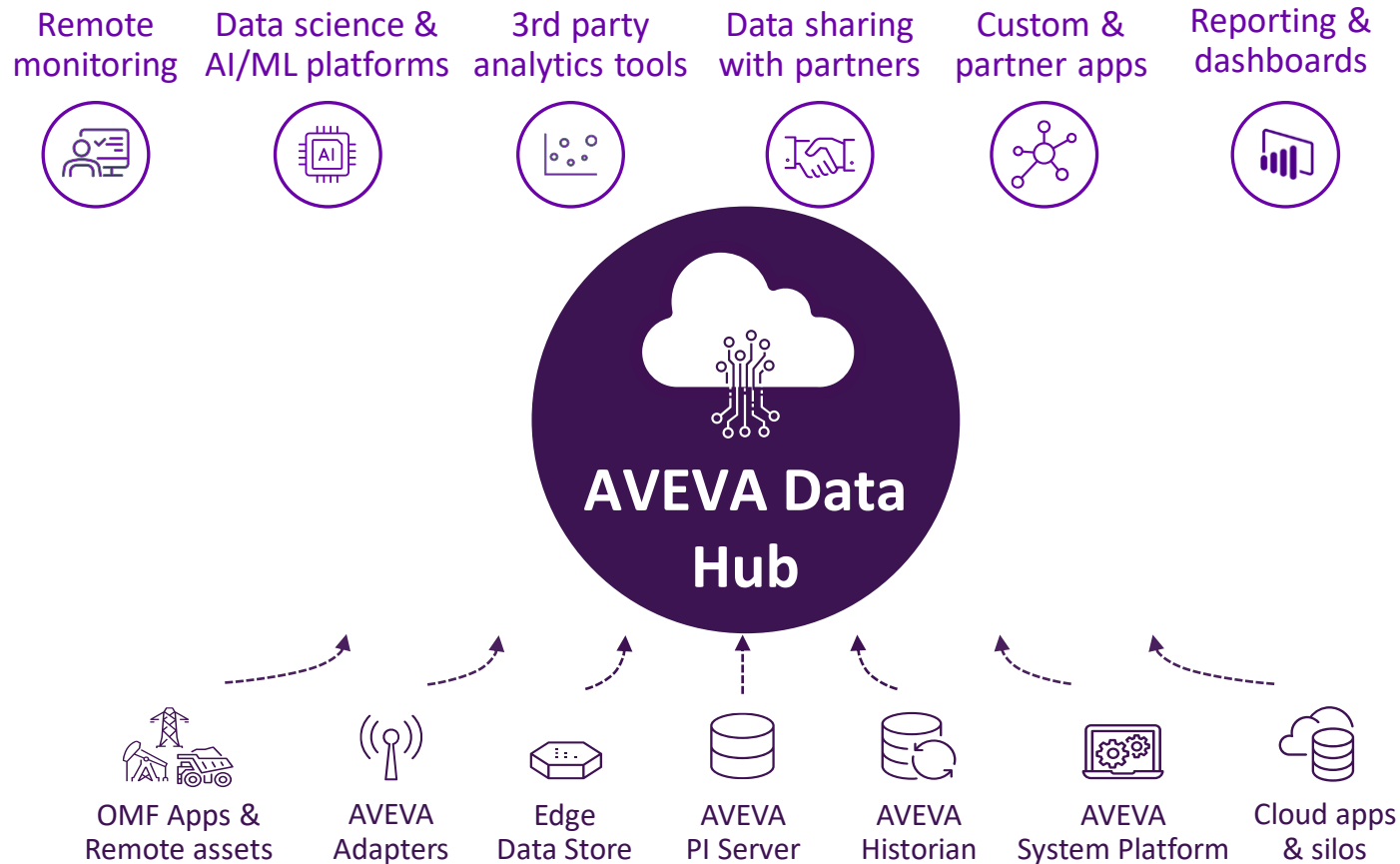
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Aggregated data with cloud-based applications provides seamless access

- Utilizing the cloud to aggregate and display information reduces on-premises data gathering hurdles

- Diverse teams across operations, reliability, sustainability and others can access the information that matters to them

- Users can retain the structure, design and format of their work

- Scalability of the cloud ensures short time to value for initial deployment with the ability to grow systematically

