



Connected Services:

A Real-Time Information Framework to Transform Aftermarket Services

EXECUTIVE SUMMARY

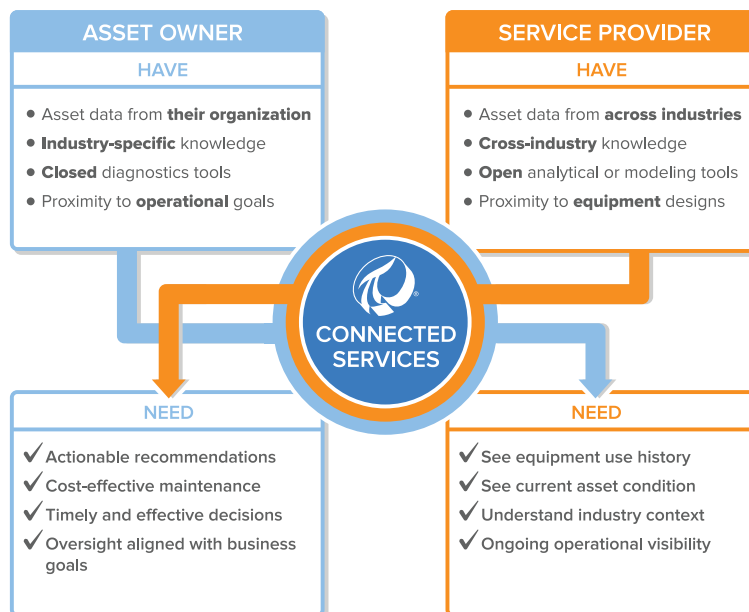


EXECUTIVE SUMMARY

Across all industries, technical domain experts are retiring and being replaced by less experienced workers. Industrial machines – many of which incorporate embedded connectivity or sensitive intellectual property - are becoming more complex, and the number of machine and sensor-based data sources is constantly growing. As a result, industries are relying more and more on outsourced expertise to manage asset health, process optimization, and quality control. In today’s global and competitive marketplace, service providers differentiate their value to their customers by streamlining their cost of service, improving their recommendations, and reducing time-to-solution. Growing their businesses requires that service providers maintain and update intellectual property, optimize staff and adopt appropriate cost structures to maximize market penetration.

“Over the next three years, manufacturers increasingly plan to use service as a **competitive differentiator** and aim to grow business through product service innovation and **value-added services...**”
IDC Manufacturing Insights, July 29, 2013

This paper discusses the advantages of adopting a Connected Services framework to transform the business value of aftermarket services. A Connected Services agreement provides a simple, secure technical and commercial framework for service providers to access real-time sensor-based data from their customers’ assets. Real-time access to operational data allows service providers to deliver timely, accurate recommendations and solutions while cutting costs and maintaining intellectual property. Through this collaborative, customer-focused framework, OEMs and suppliers can offer customer-centric services that increase brand equity, improve product offerings and provide more value to their customers.



BUSINESS CHALLENGES

Although service providers have specialized domain expertise and provide targeted recommendations to customers across a wide range of industries, they share similar business challenges.

