ROLTA

INSIGHTS. INNOVATION. IMPACT

ROLTA OneView™

ENTERPRISE INTELLIGENCE SUITE

WHAT DOES YOUR FUTURE HOLD?

DRIVING OPERATIONAL EXCELLENCE

Through IT-OT Integration and Pre-built Analytics

Operational Excellence: A mirage in the Digital Universe?

Information is increasingly influencing the way we live and work. Organizations need insights into their business operations across their entire value chains and ecosystems all the time. More than just plain insights, organizations need best-practices based industry-specific methods and means by which they can identify, access, consolidate, analyze, visualize and effectively utilize huge volumes of enterprise data in real-time. Organizations are at crossroads today, with a plethora of value-propositions emanating especially from the diverse growth of technology. Business, Functional and IT Leaders have long adopted, collaborated and invested in Information and Operational Technologies albeit as independent strategic decisions. The expanding universe of digital technologies creates challenges stemming from multiple stand-alone technologies, which tend to fragment processes and information across the enterprise value chain. Rapid evolvement of technology convergence is the guiding principle shaping our times. Today, CXOs have a great opportunity to enable decisions that optimize business processes and performance, taking leadership role across the digital technology spectrum, to drive innovative business outcomes.

Provisioning right data to the right person at the right time and in the right format is critical to effective and efficient decision making to drive business excellence. For organizations in asset-intensive business (e.g. Oil & Gas, Refineries, Petrochemicals, Chemicals, Power Generation, Utilities, Manufacturing, Transportation, etc.), Operation Excellence (OpX) opens the doors to business excellence. Companies pursue OpX in a holistic way to streamline processes, optimize cost, and create value. In order to achieve OpX, organizations need to make continuous improvements across key areas of the business.

As acknowledged by leading industry analysts like Gartner, OpX requires Operational Intelligence (OI), which is architecture rather than applications. Integration of Operational

Technologies (OT) and Information Technologies (IT) needs to guide Business Intelligence and Analytics. Corporations need to invest in such all-encompassing BI & Analytics technologies spanning IT-OT integration, descriptive, real-time, spatial, big data, predictive and prescriptive analytics with a view to speed up their BI maturity map and stay ahead of the competition. Additionally, the organizational BI Strategy needs to incorporate rapidly evolving technologies like cloud, social, and mobile that are fostering paradigm shift in business environments.

Studies have proven that more than 60% of Operational Excellence programs do not achieve the desired results due to the lack of a well-defined and executed change management or paradigm shift. Availability of clear, consistent, timely and focused information is considered a leading attributable cause to enforce this change management through automated standards-based workflows. Besides the BI platform and tools selection per-se, ensuring appropriate business context, meaningful metadata, comprehensive BI & data architectures, choice of relevant KPIs, selection of appropriate information delivery medium & platforms, adequate data quality, and strong data governance play a key role in ensuring an effective BI Strategy and Execution Program.

What is required is an innovative people-process-technology integrated approach leveraging a collaborative platform that synergistically ties all the required pieces together – right from Business Objectives, Strategies, and Operational Tactics to existing investments and legacy systems.

Rolta Comprehensive BI Solution Approach

Rolta evangelizes a comprehensive BI Solution Approach based on BI best practices, tuned to particular industry needs and in line with the organization's specific requirements. This leverages Rolta's substantial domain expertise, cutting-edge BI & Analytics capabilities, IP-based products and integrated toolsets to provide an end-to-end solution tailored to customer scenarios.

Rolta OneView™ Enterprise Suite – at the heart of this recommended approach, is a unified solution to discover, strategize, plan, model, implement and deliver the BI and Big Data Intelligence exploiting relevant data and information assets within and around the organization's eco-system. Rolta's BI solution approach embarks on a paradigm shift towards a transparent information ecosystem across the landscape that empowers every role in the organization. This approach is critical to achieve business objectives as it helps effectively address challenges such as change management in defining and executing BI programs.

