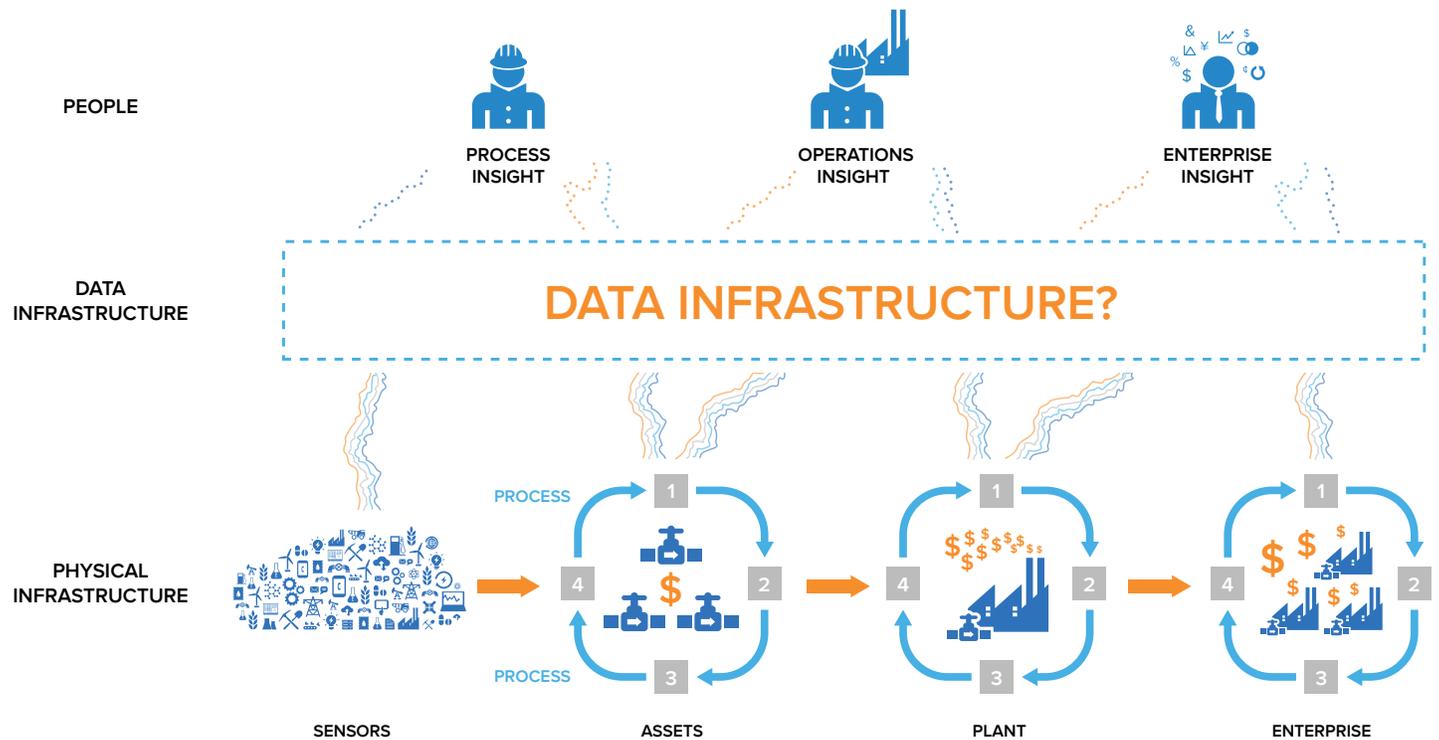# Operational Intelligence:

Transforming Industrial Operations with Data

OSIsoft®

Introduction

Each year, companies invest billions in physical infrastructure, so it's crucial to ensure that infrastructure is a high contributor to overall business performance. Asset health, availability and overall efficiency are key differentiators which directly affect business fundamentals such as process efficiency, quality and safety. As such, it is critical to balance risk, performance and cost across the enterprise and ensure that people have access to all asset, system and site data for real-time decision support and business intelligence. This access to infrastructure data allows them to turn data into information into knowledge to drive actions that optimize physical infrastructure performance.
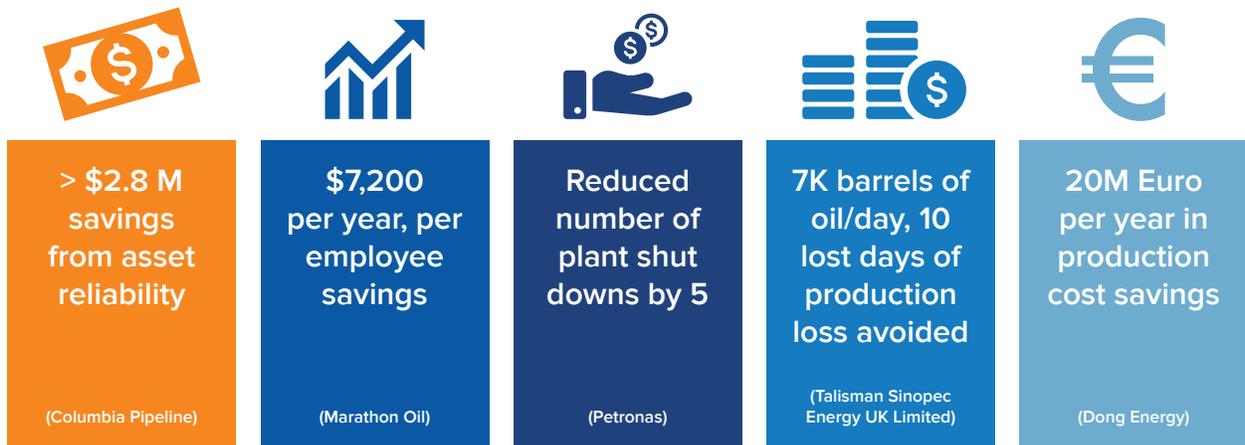

A strategic approach has evolved that leverages operations software to complement a company's physical infrastructure. The approach enables a wide array of people — operators, data scientists, site supervisors and business managers — to use data-driven information to solve problems and make decisions at the local, site and enterprise levels. This Operational Intelligence supports enterprise readiness and a continuous improvement mind-set for driving operational excellence.

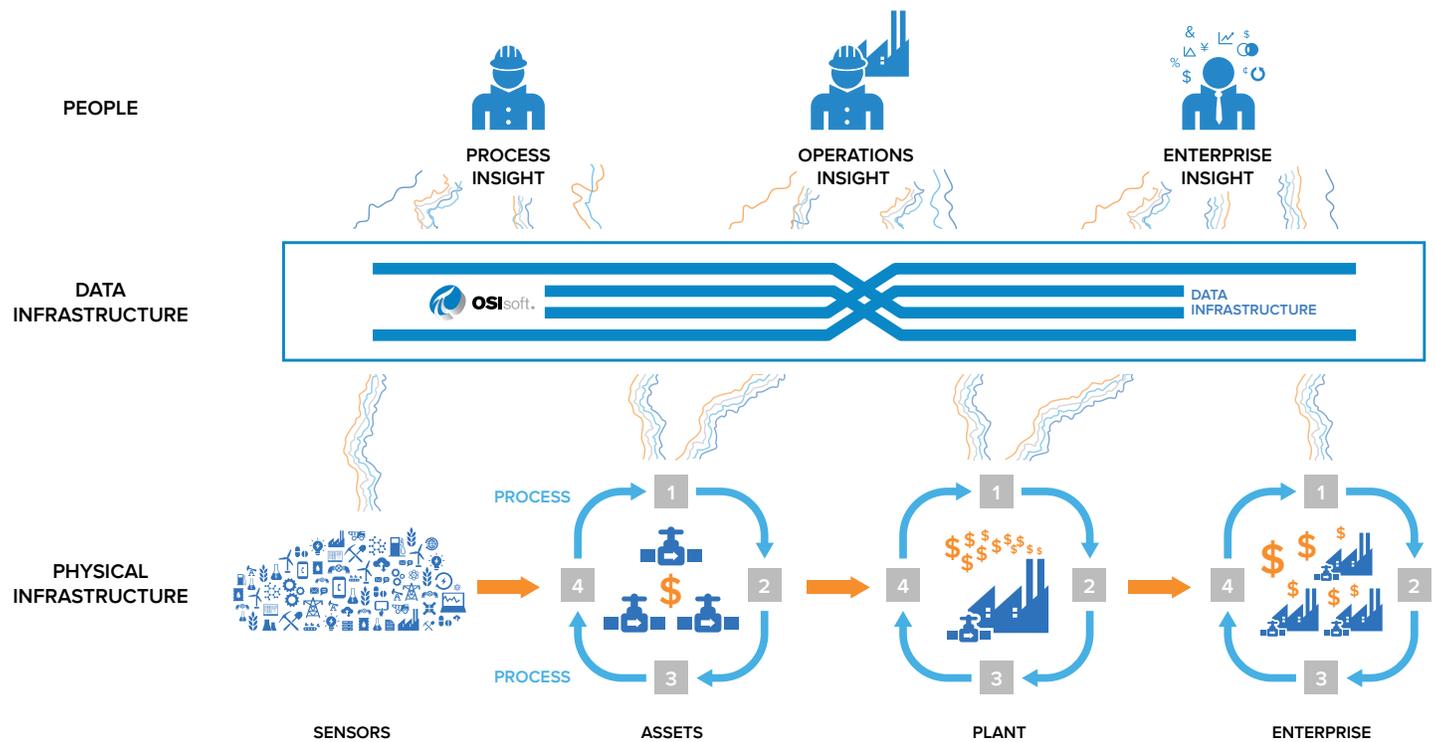# The Business Impacts of Operational Intelligence

