# Rolta OneView™ 6.0 for Oil & Gas Upstream

**DRIVING OPERATIONAL EXCELLENCE**

Through IT-OT Integration and Pre-Built Big Data Analytics

# Changing Paradigm

Upstream oil and gas companies are experiencing capex challenges of late, impacted by falling crude prices and relatively stagnant operational expenses. There is a growing emphasis on asset planning and optimization, digital oil fields and integration of data with processes. The shift towards real-time, data-driven operating models enables seamless integration of functional silos and cross functional insights replacing manual spreadsheet based metrics. With exponentially streaming volumes of structured and unstructured data, oil and gas majors are overwhelmed by the wealth of information that necessitates a unified and integrated analytics solution for deriving meaningful and timely insights to take more informed, strategic and operational decisions. Accordingly, upstream producers have to harness new technological advances such as digitization and Big Data Analytics to unlock the value of dark data and provide greater insights to business owners.

Simultaneously, the growth of unconventional upstream assets has changed the global balance of supply & demand of hydrocarbons. Successfully harvesting unconventional reserves requires a large number of low-cost wells that requires coordination of many parallel streams of activity, entailing the need to maintain complex plans, control costs and streamline the execution of operations. This needs a new data driven approach that leverages advanced sensors, collaborative workflow and relevant key performance indicators to build analytics. Integrating real time operating data with other business information to optimize business performance of major assets through IT - OT integration enables descriptive, diagnostic and predictive analytics.

## Industry Challenges

- The oil and gas upstream industry is in a flux and companies are operating in more challenging, dynamic, volatile and complex environments

- There is a lack of integrated functional planning and operations with manually intensive processes that are inadequate for the fast pace and agility of unconventional business assets. This is impacting conventional business assets and production practices

- Fragmented business management tools with low degrees of system integration, data quality challenges and lag in reporting timelines

- Managing and deriving meaningful conclusions from the huge volumes of data

- Joint venture based business operations and geographically separated assets

# Rolta's Out-Of-The-Box Solution

Rolta OneView™ Enterprise Suite is a comprehensive solution that brings unique business value through role-based actionable insights and correlated operational & business intelligence. This helps drive organizational strategy across the value chain, through informed decisions resulting in the desired business transformation.

Rolta OneView™ breaks down the fundamental barriers to achieving operational and business excellence, such as silos, across operational networks, business networks, safety and sustainability networks and enterprise social networks. It provides a 360-degree view of the enterprise and touches the nerve center of all critical functions, quickly adapting to existing systems, instilling best practices and accelerating the process of improvement.
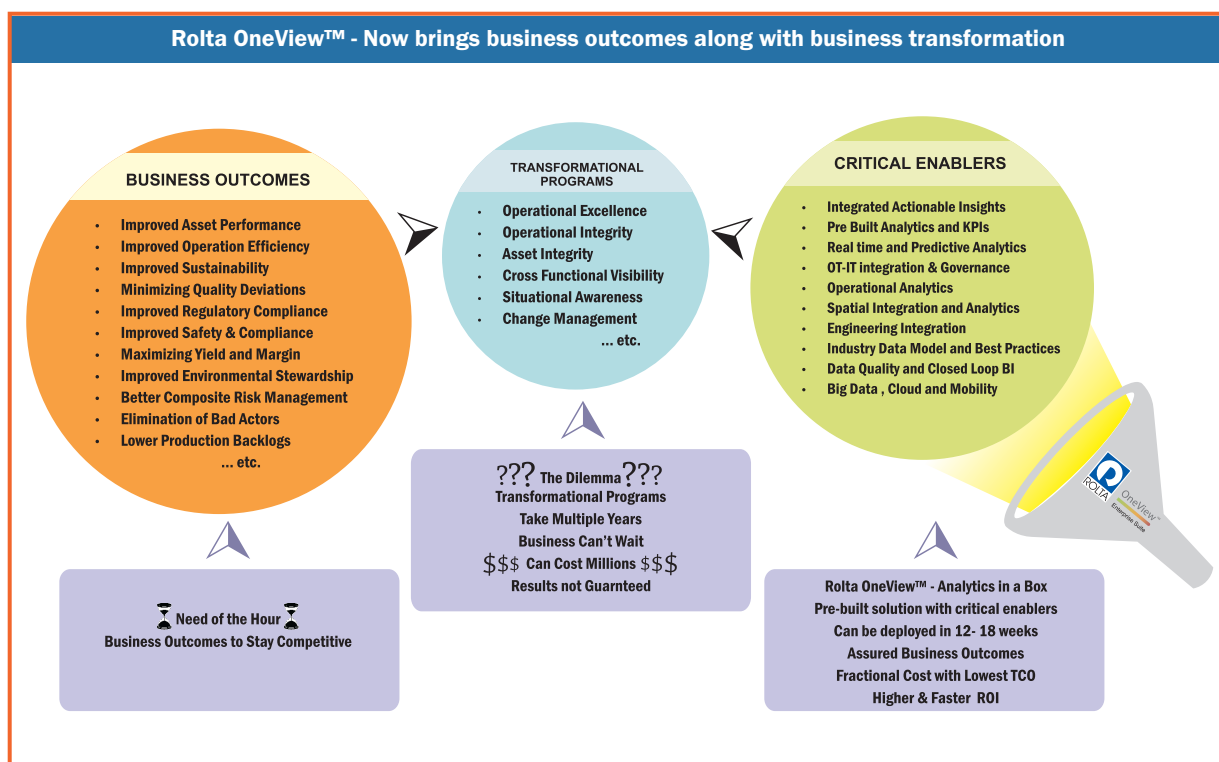


The enterprise solution provides role based KPIs and actionable insights to empower every role to achieve its individual and organizational objectives while ensuring that there is a 'single version of truth' across all those levels. Rolta OneView™ simplifies the information complexity in the enterprise by providing loosely coupled, yet comprehensive integration across the operation and business systems with a "Integrate-Analyze-Deliver" approach built by leveraging best of breed platforms.

The rich knowledge model of Rolta OneView™ provides enterprise wide multi-site as well as cross function visibility across areas such as Operations, Assets, Maintenance & Reliability, Supply Chain, Health Safety & Environment, Projects and Business for effective decision making. Each of these modules is fine-tuned for the specific industry suite that it caters to, providing domain-specific KPIs. Different modules

focus on industry-specific key processes across the value chain, allowing seamless integration and cross-functional visibility. Rolta OneView™ thereby effectively delivers deep insights to facilitate tactical, operational and strategic decision-making and in turn effectively supports a variety of enterprise initiatives such as Operational Integrity, Asset Integrity, Operational Excellence, Change Management, Risk Mitigation, etc.

Rolta OneView™ 6.0 Enterprise Suite is engineered and certified on SAP HANA. It exploits the power of SAP HANA and provides in-memory computing, high performance, real time and predictive analytics capabilities. Rolta OneView™ Enterprise Suite has been architected and designed for multi-site, multi-tenancy operations and can be deployed as a single server instance either in an organization's private, hybrid or a public cloud environment to support multiple sites across the globe. Rolta OneView™ on Cloud helps the LOBs to see the benefits without any Capex investments.



**Rolta OneView™ - Now brings business outcomes along with business transformation**

**BUSINESS OUTCOMES**
- Improved Asset Performance
- Improved Operation Efficiency
- Improved Sustainability
- Minimizing Quality Deviations
- Improved Regulatory Compliance
- Improved Safety & Compliance
- Maximizing Yield and Margin
- Improved Environmental Stewardship
- Better Composite Risk Management
- Elimination of Bad Actors
- Lower Production Backlogs
    ... etc.

⧗ **Need of the Hour** ⧗
Business Outcomes to Stay Competitive

**TRANSFORMATIONAL PROGRAMS**
- Operational Excellence
- Operational Integrity
- Asset Integrity
- Cross Functional Visibility
- Situational Awareness
- Change Management
    ... etc.

??? **The Dilemma** ???
Transformational Programs
Take Multiple Years
Business Can't Wait
$$$ Can Cost Millions $$$
Results not Guarnteed

**CRITICAL ENABLERS**
- Integrated Actionable Insights
- Pre Built Analytics and KPIs
- Real time and Predictive Analytics
- OT-IT integration & Governance
- Operational Analytics
- Spatial Integration and Analytics
- Engineering Integration
- Industry Data Model and Best Practices
- Data Quality and Closed Loop BI
- Big Data , Cloud and Mobility

**Rolta OneView™ - Analytics in a Box**
Pre-built solution with critical enablers
Can be deployed in 12- 18 weeks
Assured Business Outcomes
Fractional Cost with Lowest TCO
Higher & Faster ROI

# Pre-Built Industry Value Scenarios for Oil and Gas Upstream – Illustrative Examples

Upstream companies operating in global markets continue to leverage technology to address business improvement. Rolta OneView™ leverages over 200 value scenarios with 400+ KPIs that can be monitored on a continuous basis built upon industry-specific data models to provide cross functional insights at operational, tactical and strategic levels.

### Operational Excellence

In increasingly globally competitive markets, upstream companies are looking towards Operational Excellence (OpX) as the key to drive long term success. OpX programs tend to require cross-functional visibility by drawing information from multiple functions like Operations, Assets, Maintenance & Reliability, Health Safety & Environment, Projects, Supply Chain, Finance, Human Capital, etc. The key benefits value by Rolta OneView™ include:

- Improved field and well performance tracking to sustain entrepreneurial spirit amongst departments and business functions with clear understanding of productivity targets by all stakeholders

- Reliable prediction of well production and capacity utilization of assets

- Measuring operational and maintenance metrics accurately and monitoring assets through appropriate operational levers, driven by data

- Aligning equipment non-availability at a micro level to top line impact at a macro level

- Integrated view of production operations for people to collaborate, discuss and examine data together

**Enterprise dashboard to monitor and analyse business performance**



At the top decision making enterprise level, an integrated view of upstream operational excellence performance is provided based on organization-specific focus areas. Various elements shown in this view can be drilled down further at different levels to understand specific aspects like availability, capacity utilization, operating expenses, safety performance, etc. for user-selectable time periods. Rolta OneView™ provides rich intuitive graphical representation of this information, to aid analysis and decision making.

Water injection is an important function in upstream operations, aimed to improve productivity. Rolta OneView™ provides drill downs from the enterprise level dashboard to analyse water injection performance, for bringing greater visibility on daily, monthly and annual production and comparing them against planned values, besides indicating details of non-producing wells, with further provision to drill down into the root causes for deviations. Operation managers benefit from in-built threshold alerts and notifications, as well as corresponding workflows to take appropriate proactive actions.

**Oil & Gas Production, Water injection performance for various fields**



**Downtime analysis of wells with embedded GIS view**
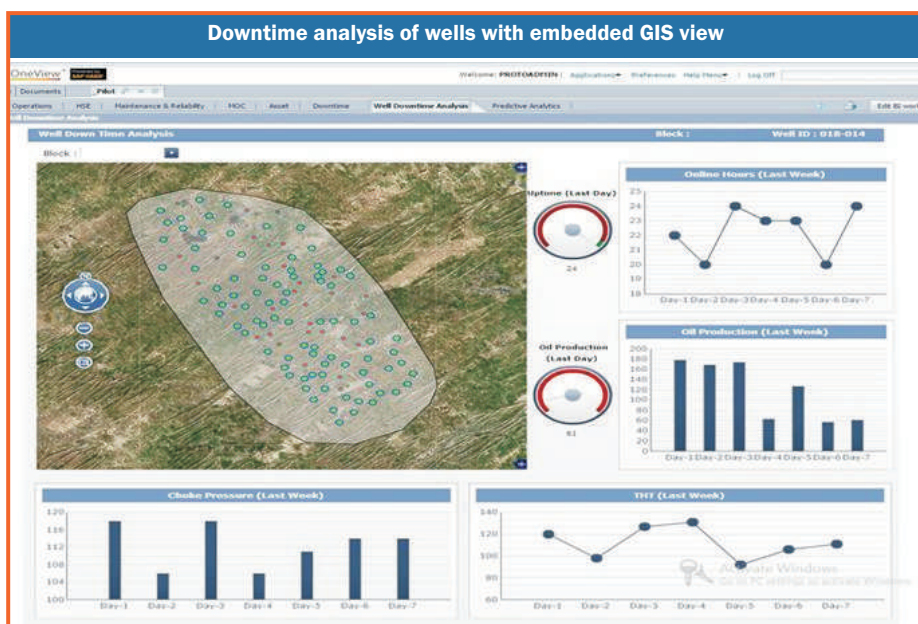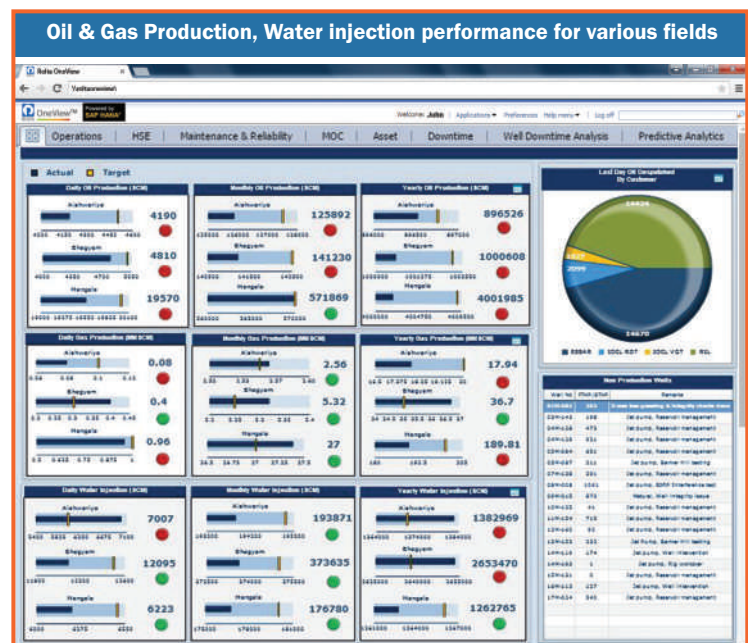


In geographically spread upstream operations, the user is assisted by in-built geospatial views and locational intelligence to analyse downtime for a selected well from among several. These wells are highlighted on the map with colour coding based on pre-determined performance targets and codification for non-adherence to plan values. Selection of the well on the map provides detailed analysis on parameters like well production performance, production hours, choke pressure etc. on a daily basis.

Note : The above dashboard views contain mock data and are shown for illustrative purposes only.

## Asset Integrity

Asset Integrity Management (AIM) is a crucial function in asset intensive industries, with significant impact on production, costs and profitability. Rolta OneView™ helps upstream companies gain greater contextual visibility into their asset integrity programs, providing benefits like

- Improved well and pipeline integrity surveillance and well downtime analysis

- Adequate visibility into subsea, onshore and offshore asset performance and operational & maintenance costs

- Aligning asset performance to corporate objectives with clarity of ownership

- Maintenance efforts to be accountable, coordinated, condition based and proactive

- Leveraging systems perspective to know relationships of multiple business functions between reservoir, wells, networks and facilities

- Monitoring wrench time for crews with scientific tool time analysis and productivity metrics

Rich visualizations through management cockpit provide 360-degree view of the assets, and associated initiatives from various perspectives. Further drill downs to specific asset feature information collated from a spectrum of IT systems like ERP, EAM, etc. along with real-time information from OT systems, to take correct timely decisions and avoid downtime or failures.


