

OCTOBER 25, 2023

Connecting ecosystems: data-sharing at scale

How to unlock operational efficiencies

Gary Wong, Todd Brown – AVEVA

AVEVA

CREATE A MORE SUSTAINABLE FUTURE

Infrastructure

Modernize your critical operations
and achieve net-zero emissions





87%

of companies are making decisions with incomplete data

78%

of companies know enabling data sharing drives highest value

AVEVA, 2022



Common data sharing challenges

Disparate systems
Devices, sensors, meters, IoT
Security
Can't scale

Data silos

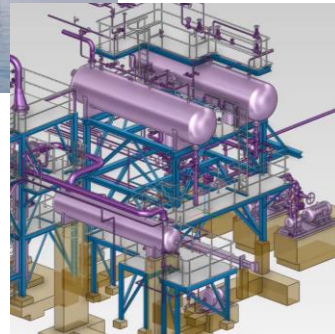
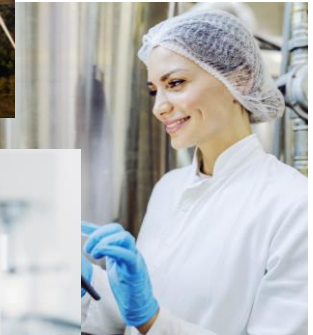
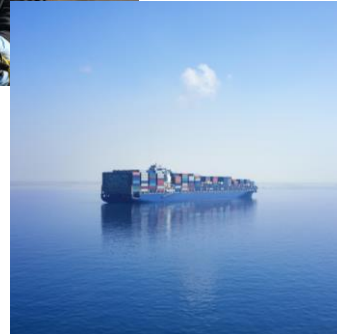
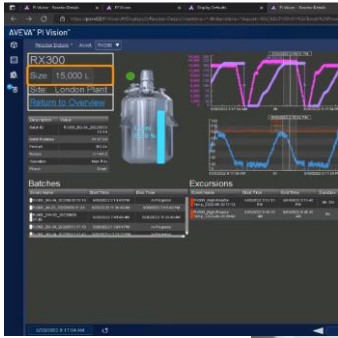
Data sharing - internally and externally

Many sites, buildings, plants
No situational awareness
Remote locations
Too much data

Common data sharing challenges



How do we bring it all **together**?



How do we bring it all **together?**



From one to many - the power of connecting ecosystems

Water utilities want to:

- Find and reduce leaks
- Use less energy
- Forecast demand



Facilities and data centers want to:

- Plan for capacity
- Use less energy, water, gas
- Reduce downtime



All infrastructure companies want to:

- Share data internally and externally
- Apply AI
- Realize sustainability goals and net zero

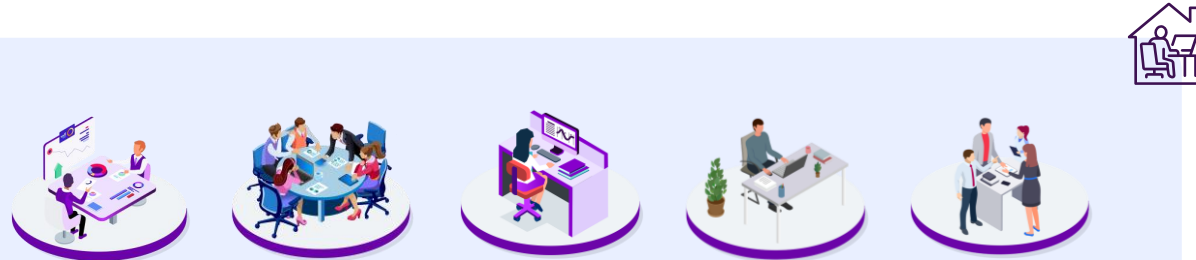


Drive efficiencies
by enabling more
collaborative work

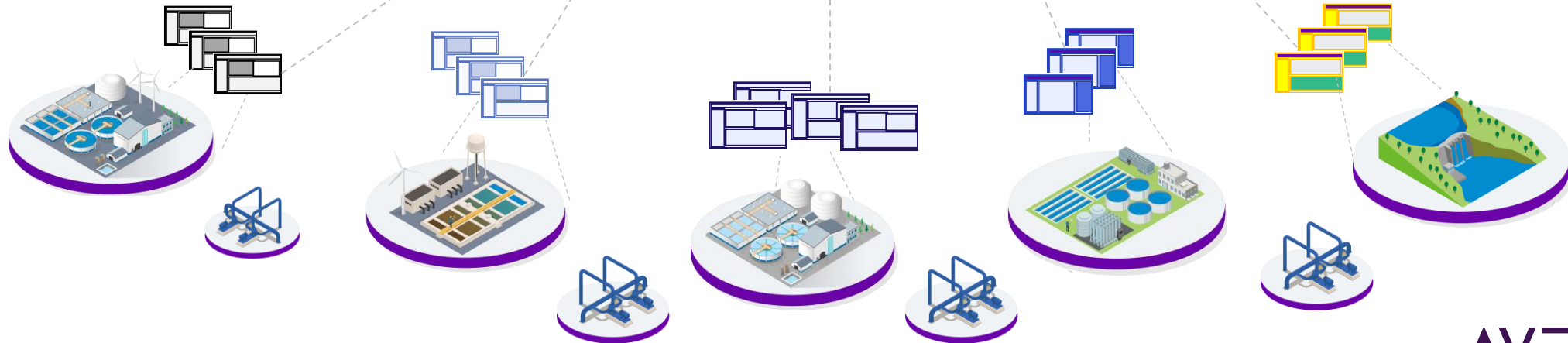
Tackling the data challenge in the real world

Water utility in America wants to leverage its data better to:

- Improve operational agility and resiliency
- Drive operational efficiency
- Transform work practices
- Improve asset reliability and safety
- Realize sustainability and net zero targets



Cloud-native data-sharing for industrial information



Secure data-sharing at scale with AVEVA™ Data Hub connected community

Todd Brown, Strategic Product Manager

AVEVA

Leveraging new digital services industrial data



INDUSTRIAL DATA
MORE VALUE



**Equipment
suppliers**



**Service
providers**



Partners

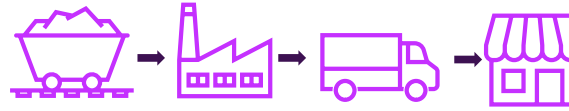
Getting more value out of industrial data, together

“We want a standard sharing approach for the entire world. We’re the experts in the process. We are not experts on the individual components that are part of our process. This is why we want to share data.”

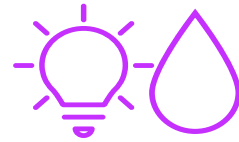


“We can get added value because we can send the data to the cloud, our service provider subscribes, they do their analysis, and they can notify us if we have a water leak.”