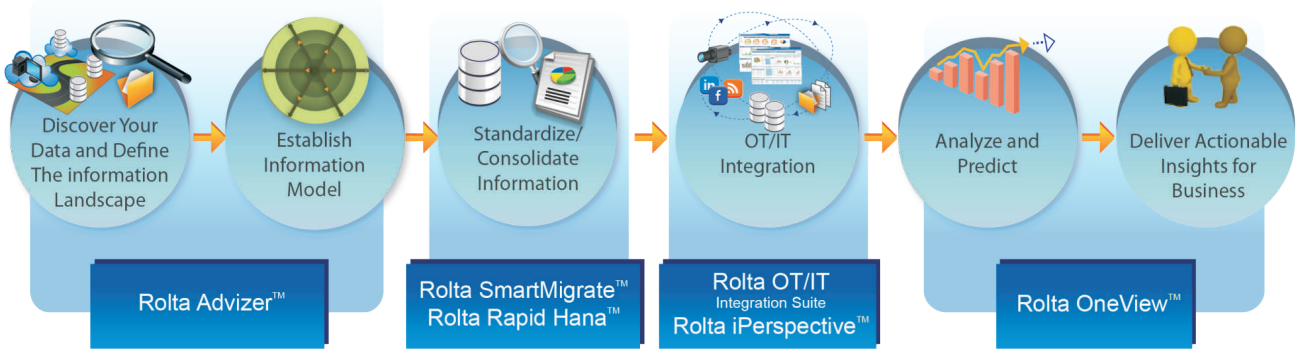
Discover your Data:

Discovery is the key exploratory phase which allows stakeholders to gain critical understanding of the existing data landscape including Volume, Variety, Velocity and Validity / relevance of data. Rolta Advizer™ is an innovative product, which uses the combination of automated and interactive approaches, along with its mature knowledge repository, to follow a structured discovery process. It baselines the current state, performs SWOT analysis and feeds the necessary inputs to define the information landscape and blueprint

Define Information Landscape:

It is critical to define the information landscape that relates to the business model of an organization. Unstructured and semi structured data sets are emanating from diverse set of data sources, but owned by different organizations. Data, with relevance and value within the enterprise and from its surrounding eco-system namely - partners, customers & social, forms the information landscape that in turn establishes the information model. Rolta Advizer™ helps to define the information landscape and brings out the relevance and potential of the data across the entire landscape of the enterprise.

Figure 1 Rolta's Comprehensive BI Solution Approach



"Solutions such as Rolta OneView™ will play a critical role in transforming plant management and drive growth."
Frost & Sullivan, "Oil and Gas Information Technology – Enabling Operational Excellence," September 2011

Establishing the Information Model:

This defines a comprehensive strategy in order to have Business Intelligence make a positive impact on the enterprise performance. The strategy needs to identify the following:

- Needs of people who enable, produce & consume information
- Respective contextual processes – information governance processes, analytical processes and decision processes
- Platform capabilities required to deliver the expected intelligence
- Analytical capabilities (descriptive, diagnostic, predictive, prescriptive, etc);
- Decision capabilities (collaborative decision making, machine learning, applications, KPIs / dashboards, Balanced Score Card and Strategy Maps)

Standardize and Consolidate Information Platform:

Based on the established information model, an enterprise may decide to standardize on a unified or consolidated information platform that suits their overall BI strategy. This would require consolidation and migration of their existing platform(s) to the standardized platform comprising of Data, BI Analytics, Content Management as well as Enterprise and End-user Reporting. Rolta SmartMigrate™ provides solution accelerators, methodologies and expertise to speed up the execution while reducing the complexity of these migration efforts.

Integrate:

Integrate the data emanating from various networks – IT, OT, enterprise, social, geospatial, engineering design, etc. There is a need to have specialized connectors for these systems catering to their different data characteristics. As the data from these systems is voluminous (terabytes - even petabytes), as well as varies in types and structure, it must be processed as soon as it enters the enterprise. This data also needs establishment of trust. Rolta OneView™ Enterprise Suite powered by Rolta iPerspective™ provides pre-built connectors to integrate the data from such heterogeneous systems. Advanced security options such as user authentication, access management, geo-fence based security, etc. besides entity based auditing for data-services are in-built.

Analyze and Predict:

This phase focuses on optimal analytical processing, and visualization of results. Rolta OneView™ Enterprise Suite powered by Rolta iPerspective™ delivers the all-round analytical capabilities including Agile BI, Real-Time Analytics, Big Data Analytics and Predictive Analytics. Rolta OneView™ features in-built comprehensive industry-specific standards-based data models and KPIs to drive 360° intelligence strategies.

Deliver Actionable Insights for Business Outcomes:

It is critically important to deliver the role based actionable insights through a cohesive, easy to understand user interface. Rolta OneView™ delivers rich visualization capabilities through multiple delivery channels. Users can share information and take collaborative decisions thus allowing them to use advanced portal mash-ups, search, blogs, wikis, instant messaging and other cloud based social media capability. Rolta OneView™ provides comprehensive mobility support on all popular mobile platforms such as iOS, Android and Windows Mobile etc. It leverages GIS, GPS & rich visualization technologies to enable disconnected work management. The solution is built using Rolta's high level of maturity in usability practice that has achieved Level-5 certification, in Certified Practice in Usability (CPU) by Human Factors International (HFI).

