



ROLTA

INSIGHTS. INNOVATION. IMPACT

Rolta OneView™ 6.0 for Petrochemicals

DRIVING OPERATIONAL EXCELLENCE

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

Changing Paradigm

Global economy is propelling the demand for petrochemicals and specialty polymer products with their unique properties and versatile use. This is one of the fastest growing segments with high CAPEX and consequent competitiveness. Optimization challenges, driven by high energy costs and alternate feedstock development have a far reaching impact on the industry. Thus, there is an increasing emphasis on operational efficiency, product quality and technology adaptation in this industry. Consequently, petrochemical majors are in search of value engineering levers to increase reliability, control costs, manage risks and develop seamless supply chains to achieve and sustain higher margins.

Industry Challenges

- Globalized markets with alternate feed stocks impacting supply chains, competitiveness and operating margins
- High energy costs and cyclic market conditions with high product flexibility and stringent environmental regulations
- Dire need for seamless supply chains in order to drive well-integrated processes that bring in economies of scale through optimizing services and agility in decision making

Rolta's Out-Of-The-Box Solution

Rolta OneView™ 6.0 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 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 process 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

Digital technologies are seen as an enabler to achieve and sustain operational excellence by improved intelligence and cross functional insights into operating practices, maintenance systems and supply chain logistics. Reducing downtime and improving recovery from unplanned events is essential. This is made possible by greater visibility into comprehensive asset analytics, through planning and scheduling, to marketing and trading and monitoring key performance indicators that help unlock value.

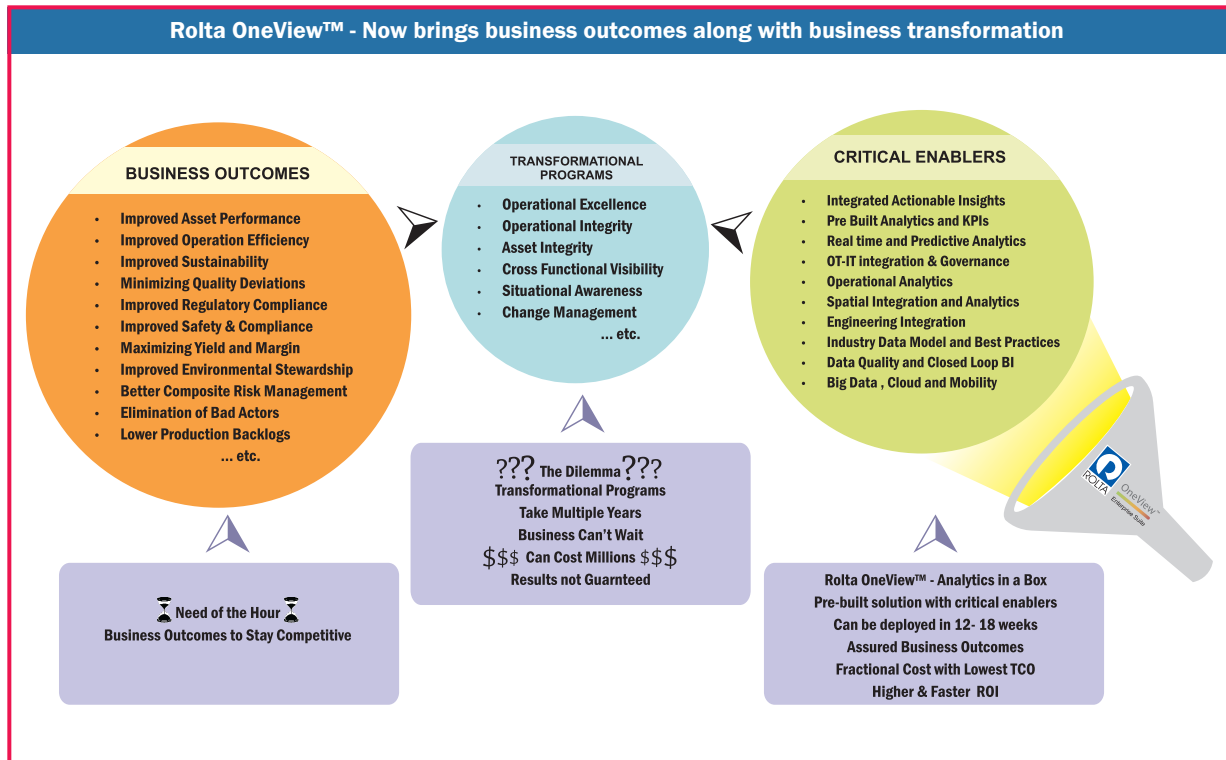


enterprise by providing loosely coupled, yet comprehensive integration across the operation and business systems with “Integrate-Analyze-Deliver” approach built by leveraging best of breed platforms.

Rolta OneView™ rich knowledge model provides enterprise wide multi-site as well as cross function visibility across areas such as Operations, Assets, Maintenance and Reliability, Supply Chain, Health Safety and 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 multisite, 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 geographically dispersed sites across the globe. Rolta OneView™ on Cloud helps the LOBs to see the benefits without any CAPEX investments.



Pre-Built Industry Value Scenarios for Petrochemicals – Few Examples

Petrochemical companies operating in global markets continue to leverage technology to address business needs to run, grow and transform their operations. Rolta OneView™ provides over 200 value scenarios, built on 400+ KPIs that can be monitored on a continuous basis, leveraging industry specific data model and pre-built analytics. Each of the value driving scenarios can be monitored at operational, tactical and strategic levels to derive meaningful cross functional insights.

Operational Excellence

In increasingly globally competitive markets, petrochemical 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 &

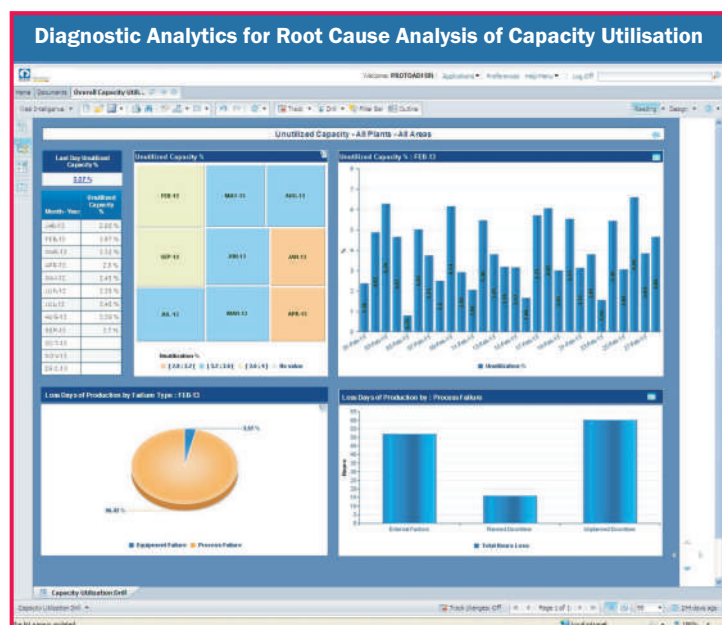
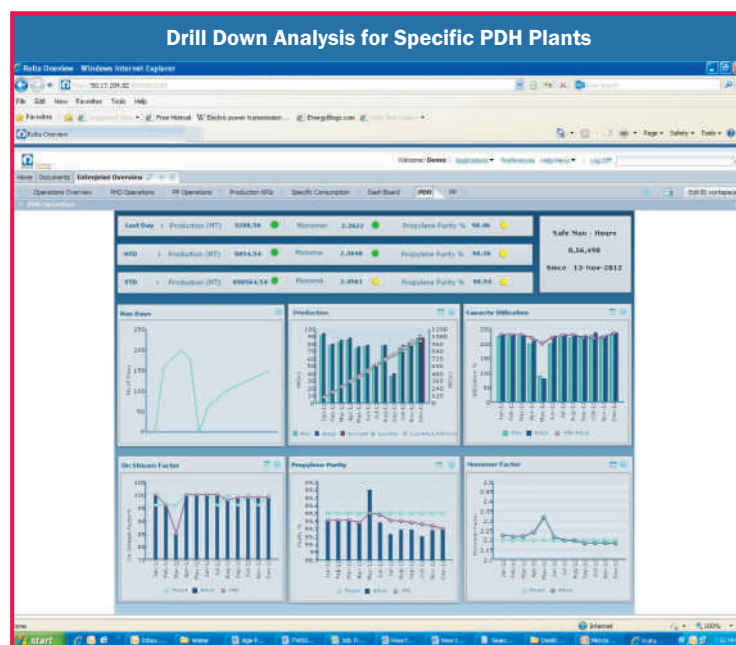
Reliability, Health Safety & Environment, Projects, Supply Chain, Finance, Human Capital, etc. The key benefits of OpX value scenario provided by Rolta OneView™ include:

- Sustain entrepreneurial spirit amongst departments and business functions with clear understanding of productivity targets by all stakeholders
- Measuring operational and maintenance metrics accurately and sweating 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 operations for people to collaborate, discuss and examine data together



At the top decision making enterprise level, an integrated view of operational excellence performance is provided based on organization-specific focus areas. Various elements shown in this view can be further drilled at user defined time periods and various levels to understand specific aspects like availability, capacity utilization, operating expenses, safety performance, etc. Rolta OneView™ provides rich intuitive graphical representation of this information, to aid analysis and decision making. The illustrated view from Rolta OneView™ provides visibility into enterprise dashboards with details on production levels for Poly dehydrogenation and Poly propylene against targets. It also provides visibility of product wise purity, capacity utilization, on stream factor etc. on real time basis with alerts highlighting areas where targets are not met.

Users can drill down to this view that provides enterprise level visibility for a PDH plant on its operational performance for the previous year including run days, capacity utilization, on-stream factor, propylene purity, monomer factor on a month on month basis against the planned values. The solution has inbuilt alarms and notifications engine that helps users to be regularly updated about any target breaches. Associated workflows help drive actions from derived insights.



Delving further provides insights into the unused capacity of the selected plant. The highlighted metrics will help in identifying areas for further focus and improvement as per daily and monthly utilization of plant.

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

Asset Integrity

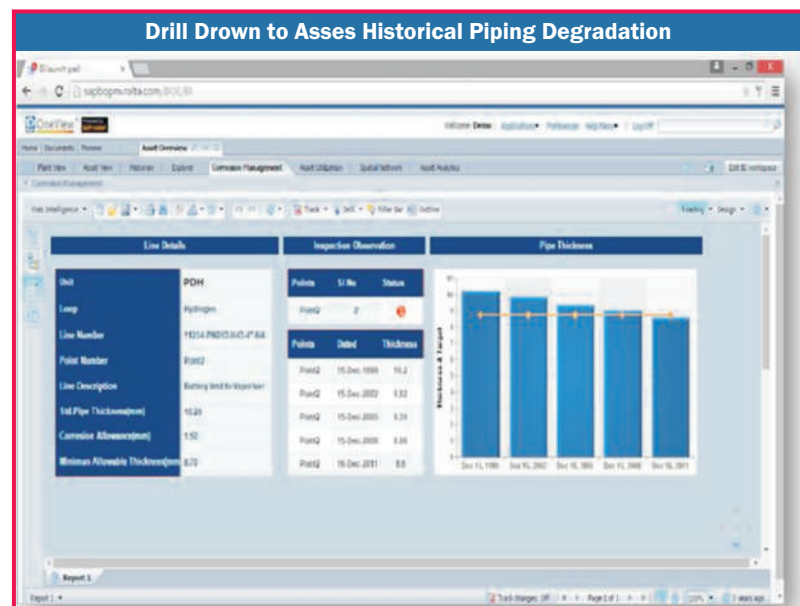
Asset Integrity Management (AIM) is a crucial function in petrochemical industries, with significant impact on production, costs and profitability. Rolta OneView™ helps petrochemical companies gain greater contextual visibility into their asset integrity programs, providing benefits like:

- Adequate visibility into asset performance and reporting operational and maintenance costs
- Aligning asset performance to corporate objectives with clarity of ownership
- Establishing baseline capacity for maintenance and ensure assets are not over-maintained
- Maintenance efforts to be accountable, coordinated, condition based and proactive
- Leveraging systems perspective to know inter-connectedness of multiple business functions
- Monitoring wrench time for crews with scientific tool time analysis & productivity metrics



As users seamlessly navigate through Rolta OneView™, specific views provide visibility of inspection reports on corrosion loops in a plant, unit wise, with alerts in those areas which are not meeting the Minimum allowable thickness of equipment and a drill down provision. This allows assigned experts to be top of the situation and plan appropriate actions

Comprehensive action planning is supported by drill down views that provide insights into the various aspects of the corrosion loops dashboard with further details like Line number, point number, line description, standard pipe thickness, corrosion allowance and minimum allowable thickness for the line that has a problem. The trend line helps in monitoring the time since the degradation started to breach the threshold. The solution provides several invaluable insights to reliability experts to gain critical handle for comprehensive planning and monitoring.



