

AVEVA PI WORLD

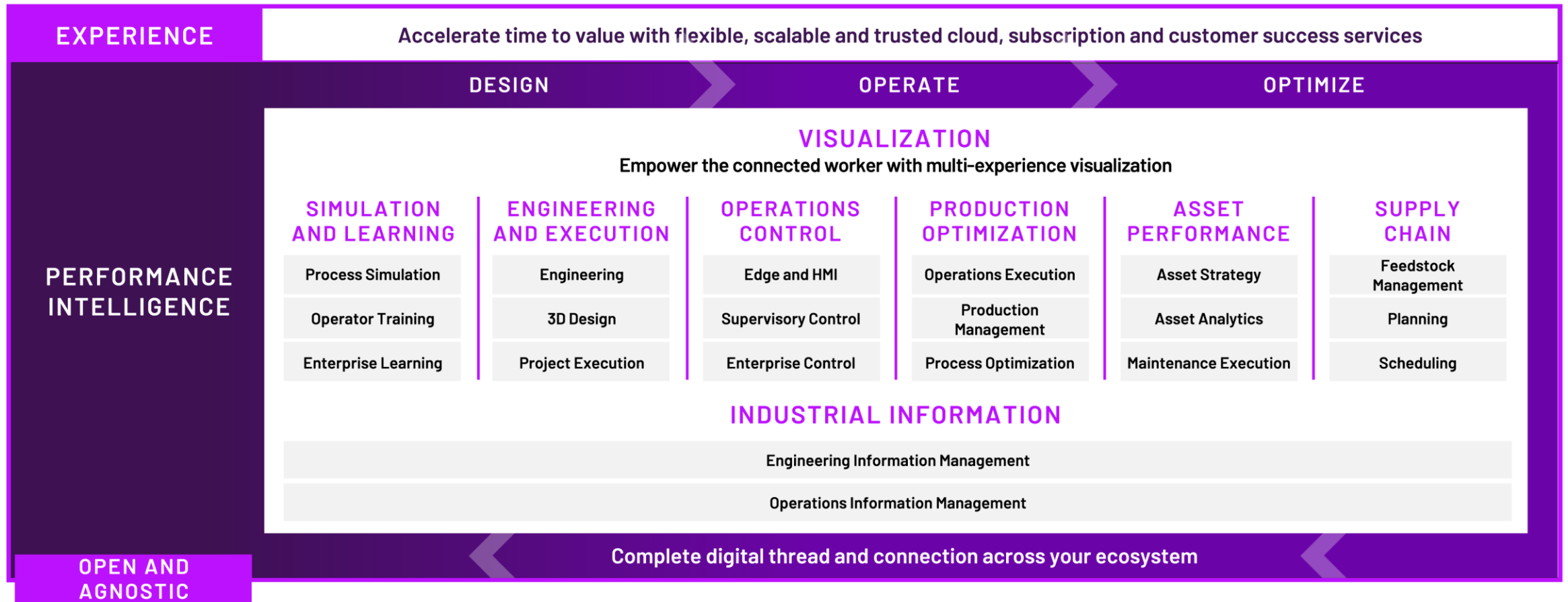
The modern PI System: seamless integration from edge to cloud

Presented By: Jonathan Pegg and Rohan Vettiankal

AVEVA

Unlocking Performance Intelligence

Accelerating digital transformation of the industrial world





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Better data. Better business outcomes.



Asset health

DCP Midstream saved

\$20-25 million

in first year



Energy efficiency

Air Liquide achieved

10x ROI

from operational savings in first 8 months



Process optimization

ArcelorMittal shipped

26M additional tons

for \$120M in added revenue



Quality tracking

Deschutes postponed

\$8 million

capital upgrade



Compliance & sustainability

TasWater sped up response time by

13 hours

and saved the local oysters



Safety & resilience

Qatar Power operated over

3,452 days

without lost-time accidents

PI System: trusted by essential industries for over 40 years



Oil & Gas

85%

of the top oil and gas
companies



Power & Utilities

1000+

utilities worldwide



Mining & Metals

9

of the top 10 Mining
companies



Pharma & Life Sciences

24

of the top 25
Pharmaceutical companies



Chemicals

9

of the top 10 Chemical
companies



Manufacturing

6

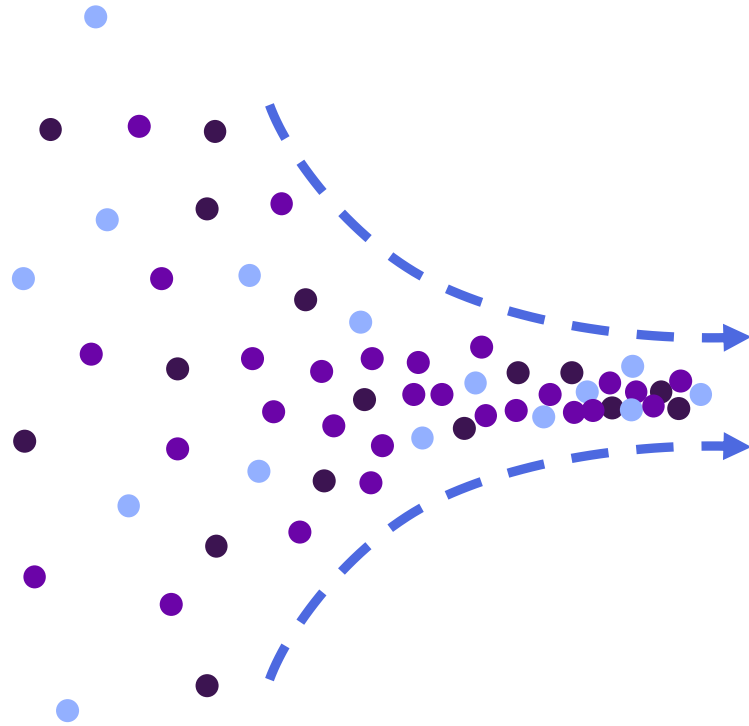
of the World Economic Forum's
Factories of the Future



From data to intelligence.

