



Rolta OneView™

Enterprise Intelligence Suite



*Moving Upstream Operations
in the Right Direction*

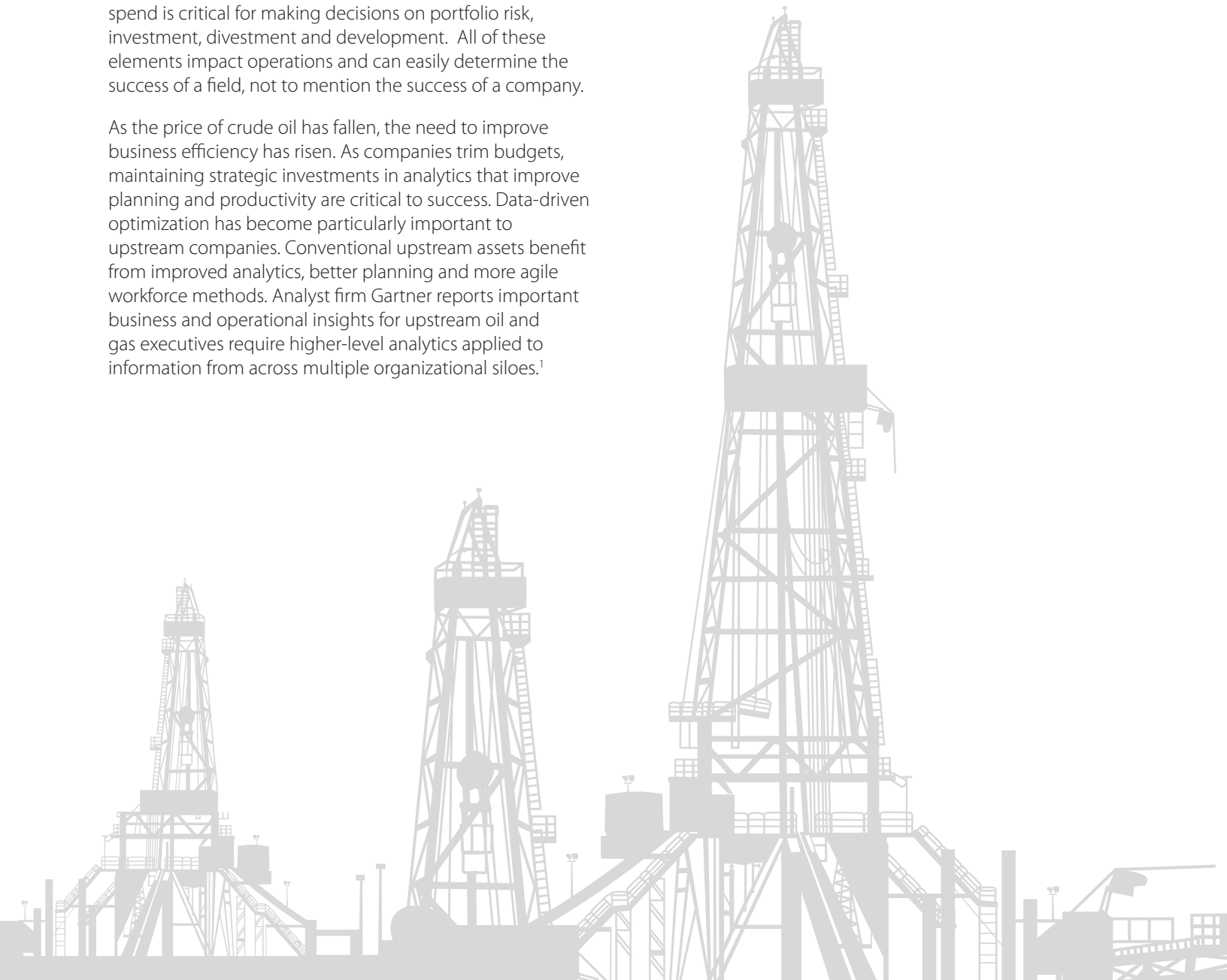


Operating in a Challenging Environment

Upstream oil and gas companies are operating in challenging times. They are trying to maintain optimal production levels while increasing recoverable reserves and reducing unplanned well down-time. They are implementing processes to improve their use of technology to proactively detect anomalies, manage remote well operations, organize logistics and improve recovery from reservoirs they acquire and develop. Additionally, market price volatility demands accurate and timely visibility to portfolio production yield. Managing CAPEX and OPEX spend is critical for making decisions on portfolio risk, investment, divestment and development. All of these elements impact operations and can easily determine the success of a field, not to mention the success of a company.