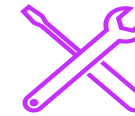
Getting more value out of industrial data, together



Supply chain partners



Utility



Service provider



Customers



Systems integrators & app developers



Equipment vendor OEM



Analytics company



Regulatory agency



Industrial Operator

“Sharing this data provides more transparency with our customers ... we have customers for 15 years ... it helps build trust with our long-standing partnerships.”

“We talk and collaborate daily with our customers. We want to make sure the data we’re sharing with them is useful. Our goal is to be a good steward of the data and help make them successful.”

“The data we get is the same data the clients see in their PI Server typically. So, the value add is the analytics that we perform on the equipment that we know.”

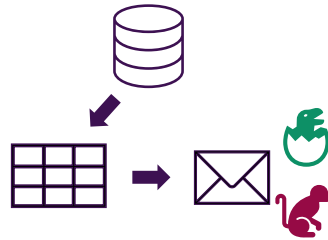
“We have big production clusters and have a team of data scientists to look at the data models and pass these analytics back to the customers. Our goal is to make money out of data for our customers.”

A spectrum of data-sharing challenges exists today

From the age of the dinosaurs & some modern-day monkey business!



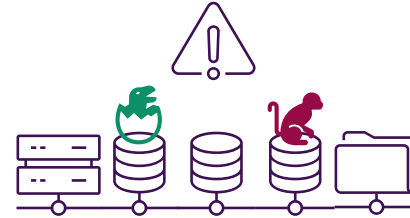
Come on-site & download data



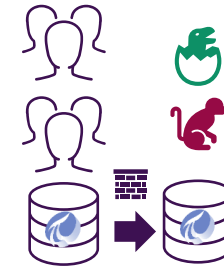
Export data/report & email



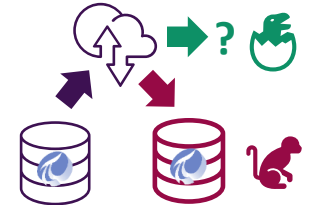
External users in our authentication & IT systems



VPNs or direct access to the plant floor or custom apps w/csv, FTP, etc.



Duplicate 'customer facing' AVEVA™ PI System™



AVEVA PI Cloud Connect



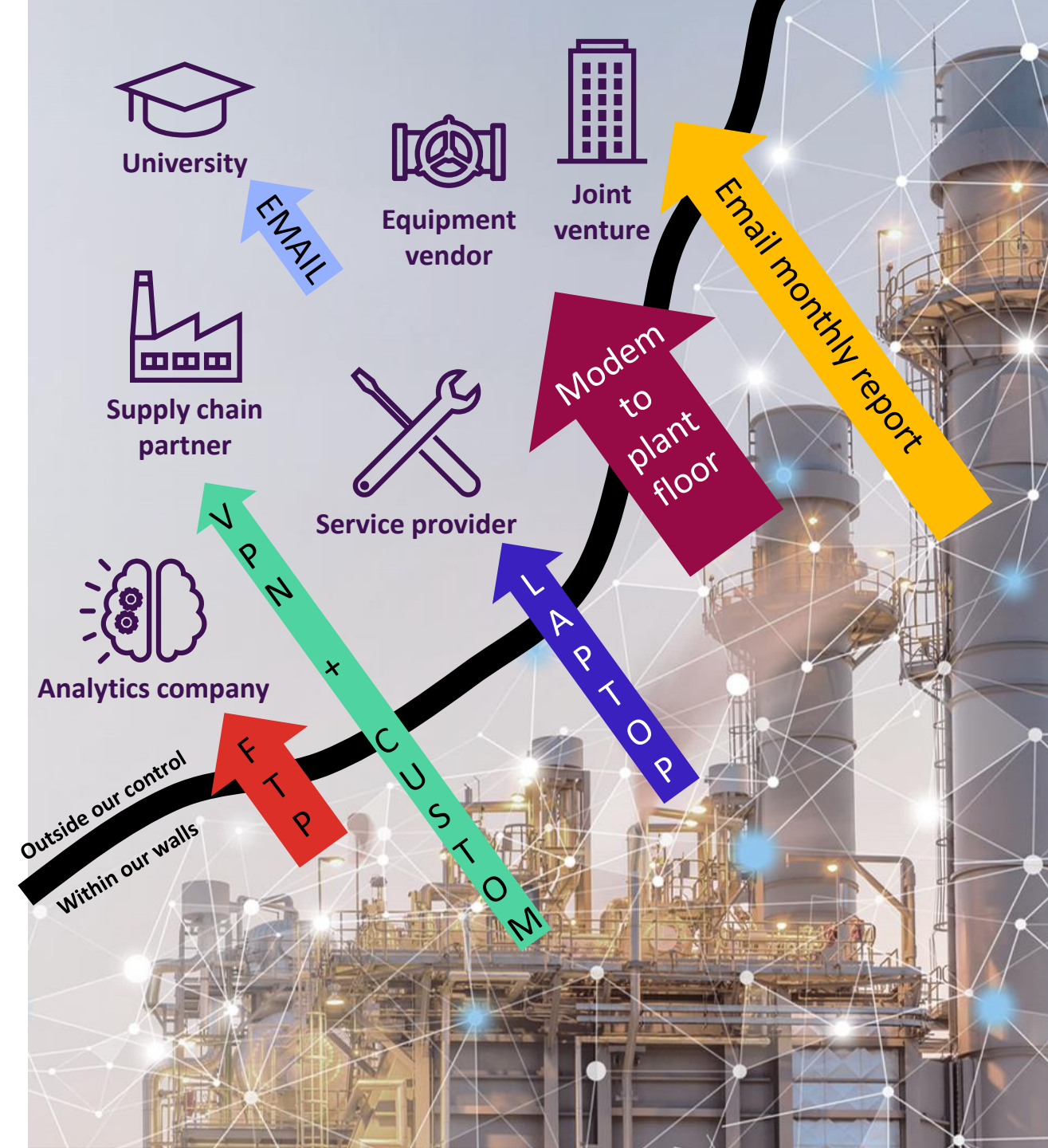
Stale, out-of-date data
Sparse snapshots of data, not granular
Very resource intensive
Analysis and value is severely delayed

Real time updating data
Full data granularity
Automated data copy to outside

Industrial operator challenges

Sharing operations data externally

- × No standard scalable way to share
- × Increased security risk
- × Data is copied all over the place
- × Maintaining control & confidentiality
- × High IT cost
- × High overhead cost
- × Not everyone has AVEVA PI System
- × Not maximizing value