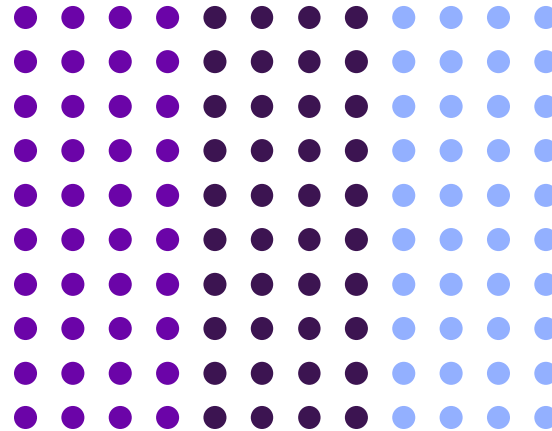
AVEVA

From data to intelligence



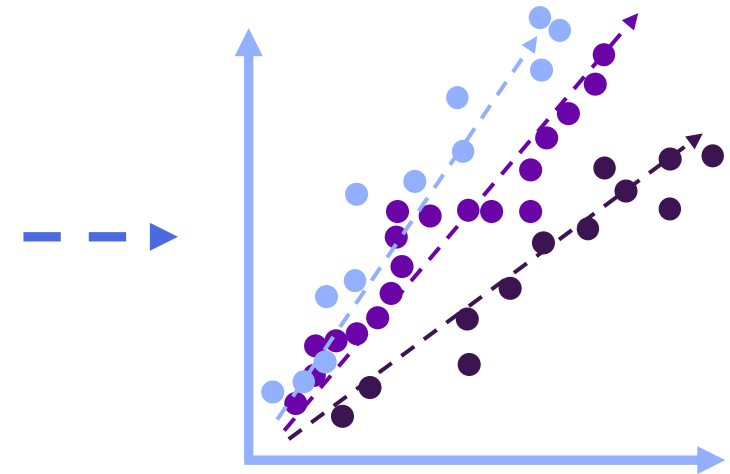
Data

Raw data points,
difficult to interpret



Information

Contextualized, real-time
decision support

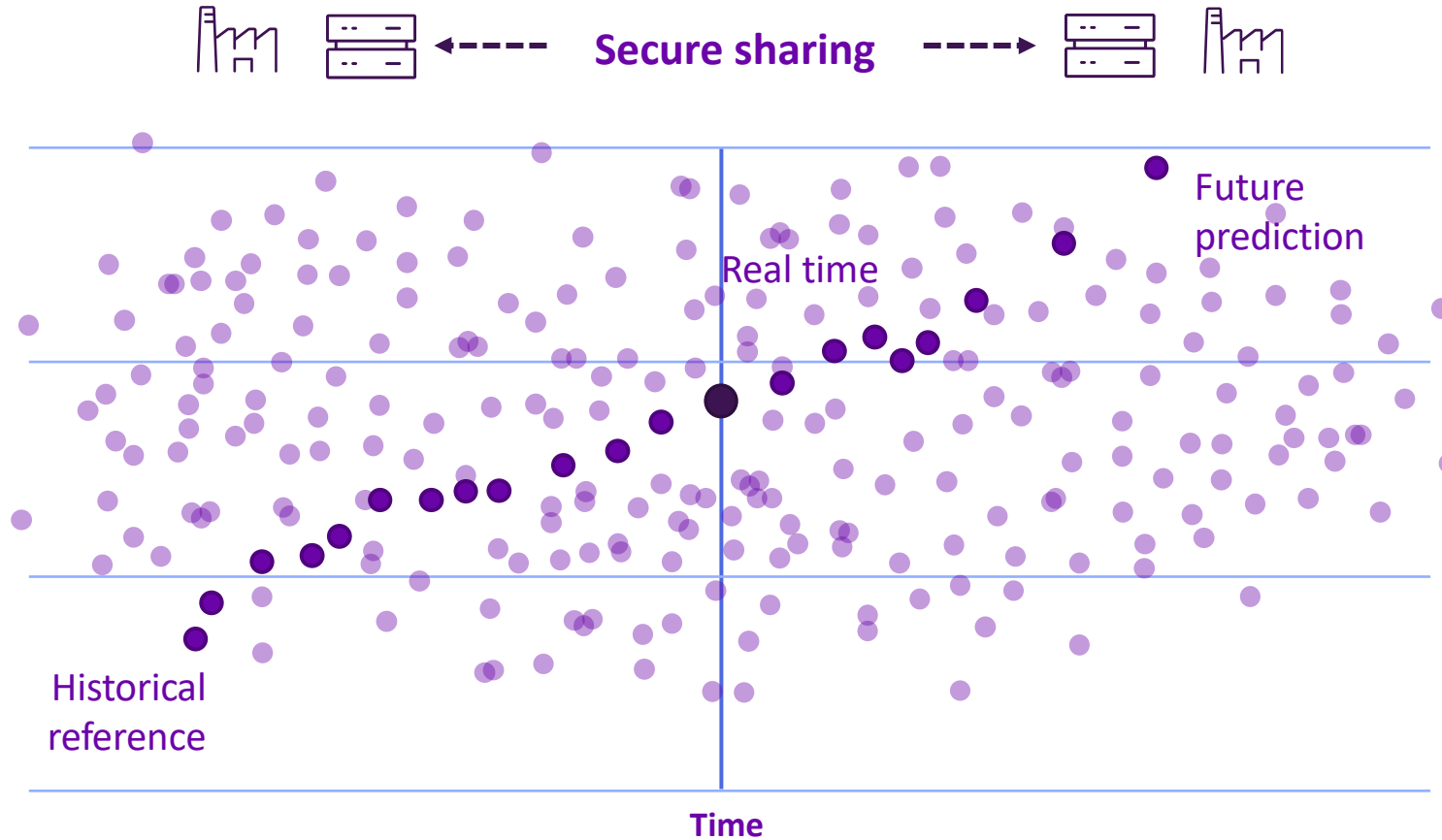


Intelligence

Business/operation
analytics

What makes OT data so difficult to harness?

Scope, scale, secure sharing



SCOPE

Collect data

- Legacy and new
- High fidelity
- Real time and historical

SCALE

Manage data

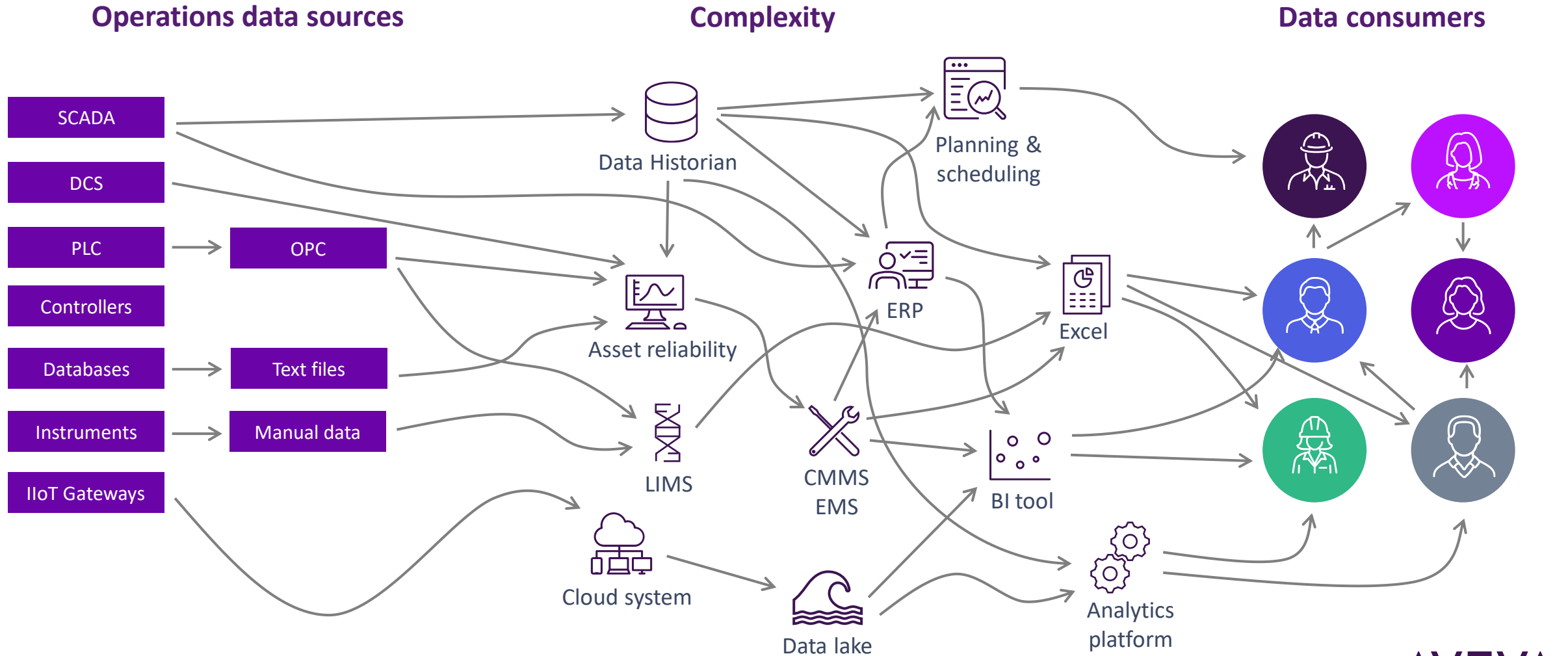
- Store for rapid retrieval
- Secure at rest and in motion
- Clean, transformed, and contextualized

SECURITY

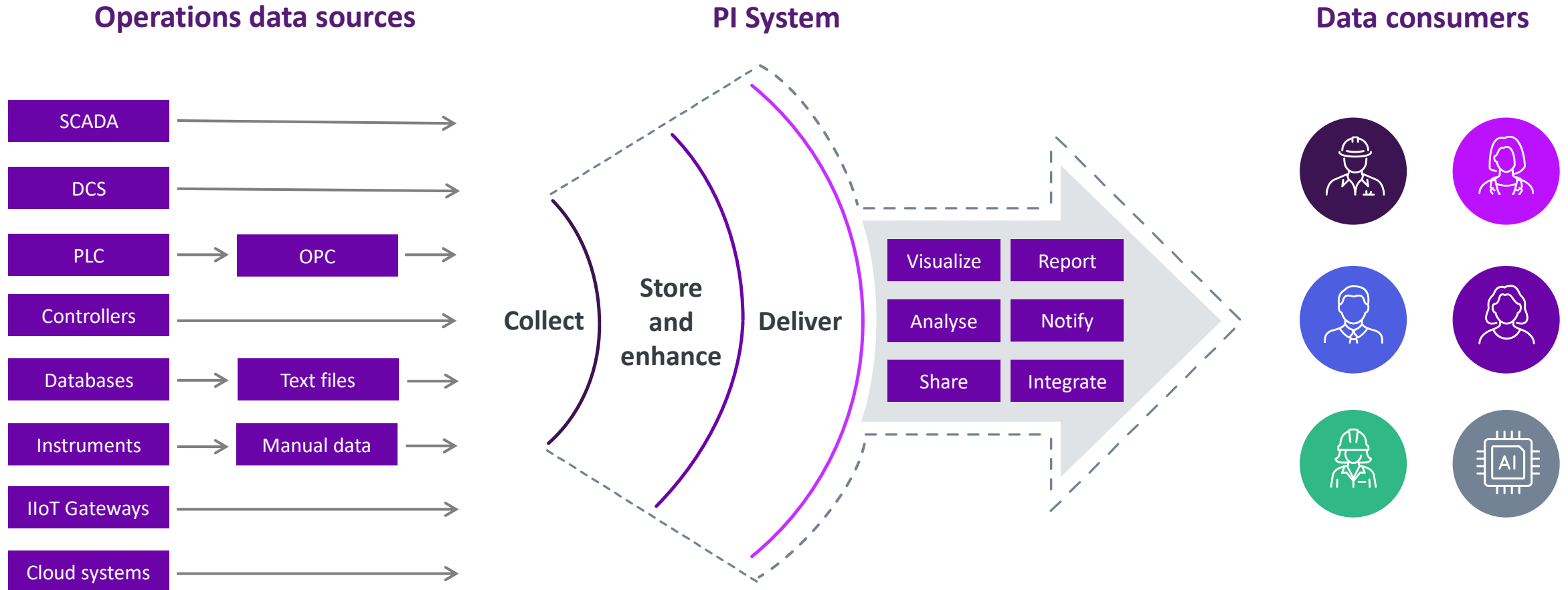
Use data

- Secure across OT, ET, IT, business domains
- Self-service and AI-ready
- Share across business and ecosystem