Enterprise level view for asset integrity
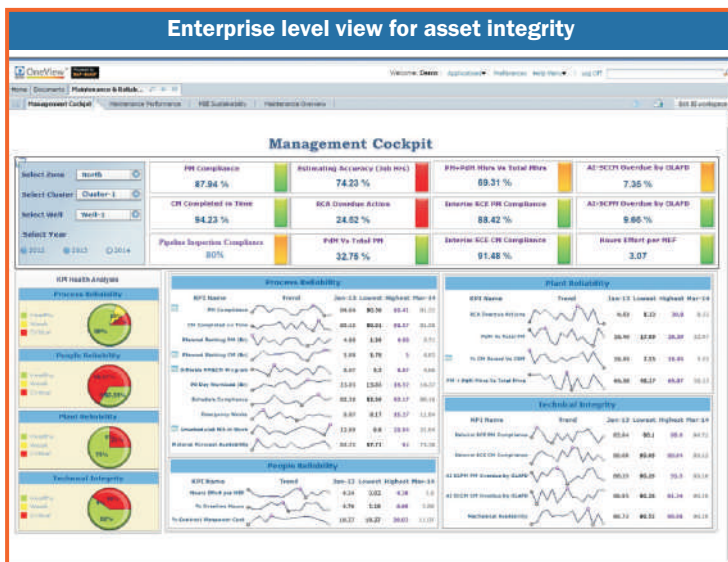
Insights at a enterprise level leverage select KPI's like PM compliance, RCA due, CM compliance, Pipeline Inspection compliance, etc.

The insights can be categorized into process, people, plant and technical integrity with an intuitive color coding for quick status information and drill down to analyze the KPI for corrective and preventive measures.

Management of long distance pipeline networks require insights into pipe-line inspection compliance, with visibility into the respective inspection reports on corrosion loops and colour coding of the pipe-lines where inspection is due or where inspection is done but equipment is not meeting MAT (minimum allowable thickness). With Rolta OneView™, users can select a specific pipe segment to analyse past inspection reports and know the trend of measured thickness over time. The solution supports a highly collaborative environment and generates alerts to respective stakeholders, who manage pipeline integrity, where anomalies were found.
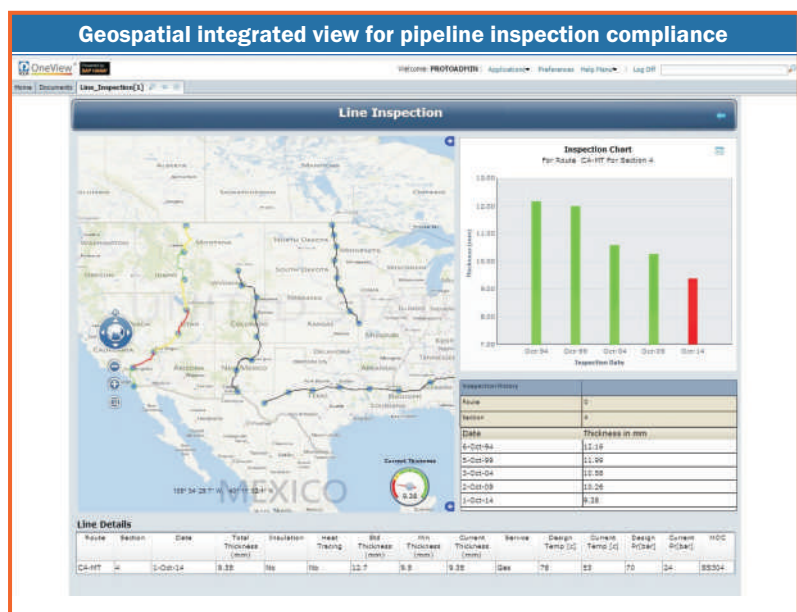

Geospatial integrated view for pipeline inspection compliance

Note : The above dashboard views contain mock data and are shown for illustrative purposes only.

## Predictive Maintenance

While descriptive and diagnostic maintenance analytics help drill into past performance, it is critical for companies to leverage past learnings, analyze real-time data, and proactively identify potential hazards and execute preventive maintenance activities to avoid costly failures. Predictive maintenance benefits supported by Rolta OneView™ include

- Monitoring real time performance of hundreds of critical assets with thousands of variables

- Reduction in unscheduled failures and interruptions that affect topline, people and process safety

- Proactively identifying incipient events before they grow in proportion and impact performance

- Leveraging enterprise data landscape for developing insights and generating alarms as needed

- Balancing corrective and preventive maintenance tasks to reduce backlogs

Rolta OneView™ provides predictive analytics against a backdrop of plant schematics, to help maintenance specialists focus on their core competencies and take timely actions, without wasting time analyzing chunks of large datasets.



Fig 1    Tag analysis for predicting the failure of gas turbines
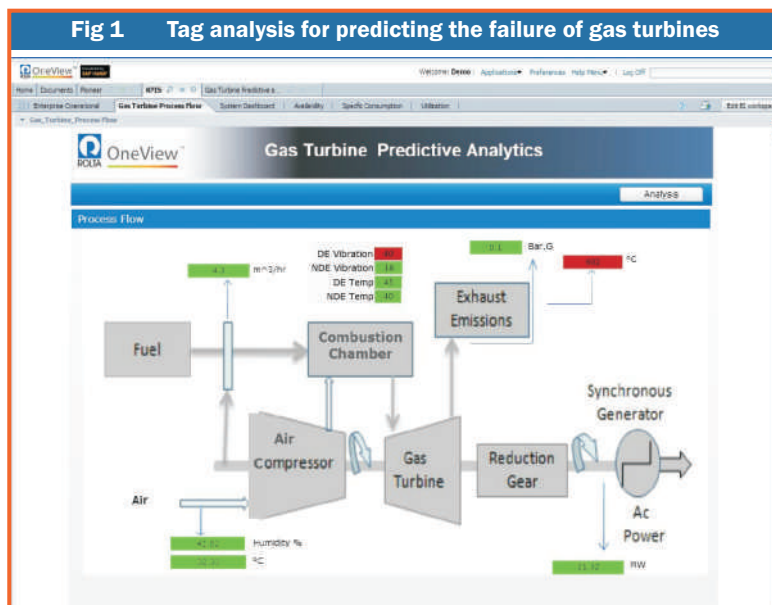
Users can drill down further to real time monitoring capabilities with smart alerts for all equipment located onshore and offshore. This also indicates risk status for the selected equipment that indicates operating parameters and asset health parameters on the schematic with colour coded status on a real-time basis. The system is capable of generating alarms based on statistical models by continuously processing real time data and enabling proactive interventions by operating personnel.
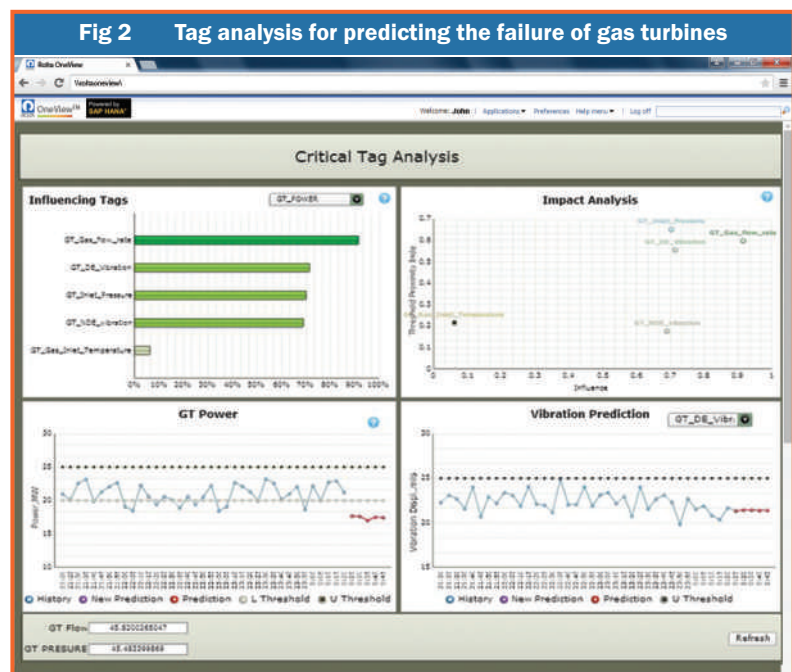


Fig 2    Tag analysis for predicting the failure of gas turbines

Note : The above dashboard views contain mock data and are shown for illustrative purposes only.

## Managing Safety and Risk

Appropriate and timely risk management is critical to ensure continued business sustainability. Risk value scenarios supported by Rolta OneView™ support

- Unified view of risk management encompassing multiple processes and systems

- Rigor in understanding integrity barriers and discipline in adhering to pre-set targets

- Identification, monitoring, and managing bad actors on a continuous basis



Enterprise wide view of process safety management

The system provides an enterprise wide view of the safety and risk element status for select asset including tier 1, 3 PSE rates, safety critical equipment by-passed, corrective & preventive maintenance work orders overdue, etc. It is is capable of generating alerts in those areas where the existing real-time value has breached the target value , with drill down provisions.

Rolta OneView™ supports enterprise wide insights into the technical integrity parameters along with GIS integration. It also features drill downs into the risk dashboard, indicating the risk status of the safety barriers of technical integrity - with multiple elements encompassing structural integrity, process containment, ignition control, detection systems, protection systems, shutdowns, emergencies, life saving processes and systems.



Technical Integrity risk monitoring with various safety barriers for a selected plant

Note : The above dashboard views contain mock data and are shown for illustrative purposes only.

## Cost Containment

Reducing costs are key to improving business profitability. The key benefits of this value scenario include:

- Critical repair vs. replace decisions for assets based on lifecycle costs

- Monitoring planned vs. actual expenditure on near real time basis

- Seamless alignment between finance and operations metrics for work prioritization and optimization

- Transparency and awareness on specific production costs



Detailed Maintenance Cost expenditure monitoring analytics

Rolta OneView™ provides an enterprise level view of cost analysis for maintenance, with respect to visibility into various costs incurred under different heads.
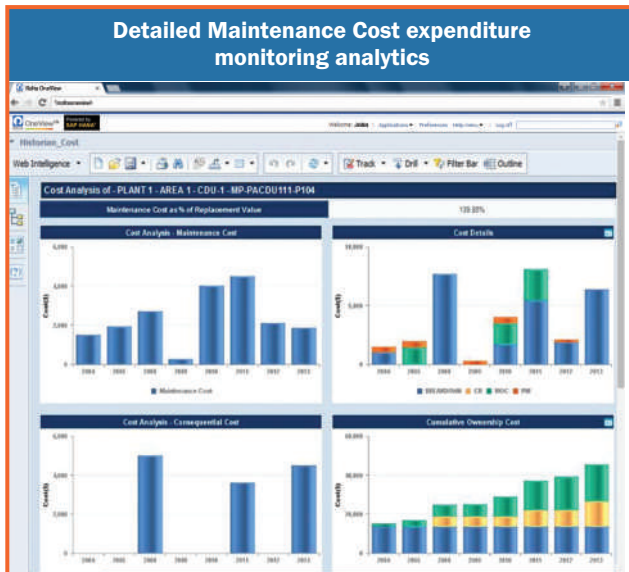
Authorized users can further drill into detailed maintenance Cost expenditure from the enterprise level dashboard. The view provides activity rates across the selected plant for maintenance activities and generates alerts for any activity that is going over the budget numbers.



Detailed Maintenance Cost expenditure monitoring analytics



Asset/Plant level cost analytics integrated with 3D Engineering drawings
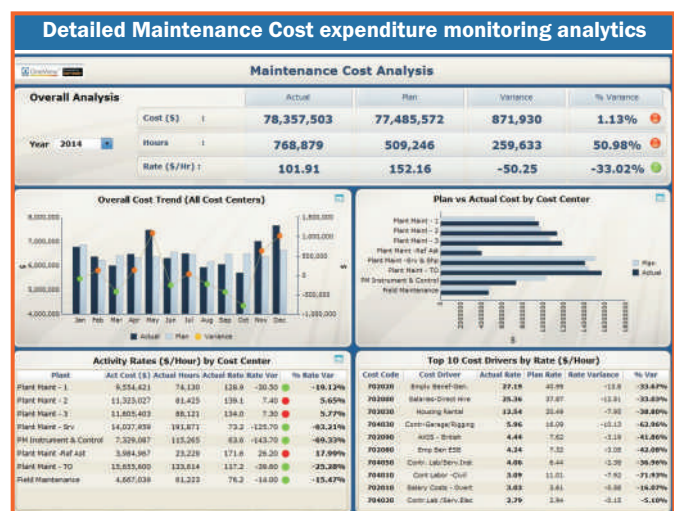
Asset/Plant level cost analytics integrated with 3D Engineering drawings enables selection of assets to provide cumulative ownership cost along with breakdown, thereby providing insights into the cost drivers for the selected plant.

Note : The above dashboard views contain mock data and are shown for illustrative purposes only.

## Managing Critical Projects

In large asset intensive and complex upstream environments fraught with several risks, managing projects is always challenging. Rolta OneView™ supports such value scenarios providing

- Visibility into project progress on near real time basis and controlling overruns - CPI and SPI

- Enabling macro levels re-planning aligned to field challenges and developing alternate schedules



Asset/Plant level cost analytics integrated with 3D Engineering drawings
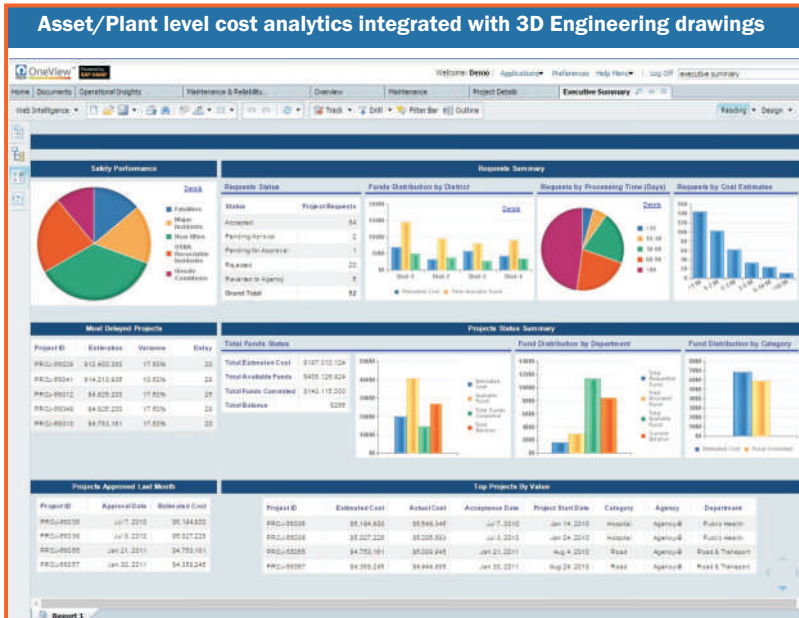
Delving deeper provides insights into the corporate view of project fund allocation and performance  with details of project fund allocation and status of funds availability, number of approved projects and list of high value projects, project request status, projects processing time, most delayed projects, project distribution by department, function, company etc.

Further investigation provides detailed project level performance analytics with location integration through a drill down of the previous enterprise level project dashboard and visibility into project performance indicators of the selected project like CPI, SPI, order placements summary, geospatial view of project location with different milestones like acceptance date, initiation date etc.
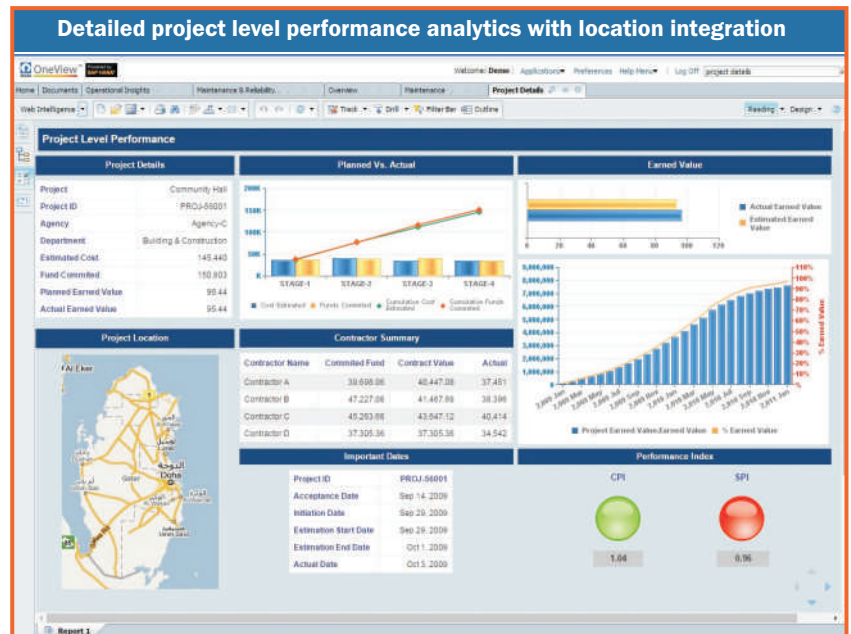


Detailed project level performance analytics with location integration

Note : The above dashboard views contain  mock data and are shown for illustrative purposes only.