Supply Chain Efficiency

One of the crucial strategic elements in hydrocarbon industries in general, and for petrochemical industries in particular is the supply chain. Rolta OneView™ value scenarios include:

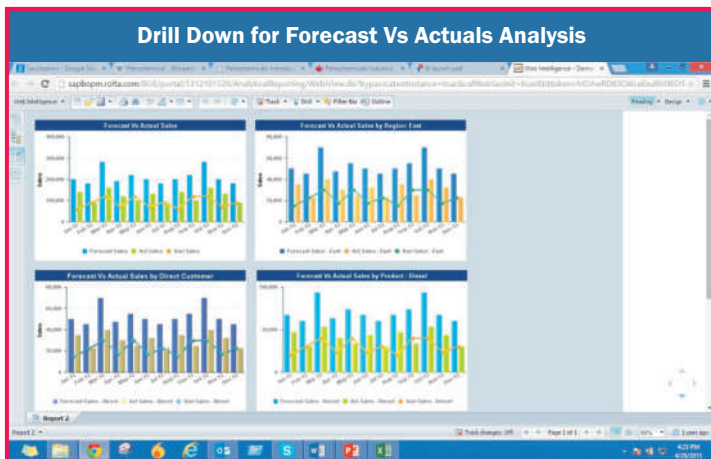
- Seamless supply chain visibility with holistic view of assets and touch-points across value chain
- Ensuring supply chain metrics, inter-dependencies and bottlenecks are transparent & visible
- Understand the inter-play and trade-offs between inventory levels and costs
- Spend analytics to reflect the influence of non-availability of critical spares on top line

Rolta OneView™ provides visibility at enterprise level, of supply chain performance KPI's like on time shipment, transit delay, order status, order fill rate, stock-outs etc.



Further drill down views provide visibility of supply chain performance KPI's like Forecast accuracy, Capacity utilization, Total Logistic Cost, on time delivery, Total Inventory, Last Day dispatched, Supplier performance measures, Loss analysis and Delivery rejection rate. The view helps in tracking the targeted times with the actuals, and helps in identifying the months when any deviations happened.

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



Additional drill downs provide analysis of supply chain cost summary, through sales by region, sales by direct customer, etc. and highlight elements that improved by comparing with historical performance for previous months, under different sales modes and regions.

Geospatial visibility of Demand Analysis of Sales and Inventory adds a critical dimension to the overall supply chain visibility, by providing say for a specific month forecast, actual and variance figures. This helps users to understand, analyze and resolve complex supply chain problems on varying temporal and geospatial scales.



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 & discipline in adhering to pre-set targets Identification, monitoring, and managing bad actors on a continuous basis



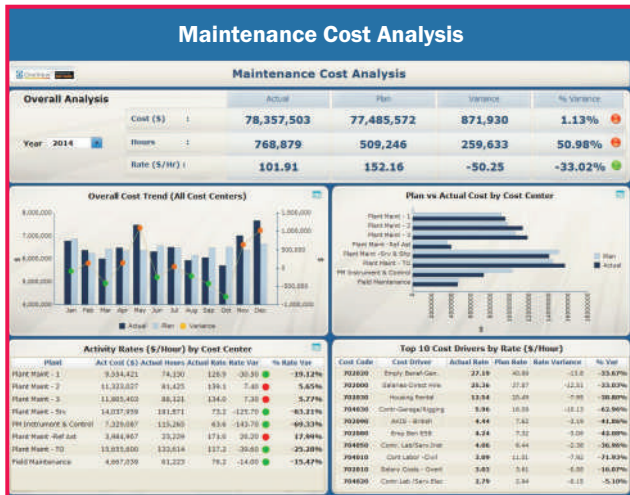
Rolta OneView™ provides an enterprise level overview of process safety for a selected plant, including events, severity details, safety equipment by-passed, Preventive and Corrective Maintenance status Standard operating procedures, and generates alerts on KPI's that breach the targets.

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:

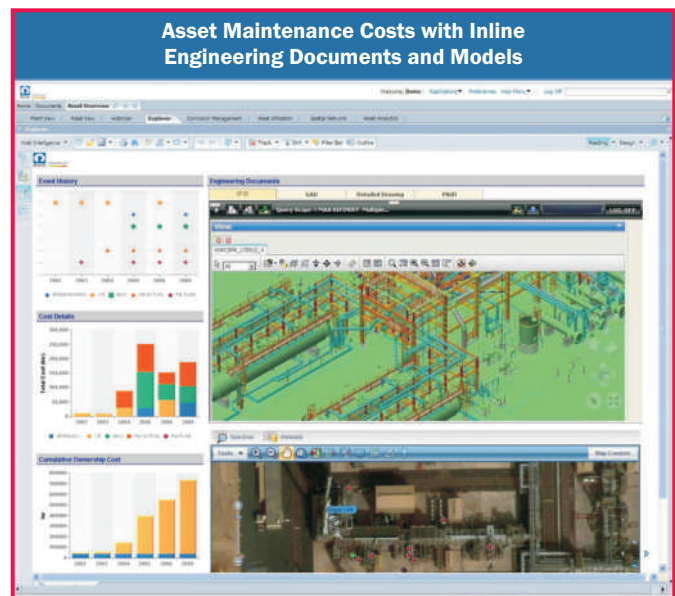
- Critical Repair vs. Replace decisions for assets based on lifecycle costs
- Monitoring Planned vs. Actual expenditure on near real time basis
- Seamless alignment between finance and operations metrics for work prioritization and optimization
- Transparency and awareness on specific production costs



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.

Rollta OneView™ provides an enterprise level visibility into various costs incurred under different heads and also generates alarms for cost items exceeding plan values, with a drill down provision.

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.



Managing Critical Projects

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

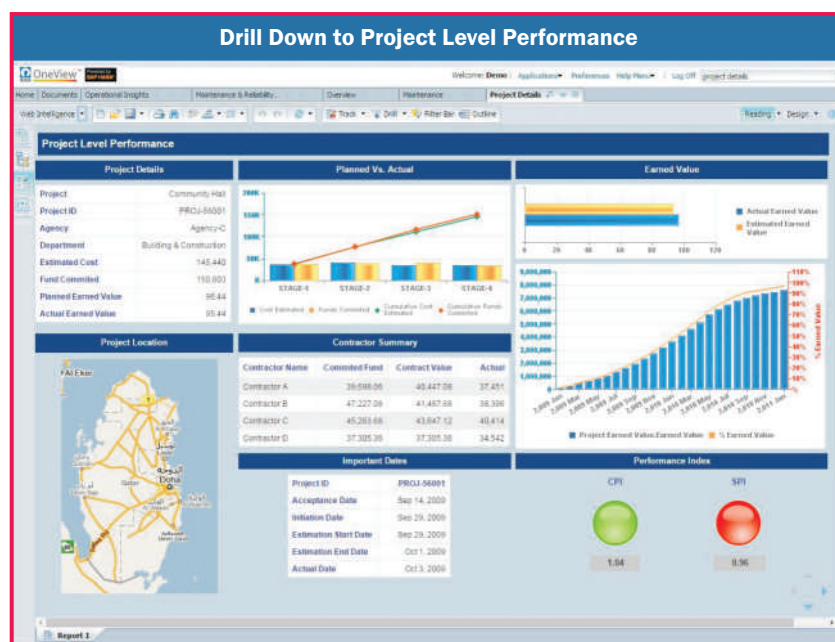
- Visibility into project progress on near real time basis and controlling overruns - CPI and SPI
- Enabling macro levels re-planning aligned to field challenges and developing alternate schedules

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



Delving deeper provides enterprise level visibility into the fund allocation and status of funds availability, number of approved projects and list of high value projects. This also captures project request status, projects processing time, most delayed projects, project distribution by department, function, company, etc., with a drill down provision.

Further investigation provides enterprise level 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.

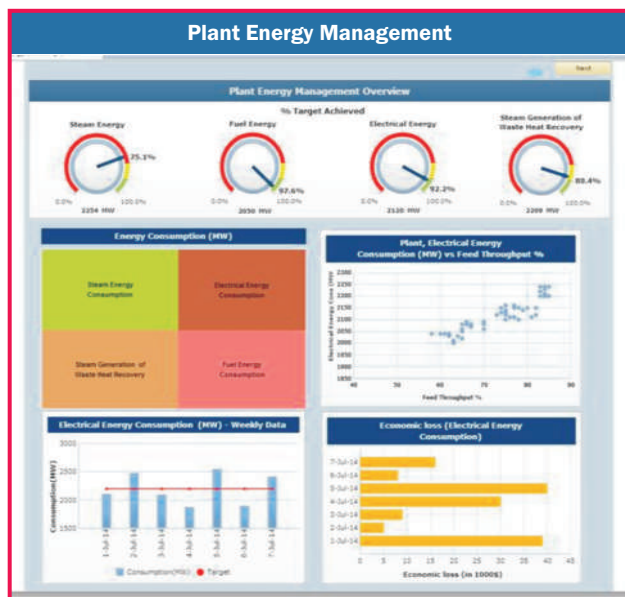


Energy Efficiency

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

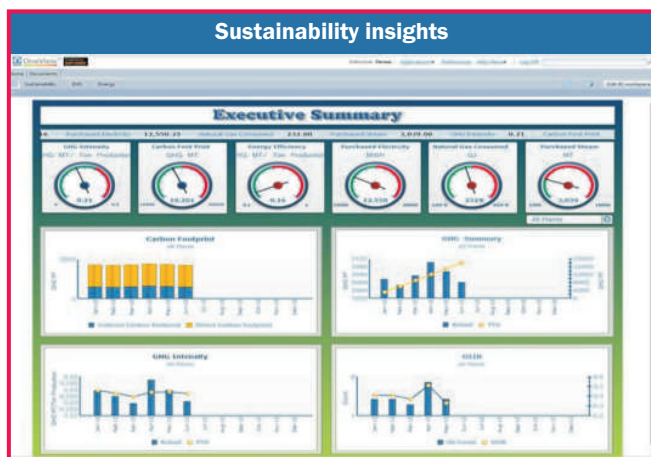
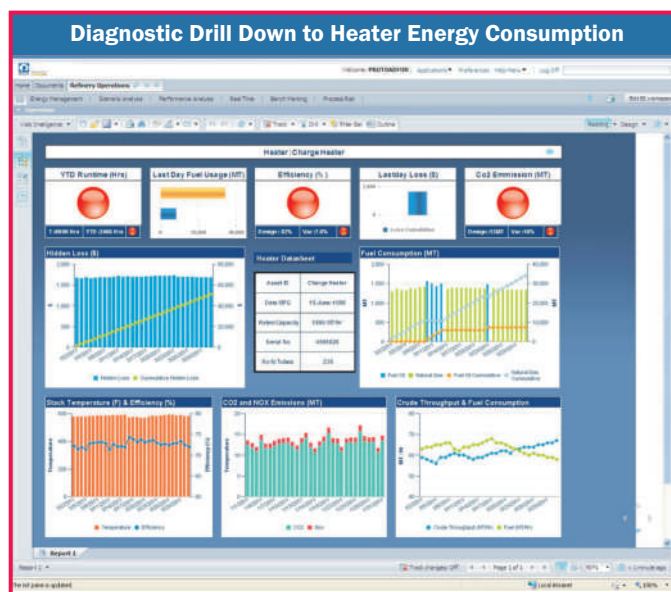
- Understanding energy generation and consumption actors and their efficiencies
- Leveraging margin pricing, wherever appropriate for augmenting power generation
- Monitoring critical factors that contribute to energy inefficiencies and excess consumptions

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



Probing further provides visibility on the energy consumption patterns for different types like steam energy, fuel energy, electrical energy. Analysis of plant energy consumption as a function of feed throughput is provided. The economic loss due to ineffective operations is captured on a daily basis with drill down provision.