Rolta OneView™ Snapshot

- Strategic solution with million+ R&D hours
- Successful deployments across industries globally
- Faster ROI, Lower TCO, Rapid Deployment
- 300+ pre-built business critical scenarios with analytics
- Engineered for best of breed industry-leading BI & Analytics platforms (including SAP HANA)

Breaking down the barriers to Operational and Business Excellence

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 desired business transformation. A typical Rolta OneView™ client engagement facilitates the business, functional and technology leadership roles across the value ecosystem in planning, building, and managing the next-generation BI & Analytics platform. This helps harness existing investments, through an optimal combination of focussed consultation, out of the box solution, implementation and services resulting in higher and faster ROI and lower TCO. Leveraging Rolta OneView™, Rolta BI Centre of Excellence (CoE) has helped many organizations, globally, in succeeding with their accelerated journey along BI maturity roadmap from 'Unaware' state to 'Pervasive Awareness' state.

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 centre of all critical functions, quickly adapting to existing systems, instilling best practices and accelerating process improvement.

Rolta OneView™ acknowledges the fact that information needs of different people in the organization vary from tactical to operational to strategic. It provides seamless aggregation and dissemination across the entire information landscape. It 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 "Integrate-Analyze-Deliver" approach built by leveraging best of breed platforms. The solution extracts key information from the functional and operational systems in each business area, applies data to a preconfigured and integrated data model, based upon accepted industry standards, and combines it with pre-defined and configurable cross-functional key performance indicators (KPI's).

The solution enables management to view system operations as a fully integrated set of processes and KPI's spanning the whole enterprise, with actionable analytics and reporting. With access to this structured / unstructured information, companies can improve and increase the safety of operations by identifying and correcting process problems, and provide information about current and future performance. These capabilities allow executives to drive operational, reliability, and performance improvements via initiatives such as balanced scorecards, Six Sigma, and Total Quality Management (TQM).

Figure 2 Rolta OneView™ - Accelerates Your BI Maturity Roadmap

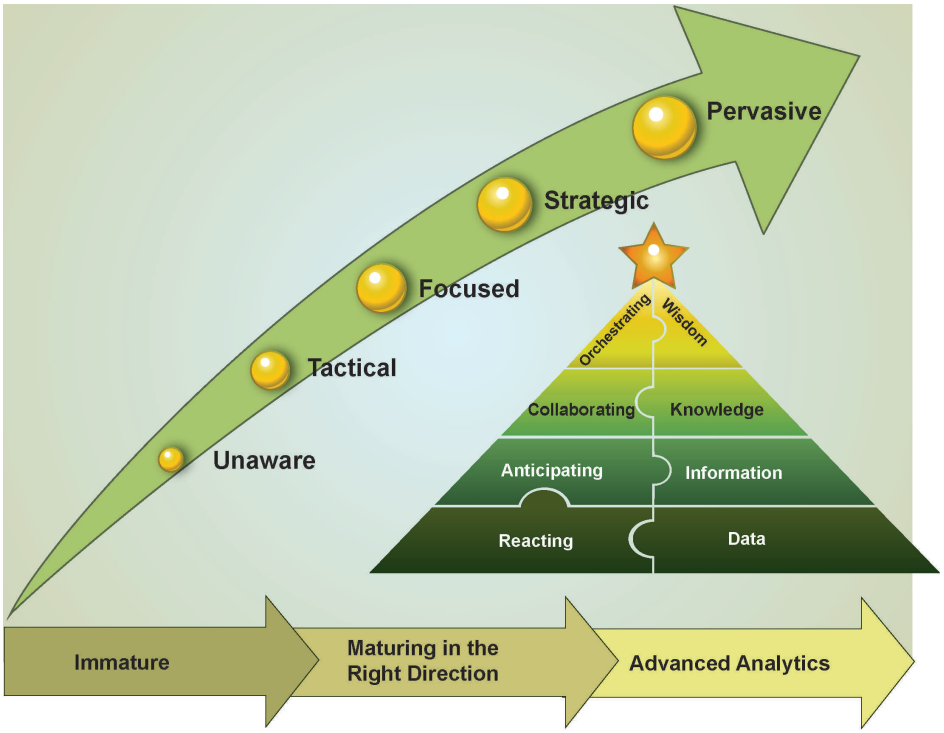
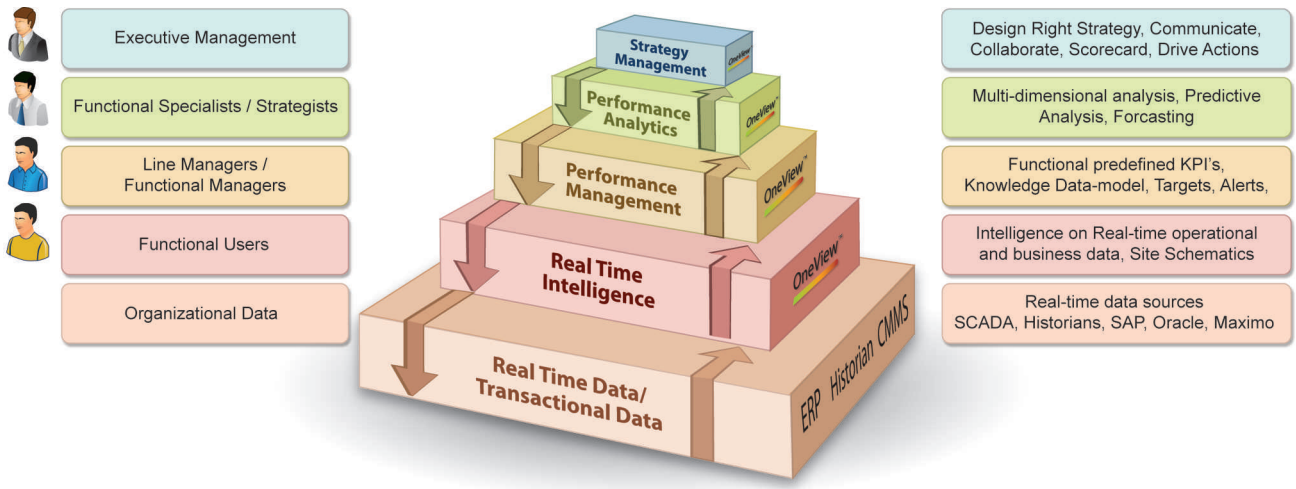