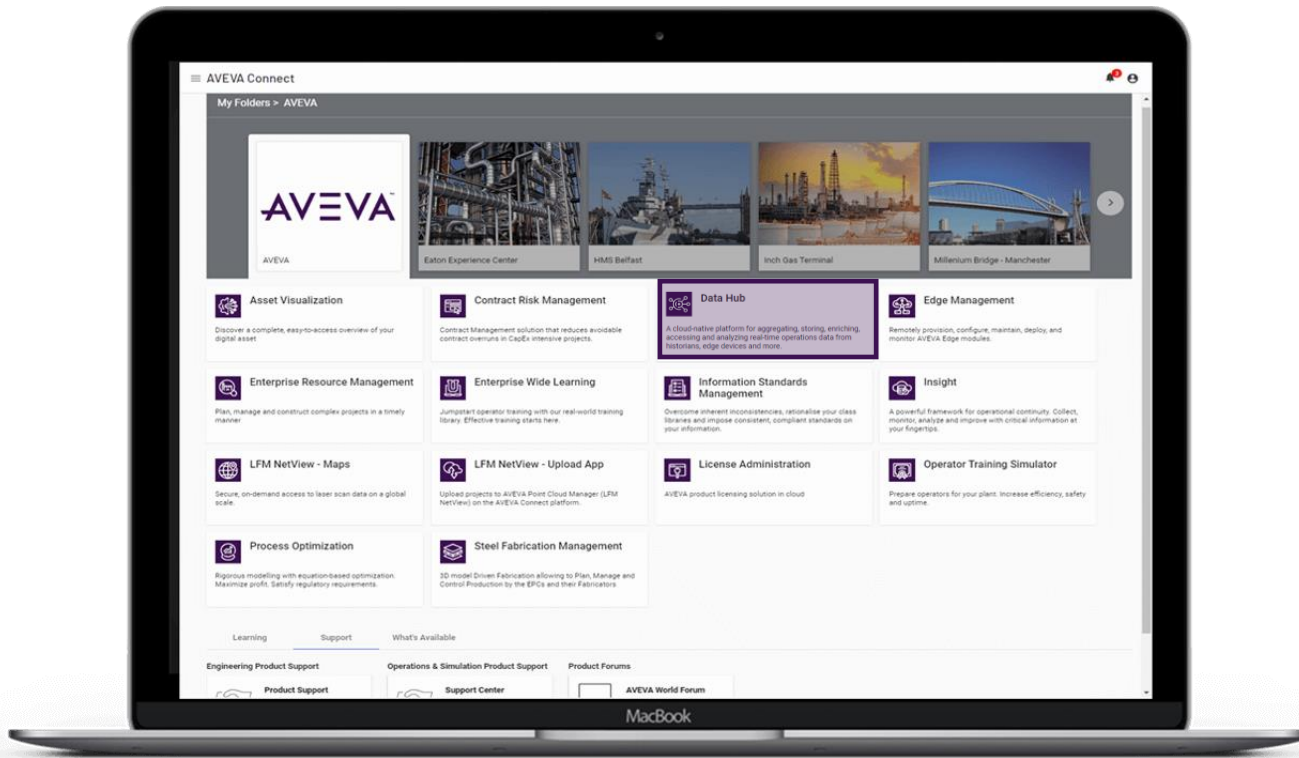


AVEVA™ Data Hub connected community



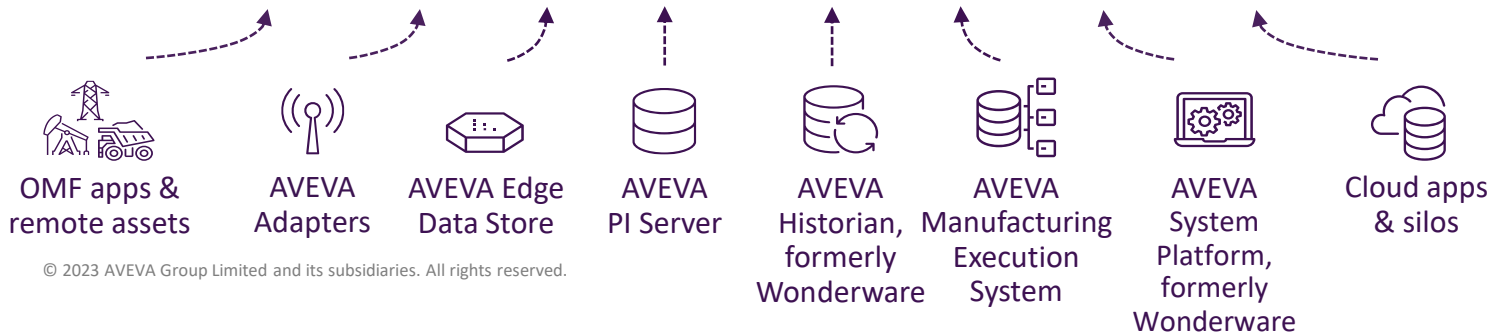
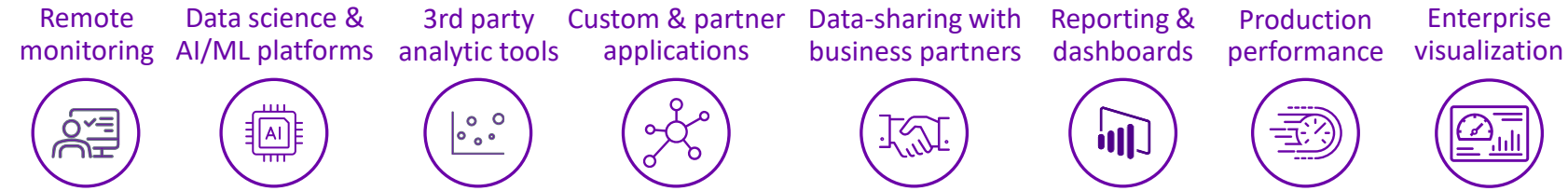
AVEVA™ Connect, common cloud platform: Our industrial cloud platform

Our industrial cloud platform is your digital transformation hub



- ✓ Transform faster
- ✓ Enable new ways of work
- ✓ Connect and collaborate
- ✓ One single source of truth
- ✓ Move from CapEx to OpEx
- ✓ Lower dependency on IT
- ✓ Always the latest and greatest features
- ✓ Easily scale up and down
- ✓ Built with security, resiliency, high-availability