Users can investigate further and carry out detailed analysis of energy consumption at asset level with alerts through visibility into historical and real time data for select equipment like the heater. KPI's include YTD Runtime, last day fuel usage, efficiency, last day loss, CO2 emission, hidden loss, heater datasheet, fuel consumption, stack temperature trend, CO2 and NOX emission trend, crude throughput vs. fuel consumption trends. The KPI's indicating red can be further analyzed.



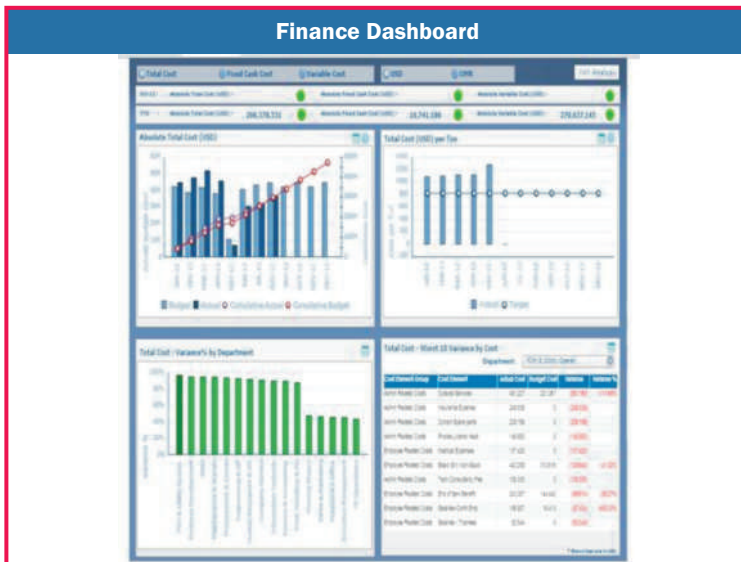
Most businesses in the hydrocarbon value chain these days have special emphasis on sustainability, to ensure continuity. Rolta OneView™ supports various sustainability scenarios. For example, this view provides an executive summary of GHG which includes Carbon Footprint, GHG Summary, GHG Intensity and Occupational Injury and Illness Rate (OIIR). This view can be drilled down to plant and year wise summaries. The final drill down provides a view into the consumption of electricity, natural gas, energy efficiency, and purchased steam. Views such as these enable users to get comprehensive visibility into various aspects of people, plant and overall business to ensure longevity.

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

Business Insights

In addition to comprehensive coverage of operations, assets, maintenance & reliability, health safety and environment; Rolta OneView™ provides significant coverage of various critical business functions like HR, Finance, IT and Marketing. The top level value of these scenarios includes:

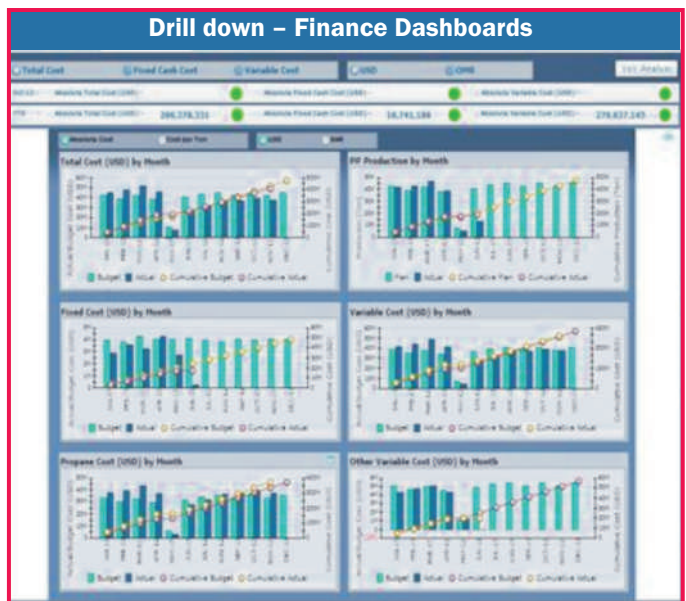
- Provide an enterprise level view for various corporate level KPI's covering areas like HR, Finance, IT and Marketing
- Set targets for various supporting functions of the enterprise and track the performance against the targets



Drill downs provides insights into enterprise level for finance KPI's like total, fixed and variable costs in multiple currencies, monthly and yearly cost trends of absolute total cost, total cost per ton along with budgeted versus actual details. It also provides insights into the total cost % variance by department and total cost, worst ten variances by cost, with intuitive color coding to enable business managers focus their energies on metrics that drive profitability of the enterprise.

Further analysis is facilitated through additional drilldowns into Absolute Total Cost dashboard and cost on monthly basis against the budgeted. It provides detailed analysis of Absolute Total cost with breakup in details like – Total cost, fixed cost, Propane cost, variable cost etc. It also provides cumulative budget and actual trends in multiple currencies.

Thus, Rolta OneView™ allows management at various levels in petrochemical companies to pro-actively monitor performance across multi-functional areas, and drive the corporate journey towards operational excellence.



Similarly, for Human Capital, Rolta OneView™ provides enterprise level overview of the human resource dashboard with KPI's like manpower status, vacant positions by department, localization and monthly attrition rate.

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 pre-built work processes, industry-specific analytics and role-based actionable insights. The solution has 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™ 6.0 - Cloud Ready Analytics Solution

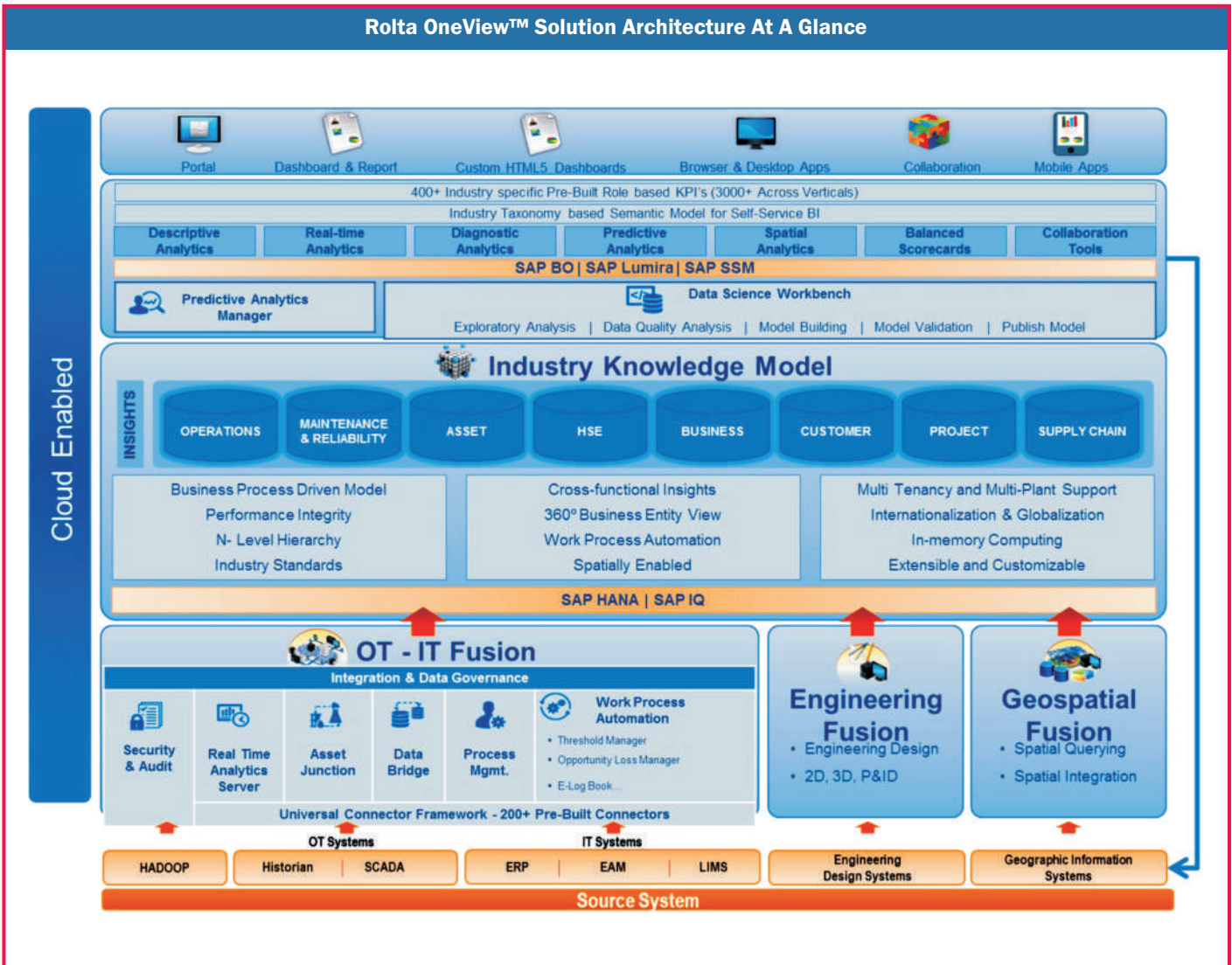
Rolta OneView™ has been architected and designed for multi-site, multi-tenancy operations and can be deployed as a single server instance either in an organization's private, hybrid or public cloud environment to support multiple, geographically dispersed sites across the globe including built-in globalization 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 Rolta OneView™ is well aligned to SAP's cloud strategy and supported to provide a comprehensive solution.