Figure 3 Rolta OneView™ - Role-based Actionable Insights



Real Time Intelligence

- Tracks operating parameters at real time or near real time
- Helps build plant schematics
- Provides alerts in the business context
- Multi-parameter analysis for specific asset
- Flexible, user-friendly interface for analysis frameworks
- Supports logical ad-hoc queries
- Integration with Spatial & Engineering applications

Performance Analytics

- Enterprise-level big data analytics for mission critical decision-making and strategy building
- Multi-dimensional data model and statistical calculation engines
- Predictive Analytics
- Forecasting tools
- What-if Scenario Analysis
- Actionable intelligence

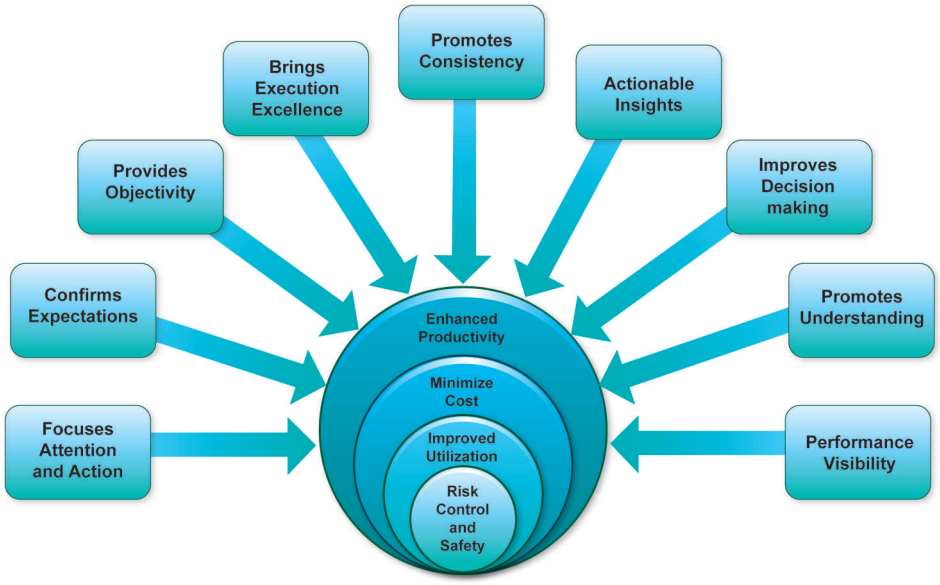
Performance Management

- Pre-defined KPIs based on industry best practices
- Aggregation for enterprise views
- Role based KPIs and dashboards
- Interactive dashboards with drill down to details
- Knowledge Model for cross-functional analysis
- Performance comparison between Assets or Units

Strategy Management

- Define Organizational Strategic goals
- Establish strategies with appropriate perspectives
- Co-relate the performance indicators
- Monitor score cards at different levels
- Strategy trees for performance analysis
- Strategy maps for interdependencies
- Prepare cause and effect charts for problem solving

