



ROLTA

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Striving for Operational Excellence?

Rolta OneView™, Your Roadmap to Success



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Gartner®

Welcome

In today's competitive marketplace, organizations are expected to be world-class and out-distance the competition. Every organization is operating with urgency to improve upon the current state of performance and create competitive advantage by bringing excellence in everything they do and therefore creating better value proposition to the stakeholders. Organizations can achieve this by deploying continuous, reliable and scalable processes at an optimized cost in other words by achieving "Operational Excellence". Studies have proven that more than 60% of such Operational Excellence programs don't achieve the desired results due to the lack of a well-defined and executed change management or paradigm shift. A paradigm shift towards a transparent information ecosystem across the landscape that empowers every role in the organization would be critical to achieve individual and collective objectives and thereby achieve Operational Excellence (OpX). A single version of truth that effectively leverages data and information regardless of its source will be a key differentiator for organizations moving forward in implementing OpX.

In order to achieve OpX and deliver actionable insights, it is critical to have an agile and a highly collaborative Manufacturing 2.0 platform that provides 360 degree view of the enterprise through a robust action-oriented Operational Intelligence (OI) system, built atop a solid Enterprise Manufacturing Intelligence (EMI) foundation.

Rolta OneView™ Enterprise Suite is an innovative enterprise intelligence solution built specifically to assist asset intensive industries and organizations to achieve OpX in a predictable success journey through EMI, OI and Manufacturing 2.0. Rolta OneView™ brings a cross-functional paradigm shift, by getting relevant data in real-time from heterogeneous business and operational plant systems, correlating this with historical trends and providing predictive analytics. This allows exploiting the state-of-the-art Business Intelligence and Big Data technologies and delivers insightful intelligence for lasting

impact. Rolta OneView™ facilitates the change management by providing role-based integrated actionable insights to people in various roles and empowers them to achieve individual as well as organizational objectives.

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. Rolta's IP-led solution strategy and decades-long, proven leadership in Engineering, Geospatial, Security and IT has been instrumental in evolving the pre-built innovative Rolta OneView™ solution and its underlying Rolta iPerspective™ platform, for customers to realize significant ROI in weeks.

In this document, you will observe how OpX is taking a new dimension emanating from the need of "Operational Intelligence as Architecture". You will also see how Rolta OneView™ has taken the lead to provide the unique solution, built on OI architecture, bringing a common platform across operational, business, safety and sustainability and social networks within and across stakeholder ecosystems.

I am confident that this document would help you in your quest to become world class through OpX driven by OI.

Thank You

Rajesh Ramachandran

President and Chief Technology Officer, Rolta.



From the Gartner Files:

The Manufacturing Performance Dilemma, Part 1: Overcoming Visibility Hurdles With Enterprise Manufacturing Intelligence

EMI helps align manufacturing performance measures and business performance through the synthesis and analysis of highly granular, manufacturing-related data.

Overview

Manufacturers seeking competitive advantage understand that manufacturing operations must no longer constrain supply network responsiveness. Enterprise manufacturing intelligence (EMI) helps strike a balance between supply and demand by aligning plant-floor performance measures with ones for business performance. It accomplishes this by computing and visualizing manufacturing key performance indicators (KPIs) that are needed to show current manufacturing costs, capabilities and constraints.

Key Findings

- Visibility into manufacturing performance continues to be an obstacle to integrating manufacturing capabilities with supply chain goals.
- EMI puts manufacturing data into a useful context that enables fact-based support for multiple roles in manufacturing, supply chain and finance. It also can be the catalyst for continuous improvement efforts to boost manufacturing performance.
- Most manufacturing environments already possess the individual components of an EMI application in the form of process historians, MES operational data stores or process automation products that can be augmented to provide EMI functionality.

Recommendations

- Tactical gains are essential versus “boiling the ocean.” Start small and think big.

- Begin projects by identifying the data models that do exist — in MES, historians, plant-level intelligence applications and ERP — and then apply an analytics framework that can join aspects of these models to provide the intelligence that’s needed by the business.
- Evaluate application providers against the five core EMI capabilities to determine which provider offers the right blend of capabilities for your requirements. Also, as the capabilities and applications for adding intelligence to manufacturing operations rapidly evolve, understand product road maps to support future plans.
- Gartner’s Hierarchy of Manufacturing Metrics provides a logical starting point for identifying the appropriate manufacturing KPIs to which to apply EMI.

Analysis

The increased volatility, complexity and distribution of today’s product supply networks raise the need for an integrated, accurate view of manufacturing’s performance. Manufacturing organizations are finally waking up to the notion that they can no longer afford to silo data and information on manufacturing process performance, but must arm decision makers with the right facts to make profitable trade-offs between supply and demand.

Visibility Into Manufacturing Performance Is Needed

The misalignment between plant-floor performance measures and corporate measures, such as return on capital expenditures; working capital; profitable revenue; and earnings before interest, taxes, depreciation, and amortization (EBITDA); or more granular measures, such as

profitability by stock-keeping unit (SKU), continues to challenge manufacturers. One version of the truth exists on the plant floor, while another is in business intelligence (BI) or ERP applications. The result is a discontinuity between the process of managing the business and the business of managing the production process.

Today, the level of visibility into manufacturing is not meeting stakeholder expectations (see Figure 1).