## Energy Efficiency

In upstream scenarios, it is critical to optimize energy efficiency. Rolta OneView™ features energy efficiency scenarios that provide key benefits like

- Under-standing energy generation and consumption actors and their efficiencies

- Leveraging margin pricing, wherever appropriate for augmenting power generation

- Monitoring critical factors that contribute to energy inefficiencies and excess consumption



Enterprise level view of energy consumption with custom analytics on electrical energy
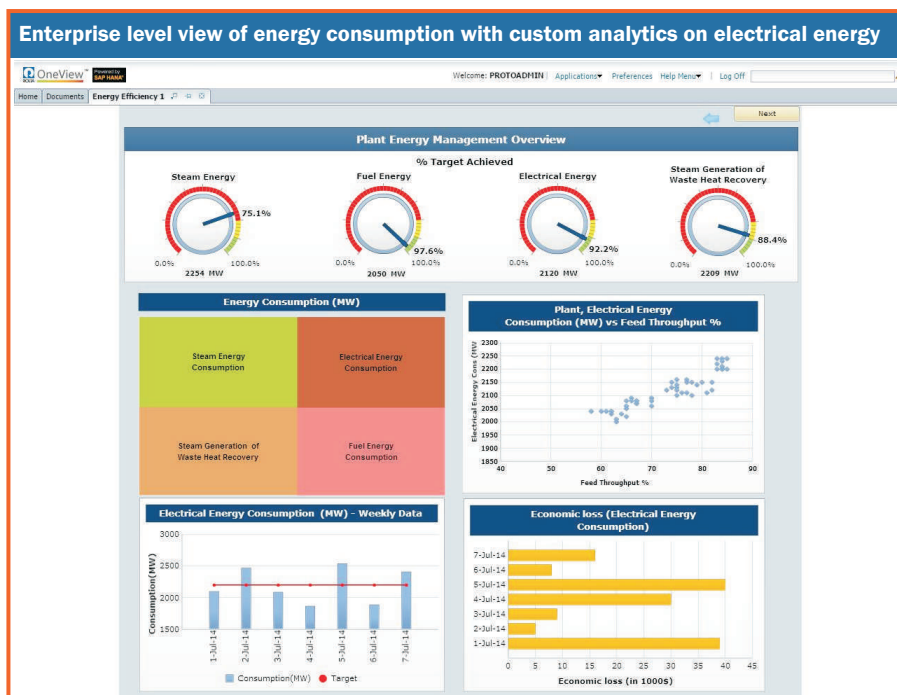
Probing further provides an enterprise level view of energy consumption with greater visibility into patterns of different types like steam energy, fuel energy, electrical energy, etc. Its also provides an analysis of plant energy consumption as a function of feed throughput that further captures the economic loss due to ineffective operations.

Users can investigate further and carry out a detailed analysis of energy consumption at an asset level with alerts through visibility into historical and real-time data for select equipment like a heater. The monitored KPI's include YTD runtime, efficiency, fuel consumption, stack temperature, $CO_2$ & NOX emissions, etc. and contribute in the quest for operational excellence.
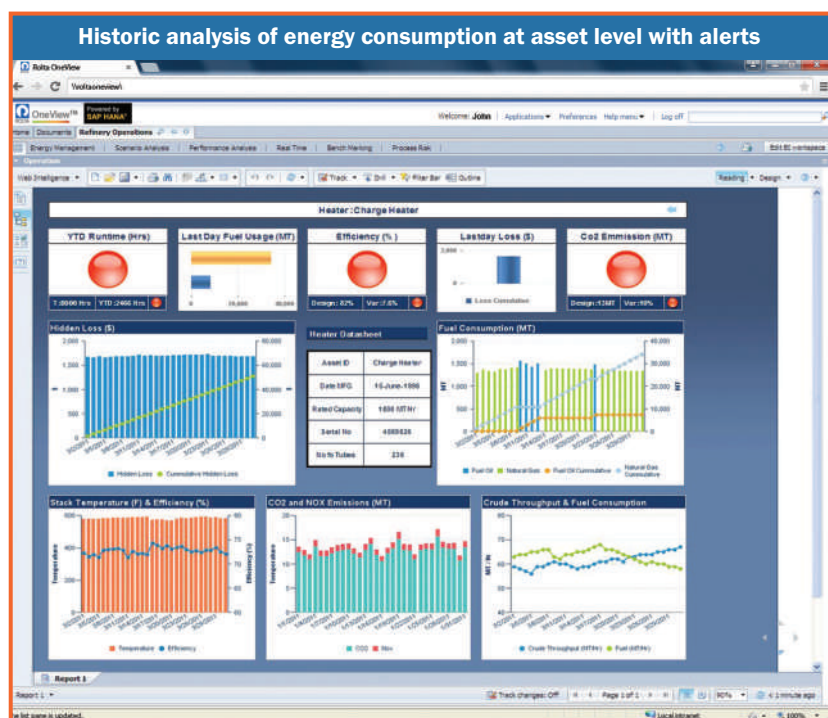


Historic analysis of energy consumption at asset level with alerts

Note : The above dashboard views contain mock data and are shown for illustrative purposes only.

## Regulatory Compliance

In increasingly regulatory and environmental pressures, companies can benefit from:

- The ability to compute the carbon footprint due to various activities within the company

- The ability to compute energy efficiency and to drill down to fuels and types of energies consumed, in order to optimize their usage



Carbon footprint analytics at Enterprise, Plant and Fuel level
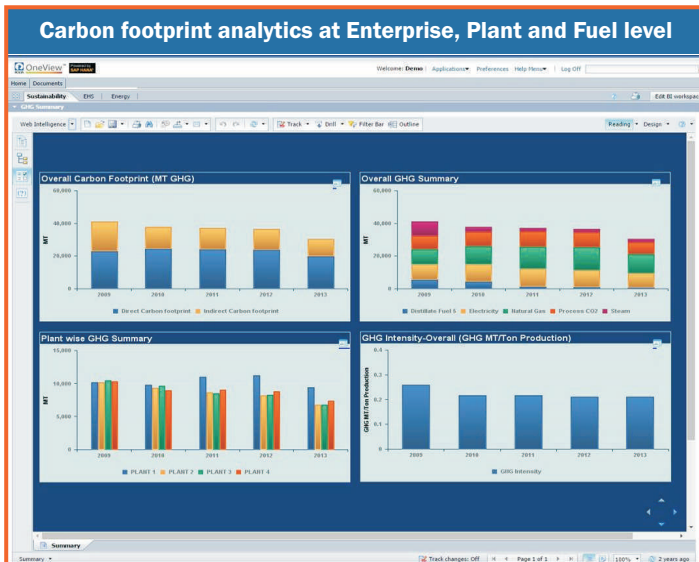
Drilling down further, this view provides insights into sustainability KPIs, that are computed on a need basis and highlighted, such as, overall carbon footprint, GHG summary, plant wise GHG summary etc., with drill down provision into plant and year-wise summaries.

## Enterprise Scorecard For Business Performance

From the overall business perspective, it is important to ensure synergy between various functional areas and drive the organization excellence strategy. Rolta OneView™ can help:

- Provide an enterprise level view for various corporate level KPI's covering areas like HR, Finance, Sales and Marketing

- Set targets for various supporting functions of the enterprise and track the performance against the targets

The enterprise score-card provides visibility into various functions like HR, Purchase, Sales that are measured and monitored. Alerts are generated where the status of a process or KPI breaches the target values. These cascaded KPIs help drive various organizational initiatives like Operational Excellence, and ensure percolation of organizational strategy at various levels, and drive pro-active culture to help objectively monitor and control performance.
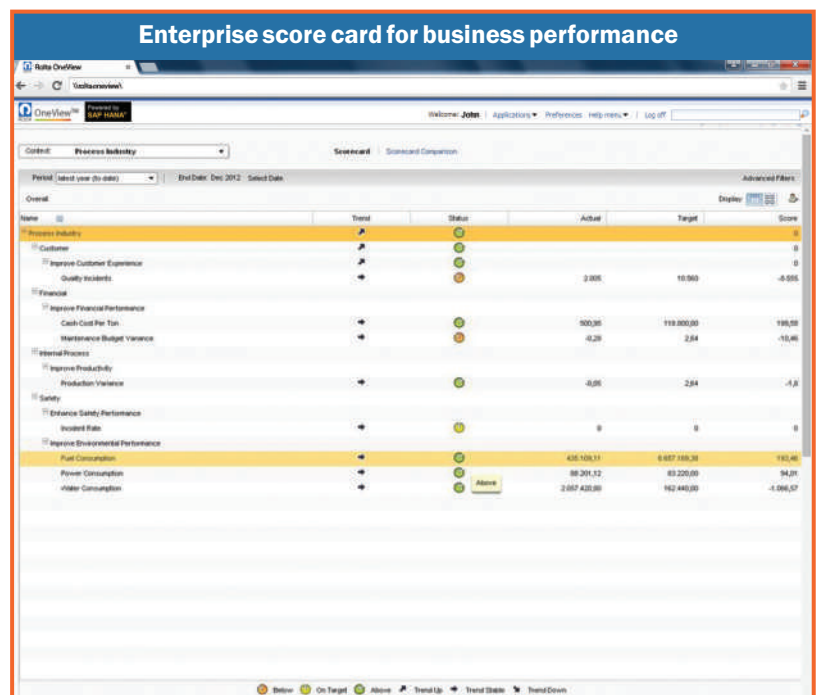


Enterprise score card for business performance

Note : The above dashboard views contain mock data and are shown for illustrative purposes only.

## Rolta OneView™ 6.0 - Unique Value Proposition
### Key Business Value Differentiators

**Pre-built, rapidly deployable** industry rich **Big Data Analytics** solution, rapidly deployable in 12- 18 weeks, brings faster ROI and lower TCO

**Deeper and broader coverage** across all the key business functions for each industry vertical - Oil & Gas Upstream/Midstream, Refineries, Petrochemicals, Chemicals & Utilities

**Role based dashboards** providing actionable insights - right information at the right time to the right users as a single source of truth

Seamless integration and tracking of **enterprise balanced scorecard** and strategy maps to **operational and role based KPIs**

**Modular solution with unified performance integrity model** designed for business priorities driven phase wise roll out – Operations, Maintenance & Reliability, Assets, Sustainability, Supply Chain, Projects, Business and HSE

Pre-built **business process driven knowledge model** providing cross functional visibility across **OT / IT / Spatial / Engineering systems**

**3000+ Pre-built KPIs** across verticals **[400+ for each industry]** bringing real time and diagnostic analytics which are rapidly deployable & customizable

**Rich diagnostic analytics** with intuitive and granular drill downs

**200+ Pre-built business value scenarios** which are rapidly deployable & customizable

**Pre-built predictive analytics** scenarios across areas including Assets, Operations, Maintenance, Supply Chain and Projects

**Pre-built work processes** for event based alerts and capturing remediation

**Self service BI** - business user friendly to customize and extend existing and new KPIs

**Industry taxonomy based semantic model** with 8000+ objects & 1300 classes to provide **self-service BI**

Built-in **contextual collaboration** enabling to take the right decisions quickly

Adoption of **industry standards** ISA 95, PPDM, CIM, OPC, MIMOSA

## Rolta OneView™ 6.0 - Unique Value Proposition
### Key Technology Solution Differentiators

**Cloud ready** enterprise intelligence solution with **multi-site / multi-tenant** support

**Pre-built industry rich knowledge model** providing optimized persistence of data from varied data sources for high performance analytics and cohesive view

**Real time & Predictive Analytics** with knowledge driven **recommendations**

Built-in **comprehensive OT-IT Fusion** [patented] platform with unique capabilities of OT security, asset junction, real-time Big Data integration, centralized job scheduling, source system diagnostics and more

Engineered for **in-memory computing.** Exploits the power of **SAP HANA**

**Logical data warehouse** support for **Big Data**

**Out of the box support** for Hadoop & "R"

**200+ Pre-built real-time and ETL based connectors** across business, operations, geospatial, engineering & other IoT systems for optimal performance & payload with over 400 data flows

**Universal Connector Framework** to develop and plug in new connectors quickly

Built-in **rich spatial analytics**

**User-friendly configuration** and monitoring of operation parameters for **easy mapping and monitoring of assets and systems**

Easy configuration of **integrity limits** and automated alerts

**Built–in** collaboration & recommendations

**Work process automation** application framework to facilitate manual data capture and improve data quality

**Multi-channel presentation** support with mobile friendly user interface including globalization and localization support

# Rolta OneView™ 6.0 Solution - Deep Dive

Rolta OneView™ 6.0 brings a Pre-built, rapidly deployable industry-rich Big Data Analytics solution that provides "Industry Analytics in a Box". While its core platform has significant common components across verticals, it has been pre-built for specific-industry verticals starting from its integration layer. It includes vertical-specific source system connectivity, an industry-specific knowledge model with the respective industry standards and business processes, industry semantical layer, industry-specific work processes, industry-specific analytics and role-based actionable insights with 400+ Pre-built KPIs and 200+ scenarios. It has a deep and broad coverage across all the key business functions for each industry vertical - Oil & Gas Upstream/Midstream, Refineries, Petrochemicals, Chemicals and Utilities.



Rolta OneView™ - Analytics in A Box

# Rolta OneView™ 6.0 - Cloud Ready Analytics Solution

Rolta OneView™ has been architected and designed for multi-site, multi-tenancy operations and can be deployed as a single server instance either in an organization's private, hybrid or public cloud environment to support multiple, geographically dispersed sites across the globe including built-in globalization and localization support. Rolta OneView™ on Cloud helps the LOBs see the benefits without any Capex investments. It simplifies achievement of business outcomes quickly while allowing organisations to focus on their core business priorities with lowest TCO.

Rolta OneView™ is cloud enabled at all its integrate-analyze-deliver layers with its Multi-site Enterprise Server architecture. Its multi-site OT-IT Fusion manager ensures real-time contextual fusion of data across sites for ETL integration while also adhering to data security and governance. The Rolta OneView™ multi-site performance integrity model stores, processes and derives cross functional insights both within a geographical site as well as across the geographical sites. Additionally, the multi-site semantic and analytics model provides the necessary meta-data layer and analytics for site specific cross-functional and cross-site analytics for various role-based insights with security and auditing. Its cloud security layer provides data security over analytics privileges, tenant level & plant level restrictions, secure channel for data extraction from on premise systems. It supports cloud metering to monitor, measure and report the granular level of usage by tenants. The cloud strategy is well aligned to SAP's cloud strategy and supported to provide a comprehensive solution.