Figure 4 Rolta OneView™ Value Derivation



"Clearly, Rolta OneView™ is an enterprise-class solution that can bring significant benefits and savings .."
Sid Snitkin, Vice President, ARC Advisory Group

Rolta OneView™ Enterprise Suite - Key Features

- BI and Big Data Analytics, Cloud-enabled Service Oriented Architecture, Mobility support
- Pre-Built and extensible KPI Management System
- Industry standards based open-technology powered ISA-95 compatible platform
- Real-time data integration with variety of data sources and applications, data quality and governance with drill down to details and write back to transaction systems
- Fine-grained security - Single Sign On, Role based Access Control & Information Delivery
- Thematic map intelligence and engineering data integration with interactive plant models to enable comparison of run-time versus design parameters on the fly
- Threshold Management System with alert notifications through e-mail, SMS, etc.
- Integrated / Pluggable Balanced Scorecards, Performance Management, Multi-dimensional Analytics, Predictive Analytics, Strategy Management modules with required
- components like Event Stream Processors, Calculation, Modeling & Scenario Analysis Engines, etc.
- Universal Connector Framework with readymade real-time & ETL/ELT batch connectors for leading IT systems (ERP, SCM, CRM, Business Systems, Spreadsheets, etc.) and OT systems (Process Historians, SCADA, Reliability / Asset Management Systems, etc.)

Rolta OneView™ Enterprise Suite - Architecture

The architecture of Rolta OneView™ simplifies complexity across the enterprise by enabling loosely coupled yet comprehensive integration options across various operations and business systems. This platform provides integration and security governance across IT and OT systems, as well as a solid foundation for Big Data analytics, real-time analytics, and predictive analytics using complex statistical computations. Rolta OneView™ open architecture enables customers to extend the pre-built analytics that best suit them.

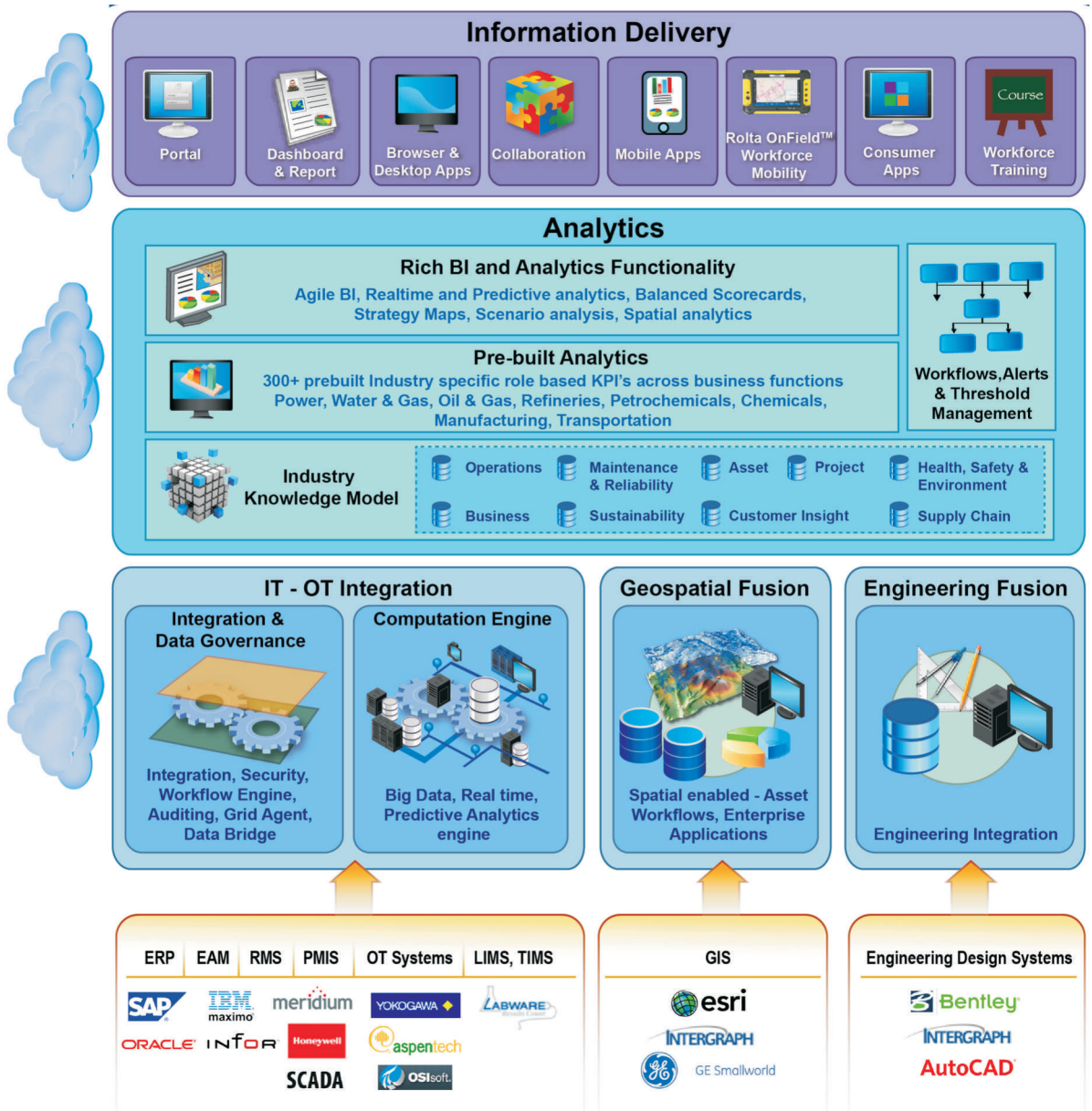
IT – OT Fusion features powerful integration capabilities across various types of OT Systems (Historians, SCADA etc.) and IT Systems (e.g. ERP, EAM, SCM etc.) from diverse vendors, through out-of-the-box pre-built connectors (real-time and batch ETL).

