OSIsoft Super Regional

Transform Your World

OSIsoft Vision & Roadmap

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Extending the reach of PI System

PDC/Edge

PI Server

OSIsoft Cloud Services

Sensors	Assets	Plant	Enterprise	Community
Millions of **Smart Devices**	Multiple **Sensors**	Multiple **Assets**	Multiple **Plants**	Multiple **Enterprises**

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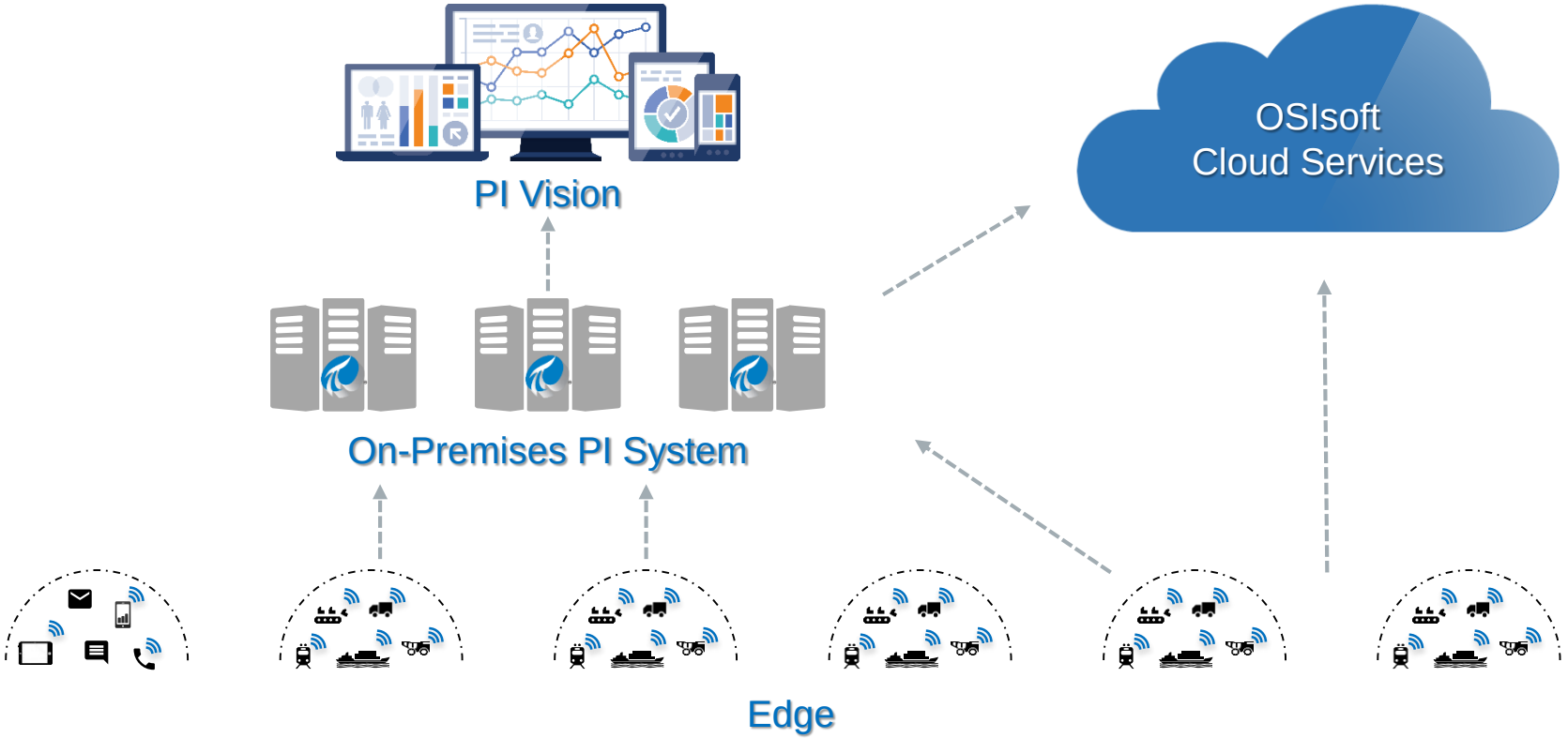
Extending your Infrastructure from Edge to Cloud



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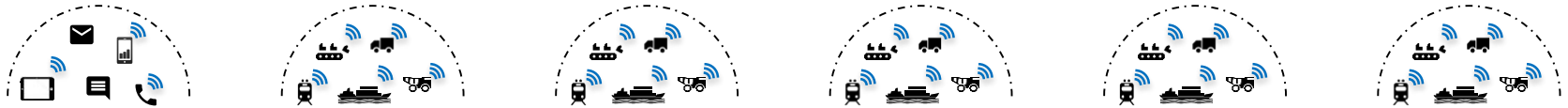
Bring in New Data with
Pervasive Data Collection