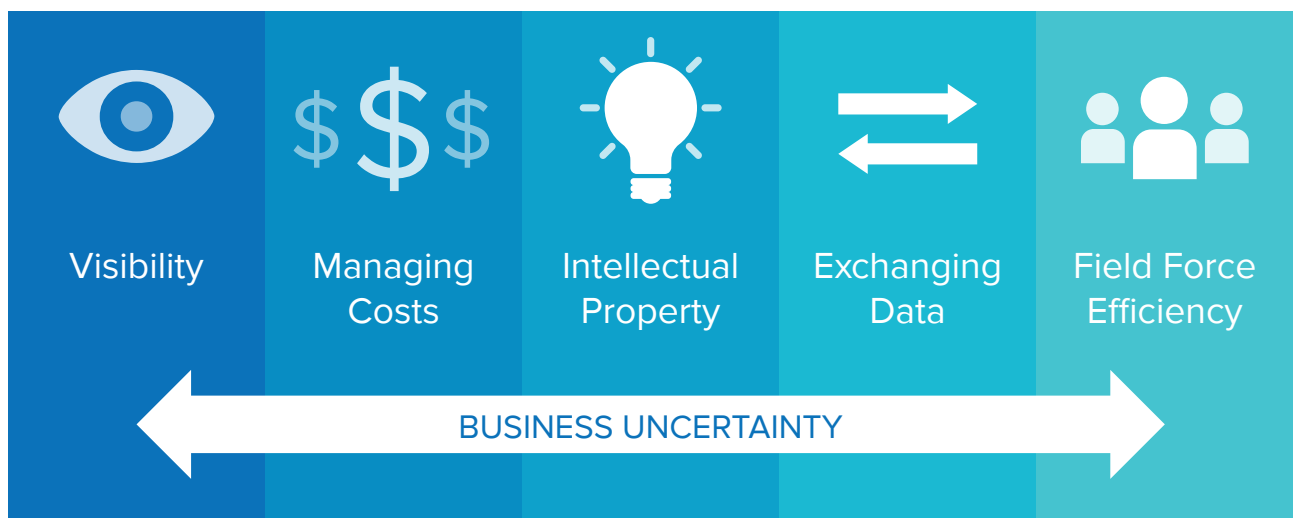
ONGOING VISIBILITY INTO CUSTOMER ISSUES – Operations are continuous and dynamic, but service providers cannot be onsite at all times. Delivering the right recommendations at the right time depends on up-to-the-moment awareness of critical operating parameters, asset conditions, and operational variables.

MANAGING COSTS – As service providers enter the market place, do they make an investment in costly on-premise software systems or do they acquire a critical number of clients first?

CAPTURING AND MAINTAINING INTELLECTUAL PROPERTY – Service providers establish credibility through specialized intellectual property. To grow their business, they need to protect and expand the scope and depth of their intellectual property.

FIELD FORCE EFFICIENCY – Not all staff have the domain expertise to resolve all customer issues. Service providers look for ways to ensure the right people are tackling the right problems to scale staff and control costs.

EARNING CUSTOMER TRUST – First and foremost, OEMs and Suppliers sell products. Customers must believe that service offerings will benefit them and are not intended to increase parent company revenues.



TYPES OF SERVICE OFFERINGS AND PROVIDERS

Many industries rely heavily on machine and sensor-based data to improve production, lower operating expenses and optimize asset lifecycles. As many industry experts retire, organizations are turning to service providers, including **OEMs** (Original Equipment Manufacturers) and **Suppliers**, to drive excellence around core levers of differentiation such as asset health and process efficiency. Service providers house deep domain expertise that can be leveraged to drive operational excellence at customer sites. They also derive tangible benefits from aftermarket services. OEMs improve ownership experience to increase customer retention, gain insight into product performance, and improve future design. Suppliers gain a better understanding of customer operations, can anticipate their needs, and establish collaborative partnerships. Service recommendations usually fall under the following three categories. Driving excellence around these recommendations also relies on access to sensor-based time series data generated at customer sites.

O&M – Operations & Maintenance

Significant unknowns exist across asset life cycles. O&M providers rewrite maintenance practices to address costs based on design, use patterns, and data. OEMs and independent service providers use information to optimize maintenance, both for planned and unplanned services like major repairs, modifications, and upgrades.

APM – Asset Performance Management

APM includes data capture, integration, visualization, and analytics all tied together to optimize the performance of assets. Optimized asset performance increases availability, minimizes costs, and reduces operational risks. In addition, APM includes condition monitoring, predictive forecasting, and reliability-centered maintenance.

DRaaS – Decisions and Recommendations as a Service

This type of service offers enterprises the opportunity to receive recommendations from a trusted provider familiar with their industry and business goals. DRaaS leads to optimized and automated decision choices based on specific information related to business unit goals. Service Providers can offer DRaaS either a continuous or an “as needed” basis.