As the price of crude oil has fallen, the need to improve business efficiency has risen. As companies trim budgets, maintaining strategic investments in analytics that improve planning and productivity are critical to success. Data-driven optimization has become particularly important to upstream companies. Conventional upstream assets benefit from improved analytics, better planning and more agile workforce methods. Analyst firm Gartner reports important business and operational insights for upstream oil and gas executives require higher-level analytics applied to information from across multiple organizational siloes.¹

The amount of data that upstream oil and gas companies generate each year is exploding, in no small part due to the adoption of new operational technologies being used for exploration and production. Unfortunately, the current technology platforms these enterprises have in place limit the amount of data easily accessible to decision makers to only a tiny fraction of what is available. To improve and optimize processes, a new approach is needed.



Transforming Data into Insight

Upstream oil and gas companies generate data from many sources at each stage of the upstream lifecycle: exploration, engineering, operations (including drilling, equipment, reliability and location data), projects and business transactional data. Consider the situation of a large oil field with hundreds of wells, in which managing all the different data types from myriad companies, partners and vendors is frustratingly complex. Not only that, the heavy influx of information from well-bores, multi-lateral and instrumented data places an enormous load on existing systems relied on for decision making. This data, plus real-time information from current wells, needs to be stored, processed, analyzed and disseminated in a usable manner – truly the ‘Big Data’ challenge of today.

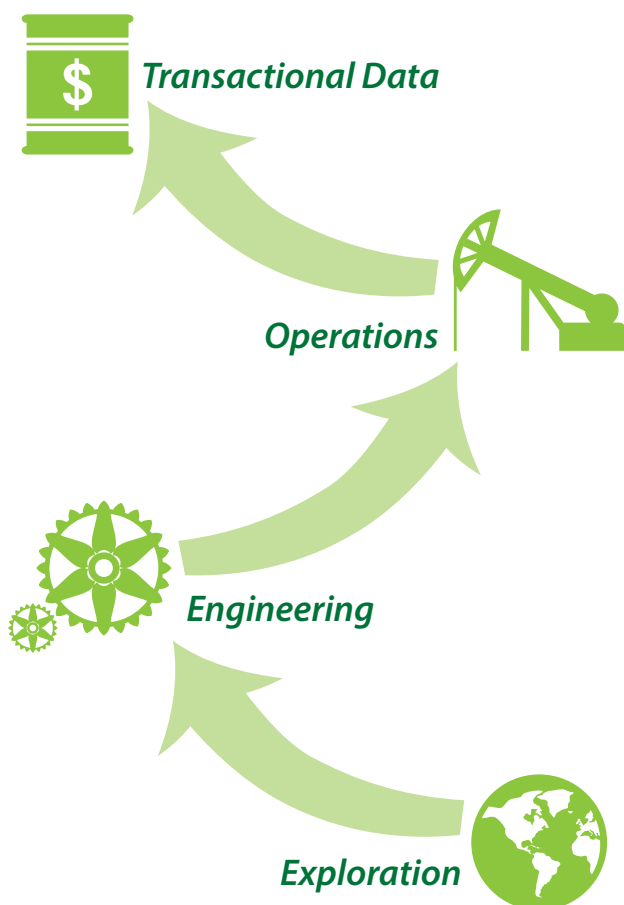
Upstream companies want to increase the speed, accuracy and frequency of data analysis in order to gain a more precise view of their operational successes and challenges, allowing them to make faster, more effective decisions. Yet the data they need access to is often held in functional silos throughout the enterprise. With numerous disparate Information Technology and Operational Technology (IT-OT) systems, it becomes difficult for a company to get a holistic picture. Often manual intervention is required to reconcile business data from disparate systems, which is time consuming, error prone, and not sustainable over time. Basically, data gathered by upstream oil and gas operations has tremendous potential, but its use is stymied by inaccessibility and complexity.