Operational Intelligence impacts the enterprise in several ways. With historical, real-time data and predictive insights at their fingertips, people can make more informed decisions for optimizing systems, preventing failures and improving operational environments:

- Engineers or operators can see moment-by-moment trends and gauge the health of their assets and systems in real time. This real-time situational awareness allows them to respond to state changes, operational limits and failures.

- Managers can access and roll up high-fidelity data from multiple assets and systems to assess performance, productivity and costs. Engineers can make informed decisions or future changes to improve production outcomes.

- Executives can observe the health and productivity of their environment and make informed decisions about where to best deploy physical, human and financial resources to meet corporate objectives.

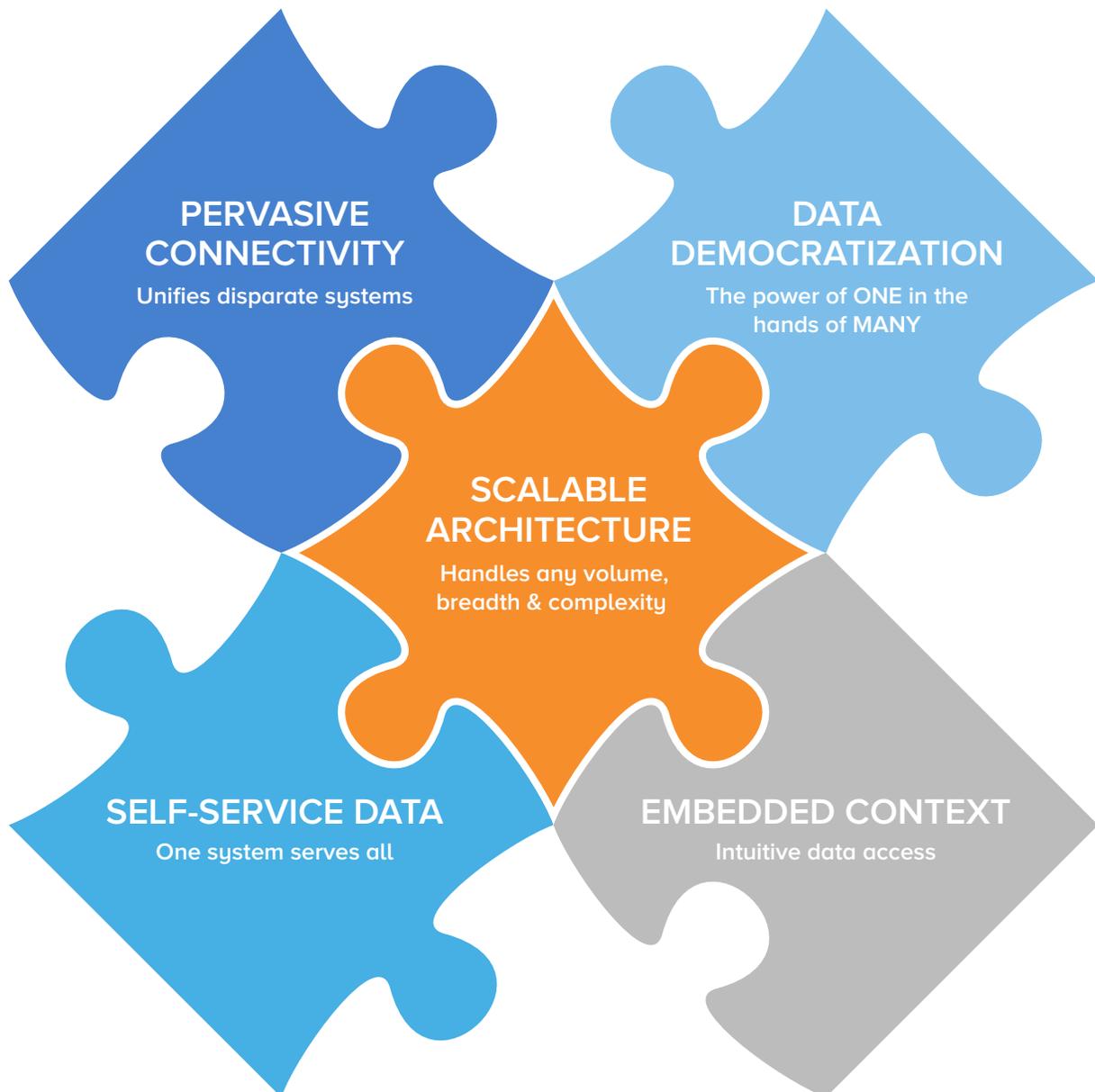| > $2.8 M savings from asset reliability	$7,200 per year, per employee savings	Reduced number of plant shut downs by 5	7K barrels of oil/day, 10 lost days of production loss avoided	20M Euro per year in production cost savings
(Columbia Pipeline)	(Marathon Oil)	(Petronas)	(Talisman Sinopec Energy UK Limited)	(Dong Energy)