Rolta OneView™ - Cloud Ready

Rolta OneView™ Solution Architecture At A Glance
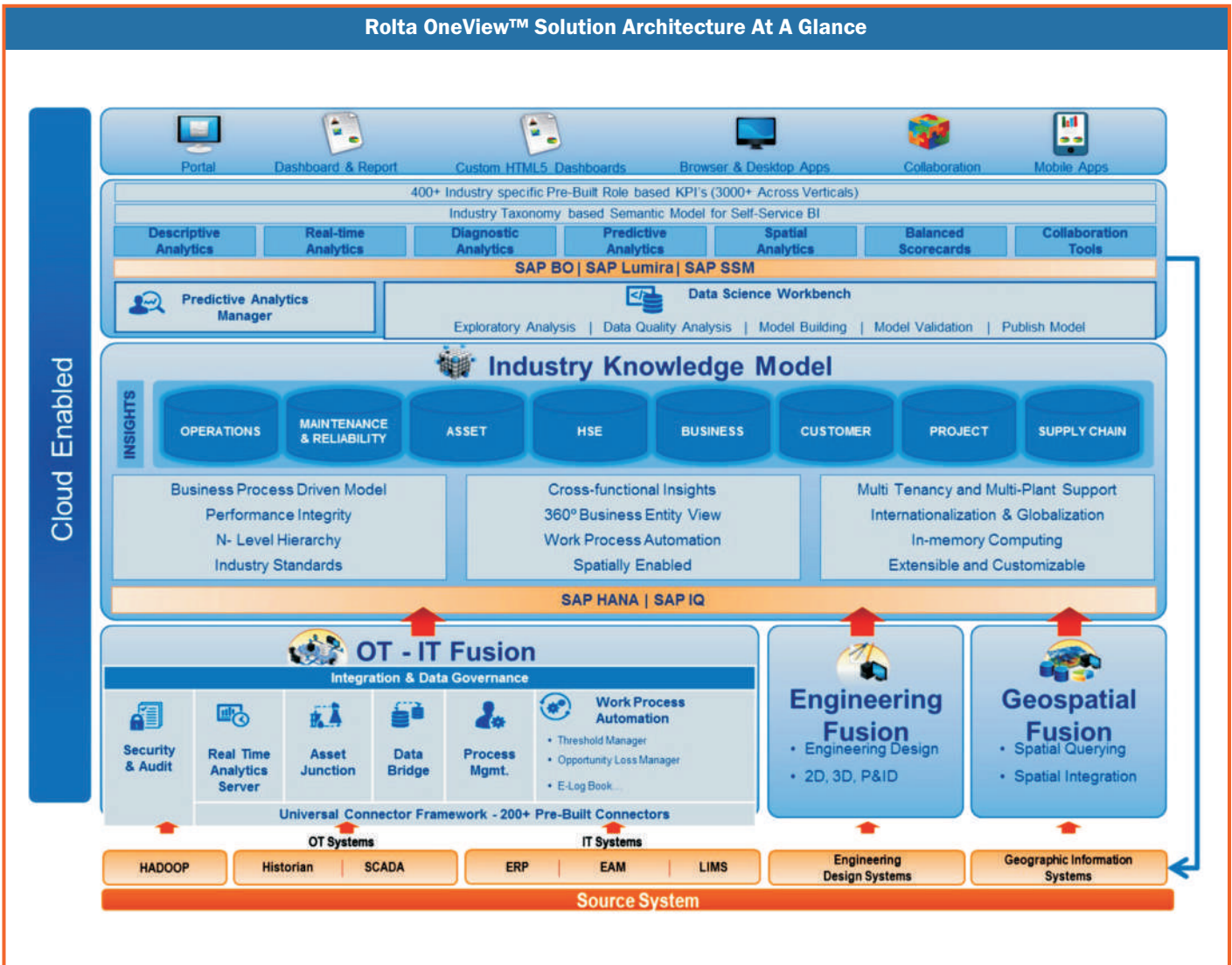
# Rolta OneView™ 6.0 - Big Data Ready

Rolta OneView™ is also a unique pre-built, rapidly deployable industry rich Big Data Analytics solution. By combining the IT - transactional, unstructured and OT data landscape, Rolta OneView™ brings 100X value of Big Data in an enterprise.

Big Data Analytics addresses the need of collating all the relevant data within the data landscape and expands the power of the information and actionable insights of the organization. Rolta OneView™ natively supports the Logical Data Warehouse model, which is critical to bring the variety of data in real-time to correlate at the semantic layer and not necessarily enforce on the physical data model. It provides optimized persistence and federated data integration to achieve a cohesive model of all the eight types of Big Data including transactional data, operational data, dark data, spatial data, enterprise social data, structured and unstructured benchmark data, external social data and public data on the cloud. Its comprehensive OT-IT platform provides optimized design for high volume, high velocity, time-series and streaming data. It permits evaluation of real-time data against user defined business rules, augmenting the data streams.

Rolta OneView™ 6.0 is engineered to exploit the high performance in-memory computing capabilities of SAP HANA. It is built using HANA columnar structure for high performance in-memory analytics with its pre-built optimized information views which include analytical, calculation and attribute views. It also effectively leverages HANA's spatial capability and predictive analytics libraries.

Rolta OneView™ - Exploiting Big Data Power 100x



Rolta OneView™ - Unified Knowledge Model Leveraging In-Memory Computing
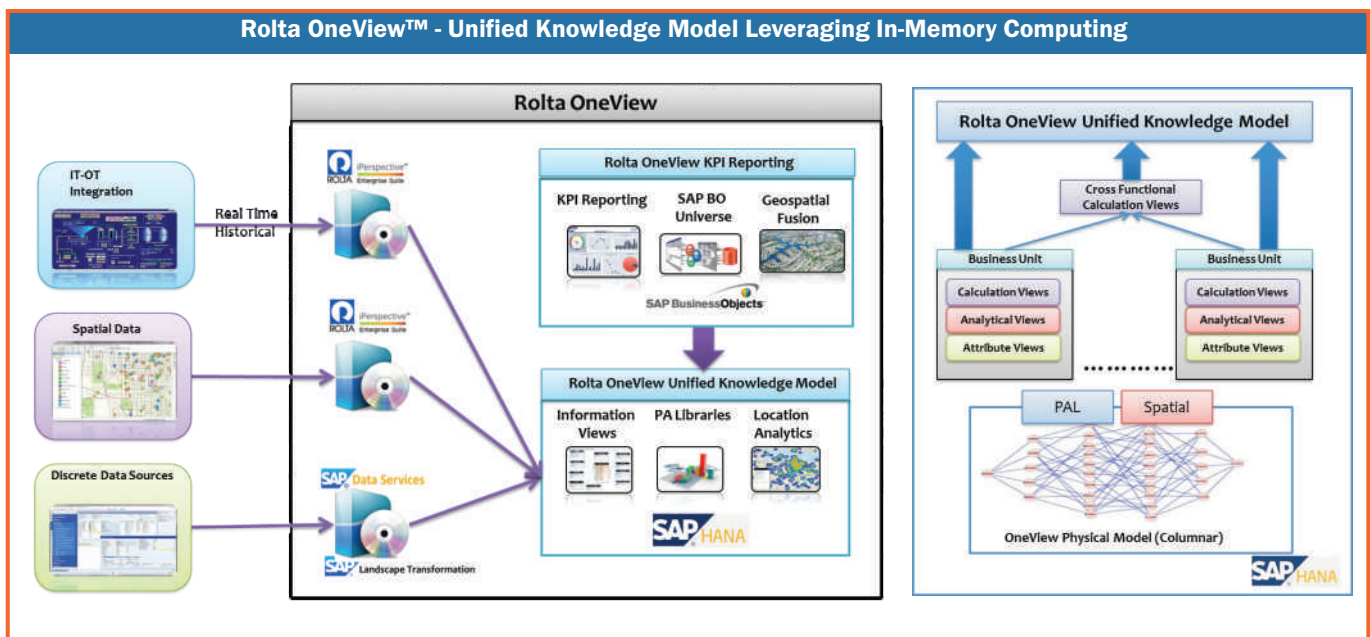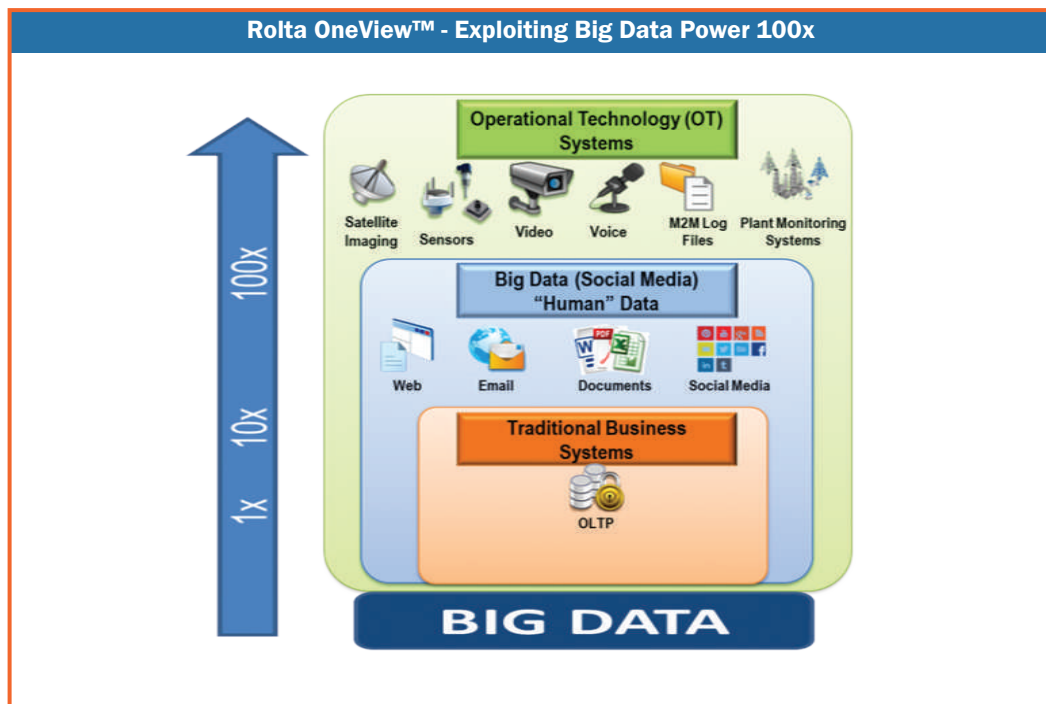
predictive analytics adds a new dimension to Big Data, allowing enterprises to leverage its benefits across the different levels. Rolta OneView™ simplifies these key capabilities and provides a simplified model leveraging the best of a variety of predictive engines including R, SAP HANA PAL, SAP infinite Insights, etc. With its in-built knowledge model it derives the most relevant predictive analytics use cases in a specific industry vertical. Additionally, its flexible architecture allows ease of customization and modifications of existing predictive analytics models as well as addition of new models tailored to suit the organizational requirements.

# Globalization and Localization Support

Rolta OneView™ 6.0 provides complete globalization and localization support which means that users can view the KPIs/Reports/Dashboards in their language of choice. It supports all the Unicode languages and provides a flexible way to leverage and customize the dashboards with pluggable, external translation files. A single centralized Rolta OneView™ instance can host multi-tenants with different languages and localization such as unit of measures, time zones, currency, etc. A few of its unique features include display base and preferred currency in-context. Rolta OneView™ automates unit of measure conversions and local time conversions which can be customized by business users.

Rolta OneView™ - Globalization & Localization Support
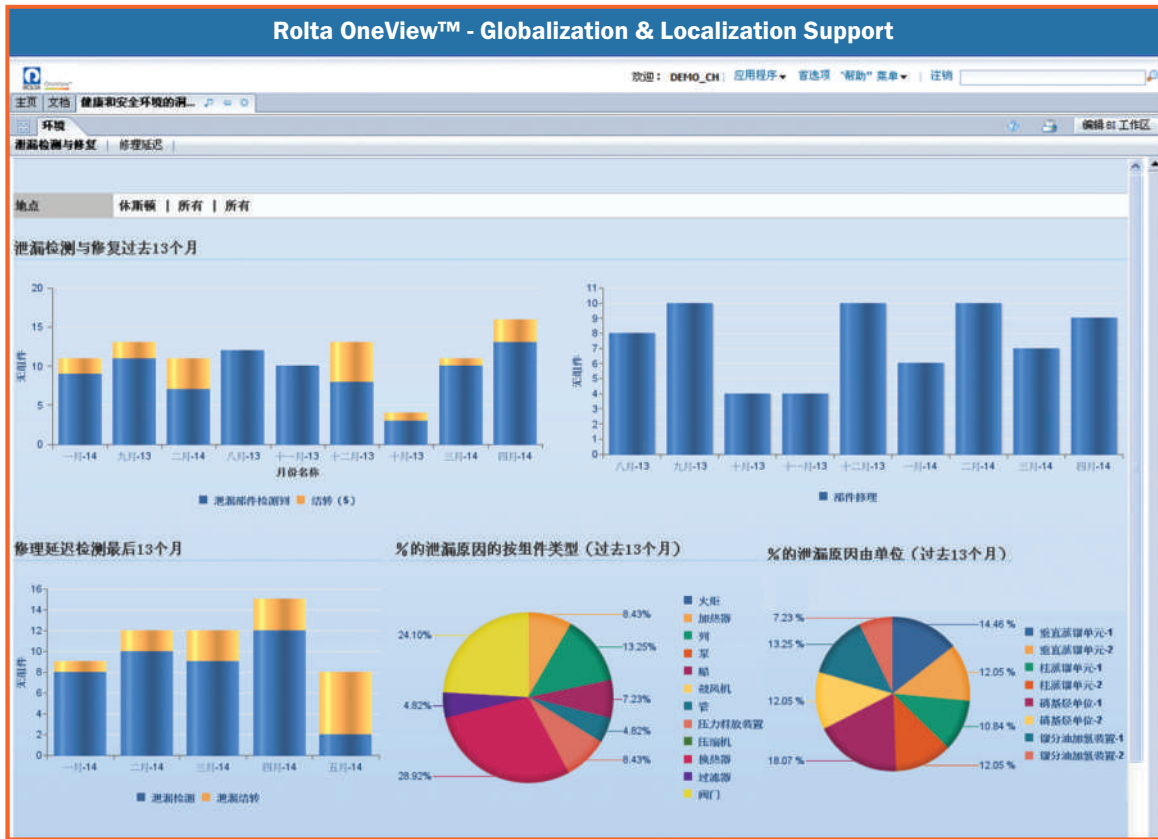
# Rolta OneView™ Integration Layer

**Comprehensive IT-OT Fusion™ Platform**

The Rolta OneView™ IT-OT Platform enables The retrieval of data from heterogeneous business and operational systems. It provides the ability to bring in historical data in bulk, incremental bulk data as well as near real-time data points as per the required frequency. The meta-data driven architecture enables easy configuration to meet customized requirements resulting in quick implementation.

IT-OT Security ensures 2-way SSL communication between IT and OT environments, supporting the latest UA security specifications. It has a high performance Audit Engine to track access to OT data. Uptime of the OT network is highly critical for production. Hence the communication between the IT and OT network is secured. It provides confidentiality and integrity of the messages exchanged between the OT and IT networks.



Rolta OneView™ - IT/OT Integration
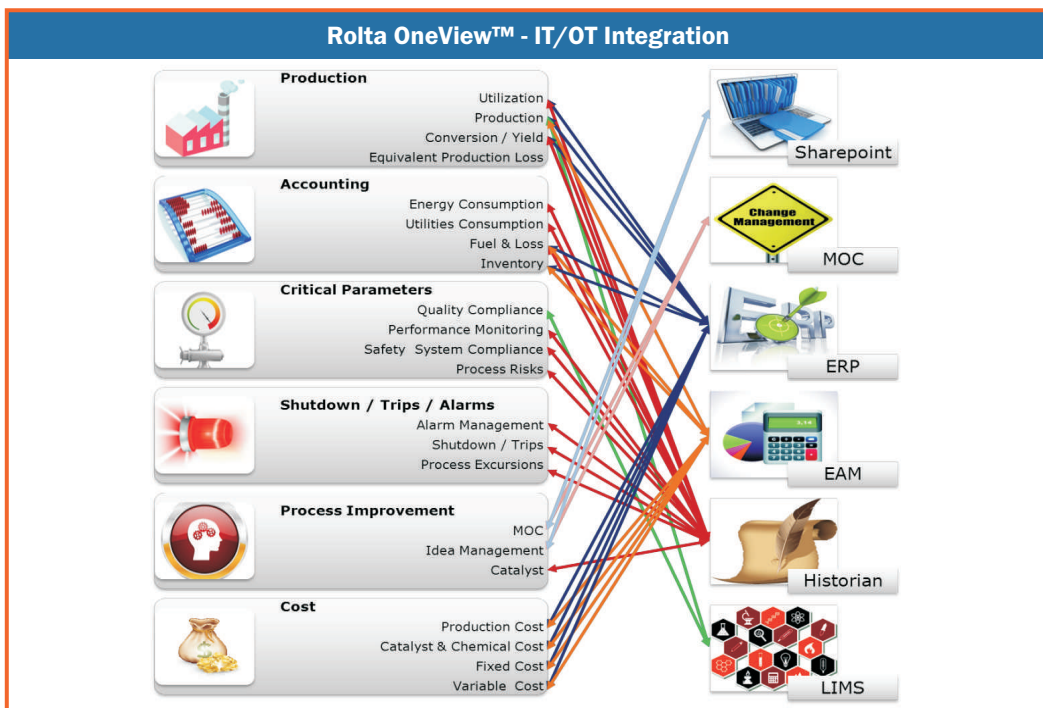
# Pre-built Connector for Real-time & ETL

Rolta IT-OT Fusion™ Platform has 200+ pre-built real time and ETL based connectors across business, operations, geospatial, engineering & other IoT systems for optimal performance & payload with over 400 data flows. The pre-built connectors include IT systems such as ERP, CRM, EAM, SCM and Operational Technology (OT) systems such as historians (OSI-PI, GE Proficy, Honeywell PHD, Aspen IP21 etc.), SCADA, LIMS, etc. Data from these source systems can be extracted and collated both in batch mode as well as real-time to enable both historic as well as real time analytics of the current operating parameters. The connectors provide secured connectivity to the systems and adopt change data capture mechanism to ensure minimum network payload. Connectors for operational systems are compliant with OPC-UA standards and also provide connectivity through native APIs / services. It provides lineage of the data received from the system including the status of the source system and data retrieval jobs.