It features in-built **integration and governance** with associated data steward & grid technologies, workflow engines, data quality techniques, metadata engineering capabilities etc. Advanced security options such as fine-grained user

authentication, access management, geo-fence based security, entity based auditing for data-services etc. are in-built. It addresses the challenges of IT/OT integration which includes integration of data at various temporal scopes (real-time, near real-time, historical). IT-OT Fusion has the ability to schedule and monitor high-volume, event-based integration transaction processes using a grid-based distributed architecture.

This layer also features complex **computation engines** that enable real-time and predictive analytics on big data. Rolta OneView™ leverages engineered systems like SAP HANA, Oracle Exalytics, etc. and Predictive Analytics products/applications like R, SAS Analytics, etc., and is geared to handle large volumes of data from structured, semi-structured & unstructured sources at very high frequency of updates.

Figure 5 Rolta OneView™ - Architecture



Consumerization of Geographic Information Systems (GIS) and wider availability of map data is rapidly revolutionizing location-based services. An enterprise BI system is incomplete without the provision of locational intelligence. Rolta OneView™ **GeoSpatial Fusion** provides the much-needed geospatial analytics as an integral feature facilitating comprehensive business view of geographically distributed assets, customers, vendors as well as integrated demand / supply planning, work-order management, maintenance optimization resulting in cost optimization. It delivers unified business intelligence and locational intelligence with seamless bi-directional interactivity across both views. Geospatial Fusion allows close-knit integration of leading Rolta earth sciences capabilities, popular map services from leading providers like ESRI, Google, Microsoft, etc.; and customers' existing

Rolta OneView™ Enterprise Suite - Value Proposition

Higher and Faster ROI

- Payback as less as in 3 months
- Transfer Of Value (TOV) in weeks
- 300+ pre-built analytics across 8 key functions
- Empowers every role to contribute in business transformation through actionable insights
- Rapid adoption with an intuitive presentation model

Lower TCO

- TCO reduction > 50%
- Leverages Best of Breed BI Platforms e.g. SAP HANA
- Easily extensible and customizable
- Service enabled to reuse existing services
- Embedded knowledge repository and collaboration
- Highly scalable and seamlessly upgradable

Rapid Deployment

- Implementation in weeks
- 60+ pre-built real time & batch connectivity to operations and business systems
- Pre-built work processes, extensible knowledge model & business views
- Standards-based, pluggable architecture - easy integration with existing IT systems
- Rapid report customization through rich business metadata model

Feature-Rich and Complete

- Integrated actionable insights - deeper co-relation of operational & business systems
- Rich and extensible Data and Knowledge Model – 3000+ MDO, 100+ Facts & DIMs, 300+ Data and Workflows
- Extensively configured for over 8 industry verticals
- Cloud, Mobile and BigData ready, secure data access

investments in geospatial technologies to unleash powerful spatially-enabled BI and Analytics in customers' business context.

Rolta also has unique capabilities to geo-enable ERP, Asset Management, Maintenance and several other functional systems. This unique capability enables organizations to quickly and accurately analyze the existing data within a geographical environment, visualize the business trends and take effective decisions based. It enables users/organizations to spatially compute and thereby streamline processes, minimize risk, predict work load and enhance business decision-making. Additionally, Rolta OneView™ leverages GIS & rich visualization technologies to spatially-enable work management activities with mobility support on all popular mobile platforms such as iOS, Android, Windows Mobile, etc.