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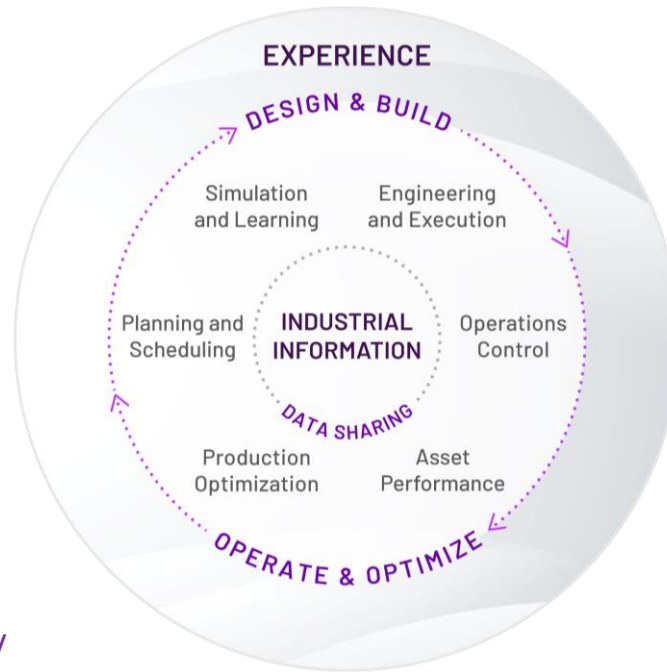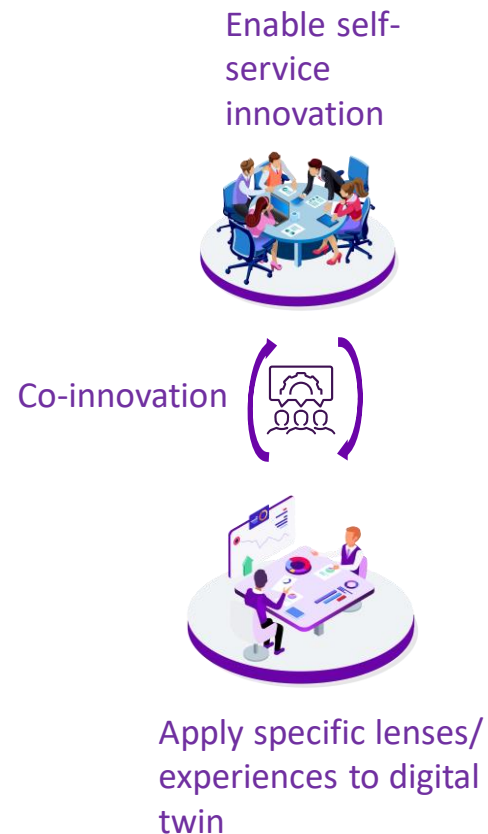# AVEVA Data Hub

Cloud-native data management solution for aggregating, contextualizing and sharing real-time industrial data

| Remote monitoring | Data science & AI/ML platforms | 3rd party analytics tools | Data sharing with partners | Custom & partner apps | Reporting & dashboards |