AVEVA™ Data Hub

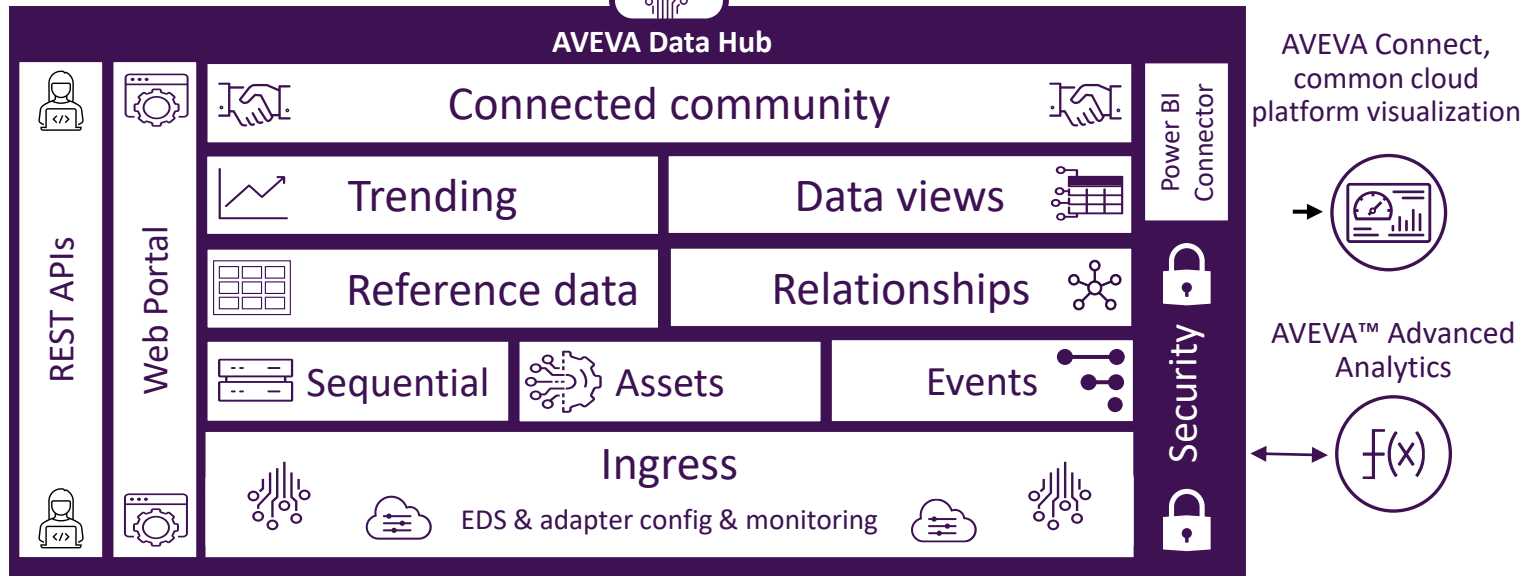


A cloud-native industrial platform designed for aggregating, storing, enriching, accessing, analyzing, and securely sharing real-time operations data from historians, edge devices, and more

- Managed, secure, multi-tenant platform
- Operated & maintained by AVEVA
- High speed, scalable, elastic, & resilient
- Modern, secure REST APIs
- Built & deployed on Microsoft Azure

AVEVA™ Data Hub

- Remote monitoring
- Data science & AI/ML platforms
- 3rd party analytic tools
- Custom & partner applications
- Data-sharing with business partners
- Reporting & dashboards
- Production performance
- Self service visualization



OMF apps & remote assets

AVEVA Adapters

AVEVA Edge Data Store

AVEVA PI Server

AVEVA Historian, formerly Wonderware

AVEVA Manufacturing Execution System

AVEVA System Platform, formerly Wonderware

Cloud apps & silos

A cloud-native industrial platform designed for aggregating, storing, enriching, accessing, analyzing, and securely sharing real-time operations data from historians, edge devices, and more

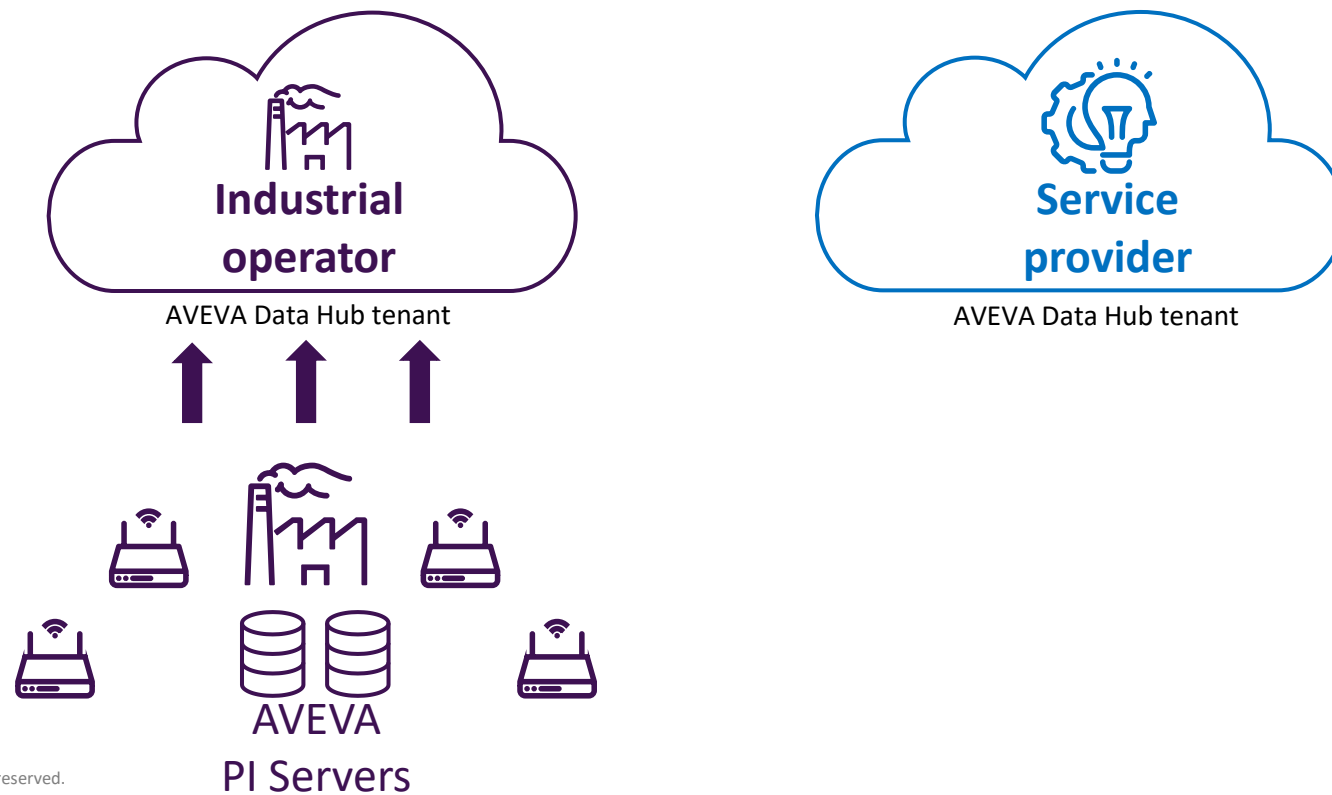
- Managed, secure, multi-tenant platform
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- Modern, secure REST APIs
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Supported Regions
 West US (California)
 North Europe (Ireland)
 Australia East (New South Wales)