Rolta OneView™ - 200+ Out-Of-The-Box Connectors
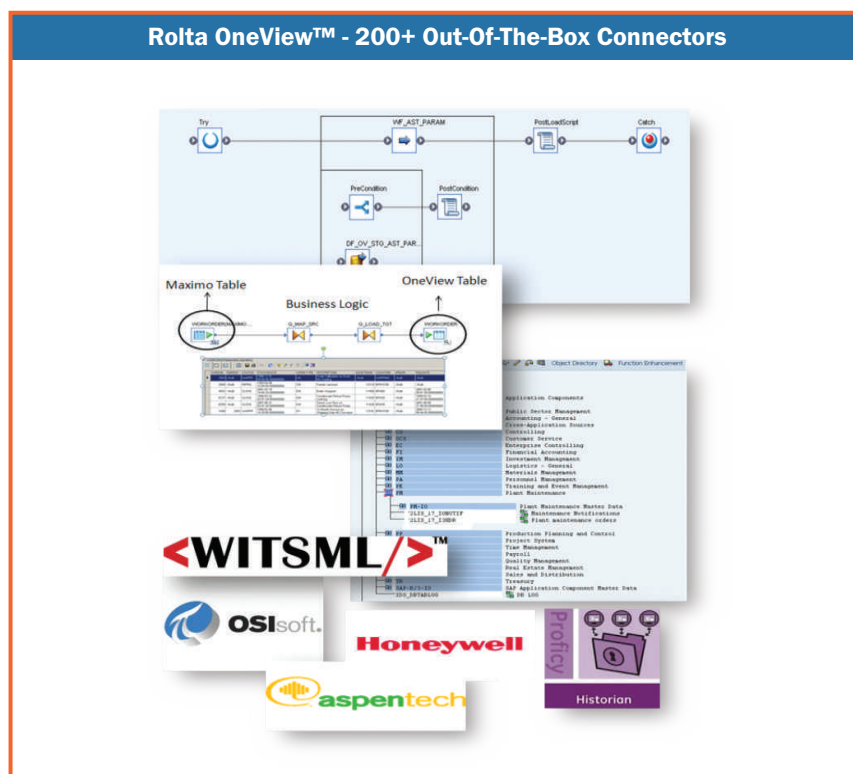
The Universal Connector Framework allows for easy configuration / customization of extraction and transformation of the data retrieved. It enables rapid development and plugging in of new connectors quickly.



ETL Framework flow for audit checks
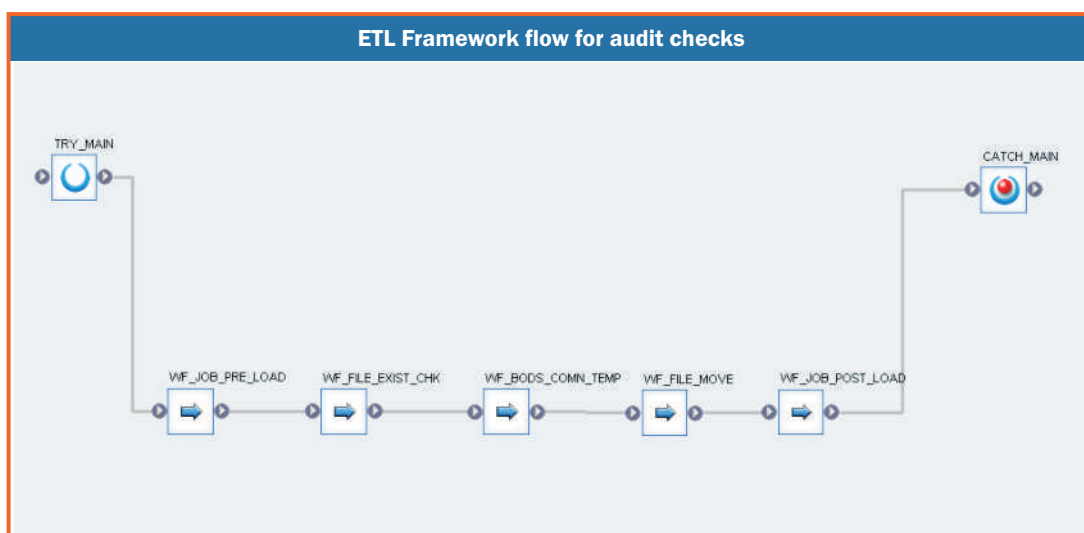
# Asset Registry

The Asset registry provides a user-friendly console to configure parameters of individual equipment, systems and processes that need to be monitored. It allows for monitoring performance trends and critical parameters in near real time. The registry aligns with the asset hierarchy maintained within the EAM system to facilitate the configuration & monitoring equipment and processes.

It helps to map defined tags to their asset. This facilitates association of an asset with OT systems tags when re-commissioning an asset or commissioning a new asset and thereby provides rapid access to operational data for an asset / process. It provides an easy way to associate the process schematics with corresponding tags and the ability to gather data from multiple OT systems for an asset or a process. It supports N-level Plant Hierarchy Model with Multi-Tenancy. It provides easy tag browsing and editing. This facilitates monitoring and quickly identifying deviations.



Rolta OneView™ IT-OT Fusion Asset Junction
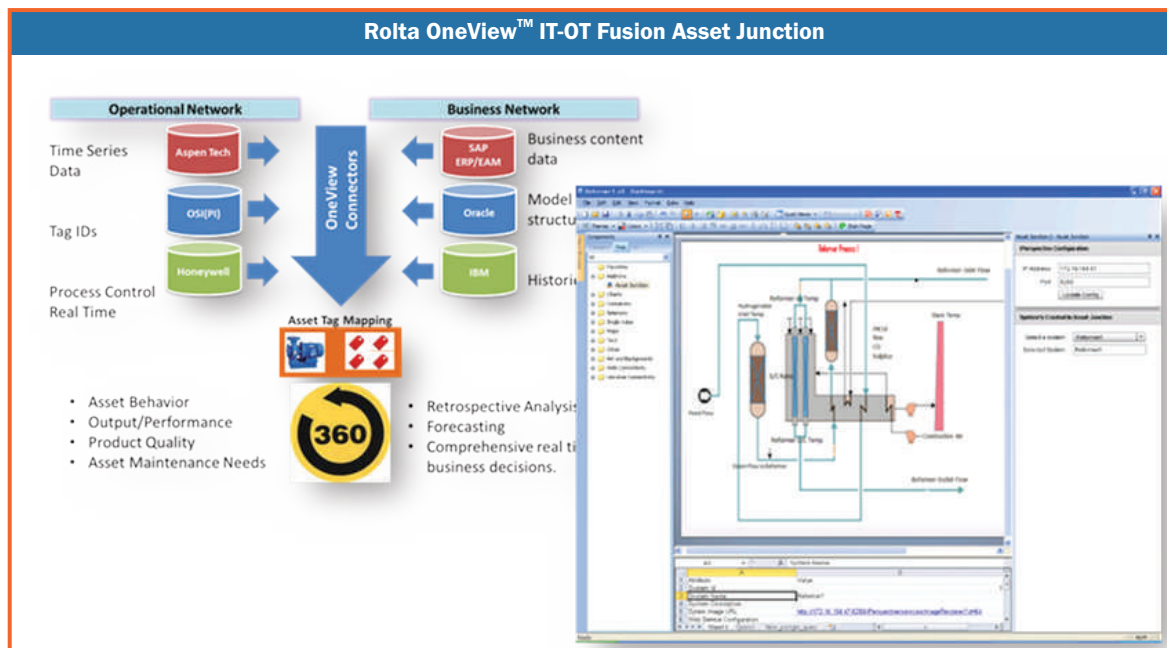
# Geospatial Fusion

Any analytics system would be incomplete without the provision for locational intelligence. Rolta OneView™ integrates Rolta Geospatial Fusion™ to provide the much needed locational intelligence, out-of-the-box. Rolta Geospatial Fusion™ helps to populate the integrated geo-enriched knowledge model and as a result facilitates comprehensive business view of geographically distributed assets and supply chain. Fusion of spatial data with heterogeneous data sources and business systems enables Rolta OneView™ to provide complex spatial queries and drill downs for contextual analytics with bidirectional interaction capabilities. The ability to visualize the business and GIS data in a single dashboard with thematic mapping, heat maps and cluster maps helps enterprises take quick and effective decisions. The bi-directional communication between the dashboard charts and the maps facilitates analyzing asset performance using maps and data. It provides a unified, seamless geospatial view of enterprise KPIs and data.

Rolta OneView™ IT-OT Fusion - Critical Imperative
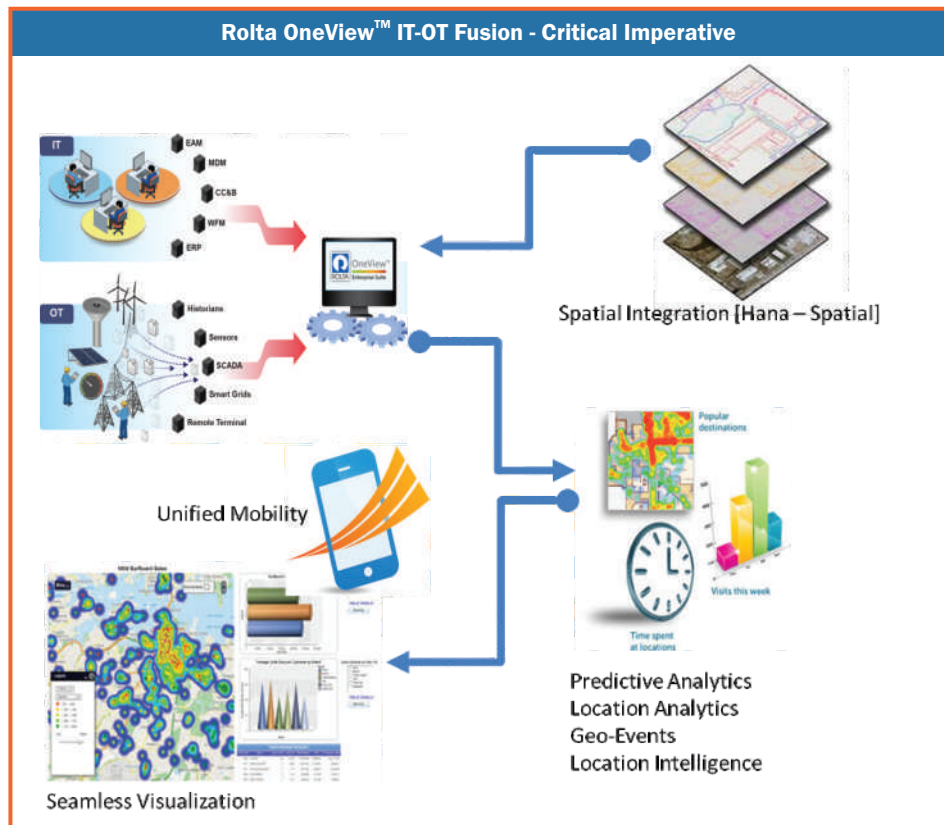
# Engineering Fusion

Asset maintenance and availability constitute a good percentage of the operational cost. This makes risk identification and mitigation one of the most focused objectives of an enterprise. While most asset analytics are based on historical trends, engineering fusion allows monitoring of asset performance alongside its design specifications and manufacturer's recommended operating limits.

A vast amount of data is generated about assets from the initial design through its commissioning, operations till its final retirement. Rolta Engineering Fusion™ is an integral part of Rolta OneView™ 6.0 Enterprise Suite and provides an early insight on asset risks by viewing equipment actual operating range against the recommended design parameters. It provides automated notification on operating parameters crossing thresholds. As a result it facilitates implementation of design integrity practices, reducing asset maintenance and failures. Rolta OneView™ with its integrated 2D and 3D model viewer ensures easy navigation to asset using bidirectional interaction capabilities between asset dashboard and the plant model.



Rolta OneView™ - Integration with Engineering Design System
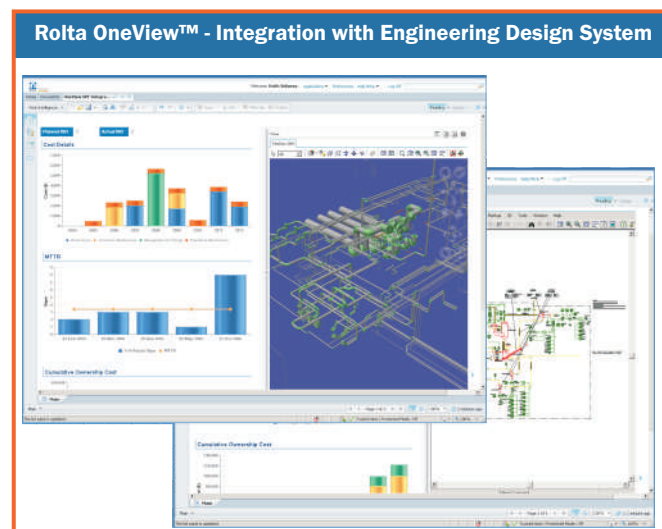
# Pre-Built Work Processes

**Pre-built Industry-specific workflows and Workflow Automation Framework**

Rolta OneView™ provides some key pre-built industry workflows that fill the gap generally observed in the industry. These workflows also help in alleviating the need for manual data creation that companies end up with when trying to fill those business process gaps and thus enhance the data quality. Rolta OneView™ also provides an extensible workflow framework to build customized workflows for specific needs. The framework provides functionalities to manage thresholds and targets along with its history. Alerts can be defined on these thresholds and notifications sent via multiple channels – emails, dashboards, mobile devices. Additionally, one can configure system driven actions to close the loop by invoking web services and 3rd party applications, etc.