Edge

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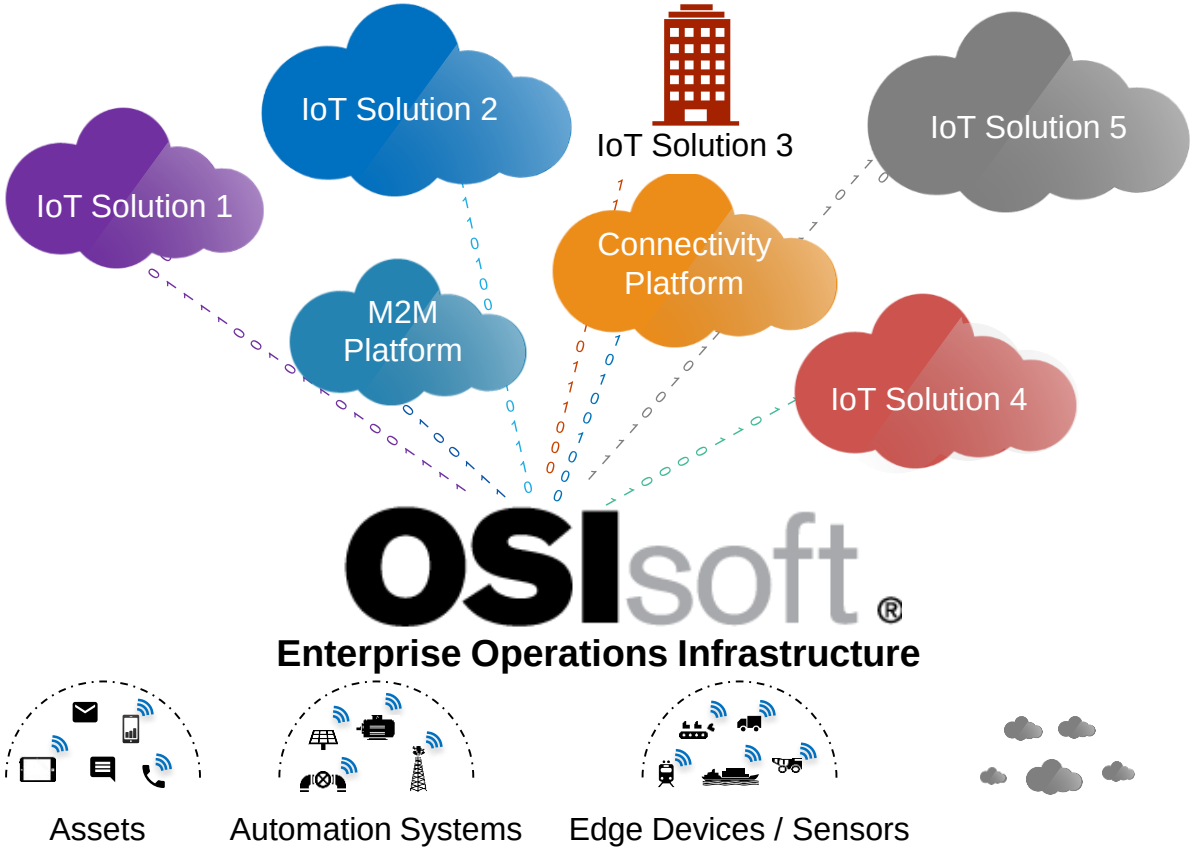
Secondary Sensor Networks, IoT Platforms, Scale and Dimension of Data



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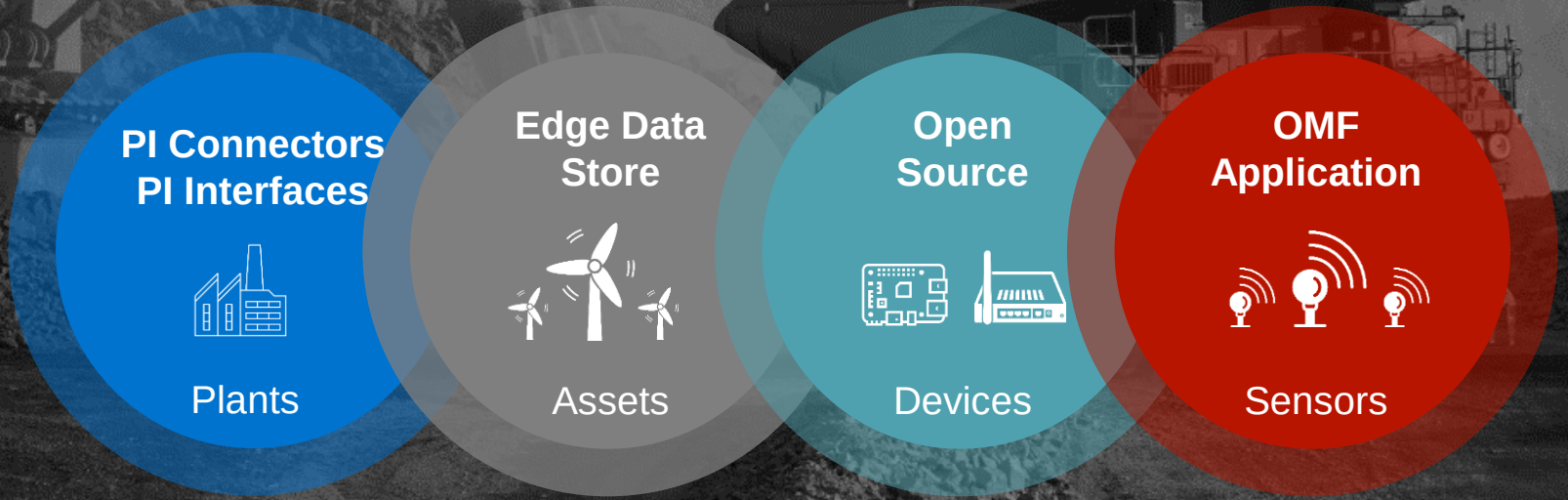
Pervasive Data Collection