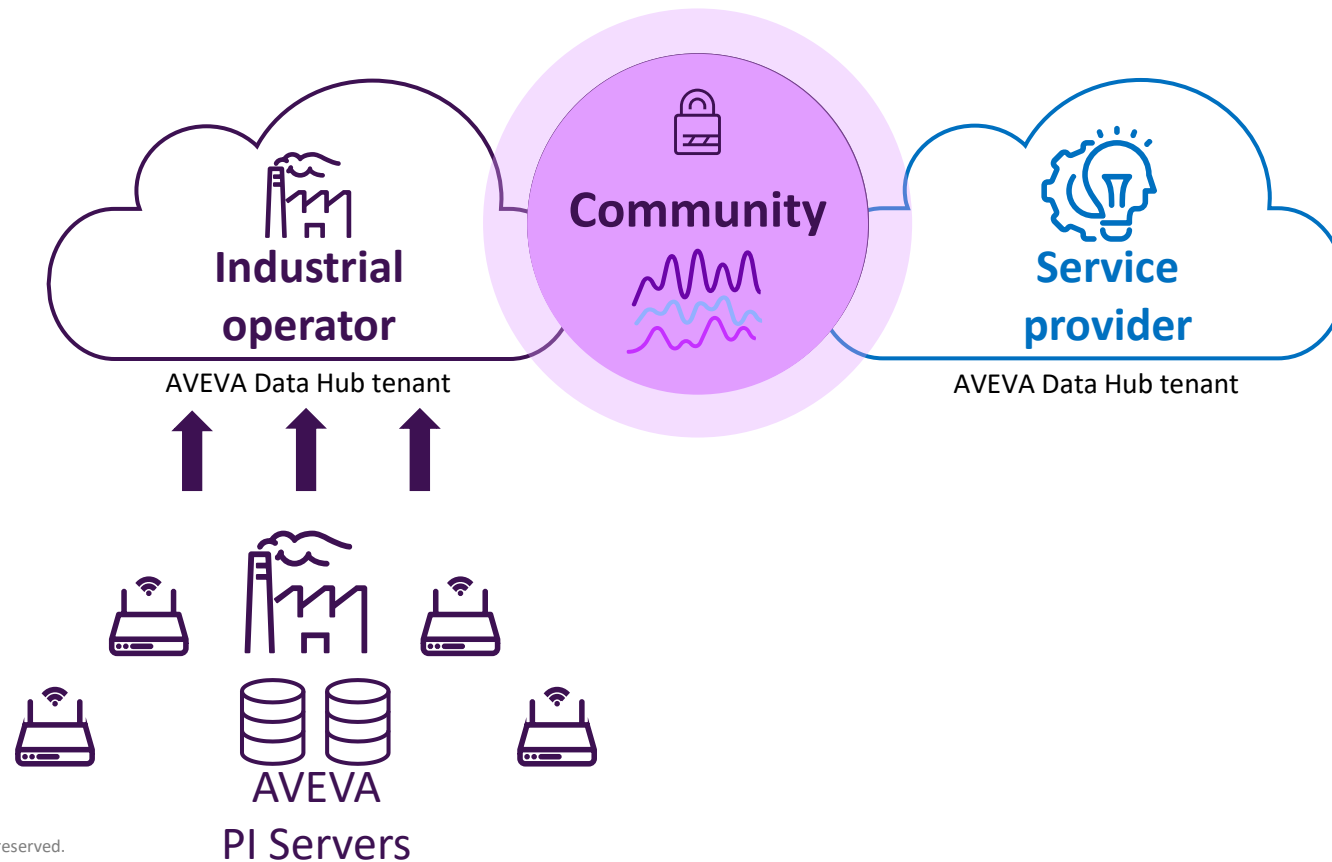
A more secure way to share operational data



A more secure way to share operational data



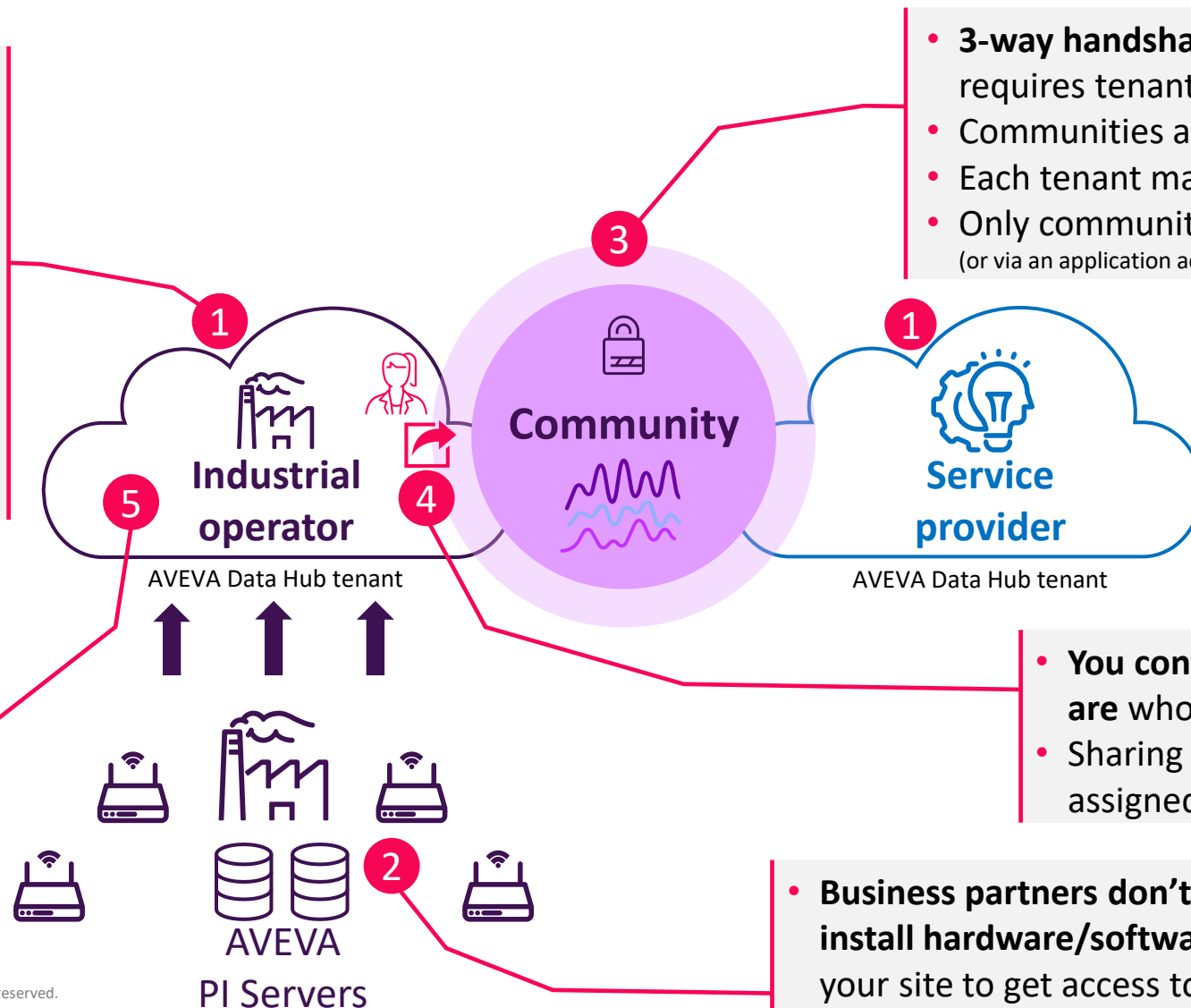
A more secure way to share operational data