Rolta OneView™ Solution Architecture At A Glance



Rolta OneView™ 6.0 - Big Data Ready

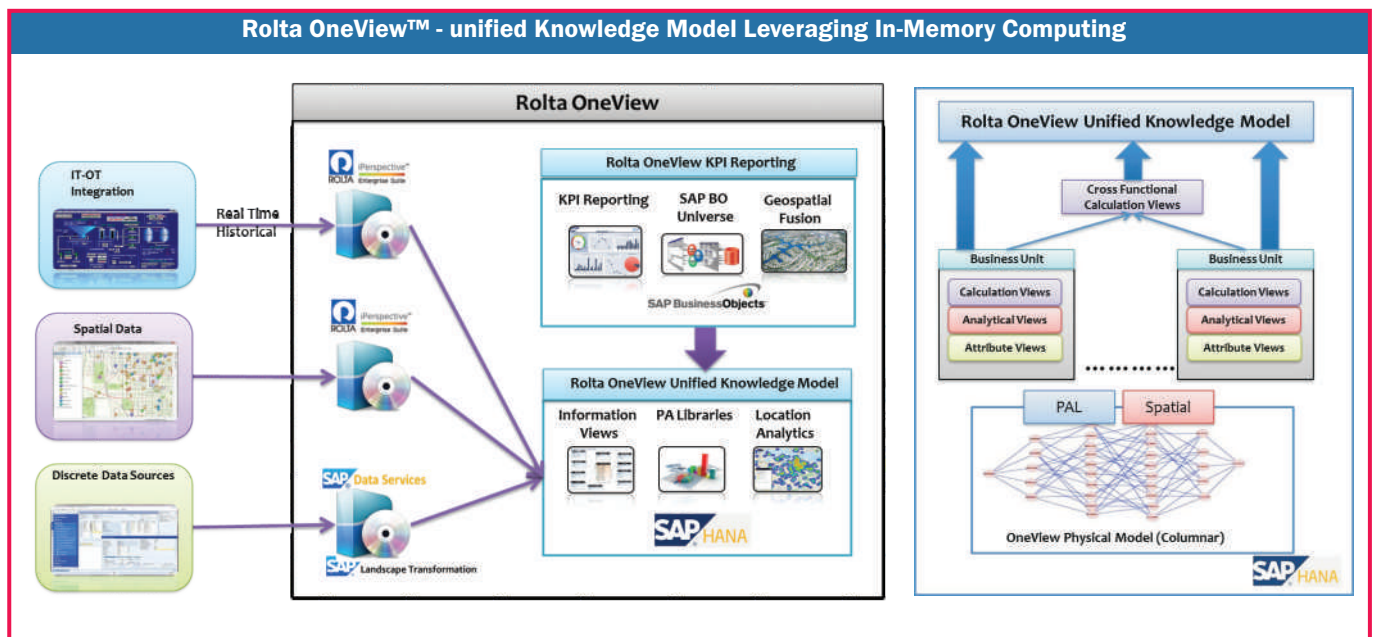
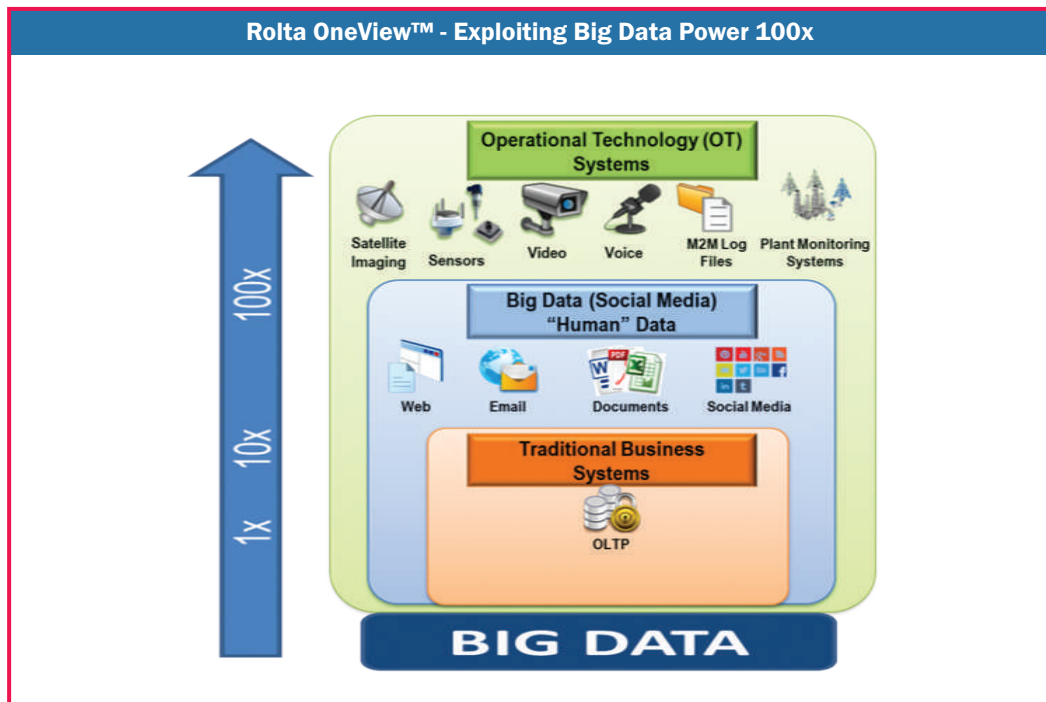
Rolta OneView™ is also a unique pre-built, rapidly deployable industry rich Big Data Analytics solution. By combining the IT - transactional, Unstructured and OT data landscape, Rolta OneView™ brings 100X value of the Big Data in an enterprise.

Big Data Analytics brings the need of getting 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 real time to correlate at semantic layer and not necessarily to 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 or unstructured benchmark data, external Social data and Public data on the cloud. Rolta OneView™'s 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.

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



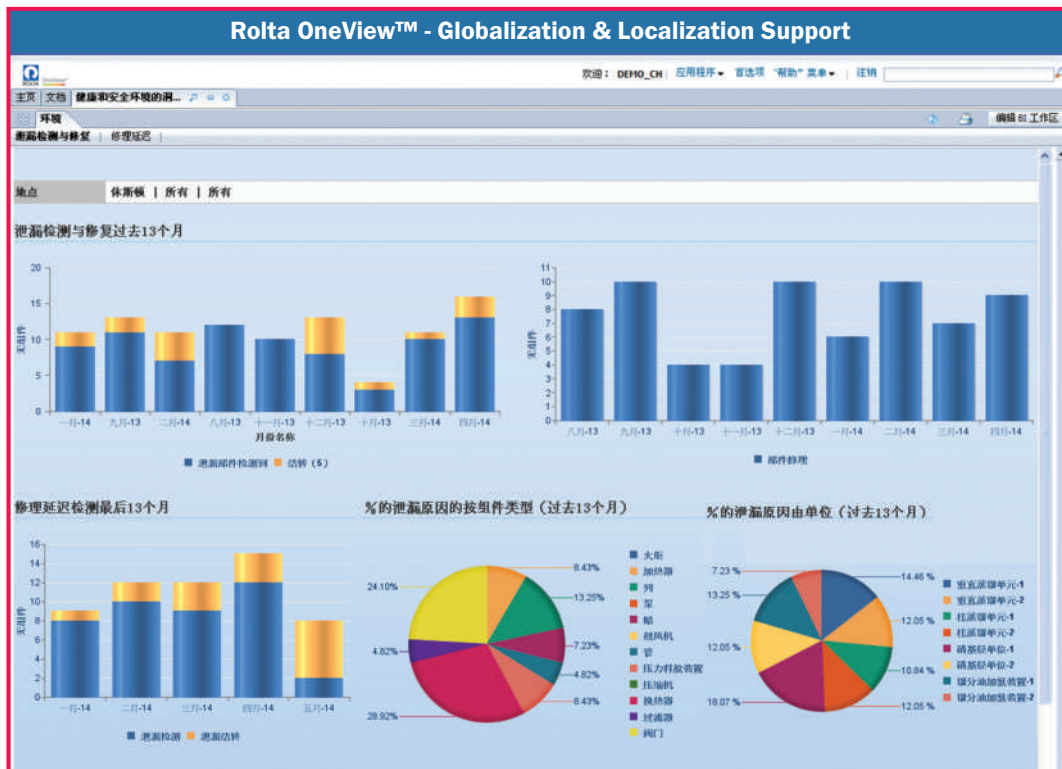
model it derives the most relevant predictive analytics use cases in a specific industry vertical. Additionally, its flexible architecture allows ease of customization and modifications

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.

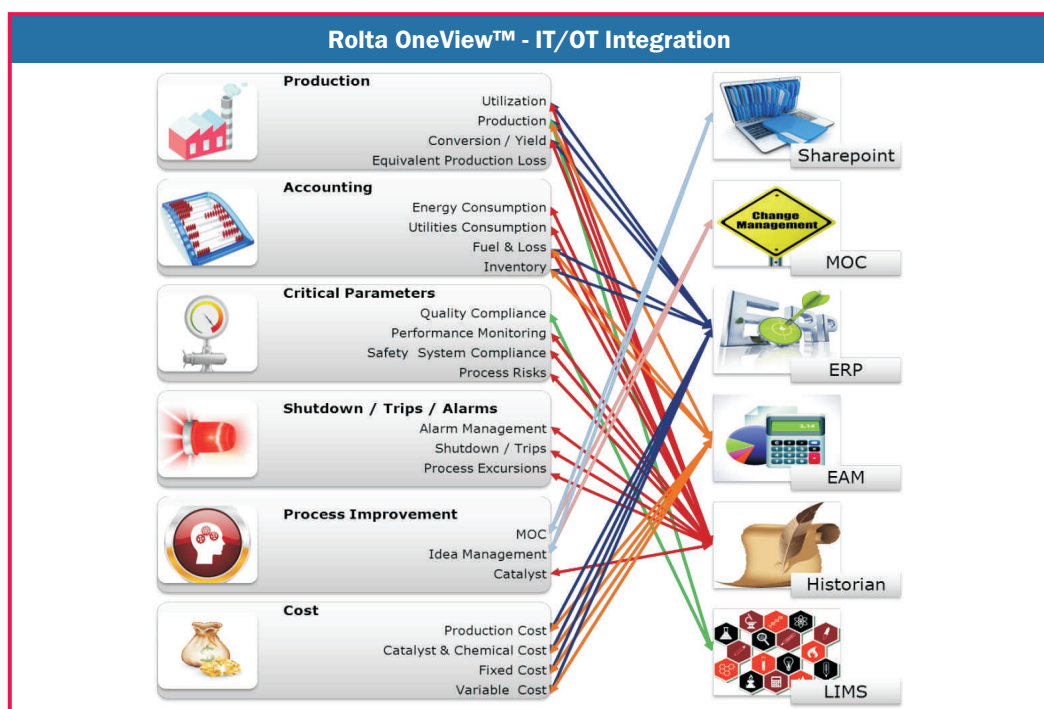


Rolta OneView™ Integration Layer

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

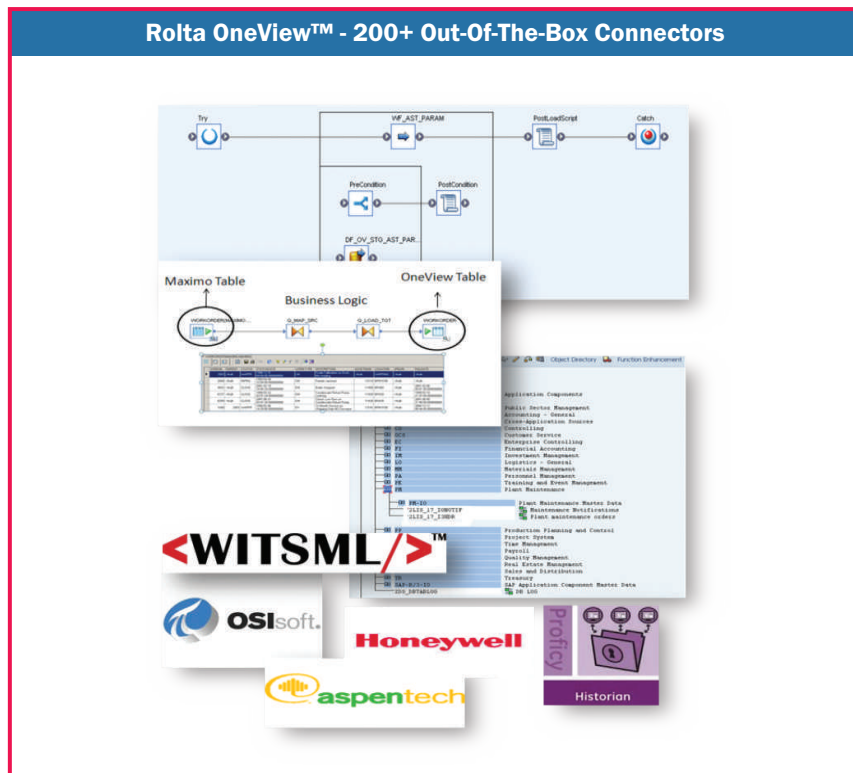
IT and OT environments, supporting the latest UA security specifications. It has a high performance Audit Engine to track access to OT data. Uptime of the OT network is highly critical for production. Hence the communication between the IT and OT network is secured. It provides confidentiality and integrity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