AVEVA Data Hub

OMF Apps & Remote assets | AVEVA Adapters | Edge Data Store | AVEVA PI Server | AVEVA Historian | AVEVA System Platform | Cloud apps & silos
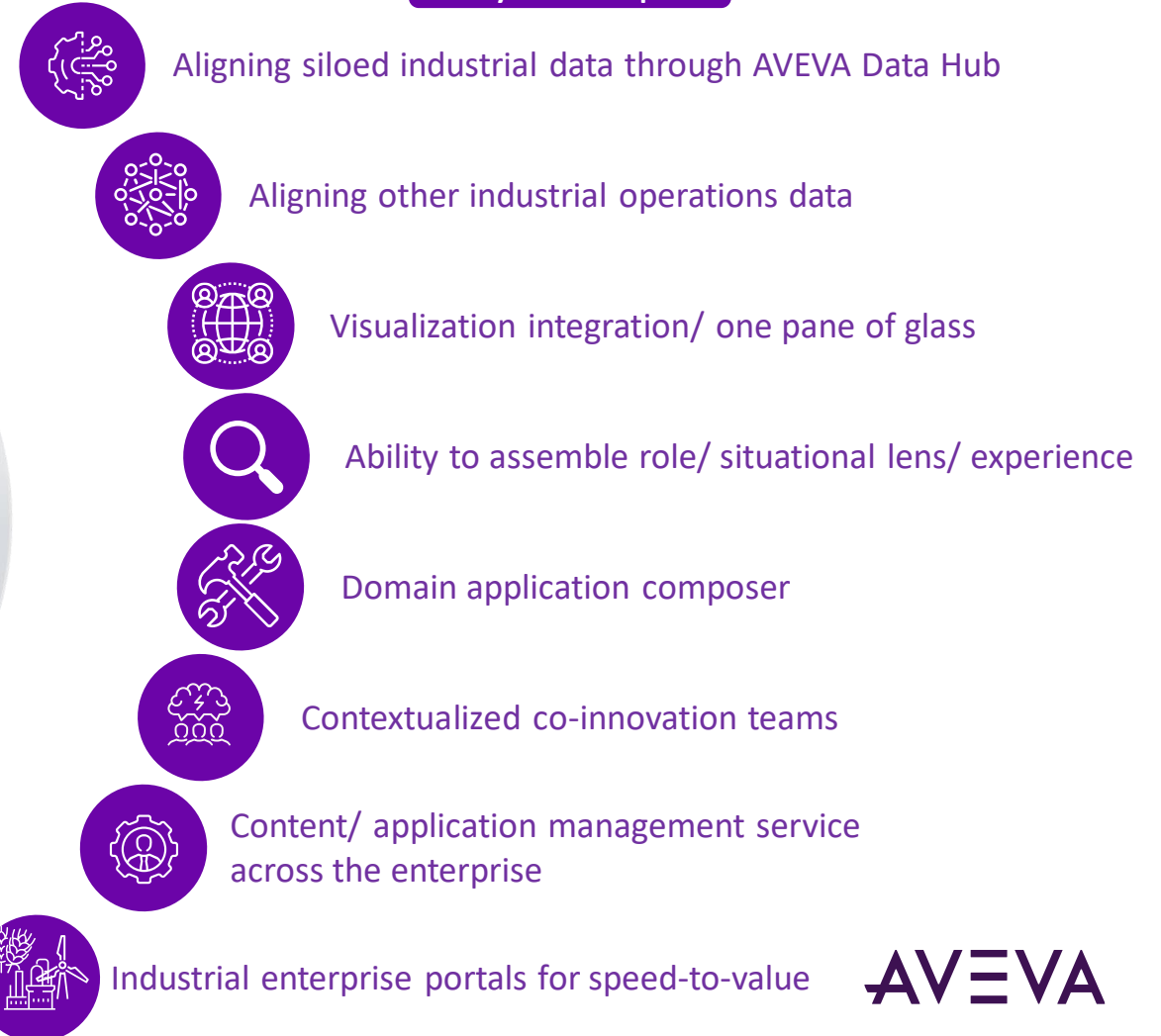
- Securely stores real-time, contextualized sequential (and time-series) data

- Ready-to-use and delivering value within hours, no additional IT resources needed