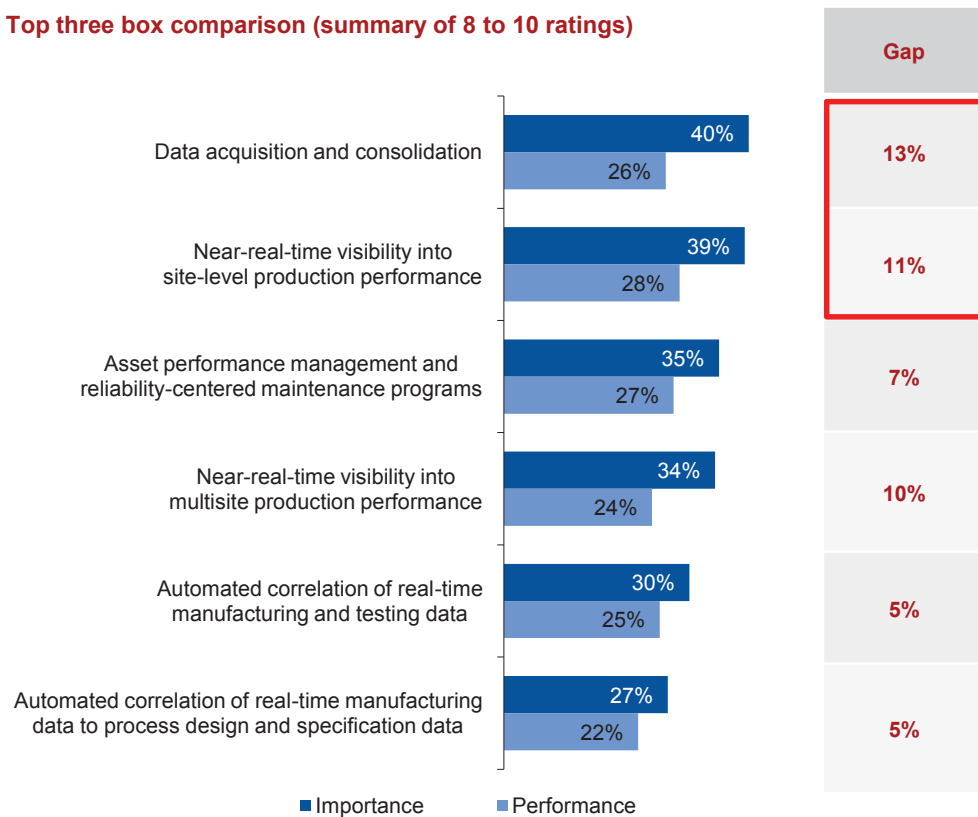
To generate and leverage manufacturing's KPIs, enhanced information capture, integration, and availability from multiple manufacturing systems and processes are needed. Organizations that have started down the manufacturing performance measurement path have encountered a huge stumbling

block: data availability. They've identified the measures they'd like to employ, but capturing the foundational data that's needed is a challenge. Overcoming the manual data entry done in absence of automated, error-proof data collection and integration, as well as the data not accessible or available in a timely fashion, often requires catch-up investments in plant-level, IT fundamentals, such as historians, supervisory control and data acquisition (SCADA) systems, SQL databases, and even in fundamental data collection strategies, to automate and error-proof the capture of basic production data.

Figure 2 highlights the multiple strategies that companies are prioritizing and emphasizing to overcome visibility barriers into manufacturing performance.

FIGURE 1 Manufacturing Visibility Performance Gaps

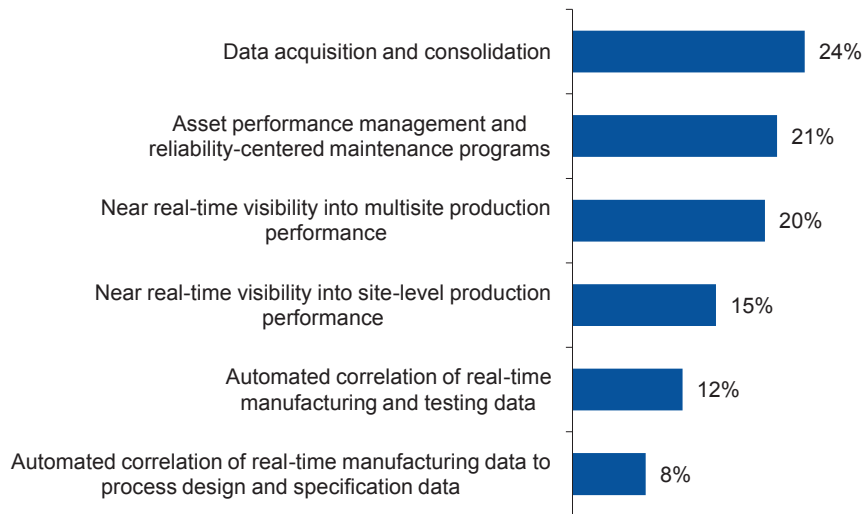
Top three box comparison (summary of 8 to 10 ratings)



N = 313 global sample

Q. How important are the following production performance/analytics and real-time processes to the overall success of your manufacturing strategy?

Q. How effective is your organization in achieving each production performance/analytics and real-time process (using 10-point scale)?

FIGURE 2 Manufacturing Visibility Improvement Priorities

N = 313 global sample

Q. Which production performance/analytics and real-time process will be your organization's top priority for improvement in the next 12 months?

Source: Gartner (July 2011)

EMI Helps Raise Responsiveness and Performance

EMI, first identified by Gartner in 2003, is production performance data made understandable — and, therefore, useful — to multiple roles, ranging from knowledge workers on the factory floor to supply chain planners. It aggregates and contextualizes information from multiple shop-floor data sources, such as programmable logic controllers (PLCs); distributed control systems (DCSs); historians; bar code scanners/radio frequency (RF) tags; operational data stores associated with manufacturing execution systems (MESs), laboratory information management systems (LIMSs), quality management systems (QMSs), computerized maintenance management system (CMMS) applications, object linking and embedding (OLE) for process control (OPC)/non-OPC production equipment, and other operational technologies (OTs).

It then provides fact-based support to decision makers in various operational roles, with results from the synthesis and analysis of intelligence from highly granular, manufacturing-related data made visible through dashboards and portals.