Pre-built Connector for Real-time & ETL

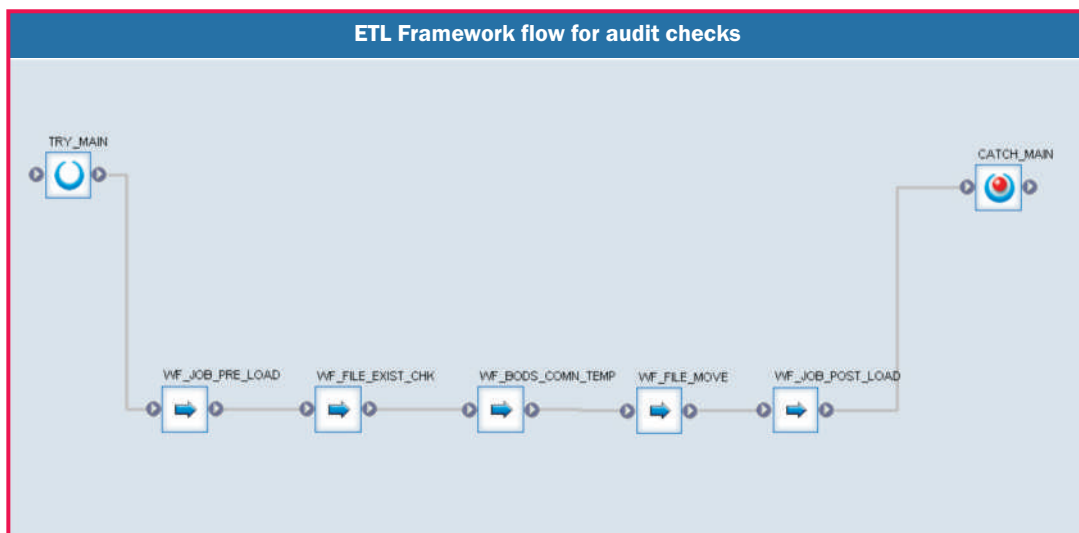
Rolta IT-OT Fusion™ Platform has 200+ pre-built real time and ETL based connectors across business, operations, geospatial, engineering & other IoT systems for optimal performance & payload with over 400 data flows. The pre-built connectors include IT systems such as ERP, CRM, EAM, SCM and Operational 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.



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.

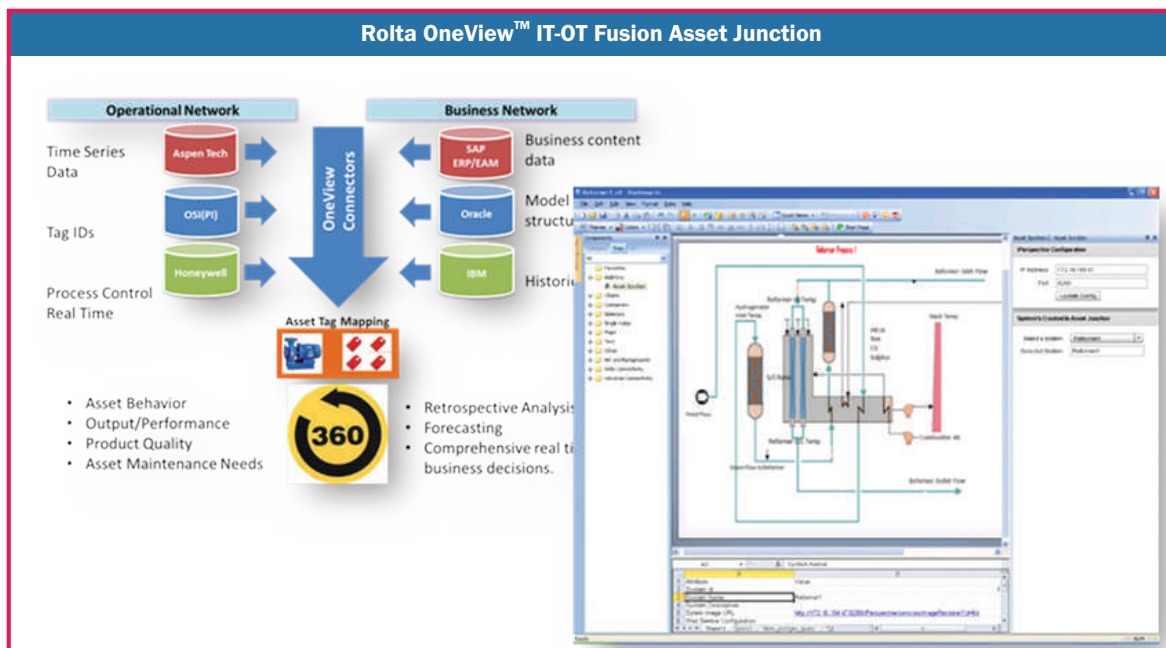


Asset Registry

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 of 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-

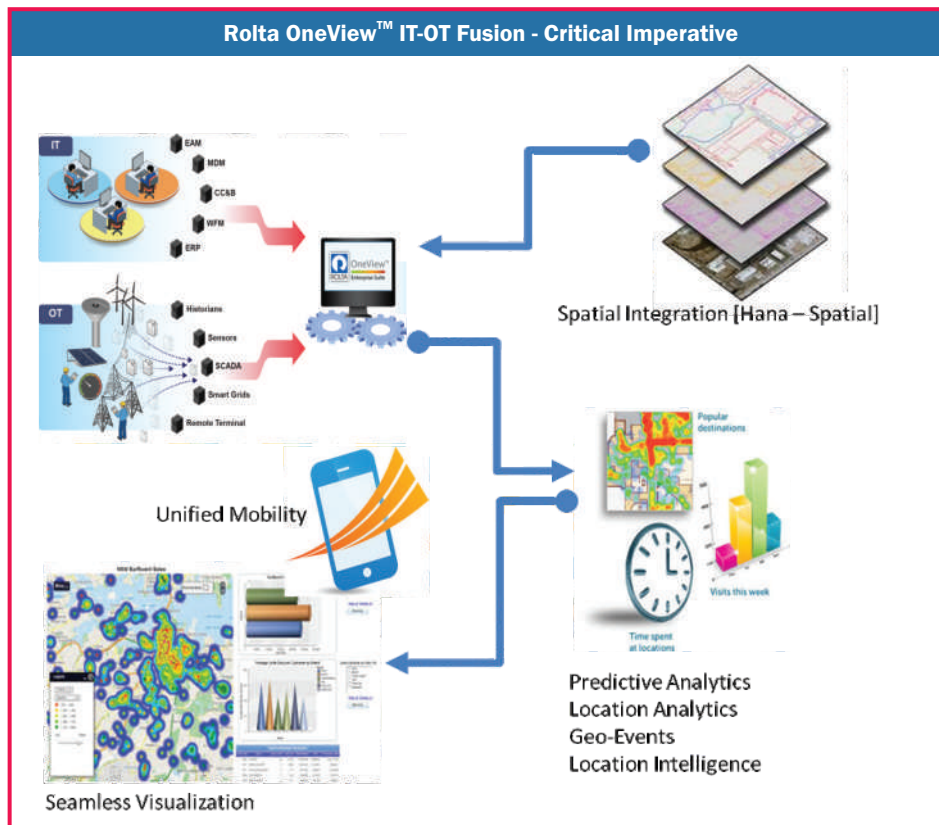
commissioning an asset or commissioning a new asset and thereby provides rapid access to operational data for an asset / process. It provides an easy way to associate the process schematics with corresponding tags and the ability to gather data from multiple OT systems for an asset or a process. It supports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



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.

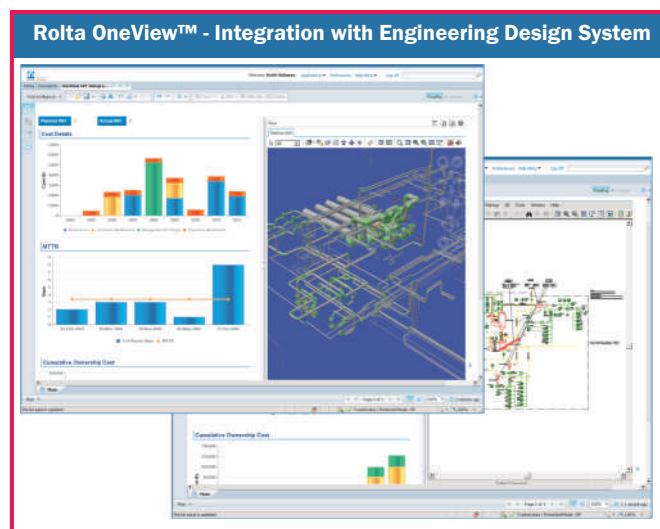


Engineering Fusion

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.