10,000’s	⟵	Data Streams	⟶	10’s
High	⟵	Compute Resources	⟶	Low

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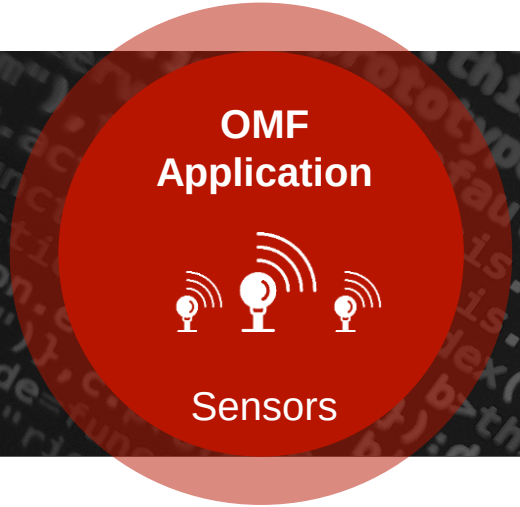
OSIsoft Message Format



Maximum Developer Flexibility

Lightweight Footprint

Agnostic to Environment

- Any Hardware
- Any Operating System
- Any Development Tools
- Data Ingress to Edge Data Store, PI Server and OSIsoft Cloud Services
- Finished Product Developed, Sold and Supported by 3rd Parties

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Open Source

Examples…

- ***FogLAMP*** – an open source toolkit for getting data into PI System & OCS
- ***ARM & Mbed*** – a community with 250,000 developers

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Edge Data Store

Persistent Storage

Self-Healing

Application Platform

- Cross Platform (Windows, Linux)
- Multiple Data Ingress Options
- Analytics Ready
- Egress to PI Server and OSIsoft Cloud Services
- Developed, Sold, and Supported by OSIsoft

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PI Connectors & PI Interfaces

- Flexible Deployment
- Cross Platform (Windows, Linux)
- Robust data collection (Data Buffering)
- Intelligent Data Selection and Data Transfer
- Developed, Sold, and Supported by OSIsoft

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Power Data Science at Scale and the Connected Community with OSIsoft Cloud Services

OSIsoft Cloud Services Vision

Develop & maintain an
operational data ecosystem
that connects customers
with **best-in-class analytics** and
their **community** of **vendors** & **partners**.