A more secure way to share operational data

- True multi-tenant system
- **Natural separation of authentication, users, and data**
- Each tenant manages their own authentication & users
- No external users logging directly into your tenant
- Better protection of intellectual property (IP)

- Sharing provides *access* to data stored in your tenant
- **Data is not copied outside of your tenant** by AVEVA Data Hub

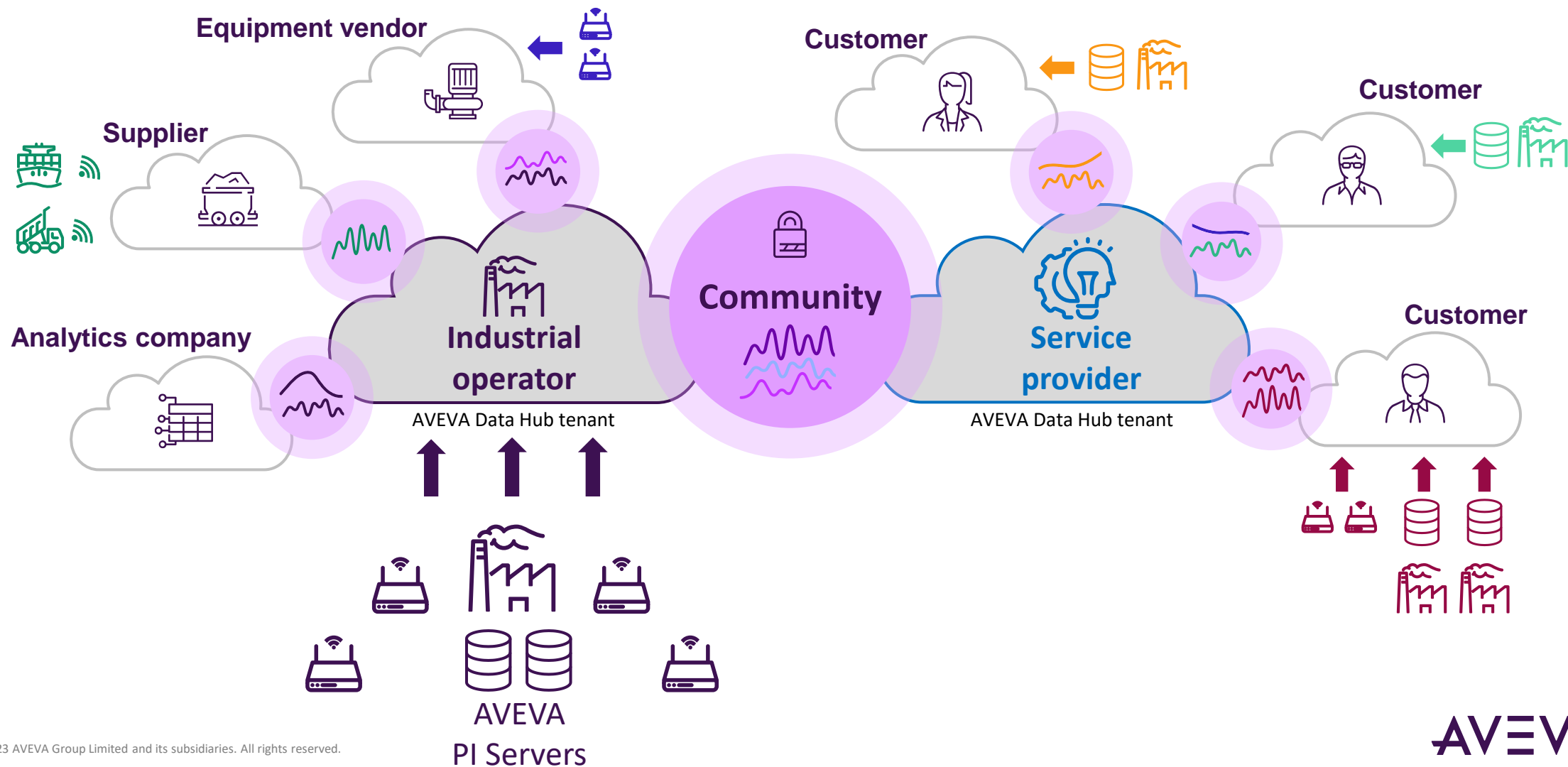


- **3-way handshake for community formation & requires tenant admin approval**
- Communities are private
- Each tenant manages their community members
- Only community members can read shared data (or via an application accessing data via API)