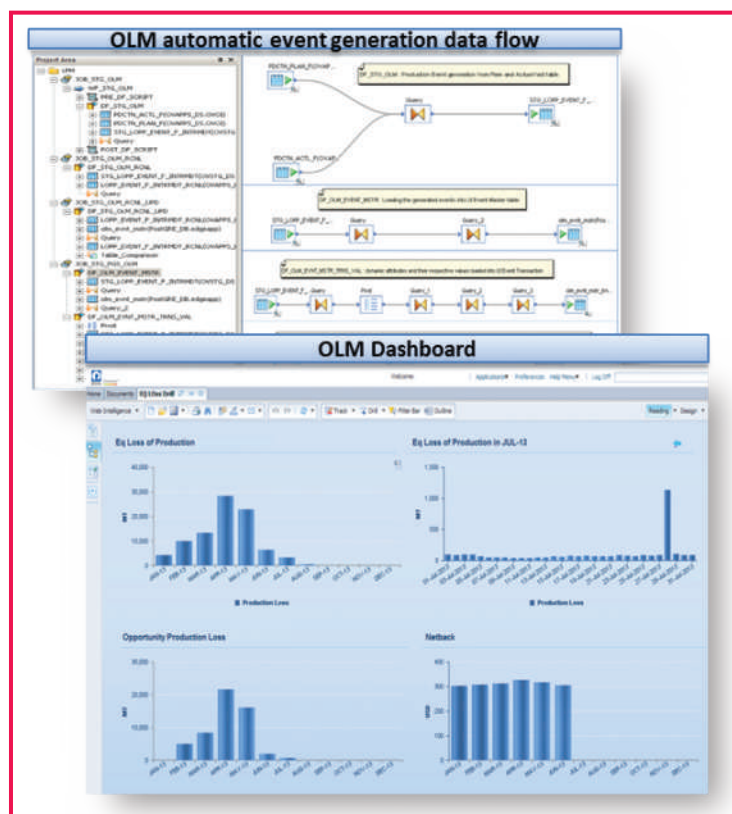


Pre-Built Work Processes

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

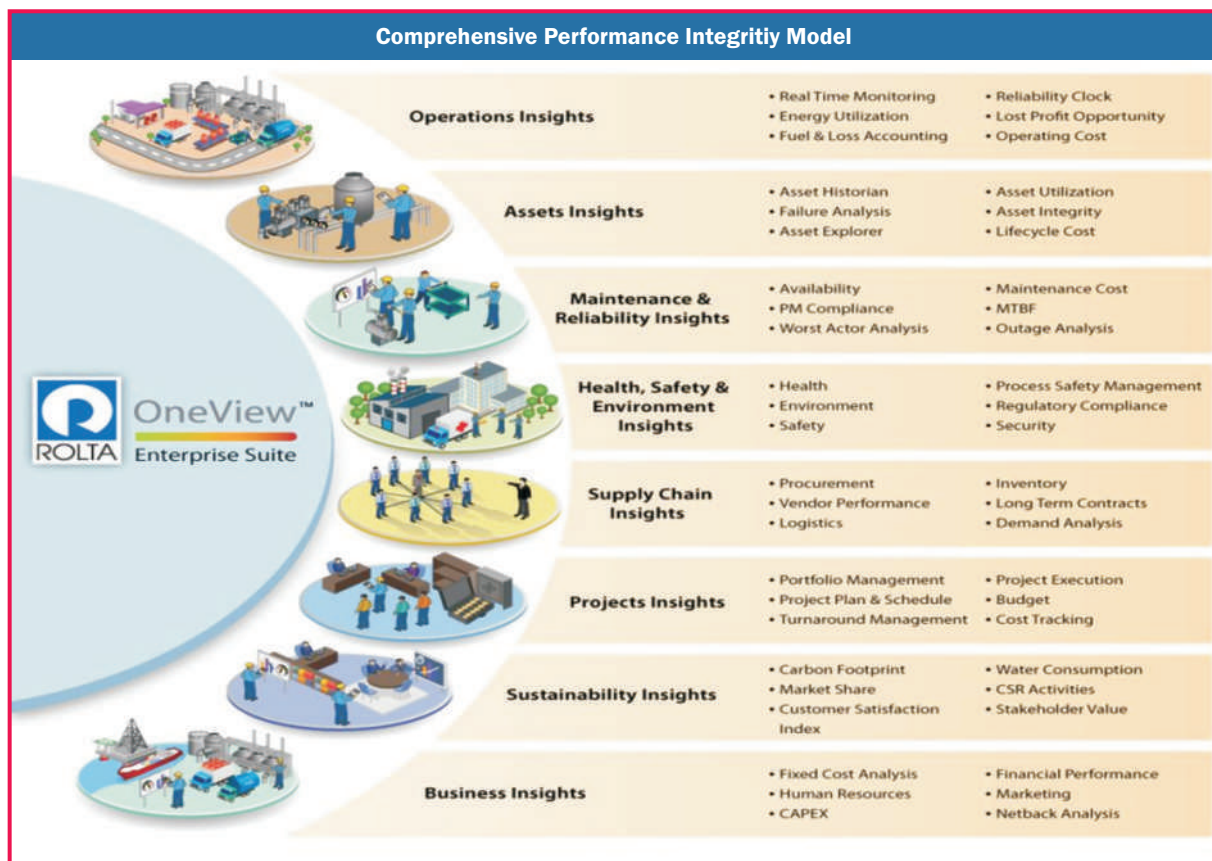
Rolta OneView™ includes pre-built business process driven knowledge models which are industry-specific, based on years of domain expertise and best practices. It is a highly optimized persistence of data from the heterogeneous business and operational systems to enable high performance analytics and 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 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.

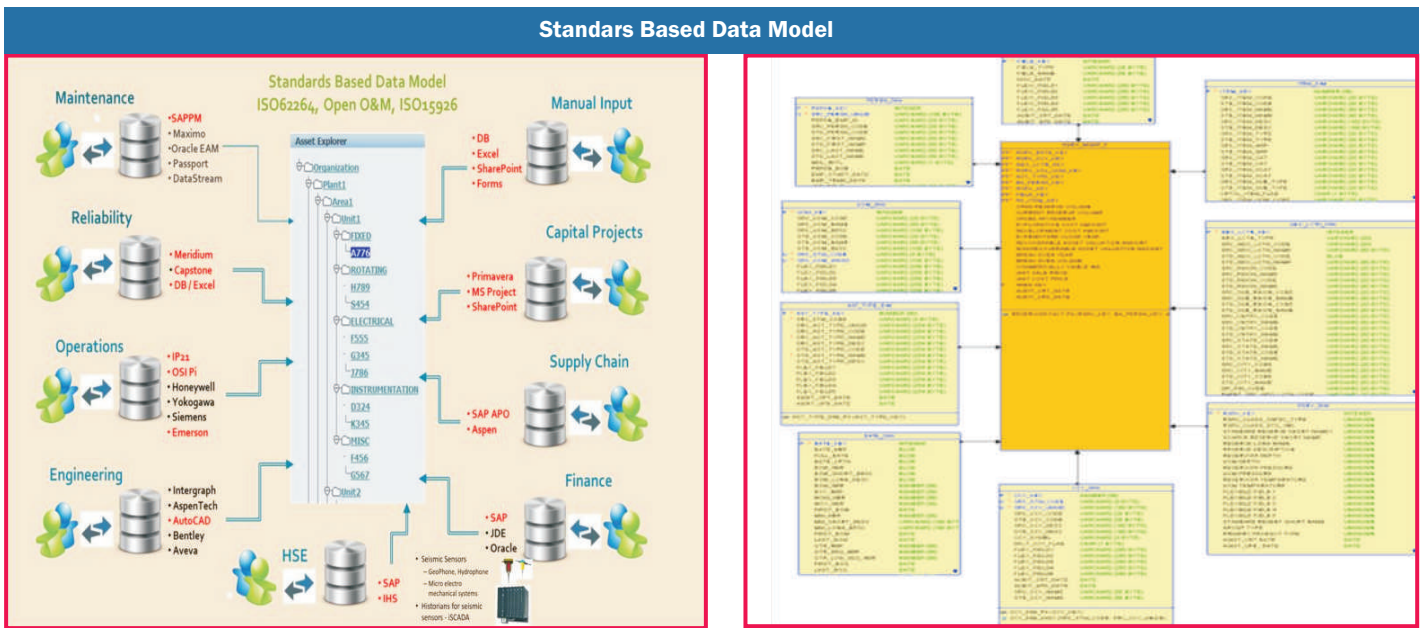
The knowledge model maintains the cross-functional information collated from varied data sources thereby enabling performance management and analytics, including trends, 'slice and dice' analysis, drill-down, forecasting, variance analysis, root cause identification, scenario planning and what-if modeling.



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.

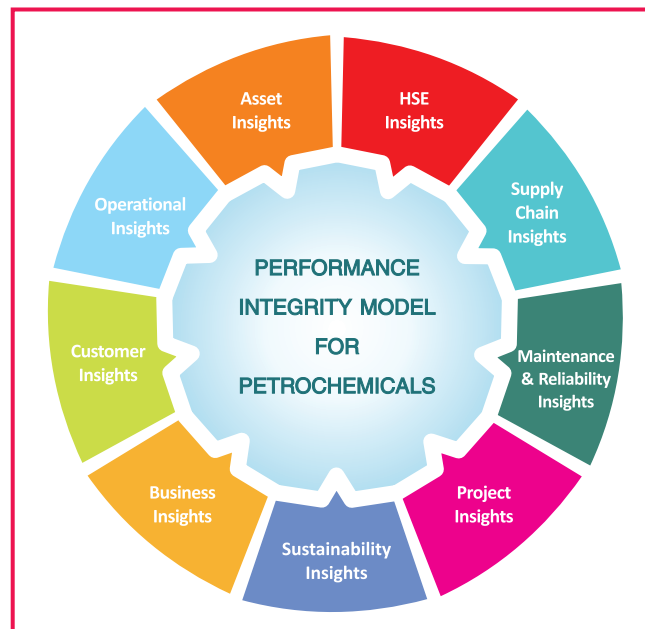


Unified Performance Integrity Model bringing cross functional visibility and modularity

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.

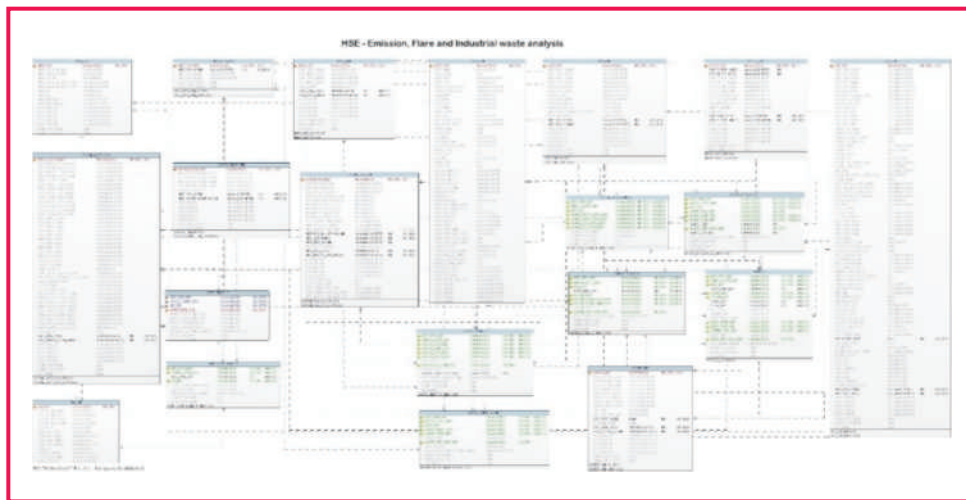


Extensibility

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

Some of the unique features and benefits include:

- Ability to build new KPIs by extending and/or customizing the entities through a documented process to ensure of 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

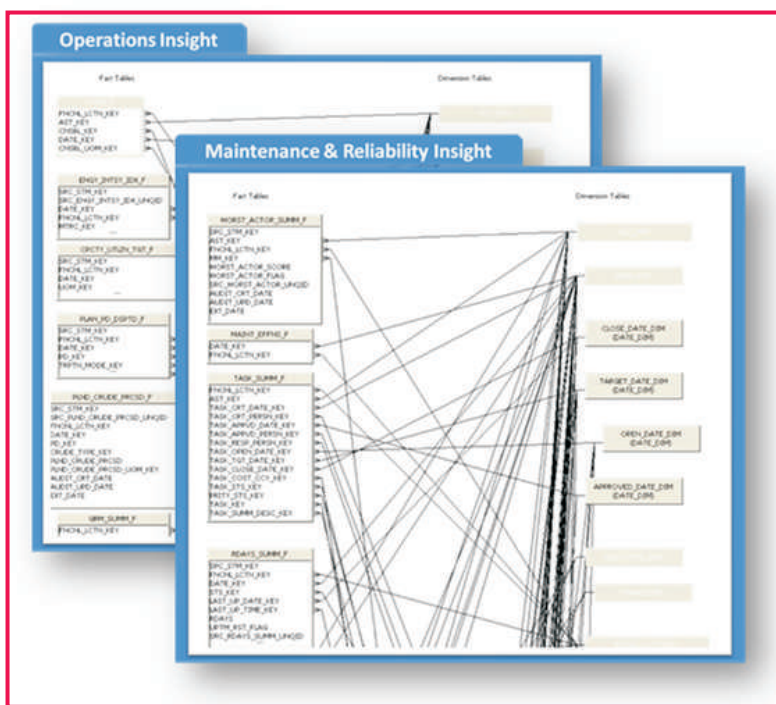
- Comprehensive star schema based semantic model with over 8000 objects and over 1300 classes
- Semantic model by each business function and defined guidelines to extend them
- Adopts industry based taxonomy
- Enables cross functional KPI creation Business users are easily able to customize and extend 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 petrochemicals 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.