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Initial Customer Scenarios

Remote Operations Monitoring

Data Science Enablement

Connected Community

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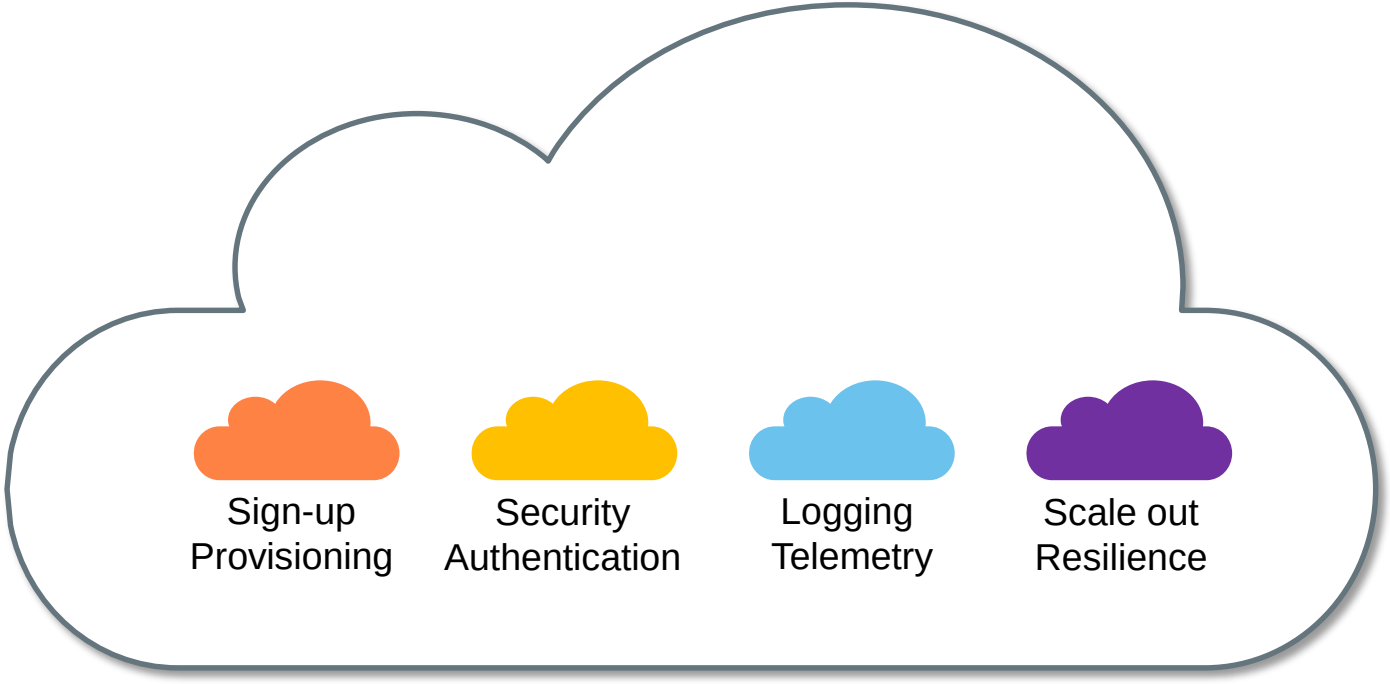
An Infrastructure Approach



micro service

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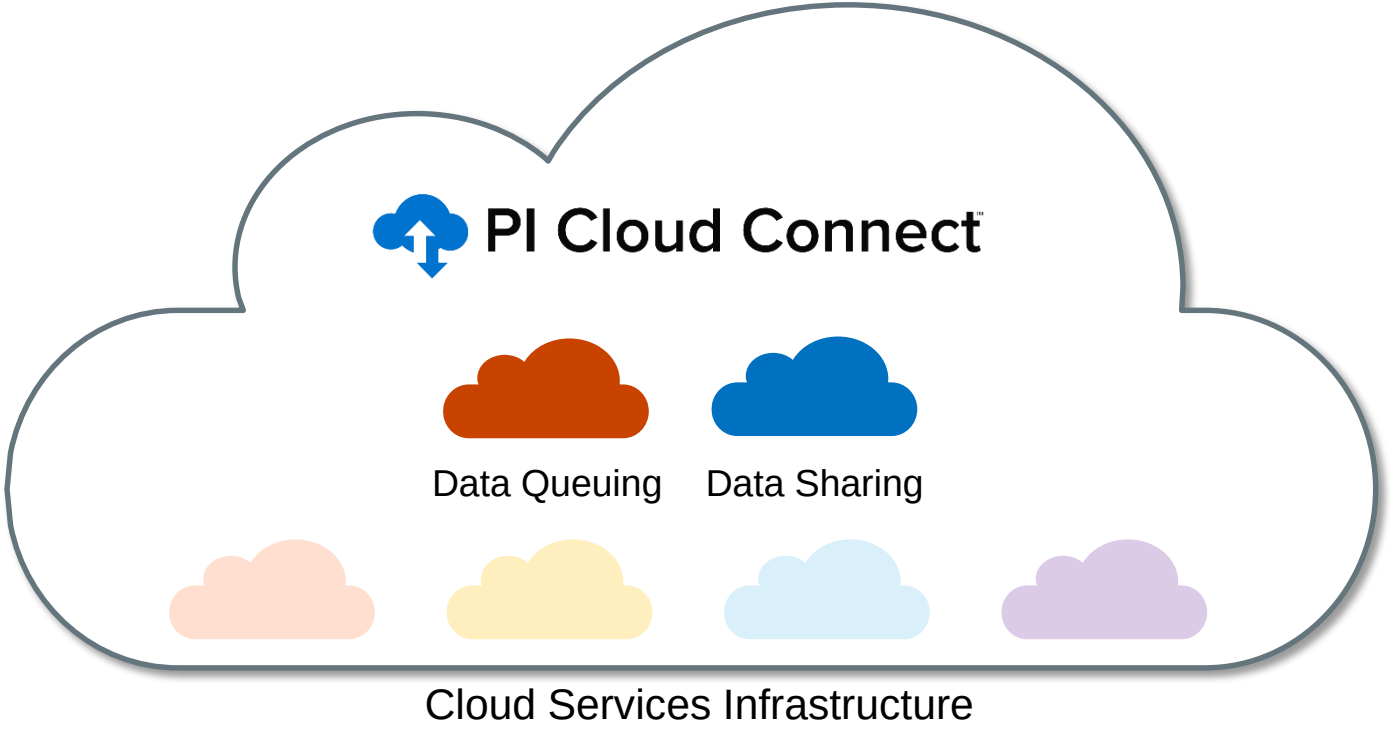
First SaaS Offering