Examples of this fact-based support include the following:

- Machine-state data (up, down, stopped and idle) translated into overall equipment effectiveness (OEE), which helps operators understand performance to plan and determine opportunities for preventative maintenance activities
- Process variable history translated into dollars-per-unit volume production to support activity-based costing, resource efficiency and profit optimization projects
- Quality reject data translated into dollars per finished goods scrapped, or the cost of poor quality (COPQ)
- Visibility of energy consumption and emissions output for energy management and compliance reporting

Surfacing this information and presenting it in the right context also help define the root causes of production issues and are the catalyst for continuous improvement initiatives to boost manufacturing performance.

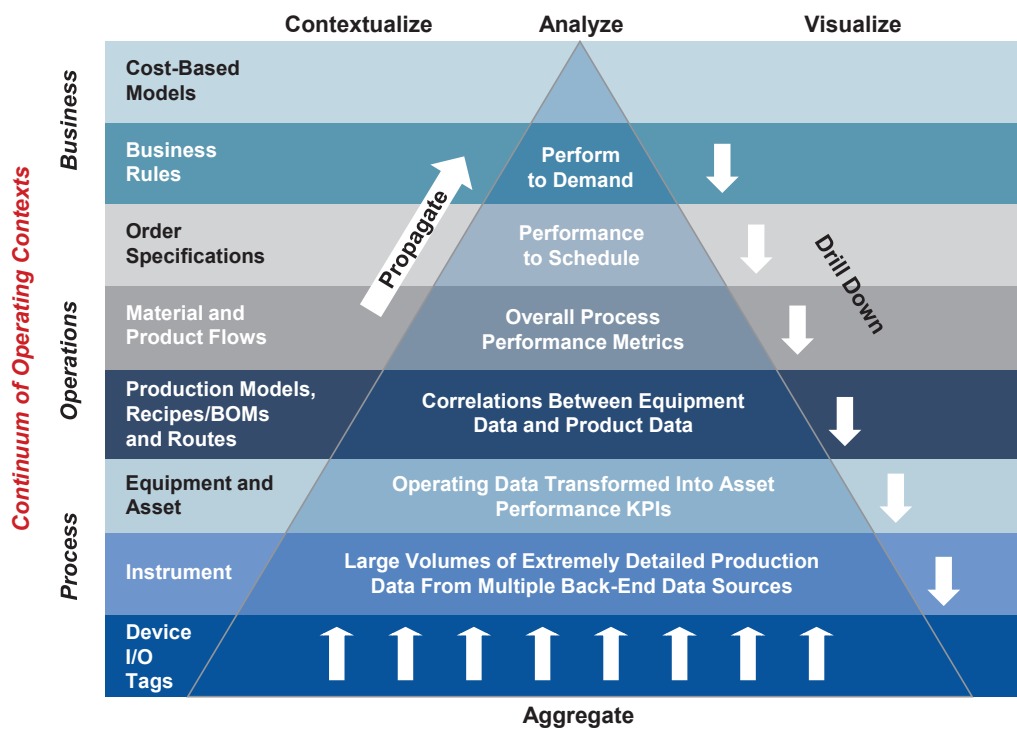
EMI approaches encapsulate the following capabilities:

- **Visualize** — Provide graphical representations of KPIs that support the context or role-based navigation of information based on persistent interrelationships. In some instances, this means enabling drill-down from multiplant representations to individual facilities and individual systems.
- **Propagate** — Automatically transfer relevant operational performance information to the appropriate business-level systems (e.g., enterprise asset management [EAM], ERP, supply chain management [SCM] or product life cycle management [PLM]).

Architecture, Not Applications, for EMI

EMI must support the multiple data models that exist in current manufacturing applications, such as MES or EAM, that are optimized for specific tasks (e.g., maintenance management, production planning and quality inspections). The hierarchy in Figure 3 highlights the multilayer architecture designed to support the process of aggregating and distilling information from multiple levels of production data sources, and then synthesizing real-time, decision support intelligence for numerous roles in the organization.

FIGURE 3 Core EMI Capabilities — Aggregate, Contextualize, Analyze, Visualize and Propagate



Source: Gartner (July 2011)

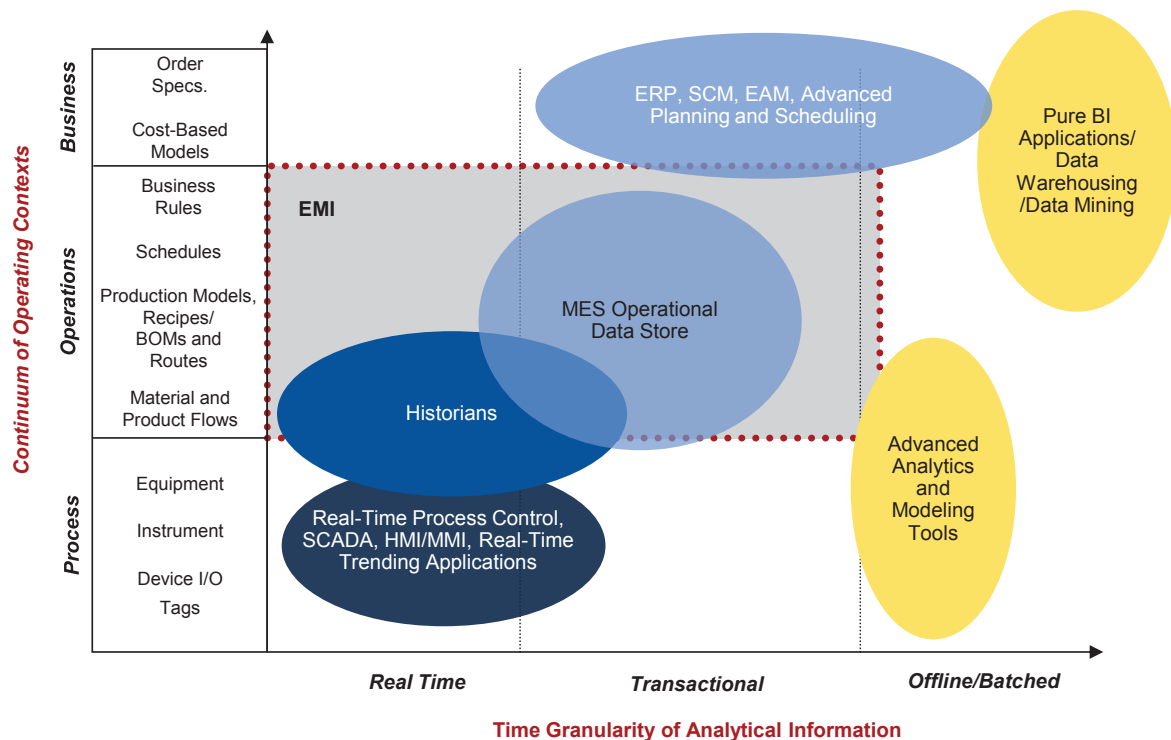
Consider the following:

- At the foundation of this pyramid, control and automation vendors use data structures and programs in specialized computers, such as PLCs, to contextualize discrete input/output (I/O) and control complex physical processes.
- SCADA systems, batch execution engines and data historians also work with device-level data, providing more sophisticated models and context for analytics. But even at this level, the physical asset model prevails.
- Moving up the pyramid, the context shifts from asset-centric to process-centric: The production model provides the context needed to analyze the flow of product through various physical assets. This is where MES applications play a role, using routings or recipes to marry assets to the products that flow through them. Even at this level, though, the marriage is incomplete. The majority of MES applications still don't have the cost and schedule detail to look at asset performance, and are just beginning to capture performance to specification data on the product side.

- Going up yet another layer requires models that tie material movements to specific products and specific products to customer orders. Most ERP systems view production as the consumer of a bill of materials (BOM), and can't support production (process) models, but they do add visibility into standard costs as well as customer orders and schedules. MES applications, on the other hand, have limited view into customer orders and commitments. They execute work-order sequences, but generally don't interact with scheduling systems. In short, neither model on its own is sufficient to provide comprehensive coverage, creating an opening for specialist EMI vendors.

Adding business context to manufacturing data isn't a trivial exercise. It isn't really the natural domain of BI vendors that can't typically connect to real-time manufacturing data sources, can't deal with real-time event management and can't provide the metrics in real time or provide the analytic tools for complex manufacturing processes.

FIGURE 4 EMI Closes the Gap Between Process Data and Business Performance



Source: Gartner (July 2011)

EMI, in total, is an architecture that must be constructed from the models that represent multiple application domains (see Figure 4).

There are multiple information systems that provide local visibility into individual silos of process information at both the process and business-system levels. For example, data historians, ERP, BI and SCADA systems provide excellent decision-support tools for their local user audiences, but they fail to support the holistic view that's needed to identify and execute on enterprisewide performance improvement opportunities.

Three Flavors of EMI Support

Most manufacturing environments already possess individual components of an EMI application in the form of process historians, MES operational data stores or process automation products that can be augmented to provide EMI functionality. Furthermore, many of these applications come equipped with strong analytics and visualization capabilities. The challenge is to craft an approach to EMI and operations intelligence that takes advantage of the investments already in place.

Gartner has observed three kinds of EMI approaches that have emerged over time:

- Tactical EMI applications, which are highly packaged applications designed for rapid deployment. These applications often come with preconfigured content and KPIs (e.g., OEE), and are deployed predominantly within the production environment, often on equipment (e.g., packaging machines) or single lines.
- Analytics, modeling and simulation applications, which represent very specialized content that is designed and targeted at solving specific industry vertical challenges.

- EMI frameworks, which provide a toolkit approach versus being model-based for constructing EMI applications. They also tend to overlay detailed systems of record, such as historians, MES applications and process automation. These can range from toolkits and APIs to construct composite applications atop data historians, which provide storage and retrieval of large volumes of data, or integration frameworks that can aggregate, visualize and contextualize production data into enterprise portals. Regardless of the approach, these frameworks can be used to rapidly develop and deploy point solutions, often providing payback in a short period, they require considerable discipline.

EMI applications are often packaged, cost-effective alternatives to high-maintenance, homegrown applications and/or costly integration initiatives. Yet, whether or not an application can satisfy your performance-monitoring requirements depends largely on your information requirements. Consider this: Conventional analytic applications operate on datasets that have been staged, but this introduces latency into the process as data is captured, transformed and then stored into the analysis set. There are also applications that can perform analytics on the fly as data is extracted from shop-floor sources, but this places a heavy burden on the network, limiting the applicability of these tools for high-volume, high-refresh applications.

Manufacturing 2.0 Builds Atop EMI to Deliver Operations Intelligence

Integrating manufacturing with demand-driven value networks (DDVNs) and movement toward Manufacturing 2.0 represent a shift in organizational strategy and architecture, from operational efficiency to strategic business transformation.

Organizations are re-establishing metrics alignment to define manufacturing's role in their DDVNs (see "Aligning Manufacturing and Supply Chain Performance, Part 2: The Hierarchy of Manufacturing Metrics"). They're also extending the core EMI capabilities across their product supply networks to establish broader OI capabilities, which connect manufacturing with broader performance management and business analytics programs to support collaborative decision making and pattern-based strategies for predicting future performance.