Managing operations data is complex



Taking a data infrastructure approach



“Data is a unique resource. The more people who consume it, the more valuable it becomes.”

- Dr Patrick J. Kennedy, Founder of OSIsoft

PI System: expanding the use of critical operations data

Modern PI System



At the edge

Real-time data collection in remote environments

Edge Data Store (EDS)

On-premises

24/7 critical operations in primary control networks

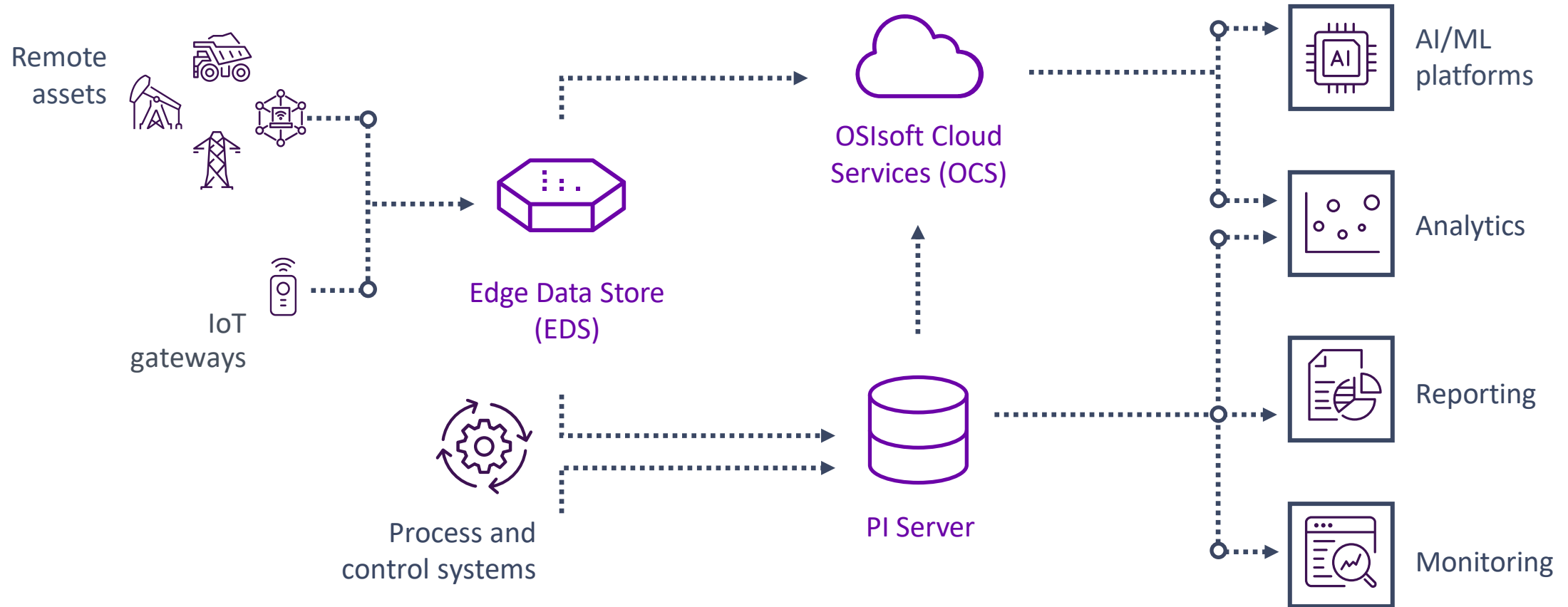
PI Server

In the cloud

Integrated and scalable data services for any user in any location

OSIsoft Cloud Services (OCS)

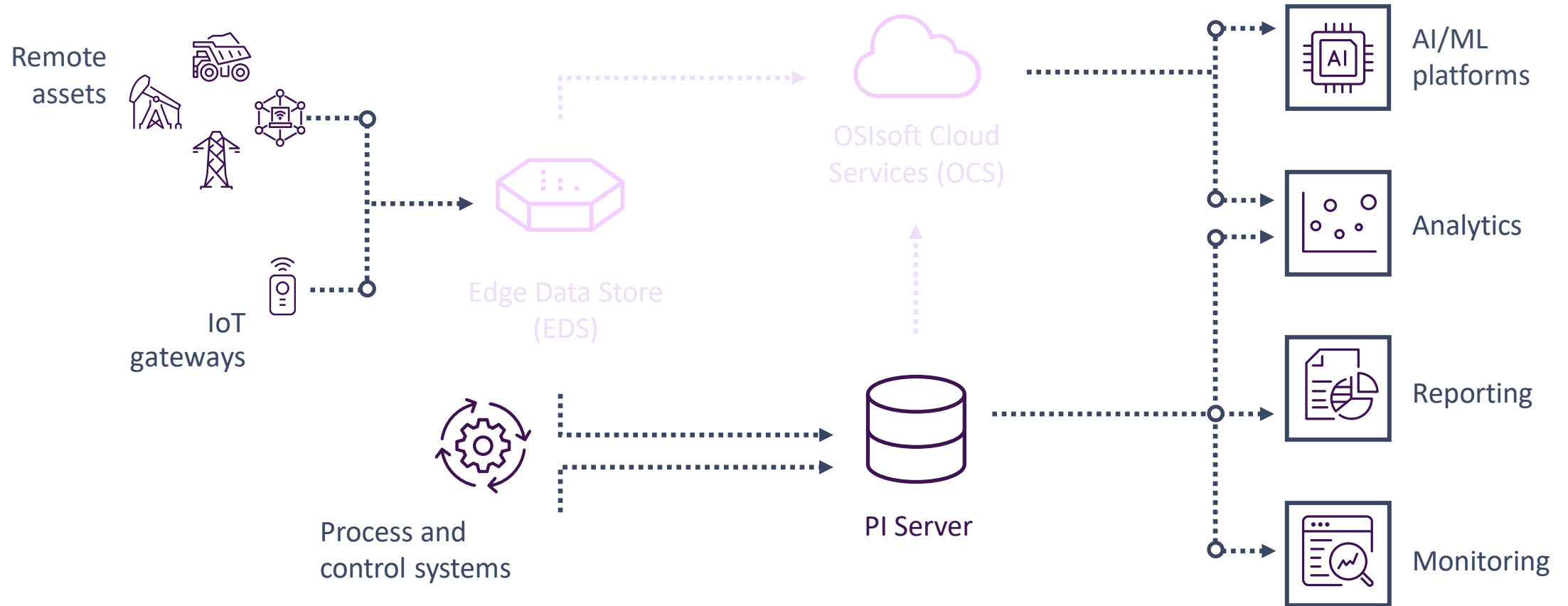
PI System enables edge-plant-cloud visibility and intelligence