To realize the full potential of data-based insights, a comprehensive solution is needed to gather, cleanse, correlate and consolidate multiple disparate sources, transforming an operation’s ability to drive improvements in efficiency and achieve higher rates of operating success. A variety of analytical tools and methods – including operational, real-time intelligence, locational, predictive and Big Data analytics – provide the most comprehensive insight. The pursuit of effective IT-OT integration and cross-functional analytics can streamline processes, optimize costs and create substantial value.

Value comes from the continuous improvement possible when organizations have complete insight into their operations and processes. Organizations need to make continuous, real-time improvements across key functional areas of their business (i.e., reservoir management, drilling, sub-surface, production operations, facilities management and pipelines, etc.) and set measurable financial, operational, and safety goals. Effectively managing these improvements is directly tied to how well an organization is able to convert an array of operational and business data into meaningful insight that will directly affect the bottom line.

This is not a ‘nice to have.’ It is mission critical. The ability of upstream oil and gas companies to obtain insights from their data is a key part of the journey to achieving Operational Excellence.

Upstream lifecycle transactional data



Introducing Rolta OneView™

Rolta OneView is an enterprise intelligence solution powered by SAP HANA that enables role-based, actionable insight and correlated operational and Business Intelligence (BI). Rolta, a strategic SAP software solution and technology OEM partner, developed the solution using the skills of its BI technology experts working closely with oil and gas industry specialists, all with decades of firsthand experience with industry processes and challenges.

Rolta's industry expertise is reflected in the data models and KPIs of Rolta OneView, which are specific to the oil and gas industry and include more than 350 pre-built metrics derived from industry standards and upstream knowledge models. The solution combines the core functionalities of information technology with engineering and geospatial information systems. It extracts key information from the functional and operational systems in each business area, verifies the integrity of the information and aggregates it to an industry-standard data model that supports improved decision making.

Rolta OneView breaks down the fundamental barriers to achieving operational and business excellence, effectively eliminating silos across operational, business, safety, sustainability and enterprise social networks. It touches the nerve center of all critical functions, quickly integrating with existing systems to provide a 360-degree view of the enterprise. An industry-specific Knowledge Model helps instill best practices throughout the enterprise and accelerate process improvements. Rolta's OneView

for SAP combines the best of Rolta's domain expertise with field-proven technologies to deliver faster ROI and dramatically lower Total Cost of Ownership.

With Rolta OneView, your operations team can access a single version of data to manage processes and make faster, more informed decisions to operate the business. The assimilated information is presented in dashboards and reports designed to provide actionable, role-based insights. When something requires attention, the solution generates alerts so managers can quickly drill down through the data to identify root causes and speed resolution.



Rolta OneView brings a unique perspective to upstream oil and gas intelligence. It monitors operational and asset performance KPIs while at the same time delivers insights across asset classes like shale, offshore, deep water and conventional oil and gas. These insights result from the nexus of analytics derived from functional (operational) areas, presented in a single, unified view that brings together descriptive, predictive and prescriptive analytics.

Rolta OneView in More Depth

Rolta OneView for upstream oil and gas provides analytics and insight for major areas of operations, including shale oil and gas, offshore, deep water, conventional and unconventional projects. Asset insights are based on performance measures for these specific project areas and integrate with operational systems (like SAP Plant Maintenance). The innovative solution improves work execution and decision making by providing asset and engineering data to workers in a single, unified view.

Comprehensive analytics capabilities deliver the right information at the right time so that executives can make the right decisions. For example:

- Descriptive analytics inform the manager how the wells performed in the past year.
- Predictive analytics tell the manager about the well's probable future production performance, using a variety of statistical, modeling, data mining and machine-learning techniques.
- Prescriptive analytics specify remedial actions to prevent a well from shutting down (for example, due to degradation issues such as excessive wax deposits or sand production).

Predictive and prescriptive analytics capabilities proactively identify potential areas for equipment failure, while enhancing process safety, integrity management and decision making at all levels of operations.

- Level 0 – Enterprise
- Level 1 – Plant
- Level 2 – Unit
- Level 3 – Process

While business insights deliver the high-level visibility that CXOs need, individual KPIs bring clarity and understanding to operational managers. With timely access to integrated, enterprise-wide data, companies can speed up their decision making and improve consistency in work execution.