Rolta OneView™ does not merely stop at providing the visual business insights to individuals but also facilitates collaborative BI through workflows. The pre-built work processes allow capture of data, enhancement of data quality and facilitate timely actions by allowing users to interact with each other for corrective actions. The workflow framework enables the creation of records in a knowledge repository for future reference with powerful search capabilities to overcoming loss of expertise due to an ageing workforce. A few examples of pre-built workflows cover areas such as Opportunity Loss Management, Greenhouse Gas Emission Monitoring, Tracking Worst Actors, Permit Management, Temporary Leak Repair Management, Risk Register, etc
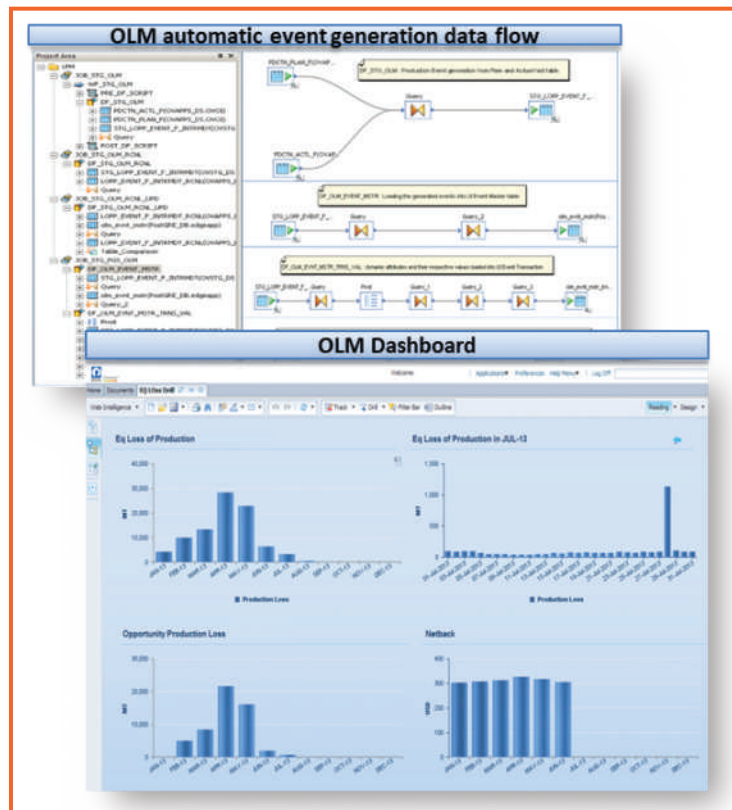


# Rolta OneView ™ Knowledge Model Layer

**Business Process Driven Knowledge Model**

Rolta OneView™ includes pre-built business process driven knowledge models which are industry specific based on years of domain expertise and best practices. It is a highly optimized persistence of data from the heterogeneous business and operational systems to enable high performance analytics and a cohesive view of information across business functions. It provides 360° business view of all the business critical areas providing cross functional visibility across OT / IT / Spatial / Engineering systems. It provides a deeper and broader coverage across all the key business functions for each industry vertical Oil & Gas Upstream/Midstream, Refineries Petrochemicals, Chemicals, and Utilities.

Rolta OneView™ pre-built Knowledge Model and KPIs are tailored to for each specific vertical and have been derived from Rolta's deep domain insights and best practices. This knowledge model extends the Enterprise Data Warehouse (EDW) with other Logical Data Warehouses (LDW) and is capable of handling humongous amounts of heterogeneous data at extremely high frequencies. One of the key distinguishing features is that it is built on a platform agnostic architecture for supporting Big Data including streaming data from OT systems, sensors etc. and is supported on leading technology providers like SAP, Oracle and IBM. The knowledge model is also designed and certified to leverage in memory data analytics capabilities while also integrating with other traditional open source Big Data

technologies such as Hadoop, NoSQL, etc. This comprehensive knowledge model not only provides deep insights with multi-level drill downs in all the different business functions but also acts as a 'Single Source of Truth'. This also ensure standardization across the different entities within the enterprise.

The knowledge model maintains the cross-functional information collated from varied data sources thereby enabling performance management and analytics, including trends, 'slice and dice' analysis, drill-down, forecasting, variance analysis, root cause identification, scenario planning and what-if modeling.
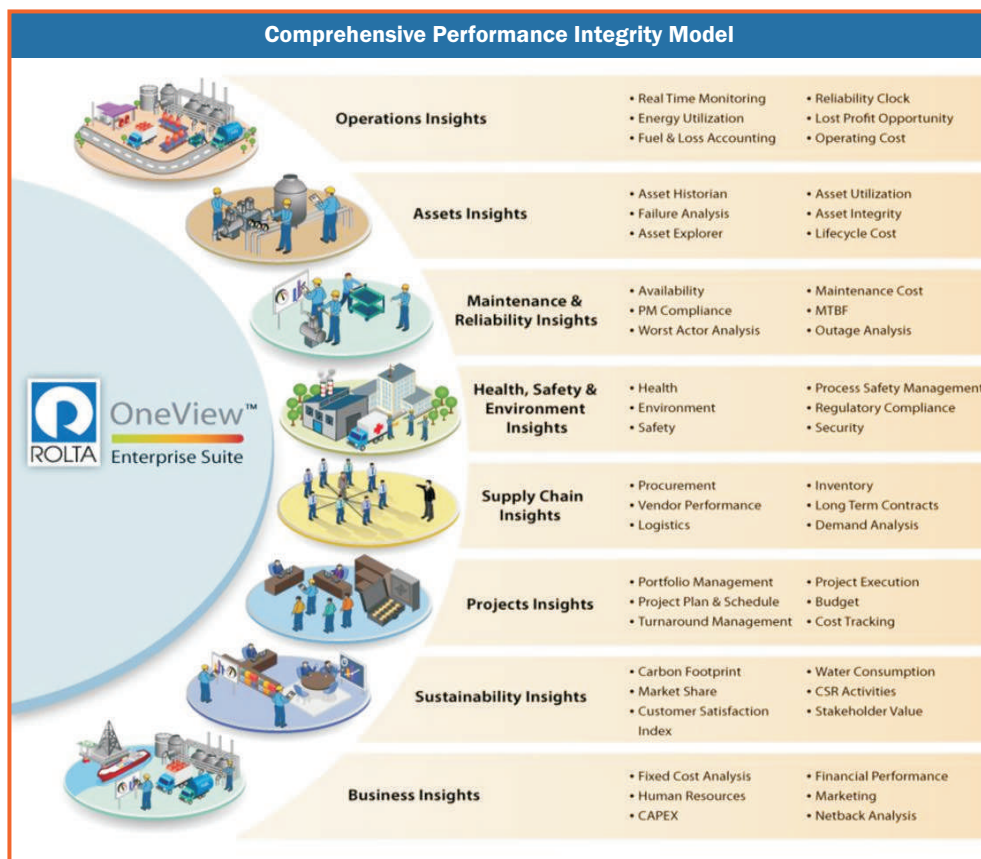


The process driven knowledge model design with a focus on performance integrity allows for broader and deeper coverage of each business function as well as extensive cross functional analytics. Further, the adoption of industry specific standards such as ISA-95, MIMOSA, PPDM, CIM, etc. ensures that the data elements persisted are in alignment with industry requirements.

The Knowledge model design scales to manage multi-site implementations across geographies. It is able to manage

data from the sources specific to each site maintaining the lineage of each and provides support for globalization and localization. It allows for viewing aggregated and summary information as well as drilling down to the lowest granularity. It includes n-level hierarchies, parameterized data structures, flex attributes and custom schemas to allow for easy customization.

Standards Based Data Model



Standards Based Data Model
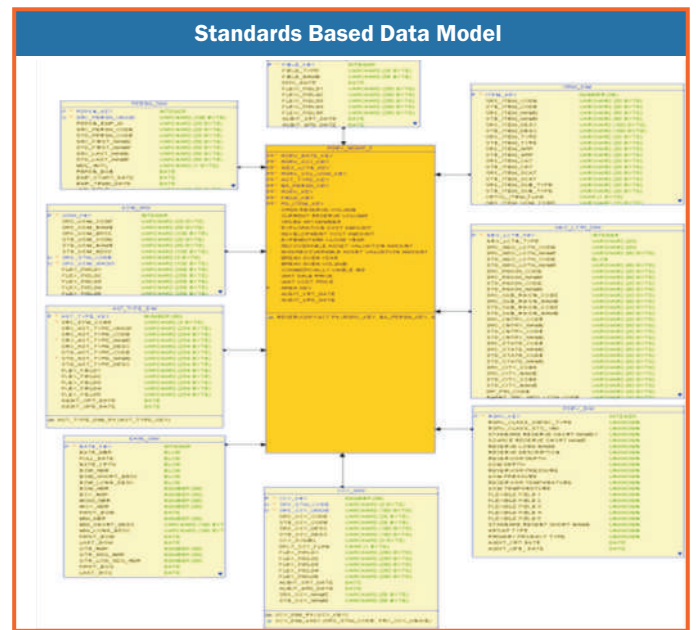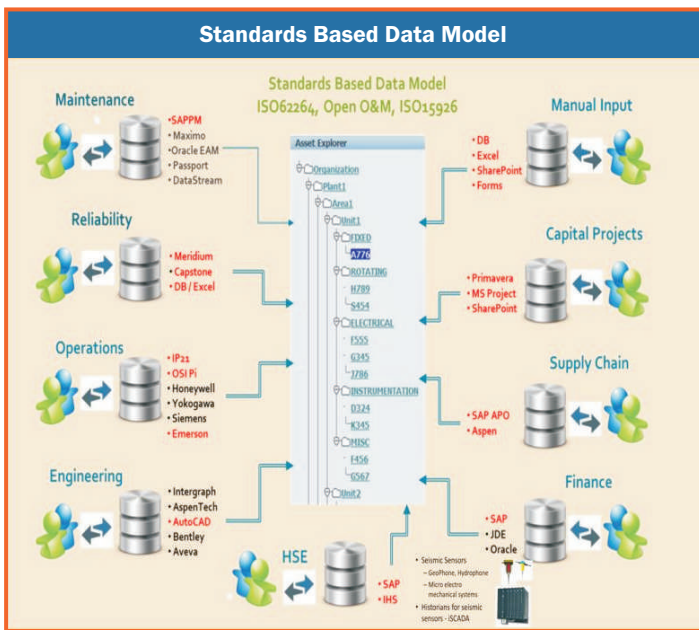
# Unified Performance Integrity Model
# bringing cross functional visibility and modularity

Rolta OneView™ provides modularity across its layers powered by its unified performance integrity model designed for business priorities driven phase wise roll out– operations, maintenance & reliability, assets, sustainability, supply chain, projects, business, HSE.

Some of the unique features and benefits it provides include:

• Drives insights across these various functions in a meaningfully correlated manner in the context of the business process, thus enabling meaningful cross-functional situational awareness and actionable role-based insights.

• While the information is aggregated and rolled up as it goes up the hierarchy, one can drill down to any lower level details to get detailed visibility from a single source of truth.

• Integrity of the data attributes across the process functions

• Ability to get 360° of an entity across the business function

• Maintains the integrity even when the solution is deployed as individual modules in a phased manner or as an integrated solution.
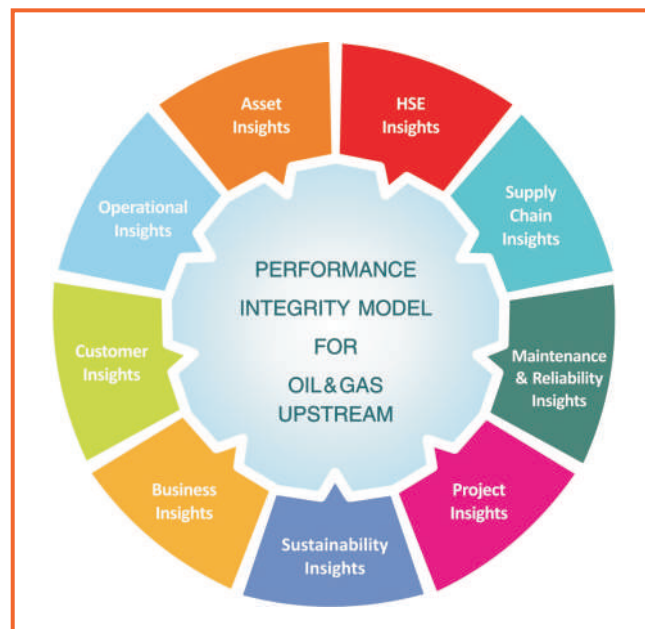
# Extensibility

Rolta OneView™ is architected to be able to extend and easily customize by the organizations for specific (and evolving) needs .

Some of the unique features and benefits include:

- Ability to build new KPIs by extending and/or customizeing the entities through a documented process to ensure compromising of the data integrity and normalization

- Empower the roles to be self-sufficient to manage the solution

- Compatibility to customer specific processes and practices

- N-Level hierarchy for functional location / organization

- Flex fields to accommodate custom requirements. formula constant factors are parameterized

- Parameterized asset structure to manage varying attributes for different asset types

- Parameterized material attributes for varied materials used across O&G, Petrochemicals, Chemicals, Power Utilities and Water Utilities

- Patches and upgrade support without impacting customizations, based on guidelines
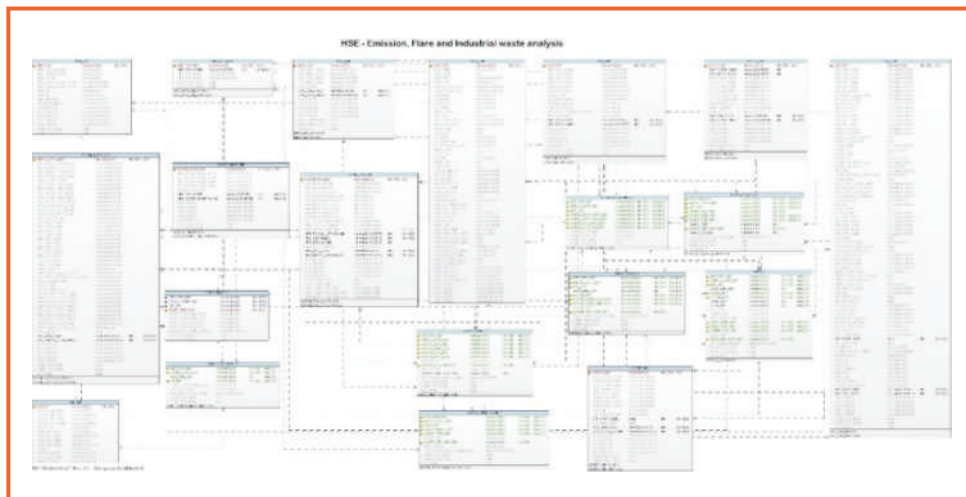


# Semantic Layer

**Industry Taxonomy Based Semantic Model**

The semantic model transforms the knowledge model into business functions and processes based objects. The industry taxonomy used to define the objects provide ease of use to quickly build new KPIs reports or dashboards thereby facilitating self-service BI and making the enterprise self-reliant. The semantic model facilitates in extending the solution to define a logical data warehouse to federate data from external data sources. Users can therefore work from a variety of preconfigured and customized dashboards, or slice and dice through data using multi-dimensional analysis, automated data cubes, ranking and alerting, condition monitoring with intelligent drill-down. Additionally, the rich Rolta OneView™ semantic model with 8000+ objects enables Self-Service BI and thereby eliminates the user's dependency on their IT team, empowering users to build their own reports/dashboards to meet their evolving requirements.

Some of the Key features and benefits that enable self service BI include:

- Comprehensive star schema based semantic model with over 8000 objects and over 1300 classes

- Semantic model by each business function and defined guidelines to extend them

- Adopts industry based taxonomy

- Enables cross functional KPI creation business users are easily able to customize and extend existing and new KPIs

- Formula constant factors are parameterized

- Flex fields to accommodate custom requirements

# Analytics Layer

**Pre-Built Analytics / KPIs**

Rolta OneView™ Enterprise Suite for Oil & Gas Upstream has over 400 pre-built industry specific KPIs bringing rich real time and diagnostic analytics which are rapidly deployable and are also highly configurable and customizable by users. As a result, it is able to support over 200 pre-built business value scenarios relevant to the industry. The solution has been designed to provide rich analytics covering real-time, descriptive, diagnostic, predictive, prescriptive as well as spatial analytics to support intuitive decision-making.