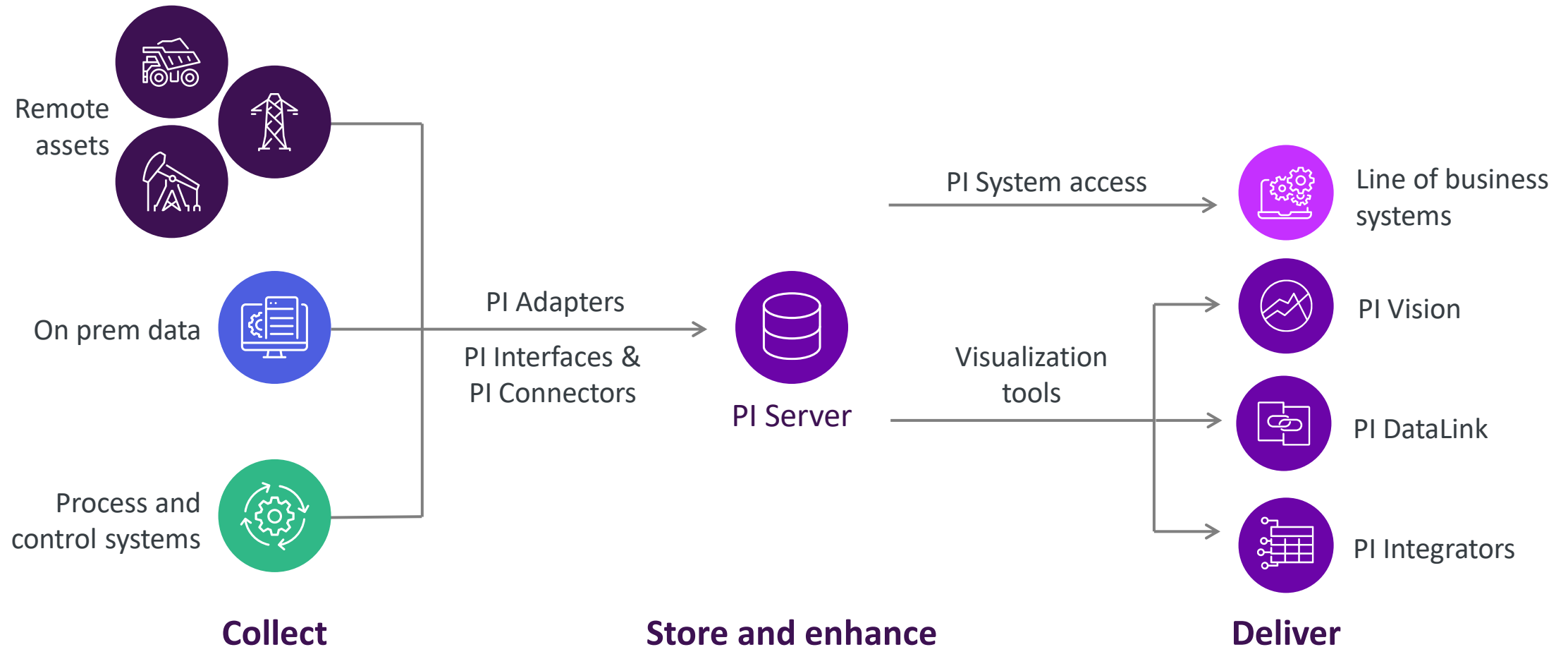
PI Server: the heart of the PI System



PI Server: On-premises for 24/7 critical operations

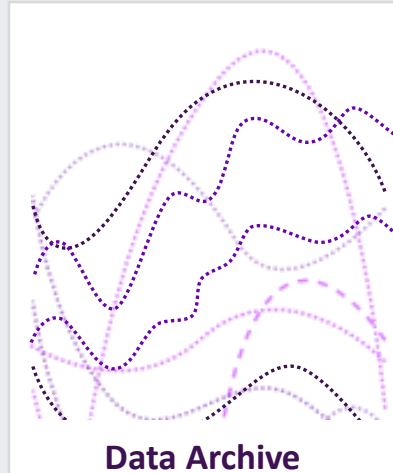
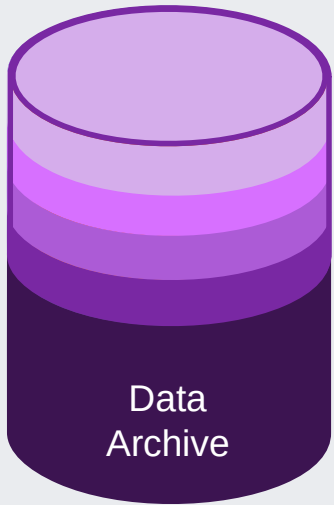


PI Server: Collect, store, and deliver



PI Server turns data into decision-ready information

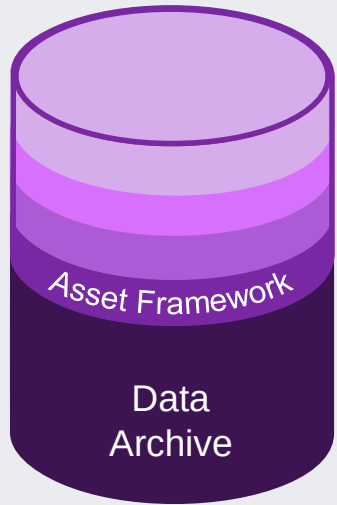
PI Server components



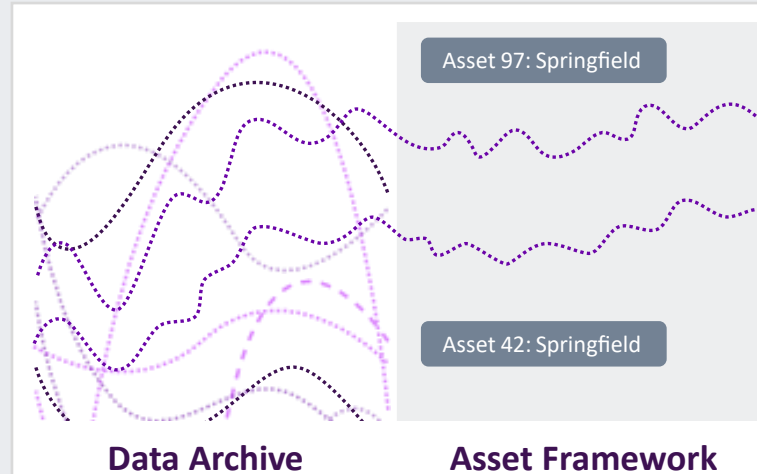
**Optimized storage &
access** to massive
volumes of
operational data

PI Server turns data into decision-ready information

PI Server components



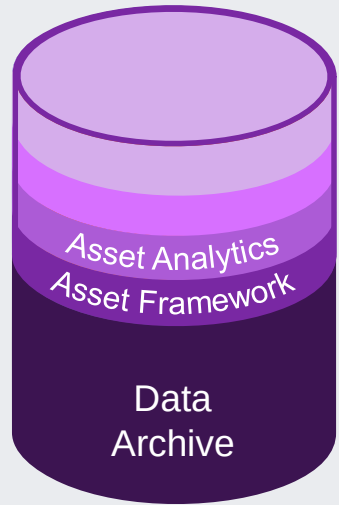
Add structure and meaningful context to your operations data



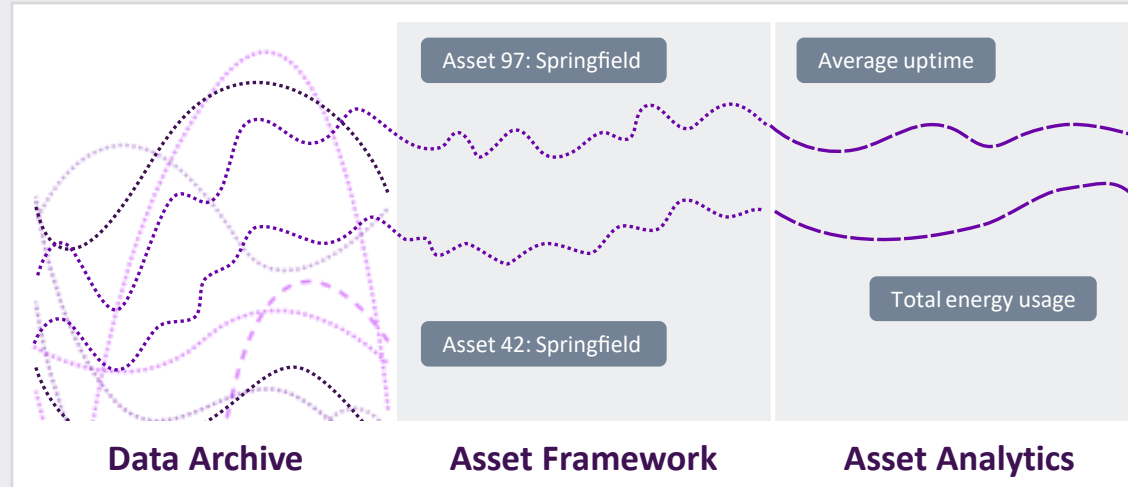
Optimized storage & access to massive volumes of operational data