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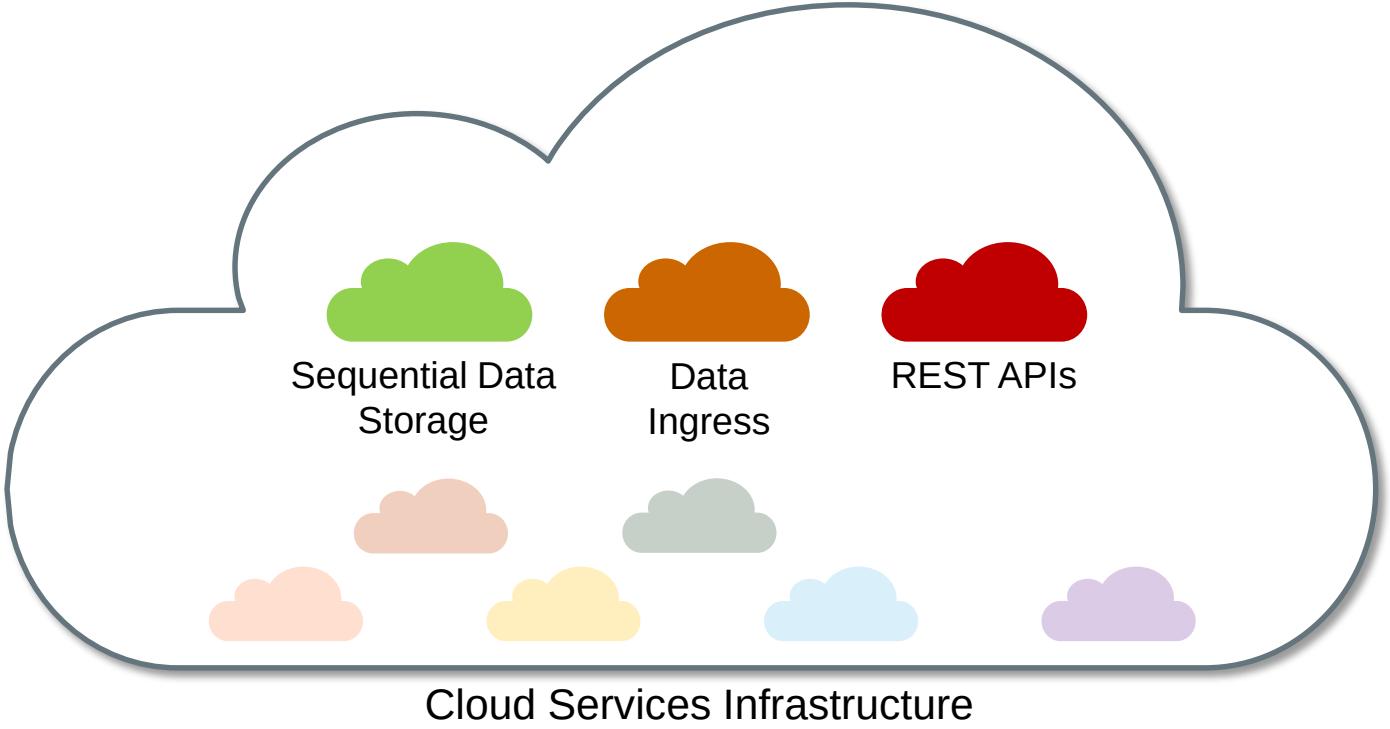
Extending the Infrastructure