An Infrastructure Approach to Enable Operational Intelligence

A common, sensor-based data infrastructure forms the foundation of Operational Intelligence. This data infrastructure removes data silos, provides consistent information within operational context, supports data governance and eases overall data accessibility. It also maximizes the investment in both people and the physical infrastructure by connecting people to smart machines and systems so they can make optimized decisions in real time. With the ability to make decisions in real time, people can obtain the insights needed to generate on-going operational patterns and predict future operational patterns as well.

Essential Components to Enable Operational Intelligence

To meet the needs of the enterprise and ensure a successful data infrastructure approach for enabling Operational Intelligence, critical software capabilities are required. The infrastructure approach requires a system capable of collecting data from any system or sensor, and delivering information in a meaningful way to any person within the organization — no matter where they reside.

PERVASIVE CONNECTIVITY
Unifies disparate systems

DATA DEMOCRATIZATION
The power of ONE in the hands of MANY

SCALABLE ARCHITECTURE
Handles any volume, breadth & complexity

SELF-SERVICE DATA
One system serves all

EMBEDDED CONTEXT
Intuitive data access

Beyond Operational to Enterprise Intelligence

Operational intelligence not only affects the decisions made by operators and engineers — it affects business decisions as well. While operations focus on production KPIs, the business itself focuses on revenue and profitability in order to deliver shareholder value. For operational intelligence to become even more strategic, operations data should be combined with business information to support business decisions. This "Enterprise Intelligence" — i.e. the combination of business and operations data -- enables the enterprise to make the most impactful decisions related to cost, value and return on investment.

By adopting a data infrastructure approach to operational intelligence, high quality and reliable information can be integrated with business information. This Enterprise Intelligence enables operations and business personnel to transform the way they work in order to best serve the needs of the organization.

About OSIsoft

With the belief that people with access to data can transform their world, OSIsoft created the PI System™ to capture and store real-time sensor-based data. For over 30 years, OSIsoft has delivered the PI System with the singular goal of connecting people across operations to data and operations. Today, the PI System is embedded in critical infrastructure and involved in some of the largest data initiatives around the globe. Sixty-five percent of the Global 500 process companies use the PI System to help transform operations. Our customer base includes Fortune 100 and Fortune 500 companies in power generation, oil and gas, utilities, metals and mining, transportation, critical facilities and other industries. OSIsoft remains faithful to its original mission — to push the edges of innovation and create software that brings high fidelity data from disparate operational sources to people in all corners of our customers' enterprises — wherever, whenever and however it is needed.