PI Server turns data into decision-ready information

PI Server components



Add structure and meaningful context to your operations data

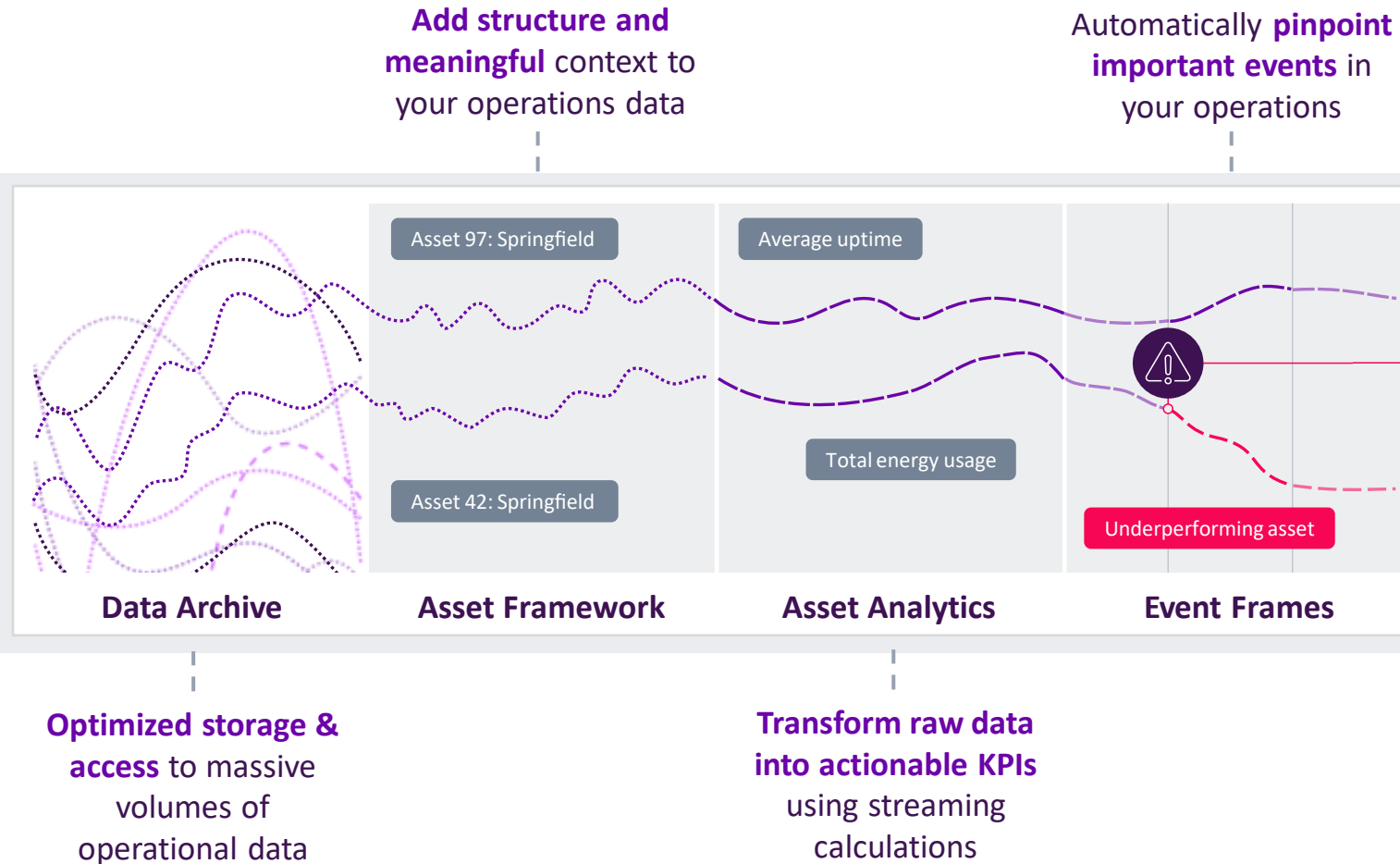
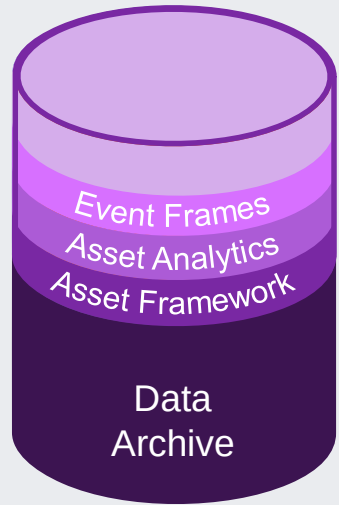


Optimized storage & access to massive volumes of operational data

Transform raw data into actionable KPIs using streaming calculations

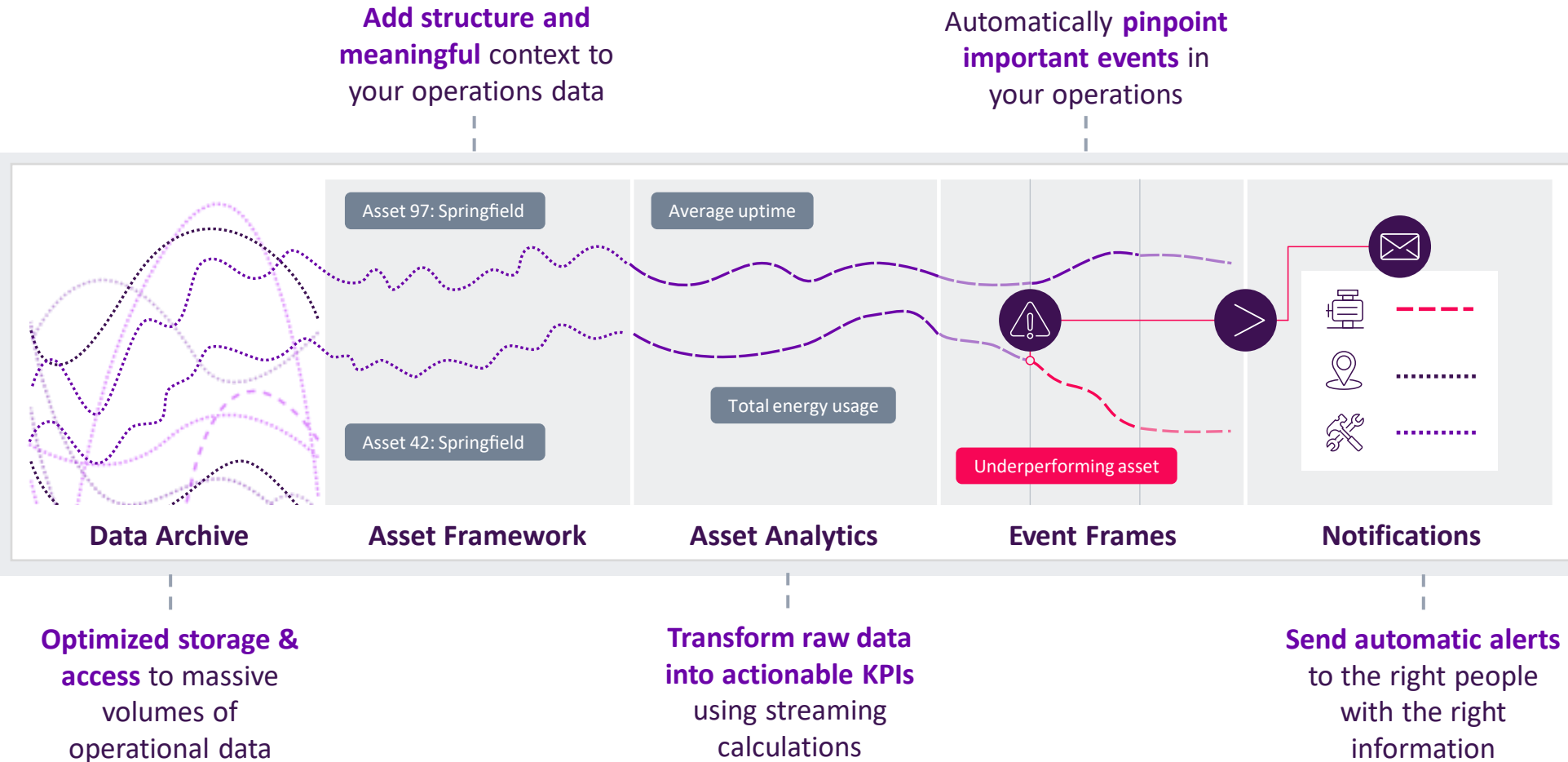
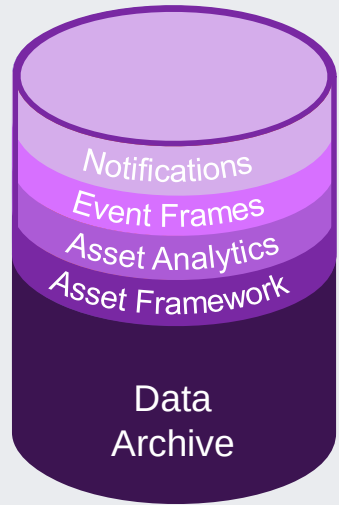
PI Server turns data into decision-ready information