micro service

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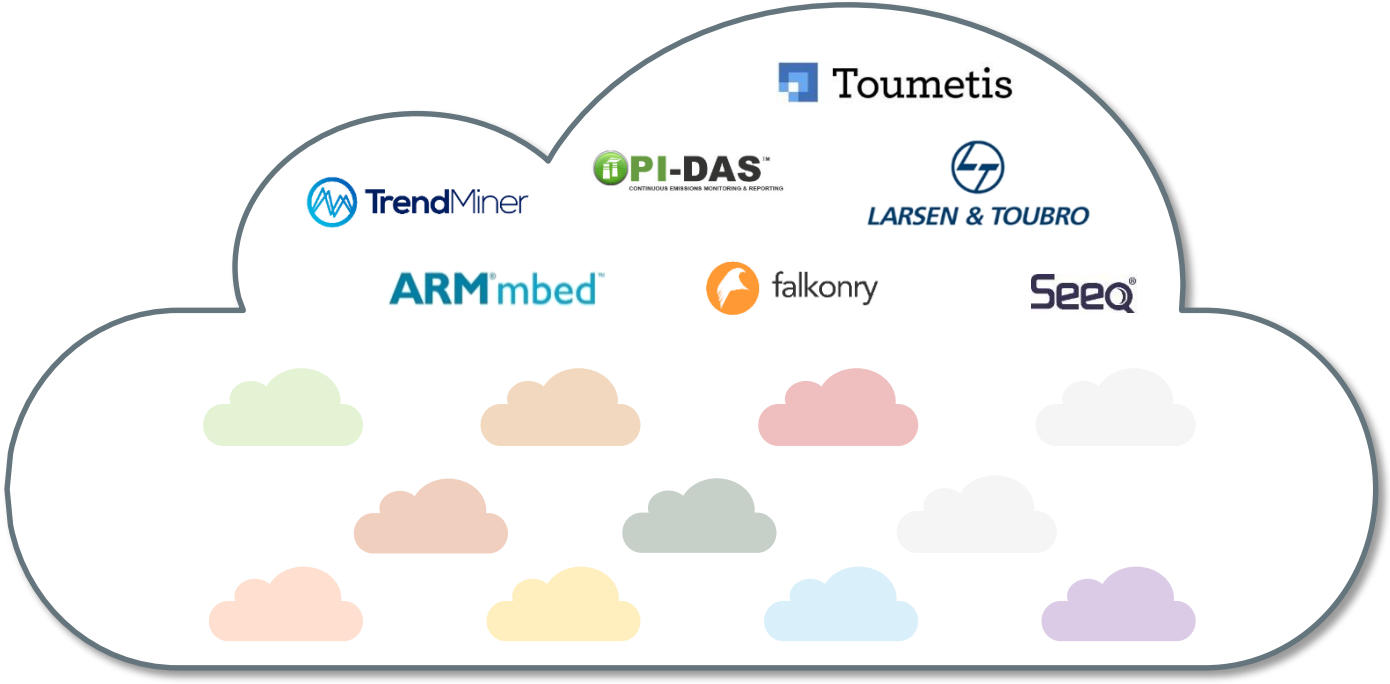
Enable partners & Application Providers



Cloud Services Infrastructure

micro service

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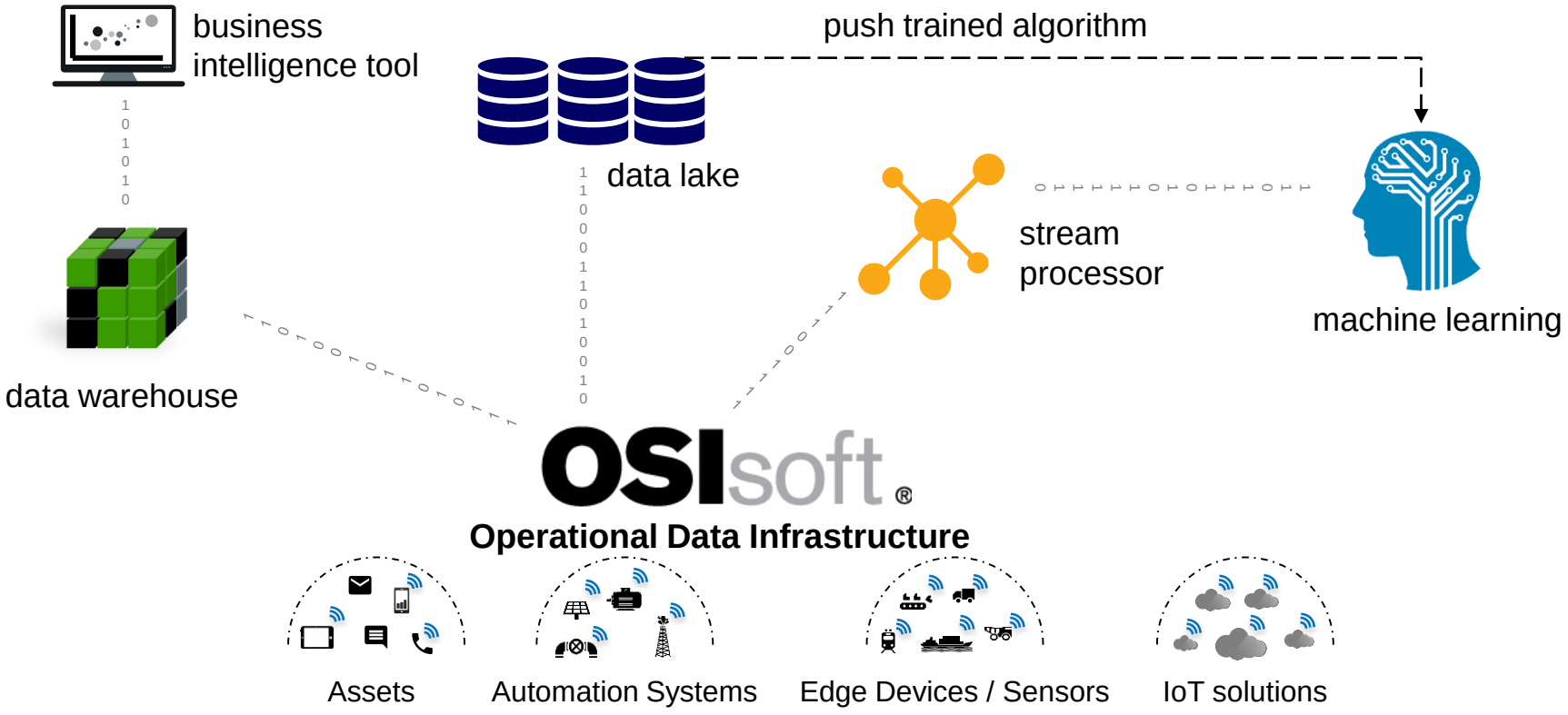
PI System accelerates and operationalizes advanced analytics