Engineering Fusion provides much needed underlying capabilities to analyze and predict operations against a backdrop of as-designed references. Rolta OneView™ provides excellent Engineering Design Systems integration-features e.g. engineering design data, P & ID's, 2D & 3D models of assets. This unified platforms tracks operating parameters for each asset against engineering design data and provides powerful search and review facilities for the engineering design documents. This feature overcomes the problem faced by the many industries to comprehend the actual performance of the assets with respect to the design specifications of those assets.

Rolta OneView™ includes unique pre-built **Industry Knowledge Model** and industry-specific KPIs derived from Rolta's deep domain insights into these industries and their recommended best practices. The knowledge model enables powerful cross functional analysis to enable comprehensive and contextual monitoring of business performance across different business functions including Operations, Asset Management and Utilization, Maintenance and Reliability, Supply Chain, Health, Safety, Environment, Projects, Sustainability, Customer Management, HR and Finance. This is a unique differentiator where functional knowledge and technology expertise are delivered in a single platform. One can also define and implement new KPIs very easily leveraging the extensive data model underneath. The pre-built data models ensure rapid deployment and also support extensible data and dimensions, secure data access and cloud / mobile readiness.

The knowledge model is industry standard compliant (ISA-95). 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.

As the knowledge model implements the best practices, it helps achieve the objectives such as reduced cost and risk, Optimized performance, Consistent model and terminology, Traceability to source.

Pre-built Analytics delivers 300+ industry-specific pre-built KPIs, dashboards and workflows. The KPIs cover the gamut of modules including Operations Insights, Assets Insights, Maintenance and Reliability Insights, Health, Safety and Environment Insights, Supply Chain Insights, Sustainability Insights and Business Insights. The prebuilt components get customers up and running from day-one, leveraging Rolta's core domain skills and valuable experience accumulated by Rolta's expert consultants over the past two decades. The framework is highly extensible, which means customers can choose to either fine-tune existing KPIs over time or add new ones through simple mechanisms, leveraging the underlying Rolta pre-built Industry Knowledge Model.

Rich BI and Analytics Functionality empower customers to leverage advanced analytics capabilities like Strategy Management, Scenario Modeling, Real-time & Predictive Analytics, etc. Spatial Analytics adds another innovative dimension to analyze and predict scenarios, bringing more accuracy to rendered business intelligence in geographically spread environments like Oil & Gas Exploration, distributed Refinery & Petrochemical Plant complexes, Downstream Operations / Retail & Supply Chains, Utilities, Transportation, etc.

Rolta OneView™ packages industry specific **workflows** to address the any business process gaps that may exist. **Alerts and Threshold Management** ensure flexibility to organizations in configuring Rolta OneView™ behavior in their contexts and identify any process excursions in real time. This enables customers to percolate organizational strategy through seamless collaboration with real-time feedback loops and appropriate escalation mechanisms when required.

Information Delivery permits rich visualization capabilities that include interactive dashboards with drill down to details, cascaded balanced score cards, strategy maps, etc. delivered through multiple delivery channels such as online reports, offline reports, portals, emails, mobile, alerts etc. Users can share information and make collaborative decisions facilitated through advanced portal mash-ups, search, blogs, wikis, instant messaging and other cloud based social media capability.