PI Server components



PI Server turns data into decision-ready information

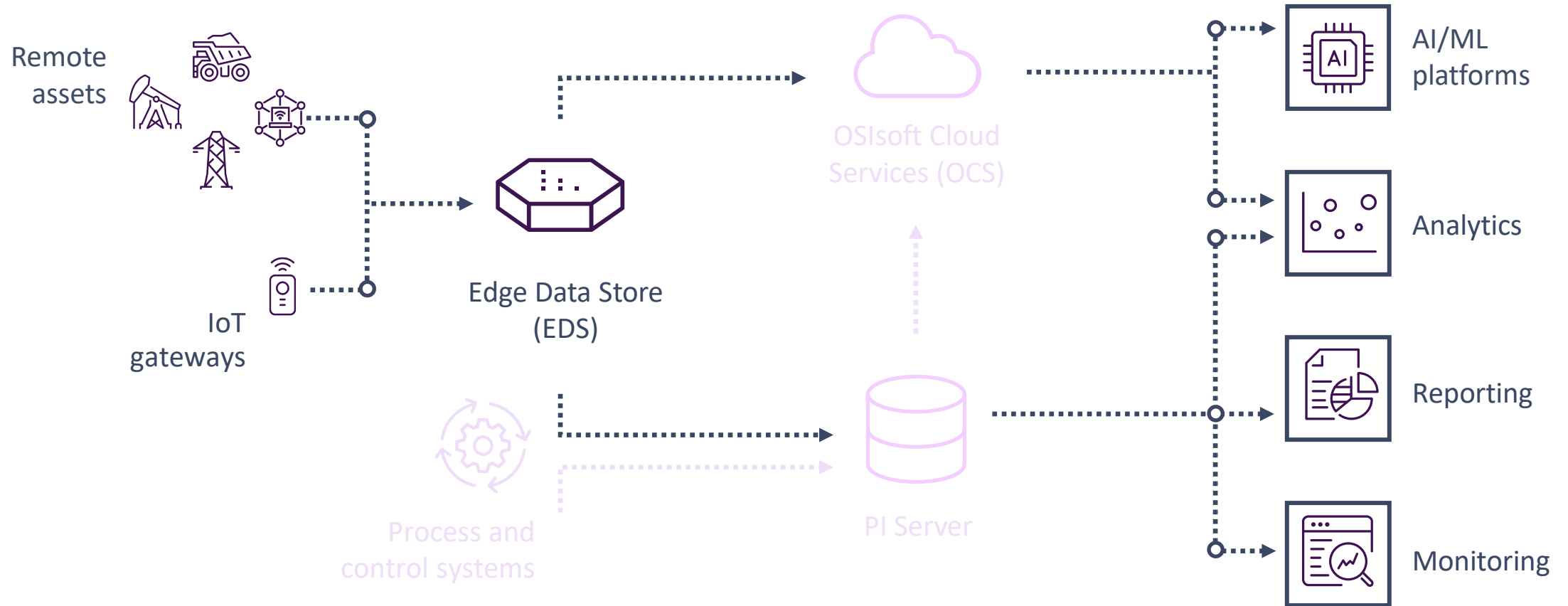
PI Server components



Edge Data Store: expand visibility to your distributed operations



Why the edge? Bring critical operations data out of the shadows





Edge Data Store adds new value to the PI System

Data collection

- **Flexible, off-the-shelf** data ingress options
- Self-healing for **resiliency**
- Tolerant of hard reboots

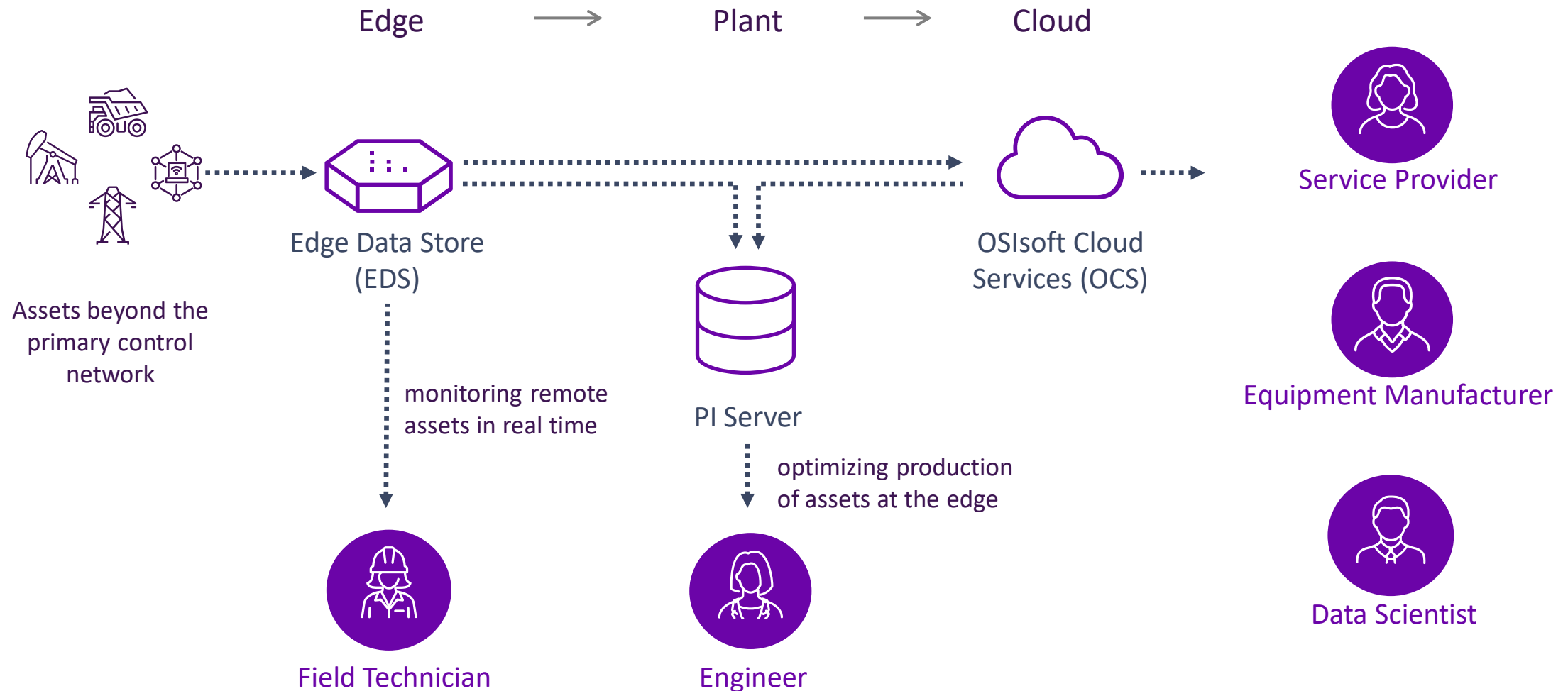
Data storage

- Lightweight software for small spaces
- Linux, Windows or Docker
- Temporary storage, optimized for retrieval

Data usage

- Open APIs for edge visualization
- Seamless transfer to PI Server or OCS for long-term storage
- Integration with analytic tools and applications

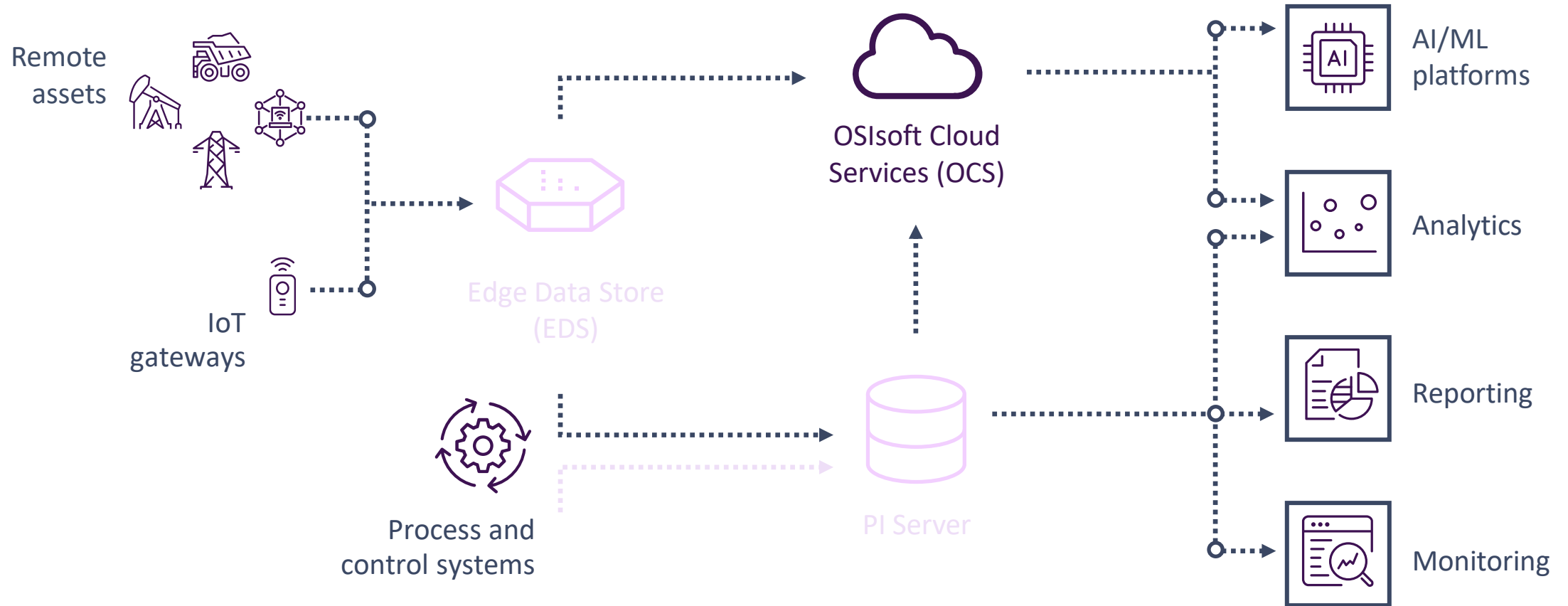
Edge Data Store expands the use cases for operations data