OPERATIONAL CHALLENGES

NO ACCESS TO STREAMING DATA AND EVENTS – Real-time, sensor-based data is key to generating insight and predictive information. Many data solutions cannot capture large volumes of heterogeneous, time series data from remote sites, leading to poor visibility into operational conditions at customer site.

LACK OF OPERATIONAL CONTEXT – Operational data obtained through emails, phone calls or flat file transfers does not have operational context. Other data access and analysis tools can make it difficult to bring heterogeneous operational data together for monitoring or analysis.

SPEED - For mission critical assets, downtime may cause catastrophic effects. Traditional data transfer methods are slow and sometimes ineffective. Data can get lost, misplaced or simply not delivered to appropriate stakeholders, ultimately costing the customer money and time.

AVOIDING COSTLY SERVICE CALLS – Customers absorb costs associated with service provider travel, data collection and any downtime. Without remote access to real-time operational data, cost of service may outweigh benefits.

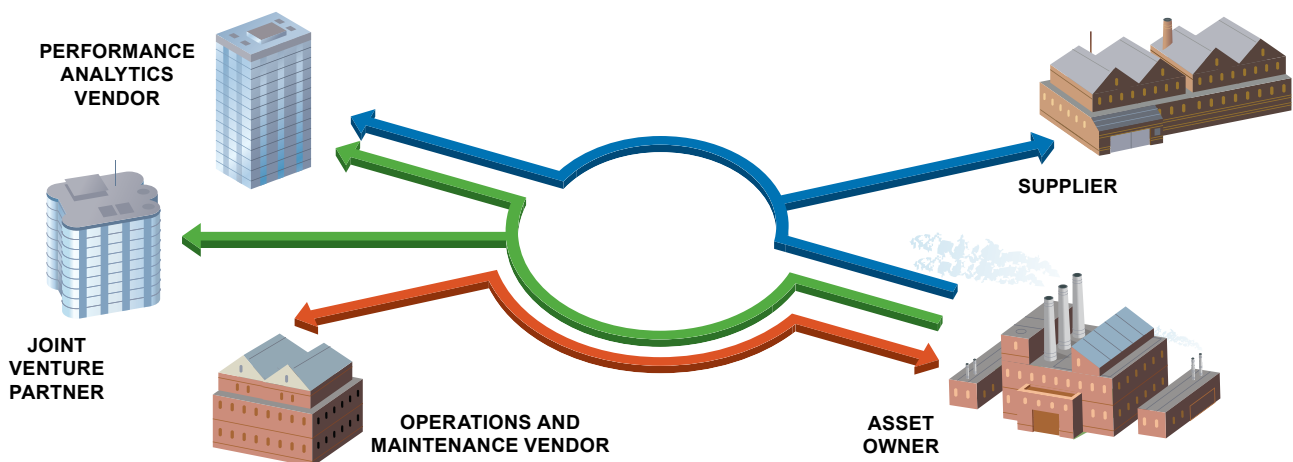
LACK OF TRANSPARENCY – How can customers trust service recommendations? Without a collaborative platform for data-driven decisions, service providers may lose the chance to build customer intimacy and trust.

| ALTERNATE SOLUTIONS | | |
|--|---|---|
| | ADVANTAGES | LIMITATIONS |
| Custom, In-house Solution | <ul style="list-style-type: none"> • Can be developed relatively quickly • Perceived lower development costs; do not have to pay third party • Total control over features and functionality • Zero license or support costs • Perceived advantage of implementing unique solution | <ul style="list-style-type: none"> • Limited documentation and reporting • Limited integration with other applications • Issues when critical staff leave organization • Limited lifespan; technology obsolescence risk • Core business is not writing software • Upgrade costs can be prohibitive • Does not include all features of a commercial solution • Inability to fully test; back-office only • Time consuming support by in-house resources |
| Specialized or Vertical Solutions | <ul style="list-style-type: none"> • Operations specific • Designed for customer's business or industry | <ul style="list-style-type: none"> • Too specialized for an enterprise-wide approach • Customization may be limited or expensive • Some features may not be relevant • High recurring license or support costs • Multiple solutions may be required |