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***PI Integrators speed the process** that **brings trustworthy data** to many unique analytical tools*

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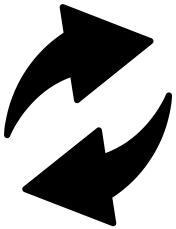
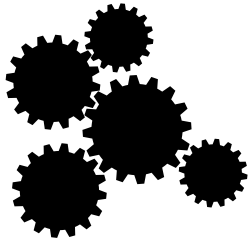
PI Integrators accelerate data science

Trustworthy operational data for machine learning algorithms

Code-free data preparation supports iterative workflows





Integration of PI System infrastructure to new IT architectures

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New streaming capability helps operationalize predictive models

data warehouses

data lakes

stream processors

PI Integrator for Business Analytics 2018				Capabilities enabled Requires non-OSIsoft software
Target Destination	**Format**	Standard Edition	Advanced Edition	
PI Views via ODBC	row-column	✓	✓	Combine OT and IT data Report holistic data sets to the business Find visual correlations
Flat Files		✓	✓	
SQL Server	row-column	✓	✓	
Oracle RDBMS		✓	✓	
Apache Hive		✓	✓	
Azure SQL Data Warehouse		✓	✓	
Azure SQL Database		✓	✓	
Hadoop HDFS	row-column	✓	✓	Train & retrain machine learning algorithms
Azure Data Lake Store		✓	✓	
Apache Kafka	stream	-	✓	Operationalize predictive models with most recent PI System data
Azure IoT Hub		-	✓	
Azure Event Hubs		-	✓	

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What we are hearing from you!

- We have more users wanting data and they are doing new things with that data
- The most important priority for me is a stable and reliable system for these users
- The system must be secure with no known vulnerabilities
- I’d like to have more control over planning upgrades to my data infrastructure
- I’d like to try the new features without having to upgrade my complete data infrastructure

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Trust Your Data with
PI System Health & Improved System Manageability

On-Premises PI System

Manageable System Initiative

Enterprise view of PI System Health

Guidance for troubleshooting, best practices

Subscribe to notifications of health incidents

Monitor the health of your data flow

PI System Health

Automatically detect your PI System inventory

PI System Directory

Simplifies upgrade planning across your enterprise

Easily organize your computers and components

Informs PI System Health what is available to monitor

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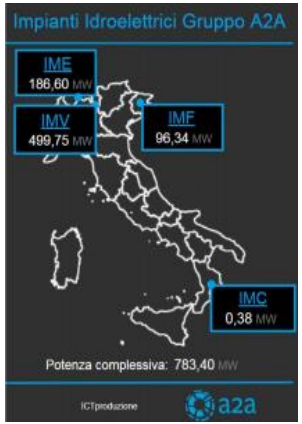
Empower your Users with
PI Vision

Customers are already using PI Vision to drive success

A2A

Remote monitoring for the Enterprise

- Italy's largest multi-utility company
- Remote monitoring for 13 remote hydroelectric and thermoelectric plants
- Improved reliability and savings on the energy trading market



SBM Offshore

Cutting Down on Downtime

- 14 offshore oil production and processing facilities
- PI Vision provides real-time visibility into operations to reduce downtime

SWCC

Automating Supply & Demand

- Supplying 20% of the world's desalinated water
- 29 desalination plants
- 400 PI Vision displays to monitor key metrics across the organization