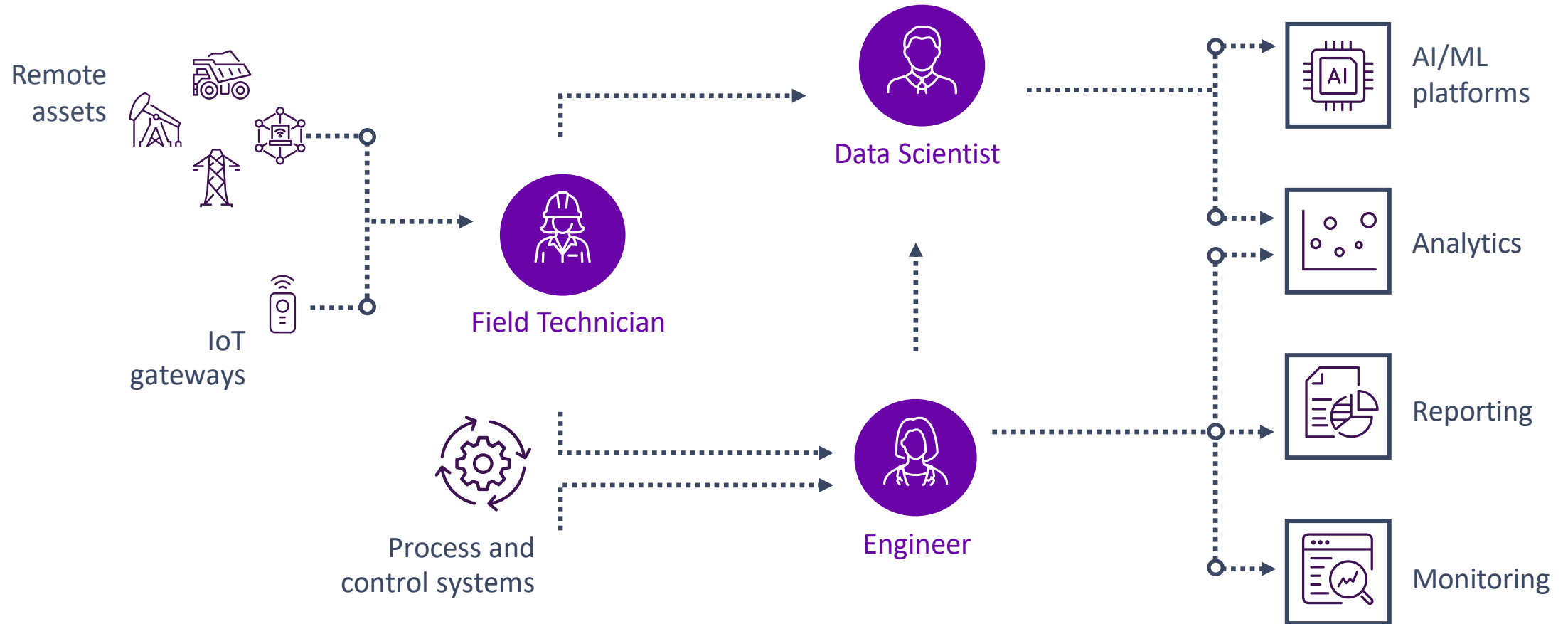
OCS: make OT data available to new users and
new business models



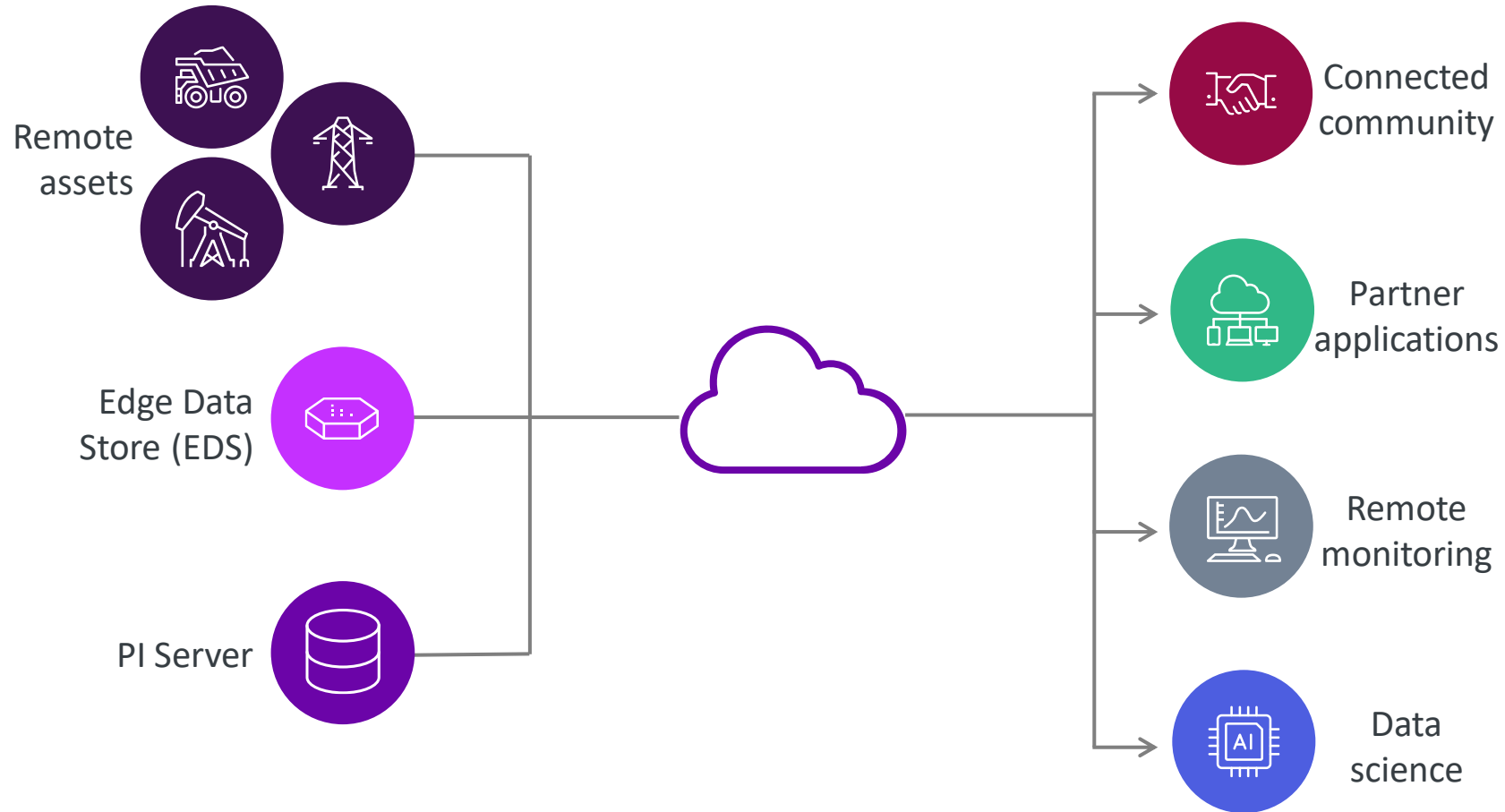
OCS: a cloud-native SaaS historian platform