OPPORTUNITY

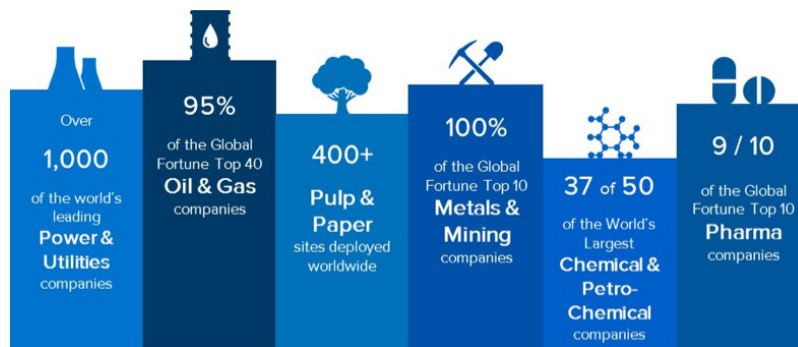
OSIsoft's Connected Services offers multiple advantages over in-house and specialized vertical solutions. As an off-the-shelf solution, service providers can implement the PI System™ quickly to gain real-time visibility into customer operations. Once deployed, the PI System is designed to scale and connect to diverse sources, meaning that service providers can use data to expand service offerings and improve their IP. The PI System also offers agility; service providers can launch new services without ripping and replacing core data systems. Finally, a Connected Services agreement includes updates to the PI System infrastructure as technology and business needs change to eliminate the risk of obsolescence.

Connected Services is a subscription-based “pay as you grow” model. Service providers pay over time from operating budgets instead of all at once from capital budgets. This scalable, flexible arrangement helps eliminate fiscal uncertainty when ramping up new services offerings. Continuous access to customer data helps equipment manufacturers, O&M vendors, performance analytics firms, and other service providers improve the design, operation, and maintenance of their products or customer assets. Joint venture partners, suppliers, contract manufacturers, and regulators also use OSIsoft Connected Services to manage inventory, improve product quality throughout the lifecycle and more fully collaborate through business transparency. By leveraging OSIsoft Connected Services, service providers are freed up to focus on what they do best, whether that's sales, business development, customer relations/support, or information technology support.



WHY OSIsoft

Founded in 1980, OSIsoft introduced the PI System to connect people to sensor-based operational data. Currently, 65% percent of the process Global Fortune500 use the PI System to manage asset health, process optimization, product quality, and for compliance or reporting. The PI System is embedded in critical infrastructure around the world and services a broad range of industries such as oil and gas, utilities, metals and mining, biopharmaceuticals, and power generation facilities. OSIsoft reinvests 20% of revenue into research to serve emerging markets and address advances in technology.



CONNECTED SERVICES BUSINESS BENEFITS

DEEPER COLLABORATION – With a collaborative Connected Services framework, the provider can deliver a customized experience each time they apply a standard solution to their customers' unique data sets.

OPTIMIZED HUMAN CAPITAL – Service providers can spend more time and resources on core services versus traveling for onsite data collection. Resources can also be used much more effectively if customer data can be collected in advance of site visits.

GROWING REVENUE STREAM – Service providers enjoy a growing and stable revenue stream with a “pay as you grow” model instead of a large upfront capital investment.

REDUCED COSTS AND FASTER TIME-TO-MARKET – achieved by eliminating busywork, layering additional services as Service Providers establish trusted relationship with customers.

STICKINESS – Creating actionable insight from customers' sensor-based data in real-time advances better quality services, better quality products and new services/sales opportunities.