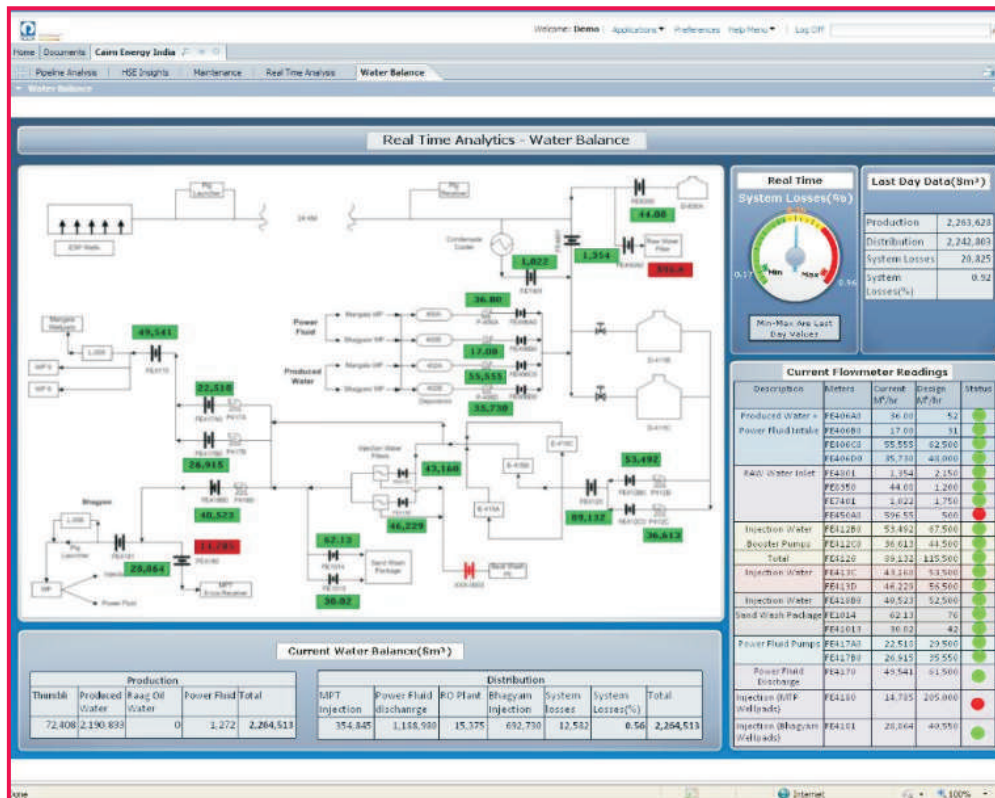


Analysis	Process	Sub Process	Performance Measures
Production	Production Volumes	Well Testing/Wireline	Equilibrium reservoir pressure vs. Timeline
Production	Production Volumes	Well Testing/Wireline	Number of well tests vs. time line
Production	Production Volumes	Fluid Analysis	GLR (Gas to liquid ratio)
Production	Production Volumes	Fluid Analysis	Water to oil ratio (daily , monthly , yearly)
Injection	Enhanced oil recovery	CO2 Injection(Mainly	Permeability & Porosity vs. CO2 Injected
Injection	Enhanced oil recovery	CO2 Injection(Mainly	Water injection (daily , monthly , yearly)
Production	Artificial Lift	Artificial Lift	Artificial lift: Well production rate vs. Gas flow injection
Injection	Annual Target	Annual Target	Artificial lift: Well bore pressure drop vs. Gas flow Injection t
Production	Production Operations	Production Operations	Number and Duration of Power failures
Injection	Water Flooding	Water Flooding	Production vs. Reservoir pressure
Production	Artificial Lift	Rod/ESP/Gas Lift/PCP	Equipment Utilization vs Availability
Production	Artificial Lift	Rod/ESP/Gas Lift/PCP	Equipment operational capacity vs Max capacity
Production	Annual Target	Reserves Recovery	Equipment operating efficiency vs max efficiency
Production	Annual Target	Adding New Zones	Total Volume of wells/ reserves from existing + new zones
Production	Annual Target	Adding New Zones	New wells, volumes and reserves added (Quarterly and annual)
Production	Annual Target	Stimulation	Revenue from new zones of production (monthly, quarterly, annual)
Production	Annual Target	Stimulation	Stimulation event frequency and Cost vs production rate
Production	Facilities	Gas dehydration	Stimulation duration planned vs actual
Production	Assets Management	Production Worst actors	Crate quality (weekly, monthly, quarterly, annual) - API /TAN
Drilling	Circulatory System	Water Mgmt.	Worst Actor Production (By Field, Well) - monthly, quarterly, ann
Drilling	Circulatory System	Water Mgmt.	Water consumption by asset / well over time
Drilling	Geological Capability	Geological Capability	Water usage per well
Drilling	Misting	Misting	Well status (drilling, production , shutdown , maintenance)
Drilling	Other	Performance	Moist status (Available , BM , CM)
Drilling	Other	Performance	% Non Productive Drilling Time (NP2)
Drilling	Other	Performance	% Drilling rig Utilization rate
Drilling	Assets Management	Drilling Worst actors	Drill rate index - Depth vs. time curves
Injection	Other	Utilization	Production Capacity Utilization (daily, monthly, quarterly, annual)
Production	Other	Utilization/Availability	Injection Operations Capacity Utilization Actual Vs. Plan (daily
Drilling	Surveillance (Res +	Process Excursions	Lost Opportunity Event
OPERATIONS	Operations	Operations	Production analysis (Day, Month, Year)
OPERATIONS	Operations	Operations	Production cost/cum of RQ - Plan vs Actuals
Operations	Production	Production	Production Volume / Quantity
Operations	Production	Production	Production yield &
Operations	Production	Production	Production measures &

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 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

Rohta 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

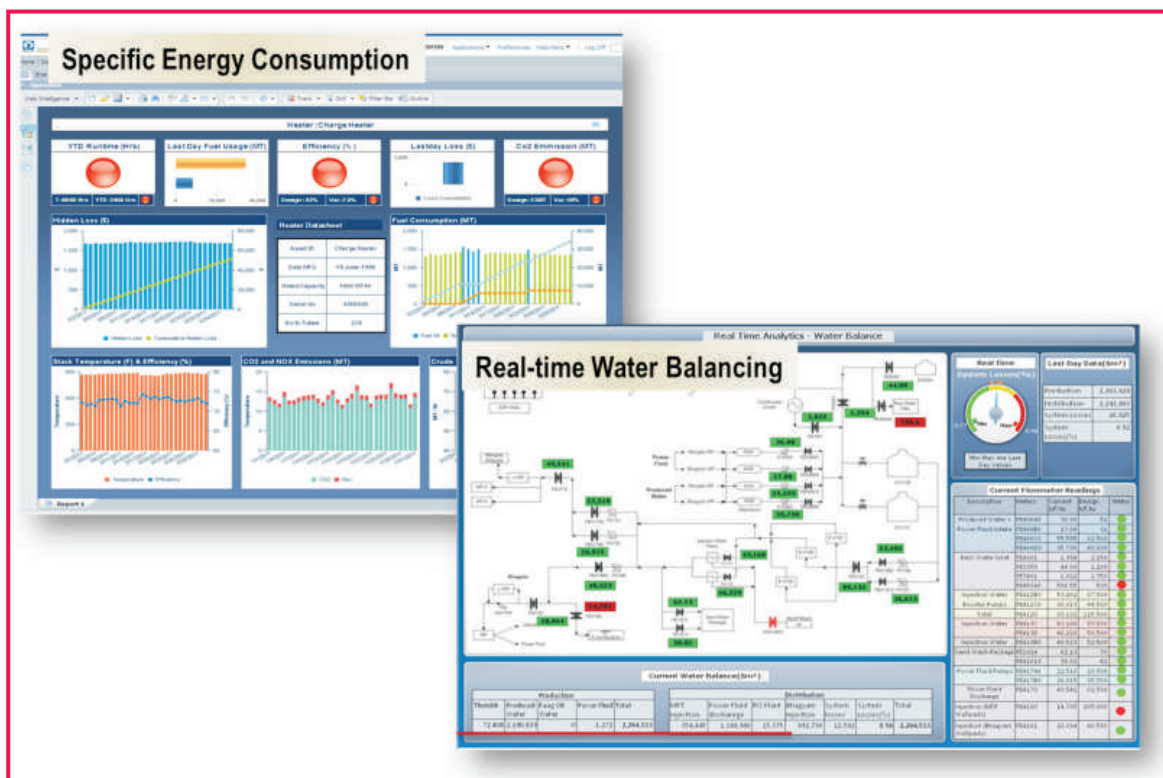
single dashboard with thematic mapping, heat maps and cluster maps helps enterprises to take quick and effective decisions.

Pre-built Scenarios

Rollta OneView™ 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

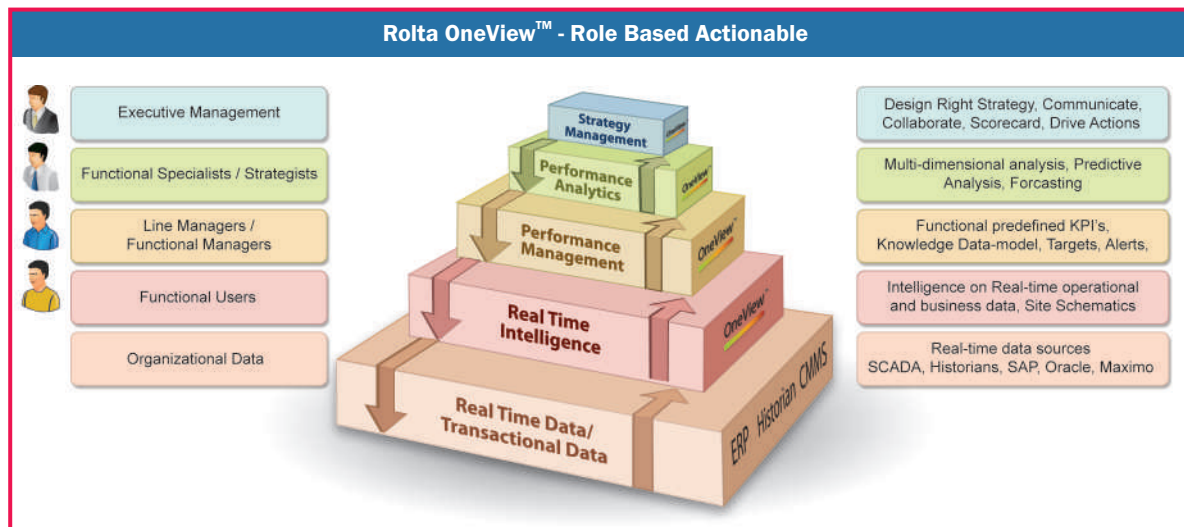
Rollta OneView™ provides role-based actionable insights to its users through seamless aggregation and information dissemination across information landscape ensuring only relevant cross-functional KPIs are seen by an individual that are relevant to their function. This ensure users can take actions effectively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

covering all the way from CxO level to functional users. At the CxO level Rollta OneView™ provides strategy maps and Scorecards that can be linked and monitored across the enterprise. Functional specialists have 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 Rollta

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

Rollta 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

Rollta 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

Rollta 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, Rollta 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.