- Enables secure, granular data sharing within and outside of your organization

- Data ingestion from any source

- Integrates IT and OT data for enhanced org-wide awareness

AVEVA™ Connect visualization SAAS experience - strategy

## Contextualized engagement with the digital thread

Enable self-service innovation

Co-innovation

Apply specific lenses/ experiences to digital twin

EXPERIENCE

DESIGN & BUILD

Simulation and Learning

Engineering and Execution

Planning and Scheduling

INDUSTRIAL INFORMATION

Operations Control

DATA SHARING

Production Optimization

Asset Performance

OPERATE & OPTIMIZE

Key concepts

Aligning siloed industrial data through AVEVA Data Hub

Aligning other industrial operations data

Visualization integration/ one pane of glass

Ability to assemble role/ situational lens/ experience

Domain application composer

Contextualized co-innovation teams

Content/ application management service across the enterprise

Industrial enterprise portals for speed-to-value

AVEVA Connect visualization services

Composable dashboards using custom and pre-defined content for visualizing AVEVA Data Hub and other data sources
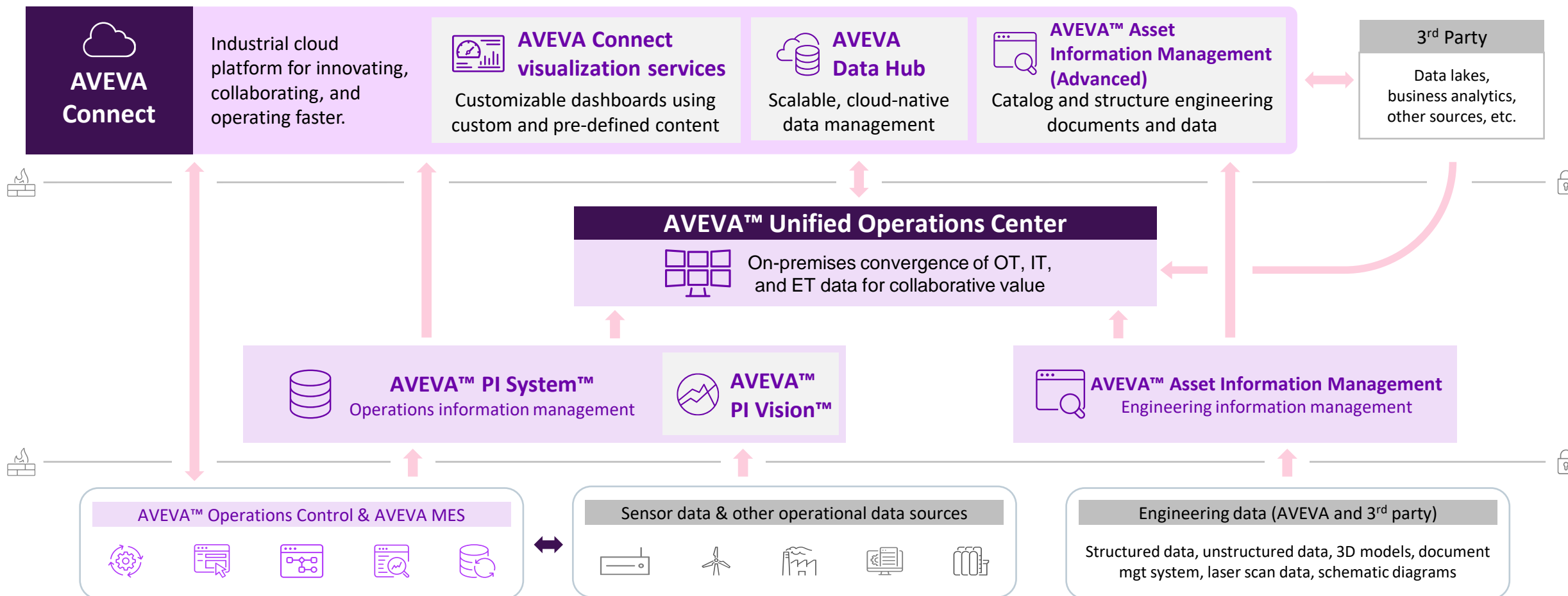
- Two dashboard types:
  - *Self-service*– user-created views assembled from a default and customized/imported content library
  - *Pre-defined* **(CY2024)**– engineered views providing a more structured and interactive visualization experience