From Information Overload To Actionable Intelligence: How a large OEM Utilizes Connected Services to Elevate Brand Equity

In today's competitive marketplace, Original Equipment Manufacturers (OEMs) are differentiating their brands by shifting from a product- to customer-focus. Part of this strategy is adding service offerings to improving overall ownership experience. One of the challenges is creating a commercial framework that creates a collaborative environment to address key performance metrics.

As a premier manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines, and diesel-electric locomotives, this company has created customer-focused services to optimize maintenance and equipment performance for their customers. With over three million sold units in service globally, capturing data in real-time and creating actionable information became challenging. This company utilized OSIsoft to meet key business and operational challenges:

BUSINESS & OPERATIONAL CHALLENGES

- Improving brand equity by offering service to their customers to increase availability and reduce total cost of ownership of sold units.
- Capturing and transmitting large amounts of operational data from over 3 million remote units to a centralized monitoring and diagnostic center
- Gaining customer trust for service recommendations such as equipment repairs, rebuilds, and maintenance
- Using customer data to visualize and analyze equipment performance to improve repair recommendations
- Identifying persistent issues before they cause equipment failure at customer sites

BENEFITS

- Accessing real-time, sensor-based data from remote assets decreased time to solution, improved service recommendations, and scaled domain expertise
- Created transparency around service recommendations and improved their understanding of product performance in relation to customer operating patterns
- Further differentiated themselves in the marketplace with value added services
- Achieved longer term intimacy by helping customers improve equipment availability and decrease operating costs
- Design and maintenance teams improved their understanding of customer equipment applications, persistent issues, and accuracy of their recommendations

From Corn To Process Efficiency: How Syngenta Utilizes OSIsoft Connected Services to Drive Collaborative Services

SYNGENTA employs more than 28,000 employees in over 90 countries and is dedicated to a single mission: to bring plant potential to life. Through world-class science, global reach and commitment to customers, Syngenta helps increase crop productivity, protect the environment and improve health and quality of life. Syngenta's Enogen® technology, a corn that contains the amylase enzyme, is designed for use in the dry grind ethanol industry to increase process efficiency by reducing the viscosity of corn mash slurry. As a supplier, Syngenta was challenged to find a way to demonstrate the benefits of Enogen to decision-makers at ethanol plants. They utilized OSIsoft Connected Services to meet the following key business and operational challenges:

BUSINESS & OPERATIONAL CHALLENGES

- Selecting a tool to expose customer data to multiple stakeholders, each with different domain expertise and in different locations
- Determine optimal blend of Enogen corn for ethanol plants
- Effectively use data and key performance indicators to demonstrate process improvements due to Enogen
- Establish credibility as a trusted advisor and partner
- Drive adoption of Enogen as strategic product for ethanol plants

BENEFITS

- Quantified significant enhancements in process efficiency, yield, and throughput due to Enogen
- Established a business relationship built on data and trust
- Maintained predictable cost structure with “pay as you grow” model
- Expanded services footprint as more ethanol plants adopt Enogen technology and through deepened customer intimacy

FINAL CONSIDERATIONS

Today's innovative industrial service providers are embracing a Connected Services approach to accessing customer data for better visibility, reduced costs, an enhanced customer experience and the ability to provide premium services. OSIsoft's Connected Services solution delivers the power of the PI System to industrial service providers, freeing them to focus on their core business of sales, evolving intellectual property and serving their customers. With an OSIsoft Connected Services framework, service providers gain real-time insight into customer issues to deliver better services while seamlessly leveraging ongoing upgrades -- all without prohibitive upfront capital investment.

ABOUT OSISOFT, LLC.

OSIsoft, a global leader in operational intelligence, delivers an open enterprise infrastructure that connects sensor-based data, operations and people to enable real-time, actionable insights. For over thirty years, OSIsoft customers have embraced the PI System to manage process optimization, quality control, regulatory compliance, risk mitigation, and asset health. OSIsoft is a privately held company headquartered in San Leandro, California, U.S.A, with offices around the world.

For more information about Connected Services, please visit:

www.osisoft.com/corporate/connected-services/index.html.