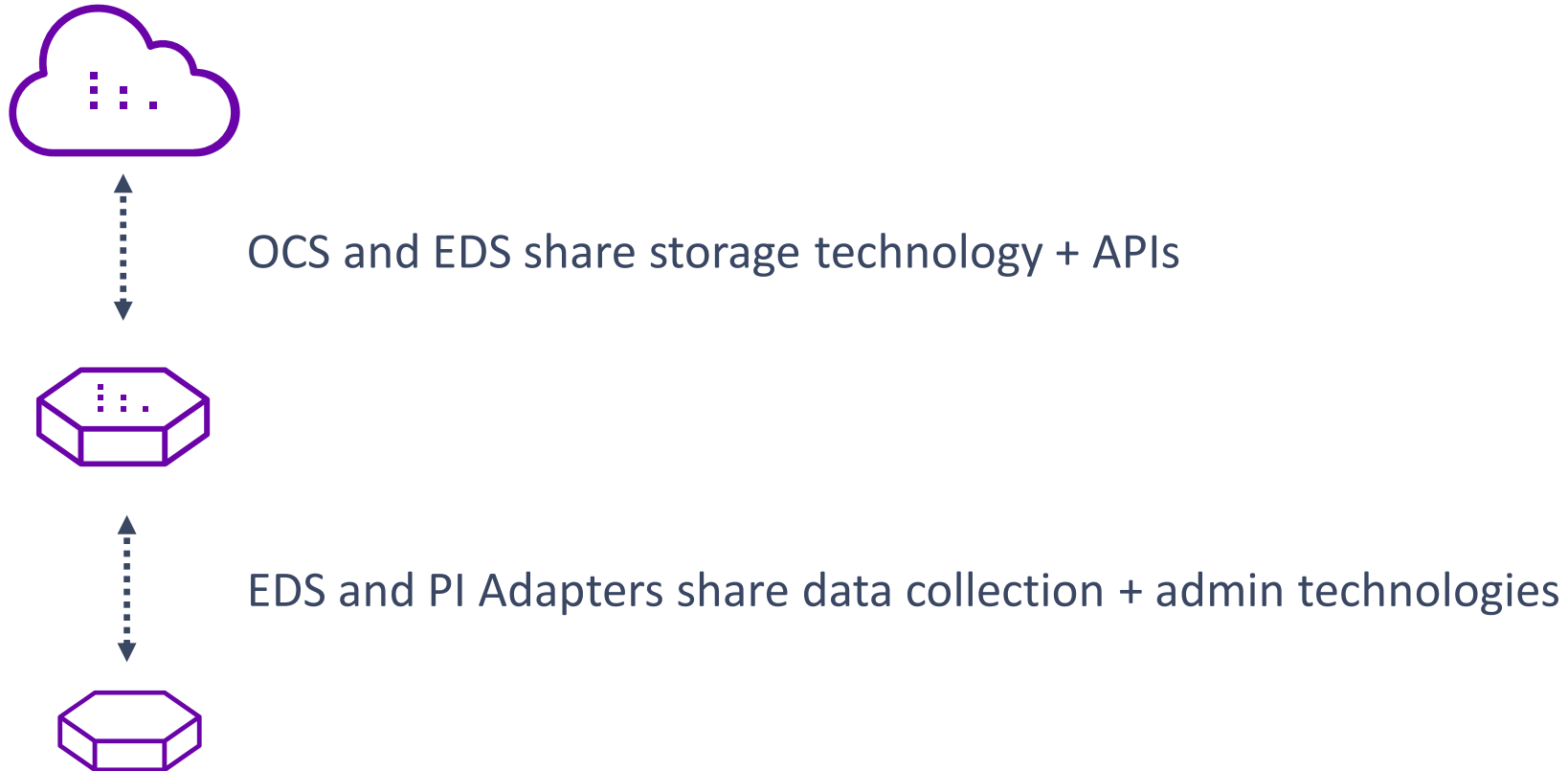
OT is moving beyond the plant: new opportunities, new needs



OCS: breaking down barriers, enabling new business models



Edge to cloud is seamless because software shares underlying technology





OCS adds new value to the PI System

Cloud native

- Managed, secure, multi-tenant
- Operated & maintained by AVEVA
- Built & deployed on Azure

Connectivity

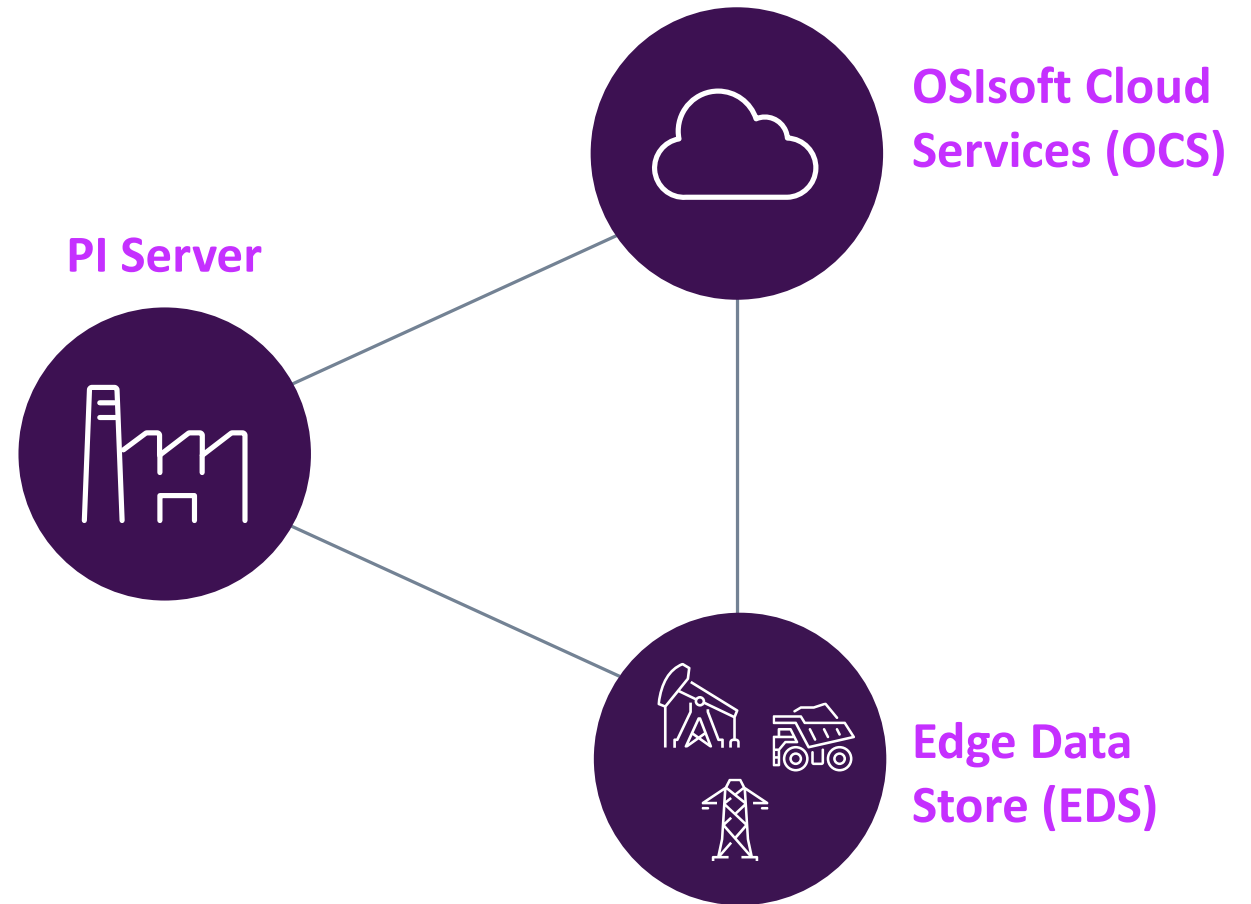
- Natively connects to PI Server, Edge Data Store, PI Adapters or OMF applications
- Modern, secure REST APIs

Performance

- High-speed, scalable, elastic, resilient
- Deployable across multiple regions to minimize latency

The modern PI System: supporting your operations from Edge to Plant to Cloud

- Proven **system of record** for operations data
- **Purpose-built** for industrial operations data
- Edge to cloud architecture, seamless and future-ready



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AVEVA, a global leader in industrial software, drives digital transformation for industrial organizations managing complex operational processes. Through Performance Intelligence, AVEVA connects the power of information and artificial intelligence (AI) with human insight, to enable faster and more precise decision making, helping industries to boost operational delivery and sustainability. Our cloud-enabled data platform, combined with software that spans design, engineering and operations, asset performance, monitoring and control solutions delivers proven business value and outcomes to over 20,000 customers worldwide, supported by the largest industrial software ecosystem, including 5,500 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 6,000 employees at 90 locations in more than 40 countries. For more details visit: www.aveva.com