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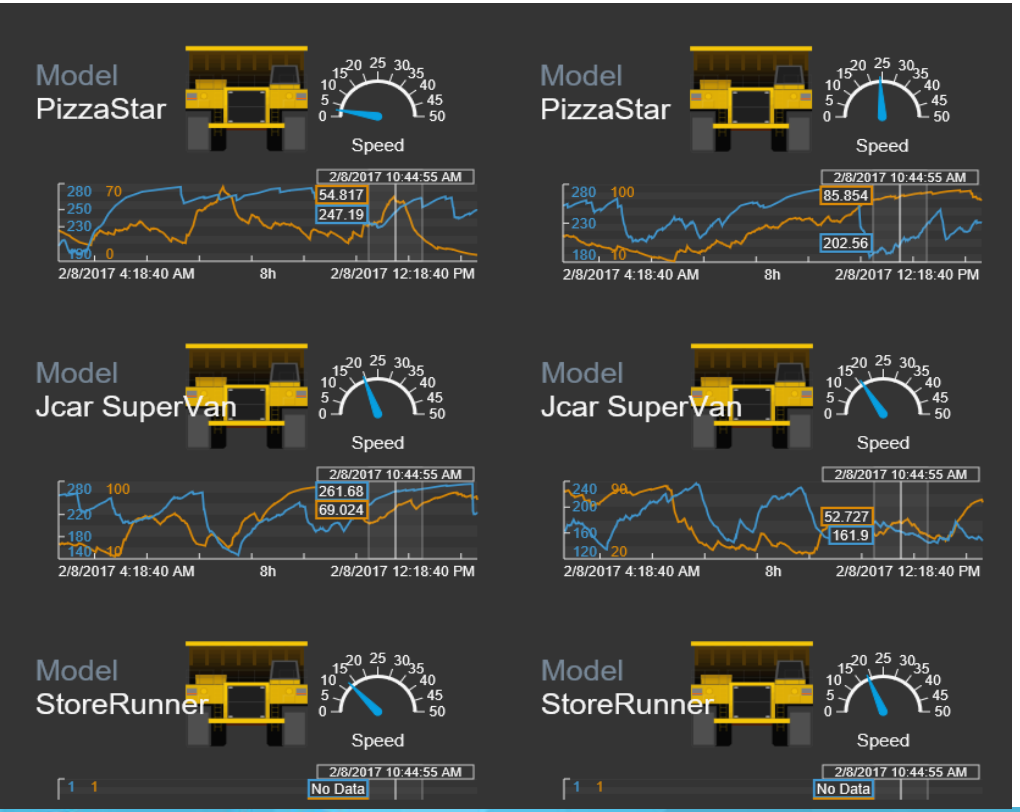
Collections: Auto-populate monitoring displays



Group one or more symbols as a “collection”

Screen auto-populates that same grouping for all assets

- New assets are added automatically
- Add filter criteria to quickly see troubled assets

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Monitor KPIs with Asset Comparison Table

Asset	LF Brake Temperature	LR Brake Temperature	RF Brake Temperature	RR Brake Temperature
Mine Truck 1	232.2 °F	222 °F	228 °F	222 °F
Mine Truck 2	245 °F	220 °F	230 °F	265 °F
Mine Truck 3	324 °F	203 °F	240 °F	230 °F
Mine Truck 4	237 °F	246 °F	227 °F	233 °F
Mine Truck 5	225 °F	197 °F	223 °F	230 °F

Add **multi-stating** to Asset Comparison Table columns to visualize key performance indicators (KPIs) across assets

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Next: PI Vision 4.x

Takes advantage of latest in web technology for value now and future

Aligns with vision to connect from edge to the community

Quickly provides new features to address growing needs

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PI ProcessBook Migration Tool

As we move forward, no customer is left behind

PI ProcessBook Migration Tool will help bring users into the future of visualization

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OSIsoft
Cloud Services

Sensors	Assets	Plant	Enterprise	Community
Millions of **Smart Devices**	Multiple **Sensors**	Multiple **Assets**	Multiple **Plants**	Multiple **Enterprises**

OSIsoft Message Format (OMF)

PI System Health
PI Vision

PI Integrators

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Questions

Please wait for the **microphone** before asking your questions

State your **name & company**

Please don’t forget to…

complete the Post Event Survey

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Thank You

謝謝
KEA LEBOHA
TAPADH LEIBH
고맙습니다
БАЯРЛАЛАА
MISAOTRA ANAO
DZIĘKUJĘ CI
NGIYABONGA
GRÀCIES
SALAMAT
OBRIGADO
شكرا
TEŞEKKÜR EDERIM
DANKON
TANK
TAPADH LEAT
DANKIE
TERIMA KASIH
KÖSZÖNÖM
СПАСИБО
MULȚUMESC
OSIsoft
FAAFETAI
РАКМЕТ СІЗГЕ
HVALA
ESKERRIK ASKO
GO RAIBH MAITH AGAT
HVALA
ХВАЛА ВАМ
БЛАГОДАРЯ
GRACIAS
THANKYOU
TEŞEKKÜR EDERIM
ТИ БЛАГОДАРАМ
MAHADSANID
DANK JE
ΕΥΧΑΡΙΣΤΩ
GRATIAS TIBI
GRAZIE
TAK
DANKE
AČIŪ
SALAMAT
MAHALO IĀ ʻOE
TAKK SKAL DU HA
ДЯКУЙ
RAHMAT
MERCI
GRAZZI
ÞAKKA ÞÉR
ありがとうございました
DI OU MÈSI
HATUR NUHUN
РАХМАТ САГА
ĎAKUJEM
SIPAS JI WERE
TERIMA KASIH
MATUR NUWUN
CẢM ƠN BẠN
FALEMINDERIT
UA TSAUG RAU KOJ
WAZVIITA
ТИ БЛАГОДАРАМ
СИПОС