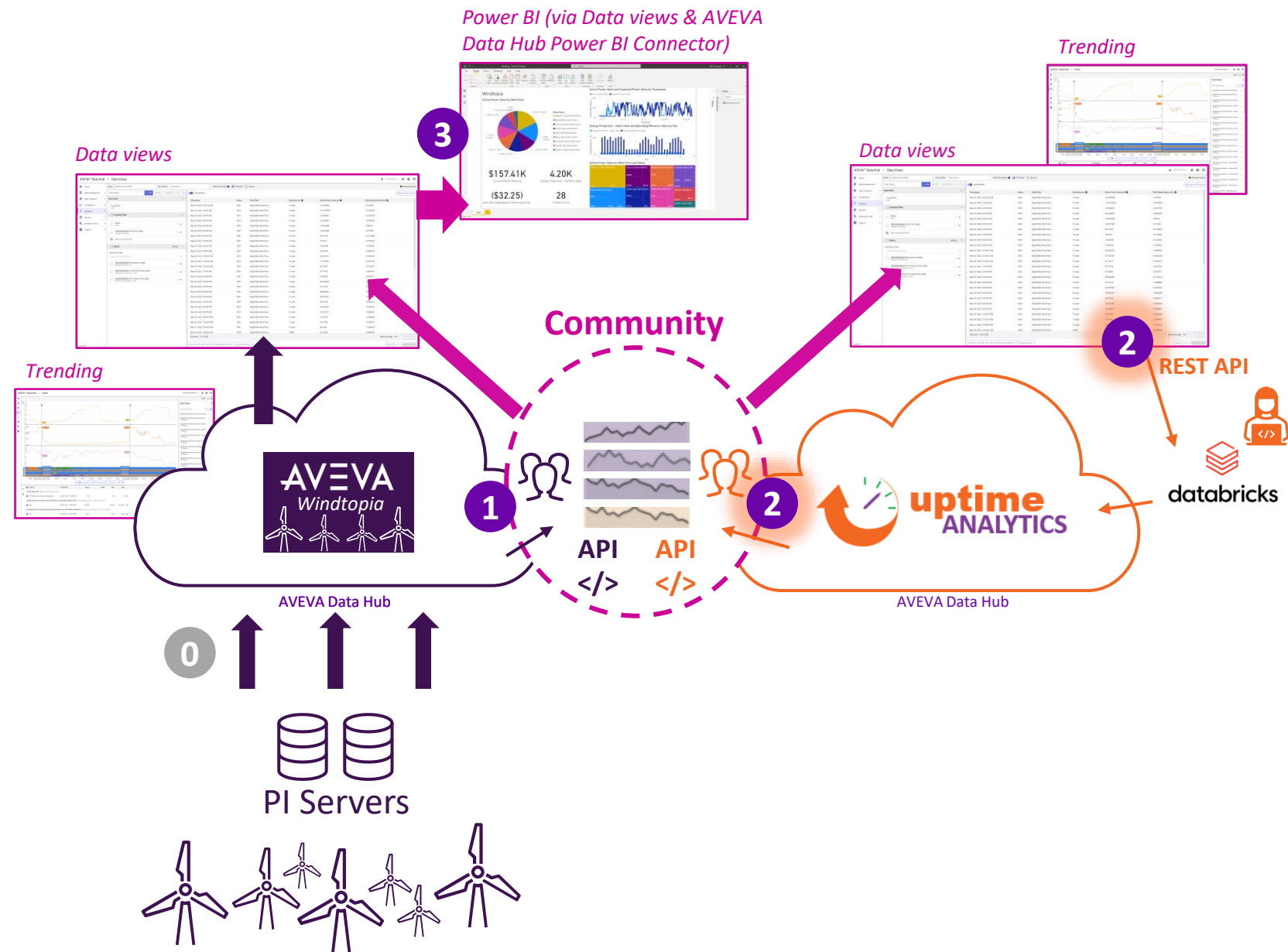
- **You control who your “data stewards” are** who have resource-sharing privileges
- Sharing privilege must be explicitly assigned

- **Business partners don’t need to install hardware/software** within your site to get access to your data

Connected community: Powering your industrial ecosystem



AVEVA™ Data Hub Community demo



0 Seamless connectivity from AVEVA PI System to AVEVA Data Hub

1 Community stream sharing

2 Shared data in Databricks, share predictions back

3 Power BI dashboard, control & transparency for your data



AVEVA™ Data Hub ▶ Communities

- Home
- Data Management
- Data Collection
- Visualization
- Analytics
- Security
- Developer Tools
- Support

← Back to Communities



AVEVA Windtopia (Uptime Analytics)
53250926-f7cf-4b34-b193-698663638dc7
Uptime Analytics
✔ Sharing Active
Created Oct 13, 2022

How do I share data with this community? ⓘ

- Tenants
- My Members
- My Groups
- My Clients
- Usage

Filter tenants...

View Streams

Administrative Tenant

Name ↑	Status	Users	Clients	Streams
<input type="checkbox"/> Totals	✔ All Tenants Active	3	0	🔄
<input type="checkbox"/> Uptime Analytics	✔ Active	1	0	🔄
<input type="checkbox"/> AVEVA	✔ Active	2	0	🔄

Showing 1 - 2 of 2

Items per page: 50

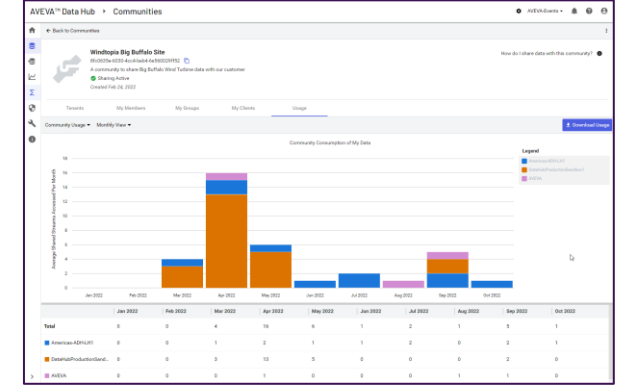
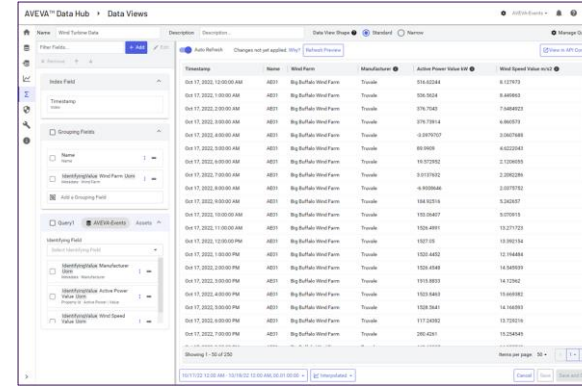
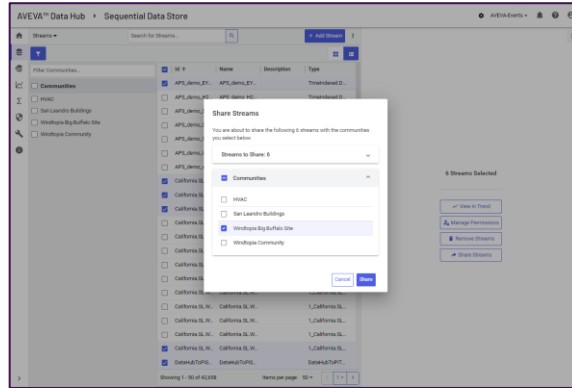
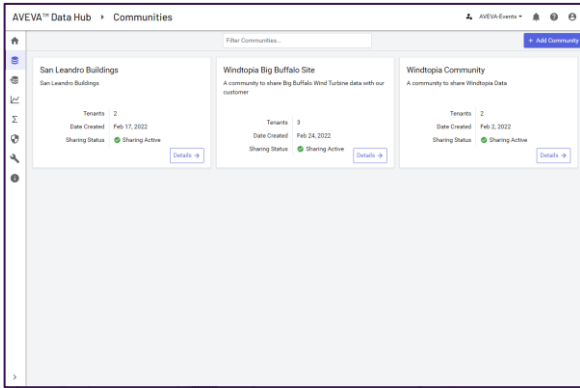
What can you do with AVEVA™ Data Hub connected community today?