For companies starting the journey to get visibility into manufacturing data to enhance business decisions, consider the following guidelines:

- Know the goal and govern it. Making information useful requires design, but simply adding additional data sources or measurement points isn't effective unless you've created a framework that can transform the data into intelligence that drives action.
- Use the metrics in the Hierarchy of Manufacturing Metrics to define the KPIs that are relevant and require visualization. Ask the simple question, "What information is needed, and at what frequency for the business to manage and improve manufacturing performance?" Start at the business level and work down the layers in Figure 2 to answer the same question. The data elements of the metrics will change in correlation to movement toward real-time processes.
- To save time during project justification processes, eliminate the misperceptions about functional overlaps between applications by articulating the design of the various information layers that your company will be constructing, and how it will be used and rolled up at each layer.
- EMI applications are enablers that deliver the information. This layering helps design information flows to determine the required EMI capabilities.
- Don't try to use a single application to serve all roles and information consumers. One-size-fits-all approaches don't work.

Source: Gartner Research, G00214298, S. Jacobson, L. Eriksen,
11 February 2013

Leveraging Enterprise Manufacturing Intelligence and Operational Intelligence to achieve Operational Excellence

One of the biggest hurdles in delivering EMI is the information silos that exist in an organization. A plethora of business systems, processes and workflows managed by disparate teams spread across geographies possess severe challenges such as:

- More time spent on collecting information than analysis to drive decisions
- Skepticism about information accuracy and consistency
- Difficulty in sorting information when required
- Sharing information across the organization
- Analysis of data in right perspective
- Building strategies, leveraging performance analytics

The information silos result in multiple versions of truth across different departments within an organization. This leads to lack of co-ordination, and results in misalignment between manufacturing and business performance.

While EMI is an essential first step that contextualizes the granular manufacturing and operational data, and makes it visible through various portals and dashboards, it's not enough to survive in today's highly competitive world. As Gartner reports, "Supply chains are increasingly collaborative and virtual, raising the performance requirements for manufacturing operations".¹ Hence it is becoming highly critical to add powerful 'Operational Intelligence' capabilities such as predictive analytics, what-if analysis and collaborative decision making on top of EMI, to be able to achieve Operational Excellence (OpX).

Additionally, a shift towards a transparent information ecosystem that effectively leverages

data and information regardless of its source will be a key differentiator for manufacturing companies striving for OpX by.

- Managing Risk and Compliance
- Making On-time Decisions with Actionable intelligence
- Optimizing Utilization, Avoiding Failures and thereby Lowering Expenditure
- Achieving Innovation and Value maximization
- Establishing a Proactive Culture and Setting up Knowledge Management
- Ensuring Customer Satisfaction

The question for most leading manufacturing companies and especially-so for asset-intensive process industries (Example: Oil & Gas, Refineries, Petrochemicals, Chemicals, Pharmaceuticals, Power Generation, Metals, etc.) is not - if they need to have an OpX Program; but to know how do they drive it better than others?

The most important factor for an OI solution is the operational or domain knowledge and understanding of the specific industry. This knowledge drives identification of the right KPI's and the data required to compute them together with the data sources. Building such a business analytics solution from scratch can take many years and often results in sub optimal or no benefit. Therefore organizations need to deploy a productized industry specific solution which can be implemented in weeks and achieve ROI right from the beginning.

In this report, we will see that an effective OI solution is no longer just a dream and can be realized by using the right systems and solutions.

Source: Rolta

¹Gartner Inc., The Manufacturing Performance Dilemma, Part 2: From Enterprise Manufacturing Intelligence to Operations Intelligence, G00227465, 29 November 2011

Achieving OpX through Rolta OneView™

Rolta OneView™ is an Enterprise Intelligence Solution that brings unique business value through role based actionable insights and correlated Operational & Business Intelligence which helps informed decisions and drives the business transformation. It is targeted towards the Process and Asset Intensive Industries and provides industry specific KPIs which are built using Rolta's deep expertise in these industries.

It achieves "OPERATIONAL INTELLIGENCE WITH A PARADIGM SHIFT" by balancing across business

and technology perspectives to deliver integrated actionable insights.

Rolta OneView™ provides an Operational Intelligence and Excellence framework to achieve goals sustainably and in integrating mission critical information seamlessly across business functions in the enterprise. It is designed to break down the fundamental barriers in achieving operational excellence, such as the silos across

Business Goals	Technology Goals
• Better and faster decision making	• Breaking information silos
• Defining right measures / KPI's	• Unified and collaborative decision-making
• Focus on Safety, Reliability & Sustainability	• Single version of truth
• Enhancing Strategy Orientation	• Dynamic Performance Management
• Benchmarking for setting goals and targets	• Right Information at Right Time
• Loss Prevention & Waste Elimination strategy	• Forecasting & Predictive Analysis

FIGURE 1 Integrated Enterprise Intelligence



Operational Excellence can help the CXO to maximize profits and improve stakeholder value by achieving operational excellence.

Source: Rolta

the operational network, business network, safety and sustainability network, and enterprise social network and provides a 360 degree view of the enterprise.