# Real-time Analytics

Real-time analytics is an essential feature to enable users to monitor critical parameters and critical equipment in near real time. With this capability users can forecast on process and equipment performance leveraging near real time and historical data to take timely actions. Real-time data capture from OT and IT systems are managed separately to minimize load on production systems.
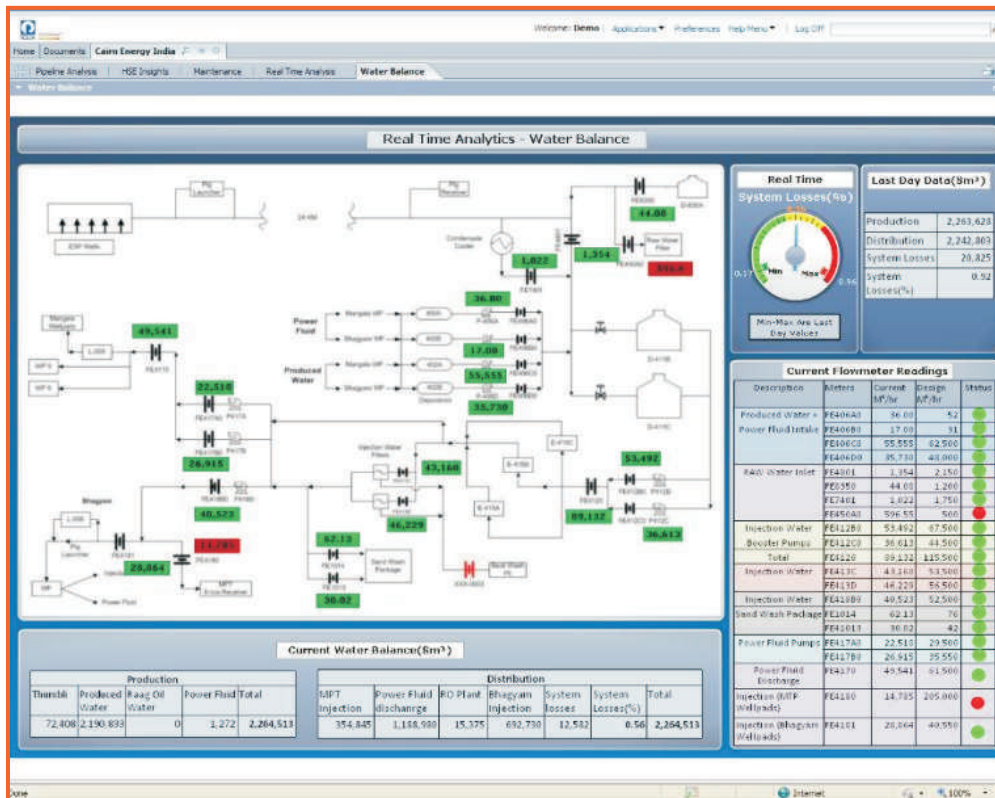


# Diagnostic Analytics

Rolta OneView™ provides feature-rich diagnostic analytics with intuitive contextual dashboard and multi-level drill downs to easily analyze a variety of scenarios and thereby facilitate root cause analysis.

# Predictive Analytics

Rolta OneView™ brings built-in predictive analytics capabilities allowing users to forecast on performance of different equipment and processes to enable early identification of possible deviations and bad actors. Timely actions can thereby minimize the impact and result in significant cost savings. The solution provides the capability to use the best model suited for a scenario and achieve realistic results for appropriate actions. It leverages leading industry predictive analytics and Big Data engines such as "R", Hadoop, SAP HANA, PAL, SAP Infinite Insights, etc. Rolta OneView™ has several out-of-the-box predictive analytics models covering a range of areas such as assets, operations, maintenance, supply chain and projects. Examples include:

- Forecasts on performances of equipment and processes

- Early identification of possible deviations and bad actors to minimize the impact and save on costs

- Capability to use the best model suited for a scenario and achieve realistic results for appropriate actions



# Spatial Analytics

Any analytics system would be incomplete without the provision of locational intelligence. Spatial Analytics provides the users with the ability to visualize the business and geographically dispersed asset data in a single dashboard with thematic mapping, heat maps and cluster maps helps enterprises to take quick and effective decisions.

# Pre-built Scenarios

Rolta OneView™ has 200+ Pre-built business value scenarios which are rapidly deployable & customizable. A sampling of these was already covered in the earlier section. These enable deeper insights into scenarios that require complex calculations and accessing data from multiple systems cutting across cross functional boundaries

A small sample of such scenarios include:

- Asset life cycle analysis
- Opportunity loss analysis
- Composite risk

- Safety instrumented system performance
- Fire prevention
- Backlog purchase order analysis
- Procurement cycle optimization
- Safety prevention expenses
- Incidents, waste and emission reporting
- Root cause analysis of deviations
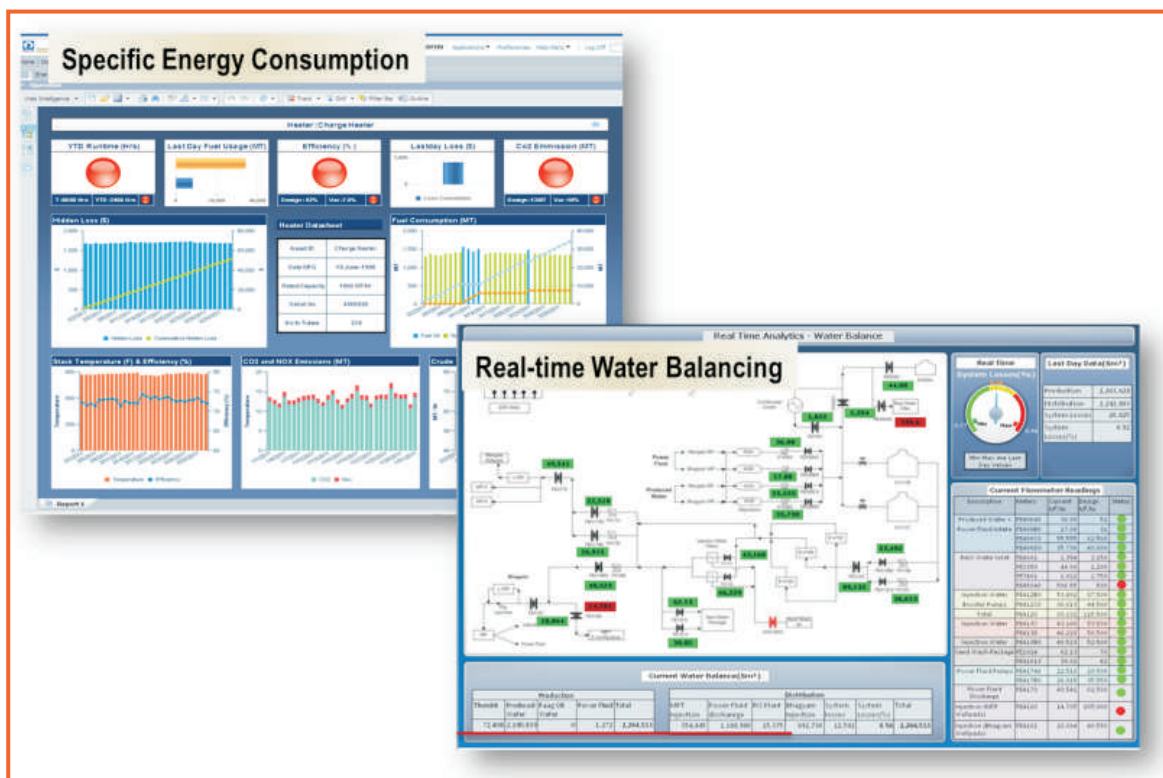


# Visualization Layer

**Role Based Dashboards**

Rolta OneView™ provides role-based actionable insights to its users through seamless aggregation and information dissemination across information landscape ensuring only relevant cross-functional KPIs are seen by an individual that are relevant to their function. This ensure users can take actions effectively as they are not distracted by data which isn't in their ambit of responsibility while also ensuring data confidentiality. Rolta OneView™ integrates seamlessly with the organizations Active directory / LDAP infrastructure to determine the user's role and security. Rolta OneView™ analytical and decision making capabilities are role-based

covering all the way from CxO level to functional users. At the CxO level, Rolta OneView™ provides strategy maps and scorecards that can be linked and monitored across the enterprise. Functional specialists have the predictive and prescriptive analytics to take corrective action. Pre-defined KPIs aligned to departmental line managers provide them with deeper insights addressing their departmental responsibilities while also providing cross- functional visibility for better alignment. Operational staff can make real-time operational decisions and take corrective actions through the real-time operational dashboards. As a result,

Rolta OneView™ is able to provide capabilities for performance monitoring and performance improvement through root cause analysis, better corporate governance through benchmarking, modeling and scorecards.

Rolta OneView™ provides role based dashboards enabling actionable insights - right information, right time to right users as a single source of truth. Some of the key features and benefits includes, guided navigations, root cause analysis, Scenario Analysis, Rich, intuitive user experience, usage auditing, secure access via SSL, ability to easily customize and extend.
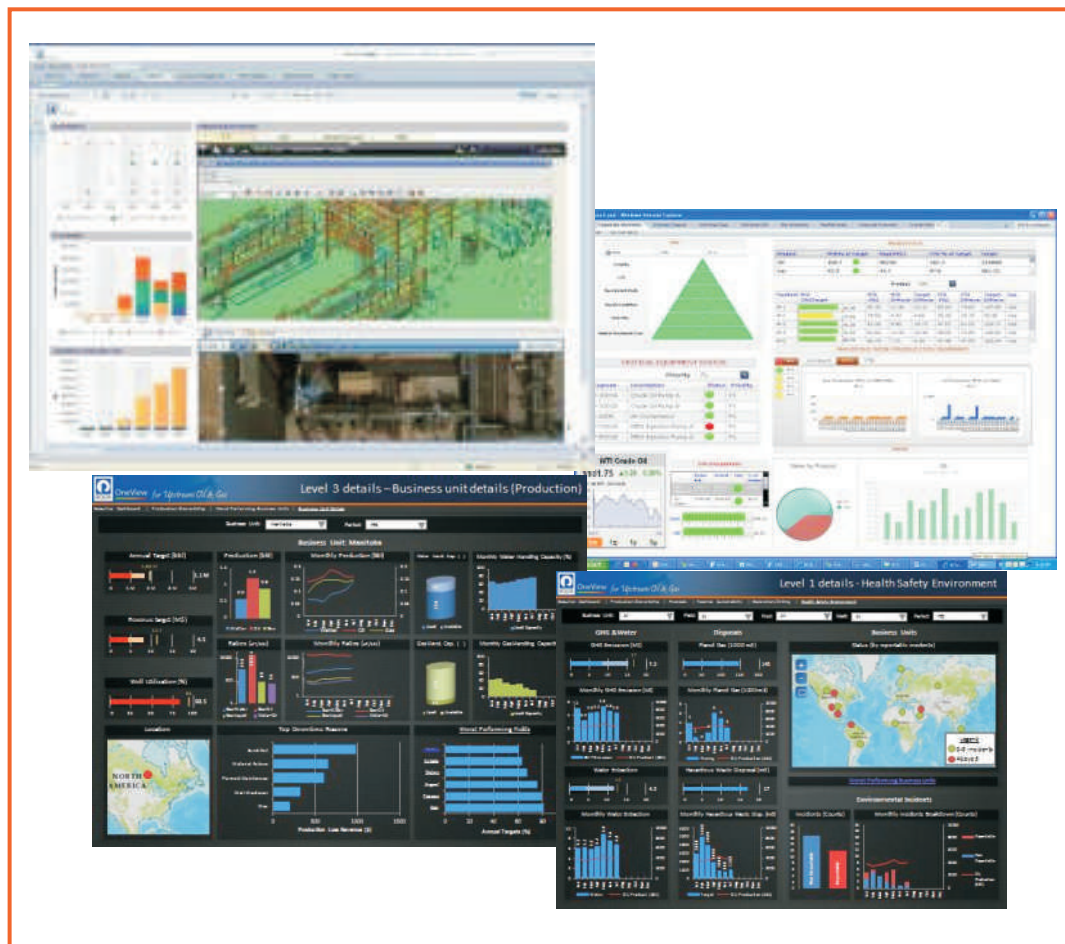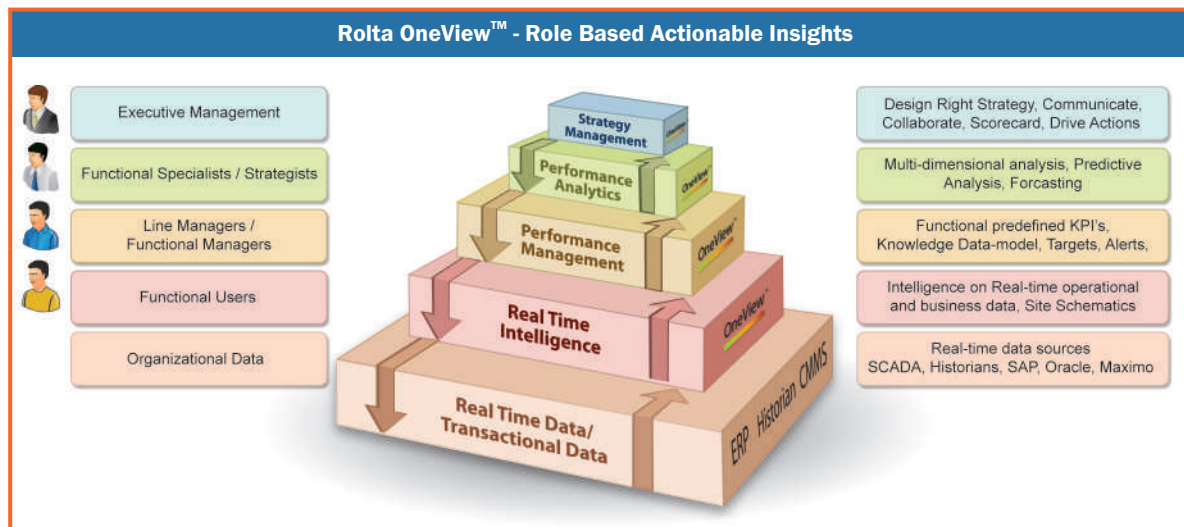
# Built-in Collaboration and Recommendations

Rolta OneView™ does not merely stop at providing the visual business insights to individuals but also facilitates collaborative BI through workflows. These pre-built collaboration processes allow capture of data, announcements, discussion boards, document collaboration, task assignment, notifications tracking and alerts to facilitate timely actions by allowing users to interact with each other. The collaboration tools allow discussion threads to be initiated based on snapshot of a dashboard thereby maintaining the context of the discussion. It allows tasks to be assigned specific to a scenario/situation observed on the dashboard. The workflow framework enables the creation of records in a knowledge repository for future reference with powerful search capabilities to overcoming loss of expertise due to an ageing workforce.
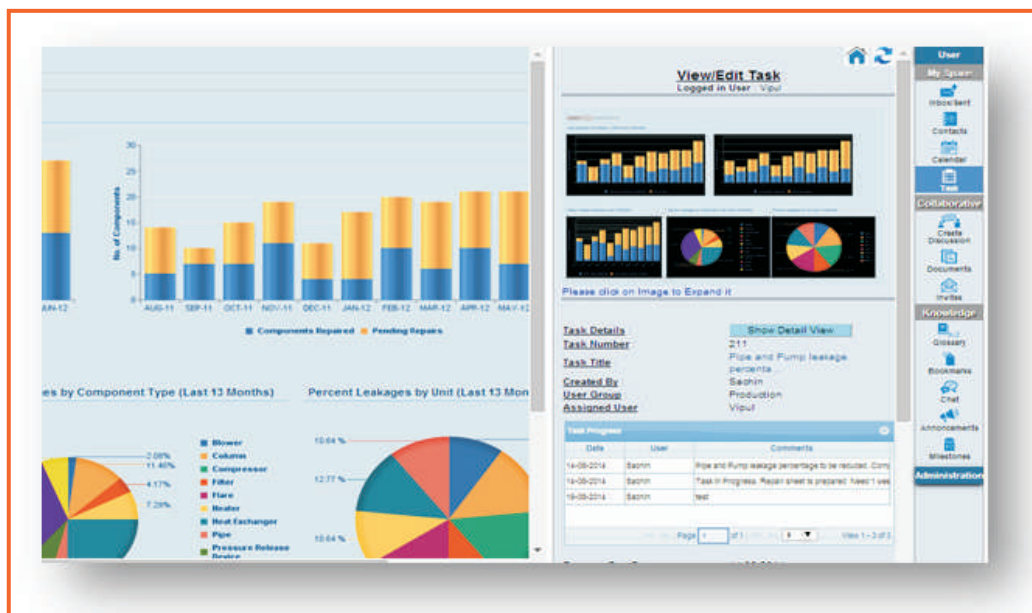


# Balanced Scorecard

Rolta OneView™ Enterprise Suite provides seamless management of the organization's balanced scorecard and strategy maps by tying together functional scorecards with Enterprise KPI as well as operational and role based individual KPIs. The tool is compliant with the Kaplan–Norton strategy management model. As a result, Rolta OneView™ allows defining of scorecards from the enterprise level down to the business owners / function owners thereby promoting the institutionalization of business goals and objectives.