- Craft many dashboards for different use cases and data visualization needs

- Incorporate data from both AVEVA Connect and third-party sources

- Assemble lists of assets and previously associated content for easy review

- Manage user creation permissions and access to each visualization type by individual dashboard
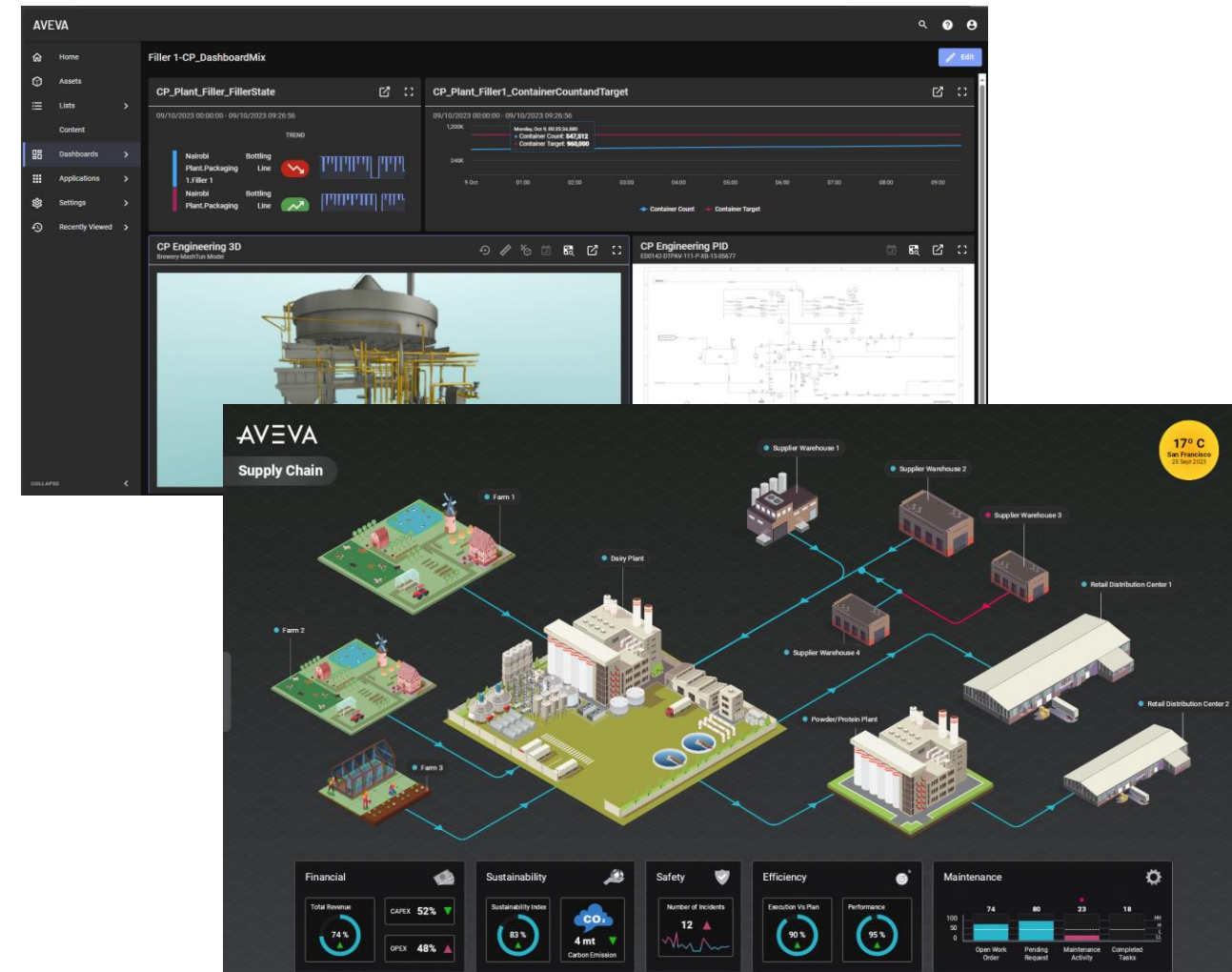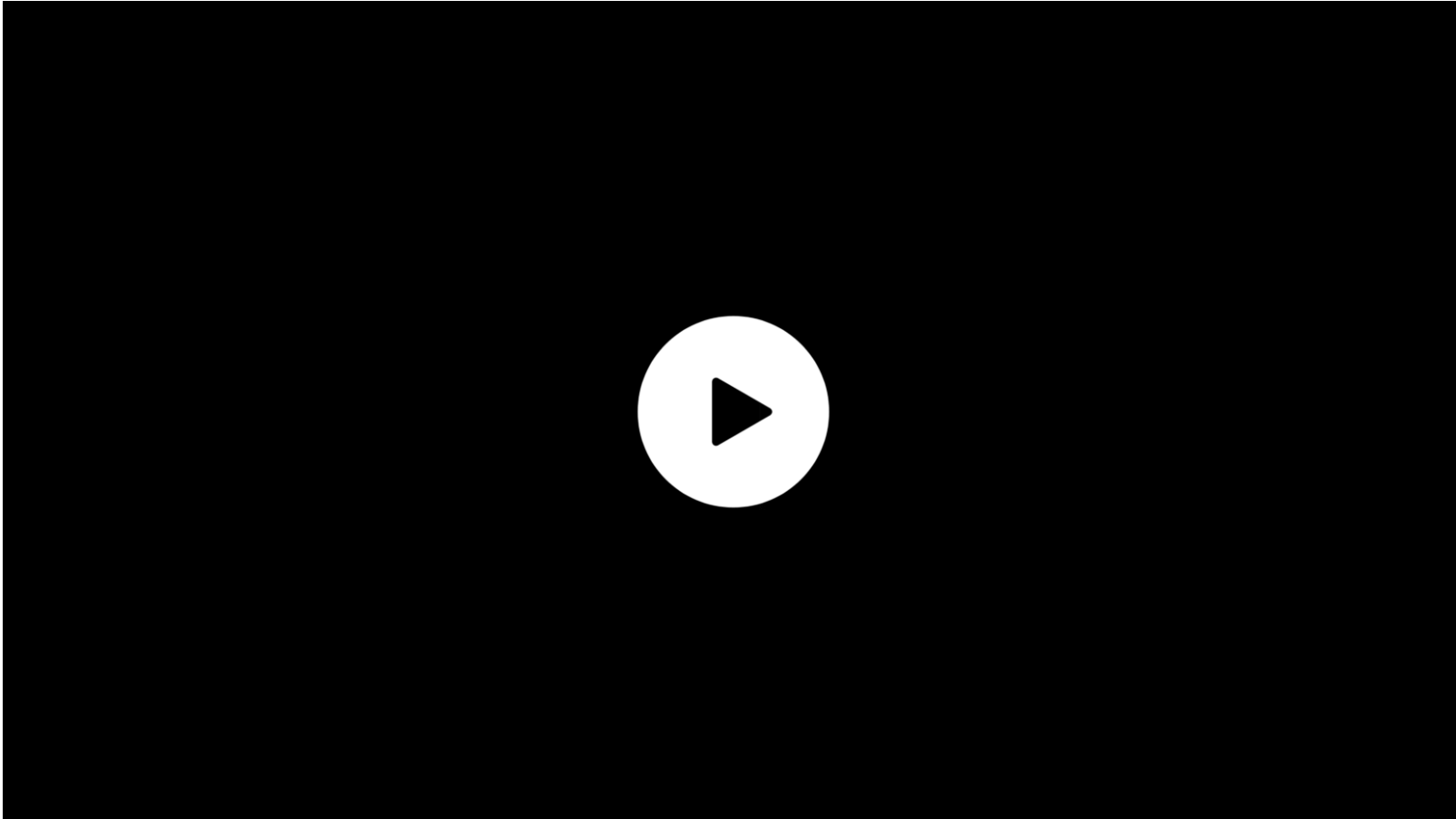
Diverse data-set visualization across the enterprise