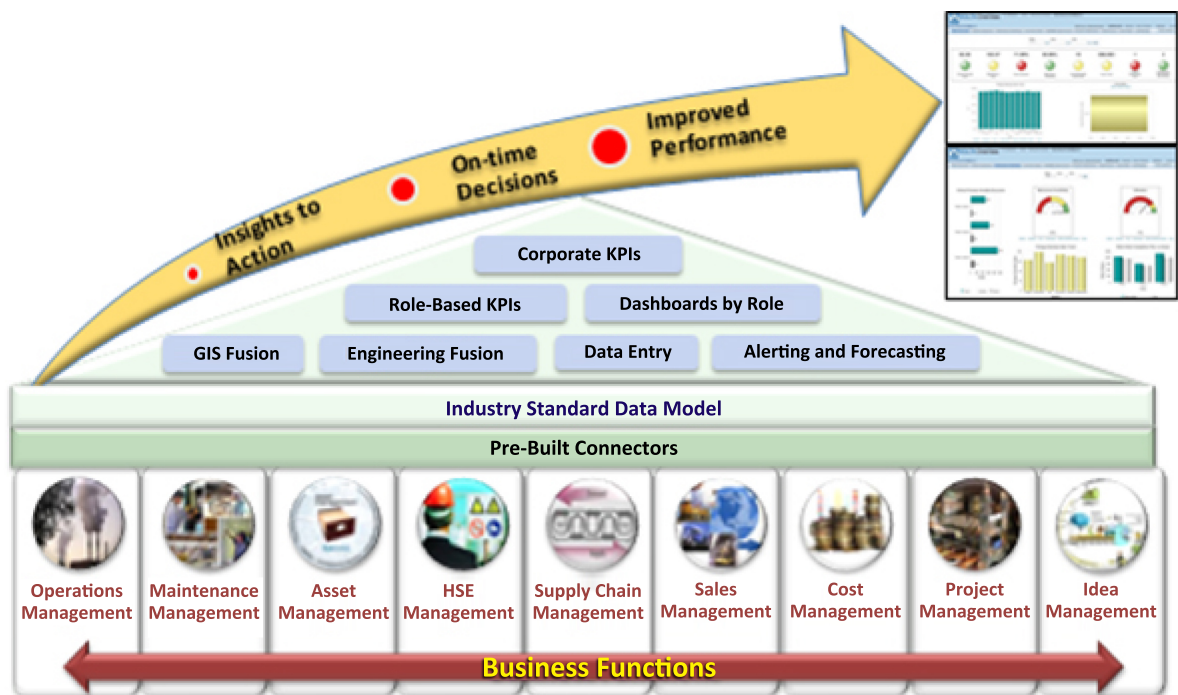
Rolta OneView™ touches the nerve center of all critical functions, quickly adapting to the existing systems, instilling best practices and accelerating the improvement of processes.

Solution Landscape

Challenges in the journey to OpX are widely varied, but from the IT perspective, can be traced down to a few distinct root causes like availability of right information to the right people at the right time in the right format to make right decisions.

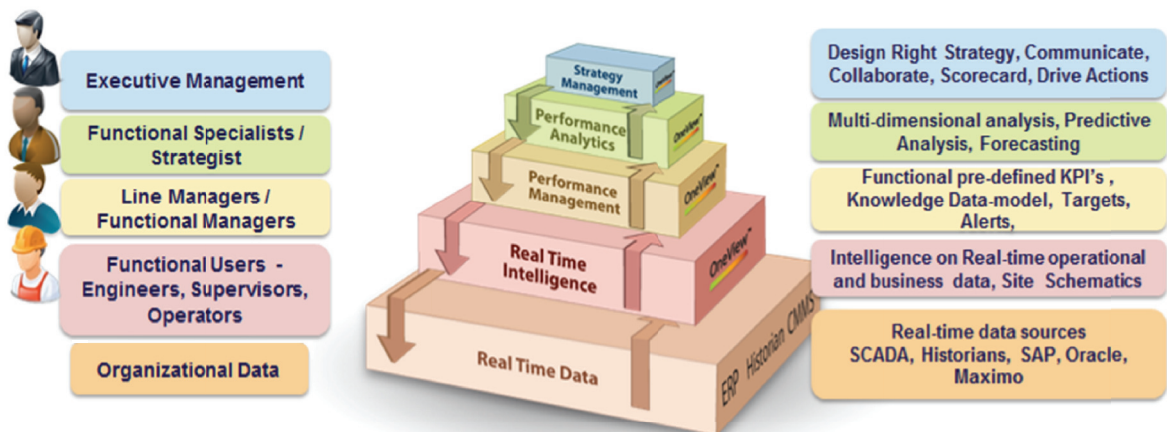
Rolta OneView™ is an excellent OI solution that brings a cross-functional paradigm shift by collecting all the data across the different

FIGURE 2 Cross-Functional Paradigm Shift



Source: Rolta

FIGURE 3 Seamless aggregation and dissemination across information landscape



Source: Rolta

functions like Operations, Reliability, Assets, Health Safety & Environment, Supply Chain, Sustainability, Projects and Business into a common platform. Rolta OneView™ then aggregates and delivers meaningful information and actionable insights to decision makers enabling them to take right decisions at right time. Using in-built calculation and analytic engines, the information is presented in the form of KPIs using a versatile presentation layer comprising of dashboards, reports and portlets.

Gartner says “Define how real-time OI needs to be. Identify which users need which information and when to support advanced decision making, since not every piece of data needs to be propagated across the enterprise to all roles in real time.”¹

Rolta OneView™ acknowledges that the information needs of different people within the enterprise are different and that these needs vary from tactical to operational to strategic.

Rolta OneView™ provides role based insights functionality to provide relevant analytics information to people in various roles. Rolta OneView™ provides seamless aggregation and dissemination across this entire information landscape. It empowers every role to be able to get its role based actionable insights and achieve its individual and organizational objectives. It is important to note that the same data flows through all the levels of hierarchy deriving the insights meant for each level. Hence, it ensures that there is a ‘single version of truth’ across all those levels. While the information is aggregated and rolled up as it goes up the hierarchy, one can drill down to any lower level information to get detailed visibility.