For example, high-level corporate business drivers supported by operations and engineering processes at business unit levels include, among others:

- Production volumes stewardship for oil, gas, condensate and produced water
- Oil and gas reserves management and stewardship to meet corporate goals
- Exploration and drilling goals for target counts, drilled depths and completion
- Financial stewardship regarding expenses, returns and best capital utilization
- Most importantly, to manage the health and safety of the company's most important asset – its people

Figure 1 below shows the high-level corporate business drivers and ways that Rolta OneView helps manage and monitor them to drive operational and asset-level excellence and efficiencies across the company.



Figure 1: Rolta OneView Upstream Executive Dashboard

Some of the key benefits Rolta OneView delivers are:

- Enriched tracking of field and well performance
- Enhanced management of reserves and asset utilization
- Better well and pipeline integrity surveillance
- Increased sustainability of business operations
- Optimized crude blending
- Improved safety and compliance

Rolta OneView in Use: A Case Study

A global oil and gas company wanted to increase the overall reliability of its plants and improve the predictability and prevention of asset failures. This effort was aimed at integrating activities associated with Streamlined Reliability Centered Maintenance (SRCM), preventive maintenance, condition monitoring and surveillance, inspection and testing, long-term planning, equipment performance and causal analysis. The biggest hurdle to accomplishing these goals was that critical data was isolated in disparate systems and applications spread across the enterprise.

However, in just four months Rolta delivered the entire Operational Excellence and Reliability Intelligence platform across all assets, integrating 28 different data sources. The resulting system delivers vital reliability information on more than 100,000 pieces of equipment to hundreds of operations throughout the company. This new analytics capability created a culture where reliability has become a shared responsibility across different functional and business areas. Some of the benefits achieved include:

- Large number of reliability threats identified and resolved
- Major reduction in condition monitoring and surveillance exceptions
- Environmental exception events at a historical low
- Reduction in cost of incidents
- Increase in the run lengths of operating units

A Comprehensive and Scalable Solution Architecture

The architecture of Rolta OneView simplifies complexity across an enterprise's disparate data sources. The various plant operational and business systems are loosely coupled yet comprehensively integrated via the solution.

The heart of Rolta OneView is a data model based on industry best practices and recognized operational standards. This model maintains the cross-functional information collated from various data sources across operations, enabling performance management and analytics. Analytics include:

- Trends
- Slice-and-dice analysis
- Drill-down functionality
- Forecasting
- Predictive analytics
- Variance analysis
- Root cause identification
- Scenario planning
- What-if modeling

The solution is fully scalable across an organization's multiple sites and businesses, which enables consistency in asset and process performance measurement, as well as continuous improvement.

An organization can pace its adoption of pervasive business intelligence with Rolta OneView enterprise architecture. Built on the SAP BusinessObjects Business Intelligence and SAP HANA platforms, the architecture delivers a robust, reliable, maintainable and scalable foundation for pervasive analytics. The overall architecture, including performance analytics and real-time intelligence, is illustrated in Figure 2.