Enabling role-based views in support of supply-chain performance, operational responsiveness and process resolution

AVEVA Connect

Industrial cloud platform for innovating, collaborating, and operating faster.

AVEVA Connect visualization services

Customizable dashboards using custom and pre-defined content

AVEVA Data Hub

Scalable, cloud-native data management

AVEVA™ Asset Information Management (Advanced)

Catalog and structure engineering documents and data

3rd Party

Data lakes, business analytics, other sources, etc.

AVEVA™ Unified Operations Center

On-premises convergence of OT, IT, and ET data for collaborative value

AVEVA™ PI System™
Operations information management

AVEVA™ PI Vision™

AVEVA™ Asset Information Management
Engineering information management

AVEVA™ Operations Control & AVEVA MES

Sensor data & other operational data sources

Engineering data (AVEVA and 3rd party)

Structured data, unstructured data, 3D models, document mgt system, laser scan data, schematic diagrams

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Enterprise visualization for consumer products

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Advantages of enterprise visualization

Expedited time to value by seamlessly integrating with all operational data sources to deliver faster and more efficient decision making

No more silos - full visibility of information enabling *collaborative work* with teams making decisions in parallel to each other

Enterprise visualization
Intuitive visual experience adapts to the context of the user perspective, surfacing cross-functional content

Composite enterprise environment consolidates formerly manual analyses between applications

Actively manage risk by increasing visibility of *data enriched in context* for operations, providing proactive identification of issues

Maximize performance opportunities through informed and agile teams that *speed crisis response*
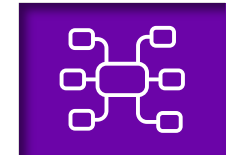
Vendor-agnostic technology with no need to rip and replace; *layers over the top of existing systems*

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ABOUT AVEVA

AVEVA is a world leader in industrial software, providing engineering and operational solutions across multiple industries, including oil and gas, chemical, pharmaceutical, power and utilities, marine, renewables, and food and beverage. Our agnostic and open architecture helps organizations design, build, operate, maintain and optimize the complete lifecycle of complex industrial assets, from production plants and offshore platforms to manufactured consumer goods.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

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