Thus, Rolta OneView™ provides integrated OI capabilities which include:

- Decision capabilities — Collaborative decision making and intelligent decision automation
- Analytic capabilities — Descriptive diagnostics, predictive and prescriptive techniques
- Information management capabilities — Describe, organize, integrate, share, govern and implement

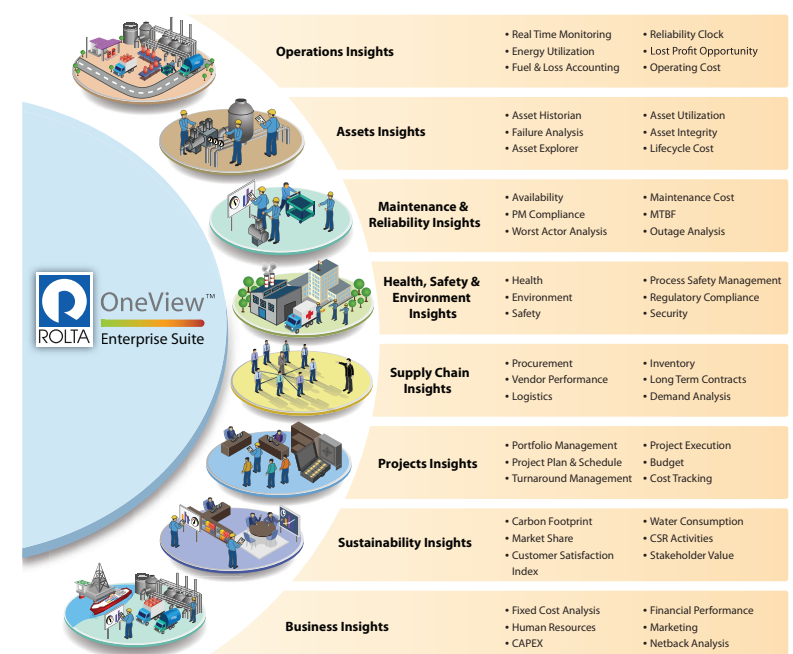
Delivering Deep Cross-Functional Insights

Rolta OneView™ provides deeper insights across the core and supporting functions within an organization. Different modules focus on the key processes with a seamless integration allowing the organizations to manage with cross functional visibility.

The performance integrity model acts as a cornerstone of the product to enable an inclusive coherent outlook in managing performance. It is segregated in various modules to provide a comprehensive coverage and role specific functional leadership in tandem as detailed below. It equips the decision makers with the right tools and information to remain focused on the goals and strategic objectives.

ROLTA OneView™ provides more than 250 KPIs categorized under the following modules...

FIGURE 4 Comprehensive Performance Integrity Model



Source: Rolta

¹Gartner Inc., The Manufacturing Performance Dilemma, Part 2: From Enterprise Manufacturing Intelligence to Operations Intelligence, G00227465, 29 November 2011

Rolta OneView™ - Solution Blueprint

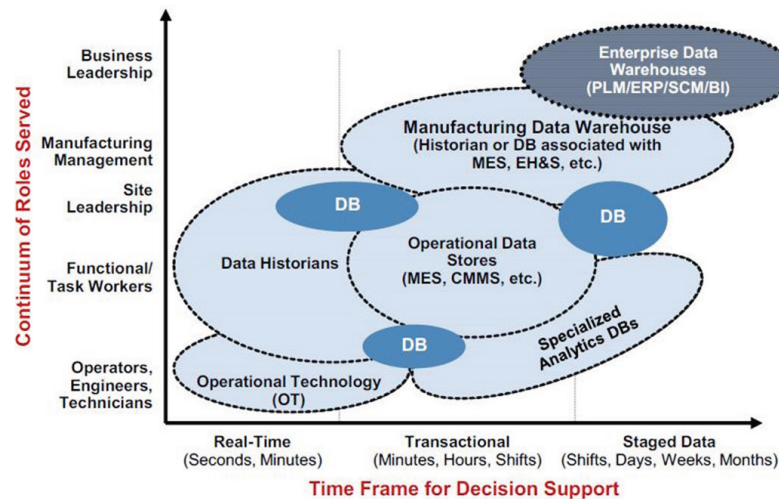
The Gartner figure below “highlights that data and information for OI exists within multiple data sources, ranging from transactional and cost-model data from enterprise applications to granular, time series production data that often resides in data historians and other operational data stores (ODSs), such as those from MES applications. (Caveat emptor: The system landscape can vary widely from plant to plant.)”²

Rolta OneView™ architecture simplifies the information complexity in the enterprises by providing loosely-coupled yet comprehensive integration across various plant and business systems, that have data with widely varying temporal scopes, to enable such a broad architectural landscape.

This innovative approach is perfect for bridging the silos in current market offerings –

Rolta OneView™ logical architecture is derived with the “Integrate-Analyze-Deliver” theme and built using best of the breed BI platforms as well as significant IP from Rolta. Powered by Rolta iPerspective™, the framework retrieves a high volume of historical data and real-time data from varied data sources. Rolta’s unique knowledge data model (compliant with ISA-95 industry standards) and pre-built KPIs have been derived from Rolta’s deep domain insights into the process industry. This is a unique differentiator in the process industry where functional knowledge and technology expertise are delivered in a single platform. The rich visualization capabilities of KPIs, Dashboards and Scorecards are delivered through multiple delivery channels such as online reports, offline reports, portals, email, mobile etc. 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 capabilities.