	Set Up Plant Dashboards and Act on Alerts	Conduct Improvement Programs	Optimize Maintenance & Plant Operations
Plant Manager Head of Site Manufacturing	Alerts: Costs, quality, yield, safety, energy consumption	Set goals based on trends & results Direct improvement programs	Use results for best practices, low cost benchmarking Enterprise and operational Energy Mgmt.
Process Engineering VP Engineering	Determine Overall Equipment Effectiveness	Investigate process improvement Conduct improvem. programs	Manage Engineering Projects Reliability based maintenance strategy
Maintenance Director Maintenance	React to alerts with unplanned maintenance Mobilize Work Orders & Service Requests	Reliability programs	Implement mntce strategy changes Manage Maintenance program
Supply Chain VP Supply Chain	React to unplanned events: adjust inventory targets & Prod plan Monitor & prioritize orders based on activity	Adjust future S&OP plan	Drive profit based inventory reduction program
Controlling Plant Controller	Set up KPI definitions Report progress/ results		Report progress/ results

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.

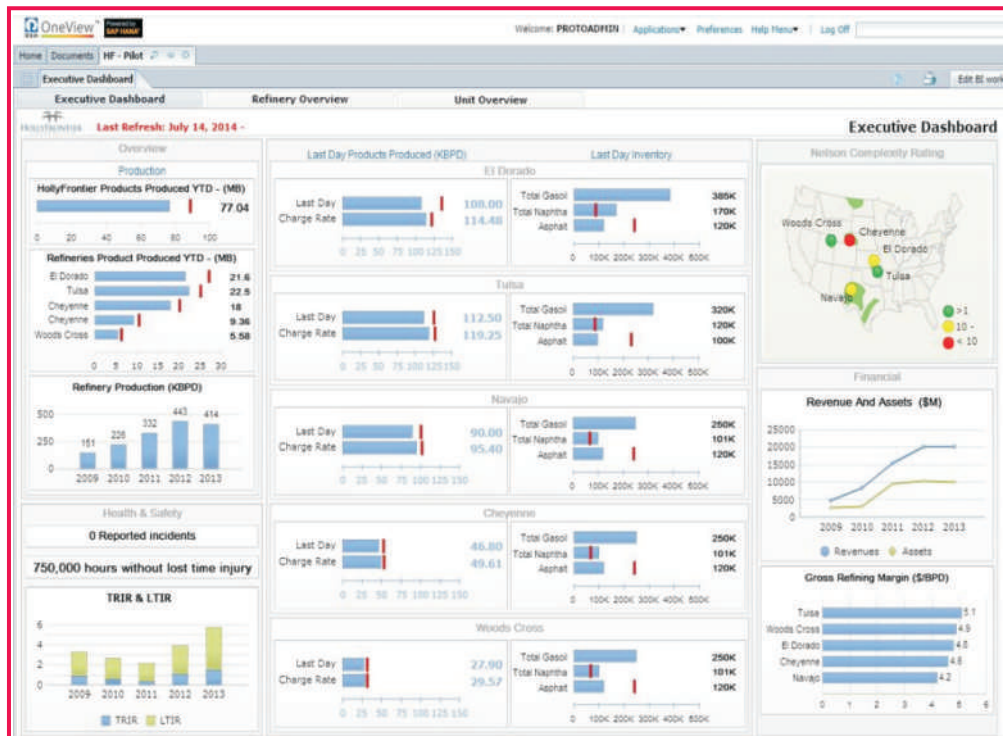
Some of the key features and benefits include - Multi-level alerts for threshold deviations for timely decision-making, status notifications for scheduled jobs, alerts for

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

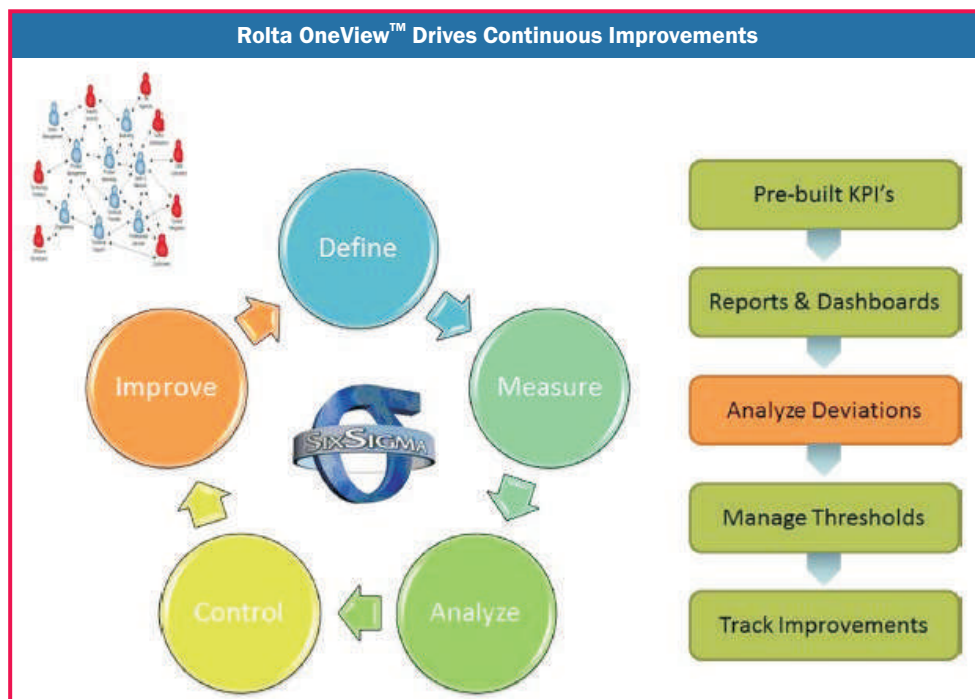
for safe operating limits, various levels of integrity layers and outliers helps to make quicker and better decisions.



Continuous Improvement (6 Sigma)

Rolta OneView™ enables continuous process improvement by analyzing the deviations in the business process executions and provides prescriptions on process

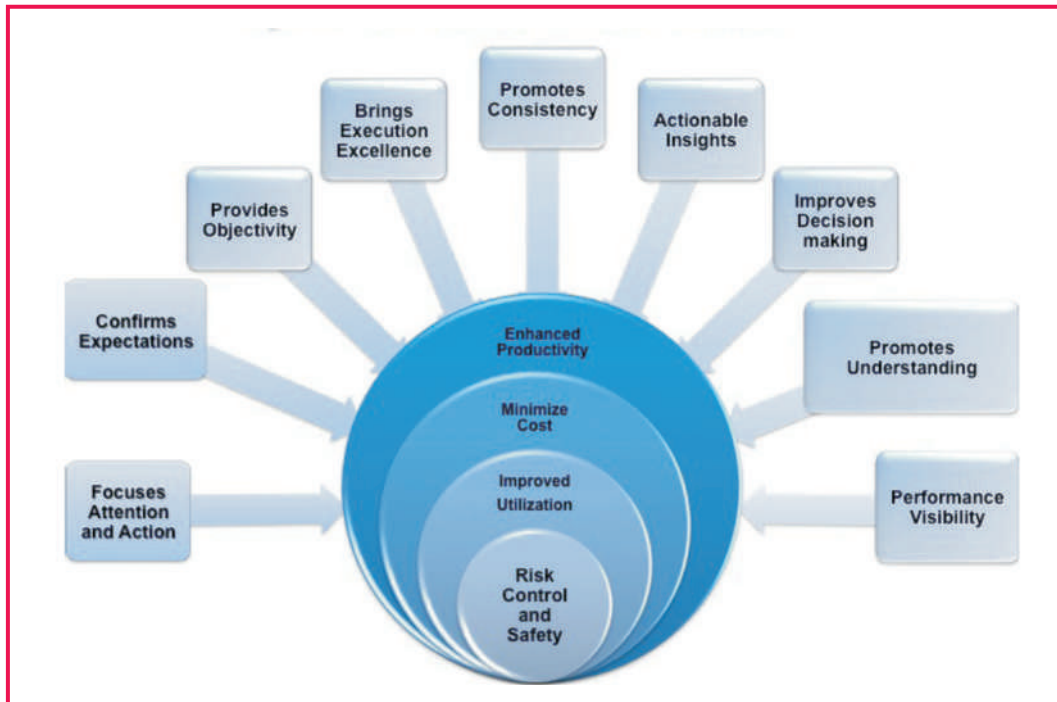
improvements and thereby facilitates initiatives such as 6Sigma.



Closed loop BI provides a way to take the insights into action to the source systems thereby turning the 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 requirements 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

and priorities across multiple industries including Oil & Gas Upstream, Refineries, Petrochemicals, Chemicals & Utilities

Case Study – Integrated BI for Operational Excellence

Business Challenges

A Major Petrochemicals manufacturing organization in the Middle East was looking for an integrated business intelligence solution to help them achieve Operational Excellence across their business functions. Their existing reporting was done through multiple excel formats with different calculations in silos resulting in a bottleneck in deriving ‘Single Version of Truth.’

The Solution

Rolta was tasked to provide them with a Business Intelligence solution with cross functional visibility. Within 4 months, the Rolta Solution powered by Rolta OneView™ delivered the key measures on Safety, Plant availability, Operational efficiencies, Quality, Cost, Profitability and Environment by integrating multiple applications seamlessly.

The Benefits

The successful deployment of the solution standardized the report definitions and frequencies providing their management team higher confidence and visibility on daily manufacturing intelligence. Customer feedback after implementation indicated that the solution allowed them to strengthen their internal processes and bring huge improvement in efficiency to avoid lost profit opportunity incidents. As a result they experienced:

- Lower operational and process failures
- Improved capacity utilization
- Standardizing definition of all metrics
- Validation of data quality
- Improved transparency in business decisions
- Improved productivity



Business Challenges

- A lot of manual effort was being spent in preparing the reports due to manual reporting
- Most of the reporting was static in nature with little analysis
- Lack of cross functional view due to disparate sources

They chose Rolta OneView™ packaged Analytics solution for enterprise wide cross functional visibility. Within five months, Rolta implemented an enterprise-wide manufacturing intelligence solution using Rolta OneView™ and leveraging the SAP® ERP application. The solution provides more than 100 key performance indicators (KPIs) across the operations, maintenance, reliability, HSE, finance, HR, marketing, supply chain procurement, sustainability and IT.

The solution enables the creation of more than 1,400 reports and departmental dashboards, now regarded as invaluable by SMC executives. With the insight gathered through the solution, SMC has realized the following benefits:

- The screenshot shows a 'Cost Analysis' dashboard for 'Hanna Goldfield'. At the top, there are tabs for 'Cost Analysis', 'Budget Performance', and 'Budget Performance 2'. The dashboard includes a search bar and a 'Filter by month' dropdown set to 'All'. Below this, there are three summary cards: 'Last Month' (Budget Increase 12.5%, Target Production 1,113, Target Cost per Ton 1.12), 'YTD' (Budget Increase 10.0%, Target Production 6,000, Target Cost per Ton 1.10), and 'Total Cost per Ton OMR/Ton' (1.10). The main section contains six charts: 'Fixed Production Cost per Ton OMR/Ton', 'Variable Cost per Ton OMR/Ton', 'Total Cost per Ton OMR/Ton', 'Fixed Cash Cost MO/M', 'Variable Cost MO/M', and 'Total Cost MO/M'. Each chart compares 'Actual' (blue bars) and 'Budget' (orange bars) data across months from March to June. The 'Fixed Cash Cost MO/M' chart also includes a green trend line and a red horizontal line for the 'Variance Budget'.

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