Community management

Stream data sharing

Data views with shared data

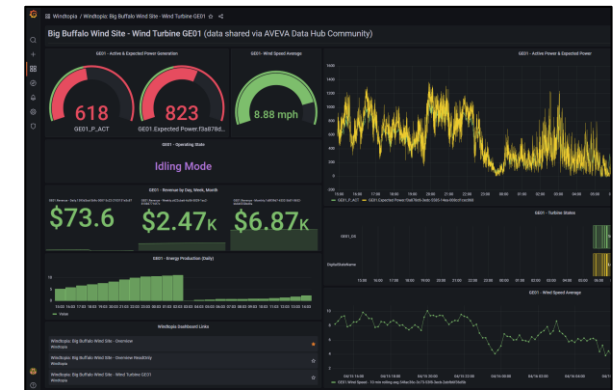
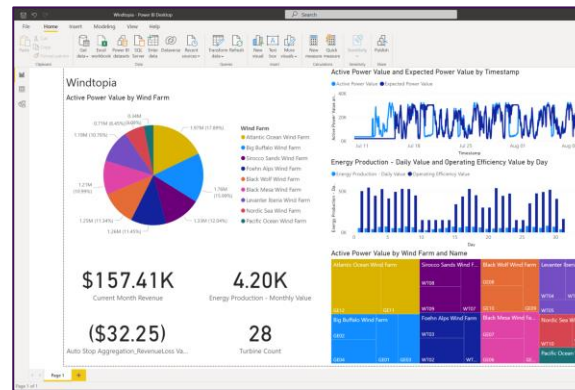
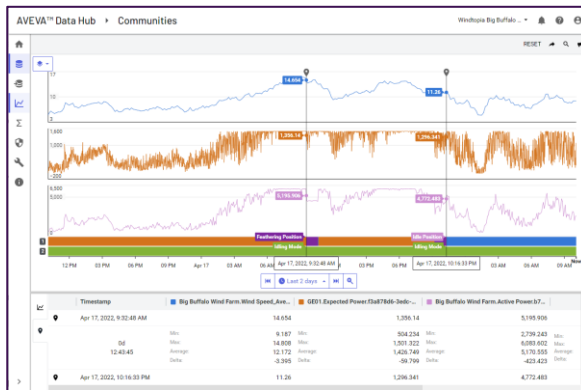
Transparent community usage



Trending with shared data

Power BI with shared data

Access via REST API / Integration



AVEVA™ Data Hub connected community

Enables simple & secure operational data sharing across organizations



Achieve a more secure way of sharing your data



Manage users in your AVEVA™ Connect, common cloud platform account



Easily connect to your trusted business partners in an AVEVA Data Hub community



Gain control and transparency over your shared data



optional

Works great with AVEVA PI Server & AVEVA Historian, formerly Wonderware

(but not required)



Scale your sharing to many business partners

Build your data ecosystem

With AVEVA Data Hub

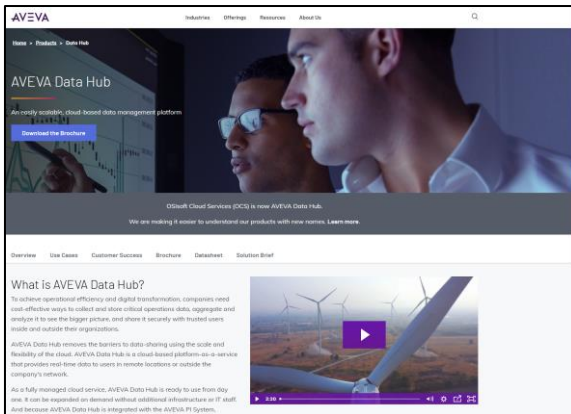
- Open connectivity for ample and easy ingress and egress of data
- No development needed, deliver value in hours
- Manage any type of sequential data, including time-series
- Securely share data for collaboration inside or outside your organization
- Cloud-native, fully managed by AVEVA, eliminating the need for CAPEX, maintenance, and IT support

AVEVA Data Hub accelerates successful ecosystem creation



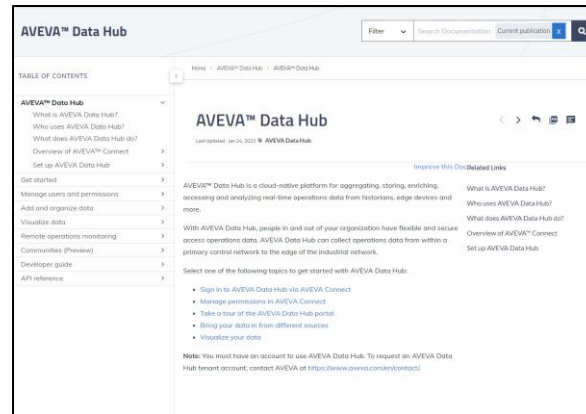
Where to find more information on AVEVA™ Data Hub

Overview & resources



<https://www.aveva.com/en/products/data-hub/>

Documentation



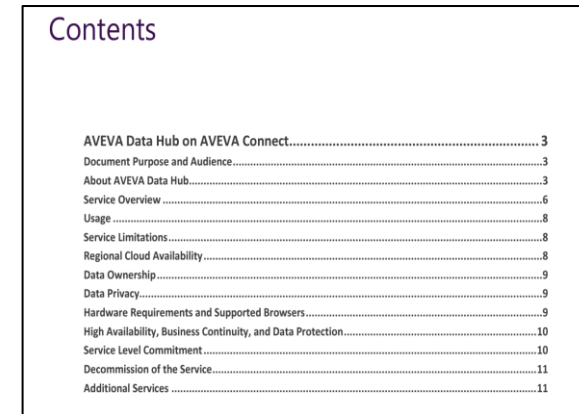
<https://docs.aveva.com/bundle/data-hub/page/adh-content-portal-overview.html>

Security & trust center



<https://www.aveva.com/en/legal/trust/>

Service description



<https://www.aveva.com/content/dam/aveva/documents/datasheets/AVEVA Data Hub on AVEVA Connect v1 1.pdf>



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Questions?

Please wait for the microphone.
State your name and company.



Please remember to...

Navigate to this session in the mobile app to complete the survey.



Thank you!

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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.

Learn more at www.aveva.com