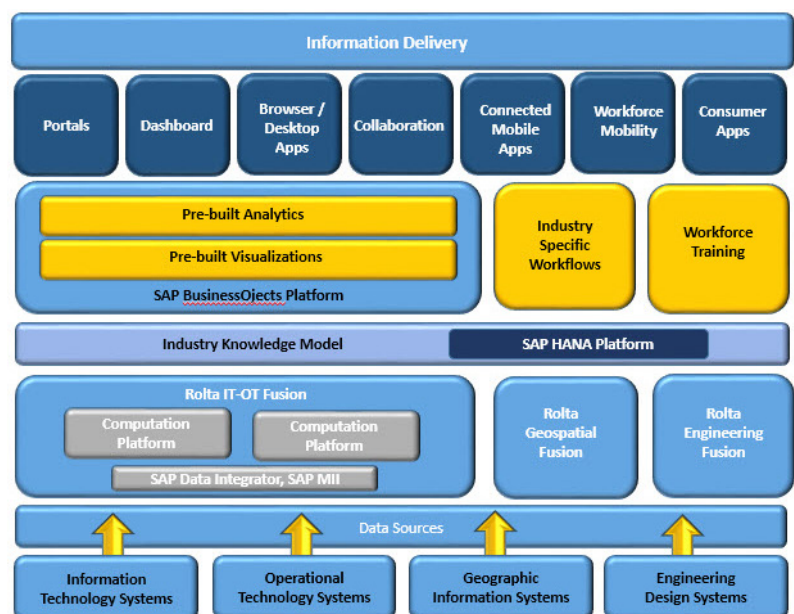


Figure 1: Rolta OneView Solution Architecture

Rolta OneView features comprehensive analytic functionality that enables historical, real-time, geospatial, Big Data, and predictive analytics on large and distributed data sets on a single platform. For example, Rolta OneView integrates engineering design systems with all other systems so that business users can analyze asset information across the entire lifecycle (i.e., 'as-designed' versus 'as-operated' versus 'cost-to-maintain'). They can interact with field and well models and view and analyze operational and design parameters, all from a single dashboard.

Functional components of the architecture include the following:

- IT-OT Fusion: Integration of real-time field operational systems such as SCADA and high frequency systems (such as PI) used in downhole and surface monitoring is combined with IT systems that include well, engineering and surface facilities
- Geospatial Fusion: Integration of location data such as XY values, global coordinate system (and conversions) for wells, along with well path trajectory data, combined with engineering and business data
- Engineering Fusion: Engineering designs of equipment and facilities combined with business data
- Knowledge Model (KN): Combines various oil and gas vertical-specific KNs (such as for reservoir, drilling, production, facilities, etc.) with functional KNs (assets, operational, Maintenance, HSE, etc.)



Figure 3: Rolta OneView Upstream Executive Dashboard Details

SAP Software Powers the Performance

Rolta OneView utilizes SAP HANA to deliver a high-performance analytics solution based on modern, in-memory, columnar data structures. The underlying metadata, modern dashboarding, ad hoc querying and analysis capabilities are built upon the market-leading BI platform SAP BusinessObjects. Rolta OneView leverages BusinessObjects Data Integrator for the Extract, Transform and Load (ETL) operations to build the data warehouse. In parallel, Rolta OneView is able to leverage the predictive analytics capabilities of SAP InfiniteInsight® and the visual data exploration interface provided by SAP Lumira. The result is that customers gain from the IT-OT fusion that Rolta OneView delivers, on top of a proven, modern, scalable technology platform provided by SAP – truly a profitable fusion of capabilities.

Rolta OneView – Designed and Built from Real-world Experience

Rolta is a company with decades of experience in combining IT, GIS, engineering and operational systems for the benefit of its customers. Rolta OneView was designed and built on the basis of hands-on experience in the oil and gas industry, and benefits from the insights of industry experts employed by Rolta, as well as feedback from our customers.

Rolta is proud of its global, strategic partnership with SAP, and is the winner of the coveted Pinnacle Partner award in 2014.

Start Your Journey Today

Why wait? Accelerate your journey toward achieving Operational Excellence with Rolta OneView. You will find that the solution enables you and other executives to make more well-informed decisions faster and improve operational processes and performance. Gain the holistic insight needed to strengthen profit margins, identify operational problems, improve safety and attain greater clarity about past, current and future performance. With Rolta OneView and SAP software, you can improve the synergy across people, technology and business processes to help your organization realize the full benefits of Operational Excellence.

For further information

To learn more about how Rolta OneView and SAP software can help your business achieve operational excellence, visit Rolta at www.rolta.com.

About Rolta

Rolta is a leading provider of innovative IT solutions for many vertical segments, including Federal and State Governments, Defense/HLS, Utilities, Process, Power, Financial Services, Manufacturing, Retail, and Healthcare. By uniquely combining its expertise in the BI, Big Data, Engineering and Geospatial domains, Rolta develops exceptional solutions for these segments. The Company leverages its industry specific know-how, rich repository of intellectual property that spans photogrammetry, image processing, geospatial applications, business intelligence, analytics, field-proven solution frameworks, and deep expertise in cutting-edge technologies like Geo BI, Cloud computing, Software Defined Infrastructure and Big Data for providing sophisticated enterprise-level integrated solutions. Rolta is a multi-national organization headquartered in India. The Company operates from 40 locations worldwide through its subsidiaries, and has executed projects in over 45 countries.

FOOTNOTES:

1. "How Forward-Thinking Oil and Gas CIOs Should Approach Price Declines," Gartner, December 2014