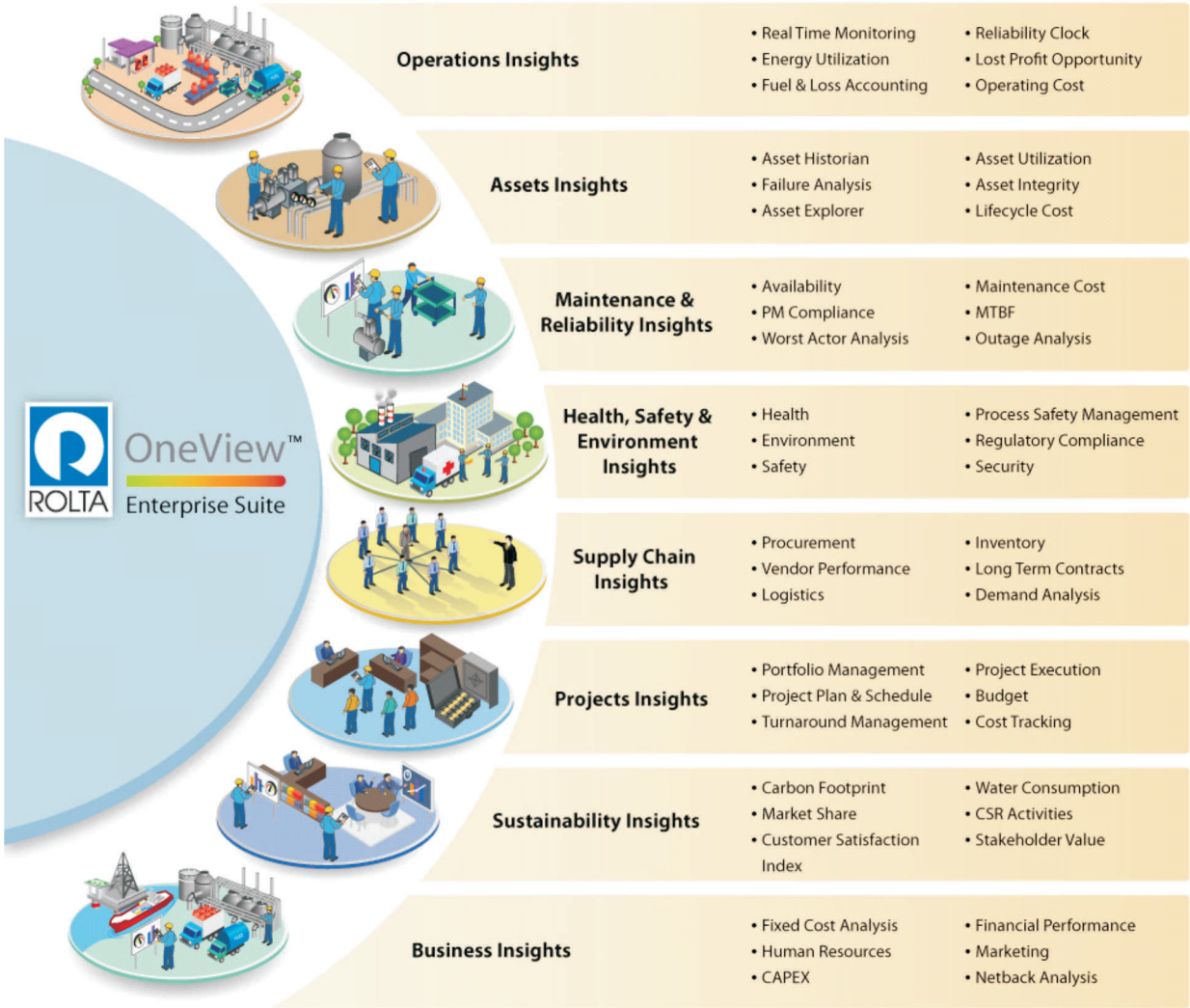
Rolta OneView™ stands differentiated because it combines all these capabilities in a single IP-enabled solution to support extreme enterprise performance requirements. Associated consulting and services provisioning for this turnkey solution are also supported through Rolta-IP based accelerators.

Thus, Rolta OneView™ Enterprise Suite provides a holistic IP-enabled productized solution for comprehensive BI & Analytics requirements across industry-specific value-chains.

Rolta OneView™ Enterprise Suite - Modules

Rolta OneView™ modules cover a wide spectrum of cross-functional areas including – Operations, Maintenance, Reliability, HSE, Finance, Human Resources, Corporate Sustainability, Sales & Marketing, Supply Chain, etc. for delivering integrated actionable insights. 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™ Enterprise Suite collates the information across the facilities for the Strategist and Decision Makers.

Figure 6 Rolta OneView™ - Modules



ABOUT ROLTA

Rolta is a leading provider of innovative IT solutions for many vertical segments, including Federal and State Governments, Defense/HLS, Utilities, Process, Power, Financial Services, Manufacturing, Retail, and Healthcare. By uniquely combining its expertise in the IT, Engineering and Geospatial domains, Rolta develops exceptional solutions for these segments. The Company leverages its industry-specific know-how, rich repository of intellectual property that spans photogrammetry, image processing, geospatial applications, business intelligence, analytics, field-proven solution frameworks, and deep expertise in cutting-edge technologies like Geo BI, Cloud computing, Software Defined Infrastructure and Big Data for providing sophisticated enterprise-level integrated solutions. Rolta is a multinational organization headquartered in India. The Company operates from 40 locations worldwide through its subsidiaries, and has executed projects in over 45 countries. The Company benchmarks its quality processes to the world's best standards, like successful assessment for Software Application Development and Maintenance at the highest Level 5 of SEI's CMMI® version 1.3. Rolta is listed on the Bombay Stock Exchange & National Stock Exchange, and forms part of various indices on BSE/NSE in India. The Company's GDRs are listed on the Main Board of London Stock Exchange. The Company's 'Senior Notes' are listed on Singapore Stock Exchange.

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