# Multichannel Presentation

Usability and user friendly visualization is a key pillar of a BI and analytics solution such as Rolta OneView™ to accelerate adoption by non-IT business users, and to support efficient workflows that ultimately enable them to accomplish their business goals more effectively. Rolta's Certified Practice in Usability has been assessed at the highest Level 5 by Human Factors International, a global leader in user experience design. Rolta OneView™ has been designed keeping usability and end-users in mind. The business dynamics across industries require information to be exhaustive, complete and be accessible everywhere.

As a web enabled application Rolta OneView™ analytics and dashboards can be accessed through various devices including desktops, notebooks tablets and smart phones. Some of the features include pre-built KPI widgets and dashboards by business functions, summarized and aggregated views with drill-down and drill-to-detail capabilities, publishing to collaboration tools and portals etc. Further, automated Alerts and notifications based on defined thresholds and targets are delivered on e-mail and SMS to enable timely decisions.

# Alerts and Notifications

Rolta OneView™ provides a comprehensive alerts and notifications system as a critical enabler for proactive data driven actions.

Some of the key features and benefits include - Multi-level alerts for threshold deviations for timely decision-making, status notifications for scheduled jobs, alerts for scheduled job failures, e-mailing of scheduled reports, visibility to the last update date & time of the KPIs & reports and which source system data update has not taken place, notifications of unavailable data sources, via data-lineage framework, customizable notification destinations and rules, etc.

# Integrity Limits and Automated Alerts

Rolta OneView™ provides business user friendly configuration of various integrity limits and thresholds and automated alerts. Intuitive dashboards with guided insights for safe operating limits, various levels of integrity layers and outliners helps to make quicker and better decisions.



# Continuous Improvement (6 Sigma)

Rolta OneView™ enables continuous process improvement by analyzing the deviations in the business process executions and provides prescriptions on process improvements and thereby facilitates initiatives such as 6 Sigma.
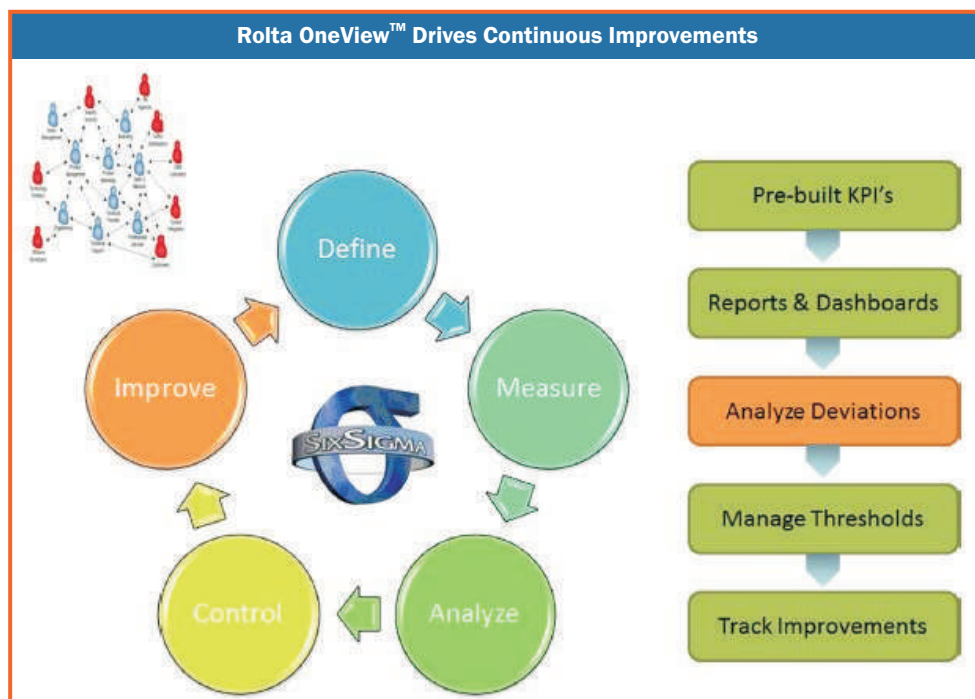
Closed loop BI provides a way to take the insights into action to the source systems thereby turning the best power of analytics into process improvements.

Rolta OneView™ with its out-of-the-box industry-specific analytics clearly enables organizations to embark on their business transformation journey confidently, to achieve positive business outcomes. As a packaged solution, Rolta OneView™ can be rapidly deployed in 12-18 weeks and easily customized resulting in a higher and faster ROI.
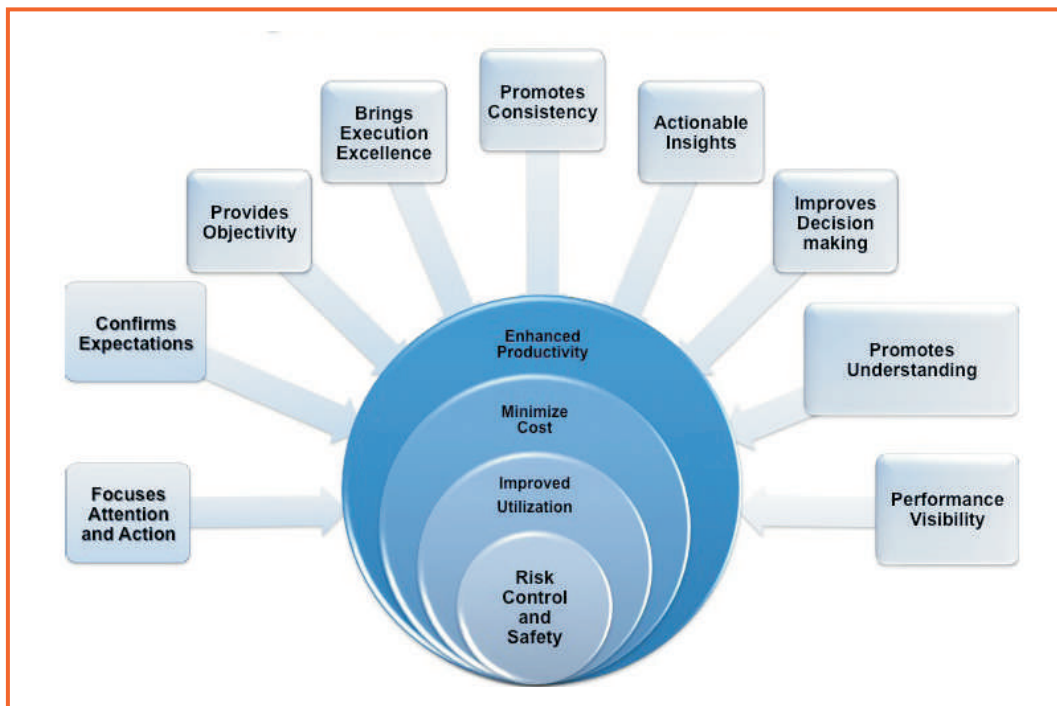


# Industry Recognition

**Rolta OneView™ has been recognized by technology providers and industry analysts for its innovative approach and solution**

**Frost & Sullivan**
"Solutions such as Rolta OneView™ will play a critical role in transforming plant management and drive growth" Frost & Sullivan Whitepaper, " Enabling Operational Excellence"

**Gartner**
A Recent Gartner Study Report in January 2014 " Competitive landscape: BI Platforms" named Rolta Oneview™ as a leading packaged analytics solution

**ARC Advisory Group**
Rolta OneView™ satisfies key AIM requirments at every level of the pyramid - Rolta OneView™ Helps Companies Overcome Key AIM Hurdles *Dr. Sid Snitkin, Vice President, ARC Advisory Group*

**NASSCOM / Frost & Sullivan - Product Excellence Matrix**
Rolta OneView™ - For the ability to convincingly articulate customer's BI and Big Data Analytics needs, improve decision making, cut costs, innovation, market trends and competitive forces

**Rolta, SAP, Customer : Win-Win-Win**
- Global Strategic OEM Partner
- SAP Pinnacle Partner of the year 2014
- Business value in weeks with Rolta's industry specific pre-built analytics solutions embedding SAP's technologies. Faster ROI
- Joint thought leadership on IT-OT integration & operational integrity
- Joint POVs for Oil & Gas, Chemicals and Utilities
- Preferred partner of  Global Database Migration Factory Program

# Case Studies

Many organizations have seen significant benefits with Rolta OneView™ solving their specific industry challenges across multiple industries including Oil & Gas Upstream, Refineries, Petrochemicals, Chemicals & Utilities.

### Case Study – Exploration and Production Analytics

#### Business Challenges

When one of the largest and fastest growing independent oil and gas exploration and production companies engaged Rolta for a Rolta OneView™ implementation, their prime focus was improved capacity utilization of their assets, reduction of risks by improving compliance to maintenance practices, improved energy utilization and compliance to dispatch commitments. Their challenge was that 20% of wells reported downtime on a daily basis, an equivalent of 60,000 barrels of production loss and even a 1% improvement would result in US $17.5 M of revenue.

#### The Solution

Rolta OneView™ Enterprise Suite for Upstream Oil and Gas with its ready-built cross-functional analysis across multiple functions was able to provide the much needed multi-site visibility to take corrective actions and was ideally suited to solve these challenges. During a short discovery workshop followed by a pilot implementation, Rolta OneView™'s real-time, predictive and locational analytics capability could successfully predict the likely downtime of a production well. This evidence was sufficient to trigger their decision to implement the full solution.

#### The Benefits

Although the full deployment of Rolta OneView™ is currently under way, the customer is already seeing several benefits:

- Fast ROI – The predictive analytics capability of Rolta OneView™ is resulting in early planning and decision making and is already resulting in significant savings

- Improved cross-function visibility between planning, operations and maintenance

- Locational analytics is greatly simplifying optimization of maintenance field crew and equipment

- Pre-packaged industry rich business scenarios has resulted in minimal involvement of functional team during deployment

- Expecting to Go-Live within months compared to their internal estimation of two+ years for an in-house bespoke development by their IT team and incumbent IT services provider

**Case Study :    Accelerating the BI and Analytics Maturity Journey for Operational Excellence and Risk  Management**

**Business Challenges**

One of the largest oil & gas conglomerates in the Middle East recognized the critical need for transforming the information ecosystem augmenting collaboration and transparency in their pursuit of excellence. The organization wanted to define a phased roadmap to accelerate their BI and Analytics maturity journey

**The Solution**

Rolta was first given a pilot to prove that its Rolta OneView™ Analytics Solution can solve complex enterprise analytics problems – Composite Risk Management. The Composite Risk management Solution involved contextually fusing data from 9 heterogeneous source systems across Operational / IT / Engineering and GIS systems, monitoring and managing the composite risk of a plant or a specific asset with an industry proven model that forms the risk index based on the operational, technical, design and people & systems integrity. Rolta successful delivered the pilot in 6 weeks and was awarded a project to define the complete BI phased roadmap for operation excellence to move from ad-hoc to pervasive intelligence.  Rolta performed a detailed design thinking workshop with various stakeholders of the customer and delivered a detailed roadmap to execute in 3 waves with specific business outcomes in each wave. The solution protects the customers' existing investments in SAP BW while moving towards the OT/IT integration with Rolta OneView™ Enterprise Suite. Rolta has completed the wave 1 solution that brings key performance insights on Supply Chain, Finance, HR and Safety

**The Benefits**

- •       Improved productivity
- •       Cross domain communication, transparency and visibility
- •       Self-service BI and reports
- •       Improved logistic planning
- •       Reducing business risk
- •       Scheduled compliance for safety of critical equipment
- •       Improved HCM planning and competency tracking of services providers
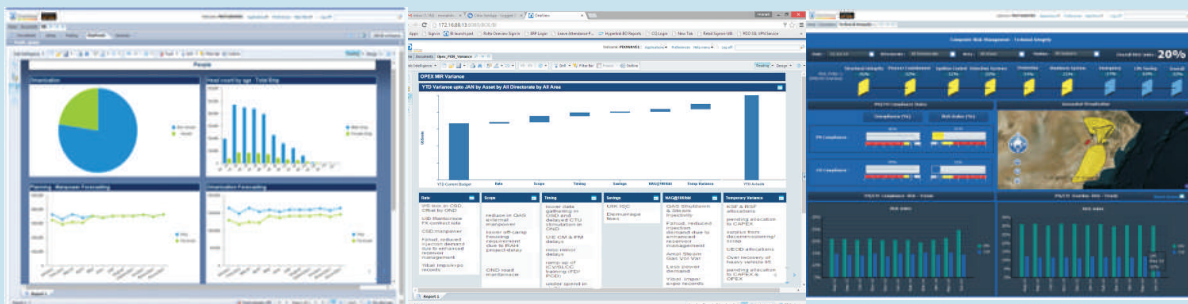
# ABOUT ROLTA

Rolta is a leading provider of innovative IT solutions for many vertical segments, including Utilities, Oil & Gas, Manufacturing, Federal and State Governments, Defense, Homeland Security, Financial Services, Retail, and Healthcare. By uniquely combining its expertise in the IT, Engineering and Geospatial domains Rolta develops exceptional solutions for these segments. The Company leverages its industry-specific know-how, rich repository of field-proven intellectual property that spans photogrammetry, image processing, geospatial applications, Business Intelligence, Big Data analytics and Cloud computing for providing sophisticated enterprise-level integrated solutions. Rolta OneView™ Enterprise Suite is one such innovative Big Data Analytics solution for asset-intensive industries with field-proven benefits. It brings unique value through its IT-OT integration and Predictive Analytics capabilities using Rolta's patented technology. Rolta is a multinational organization headquartered in India with revenues exceeding US$ 600M and over 3500 people operating from 40 locations worldwide and has successfully executed projects in over 45 countries.

**Corporate and Global Headquarters:**

Rolta India Limited
Rolta Tower A,
Rolta Technology Park, MIDC,
Andheri (East), Mumbai 400 093. India
Tel : +91 (22) 2926 6666, 3087 6543
Fax : +91 (22) 2836 5992
Email : indsales@rolta.com

**India Regional Offices**

Delhi NCR
Rolta Technology Park, Plot #187, Phase I,
Udyog Vihar, Gurgaon - 122 016.
Tel : +91 (124) 439 7000

Bangalore
Mittal Towers, 'C' Wing, 8th Floor, 47 / 6,
M. G. Road, Bangalore - 560 001.
Tel : +91 (80) 2558 1614/1623

Kolkata
501, Lords, 5th Floor, 7/1 Lord Sinha Road,
Kolkata - 700 071.
Tel : +91 (33) 2282 5756/7092

**International Offices**

Rolta International Inc.
(North America Headquarters)
Rolta Center, 5865 North Point Parkway
Alpharetta, GA 30022, USA.
Tel : +1 (678) 942 5000
Email : info.na@rolta.com

Rolta International, Inc. -- Chicago
333 E. Butterfield Road, Suite 900,
Lombard, IL 60148, USA.
Tel : +1 (630) 960 2909
Tel: +(905) 754 8100

Rolta UK Ltd.
(European Headquarters)
100 Longwater Avenue, Green Park,
Reading RG2 6GP, United Kingdom
Tel +44 (0)118 945 0450
Email : info.eu@rolta.com

Rolta Canada Ltd.
140 Allstate Parkway, Suite 503 Markham,
Ontario L3R 5Y8, Canada.
Tel : +1 (905) 754 8100

Rolta Benelux BV
Jupiterstraat 96, Building Pluspoint Nr. 2,
2132 HE, Hoofddorp, Postbus 190,
2130 AD Hoofddorp, Netherlands.
Tel : +31 (23) 557 1916

Rolta Middle East FZ-LLC
(Middle-East Headquarters)
Office No. 209-211, Building No. 9,
P.O. Box 500106 Dubai Internet City,
Dubai, United Arab Emirates
Tel : +971 (4) 391 5212
Email : info.me@rolta.com