FIGURE 5 OI is Architecture – Not Applications

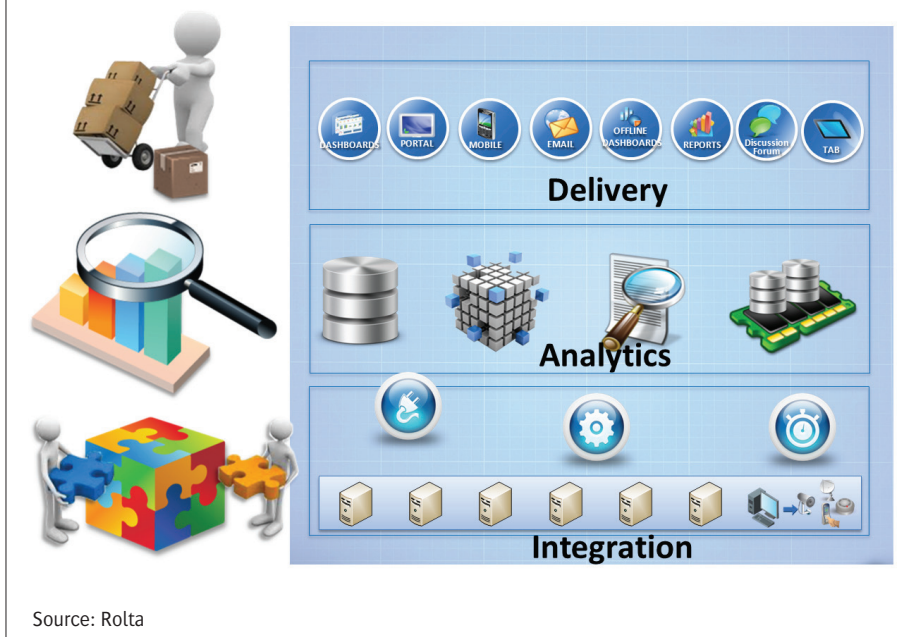


CMMS = Computerized maintenance management system; DB = Database; EH&S = Environmental, health and safety

Source: Gartner Inc., The Manufacturing Performance Dilemma, Part 2: From Enterprise Manufacturing Intelligence to Operations Intelligence, G00227465, 29 November 2011

“Architects must understand the capabilities of these various jigsaw pieces, as well as the time frame and costs to assemble them into a cohesive and maintainable architecture that supports the needs of the various organizational roles involved.”³

^{2,3}Gartner Inc., The Manufacturing Performance Dilemma, Part 2: From Enterprise Manufacturing Intelligence to Operations Intelligence, G00227465, 29 November 2011

FIGURE 6 Rolta OneView™ - Integrate, Analyze and Deliver

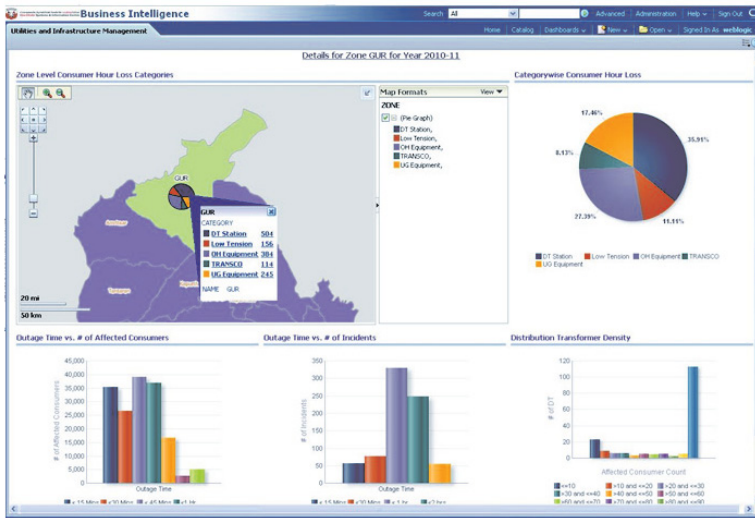
Rolta's approach allows organizations to choose and balance between real-time and traditional BI-DW capabilities based on their specific needs and infrastructure capabilities, and flexibly scale over time with improving technology capabilities. Additionally, since it leverages industry-standard components, the solution can also leverage latest advances in technologies like Engineered DW, BI, Analytics systems like Oracle Exadata & Exalytics, SAP HANA, etc. to support extreme performance requirements.

Gartner says "When evaluating vendors, look beyond the core enterprise manufacturing intelligence (EMI)

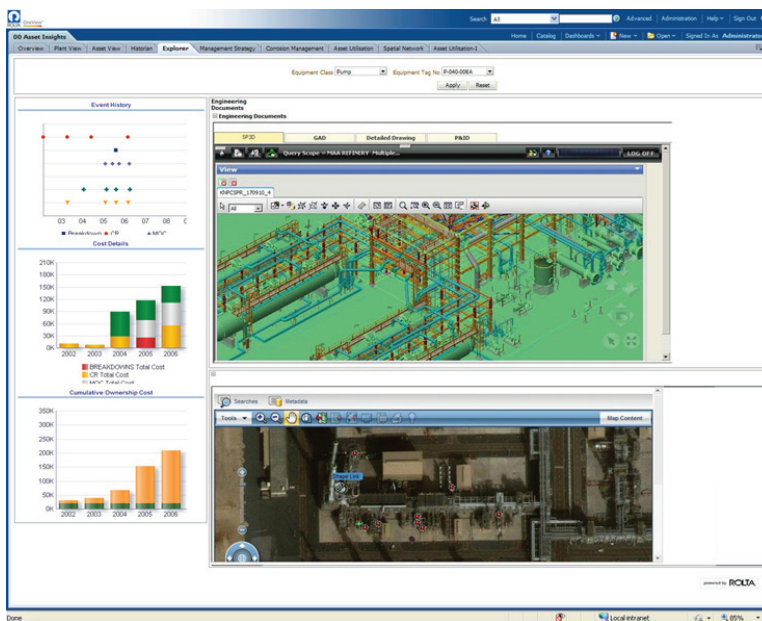
capabilities. Seek providers that support the creation of holistic Pattern-Based Strategies through advanced capabilities for data modeling, mining, lifecycle management and simulation."⁴

Typical OI and OPM integration features expected by the industry, are facilitated by Rolta OneView™ to ensure that, "out of range" behavior is identified using predetermined thresholds and business / operations professionals at various levels are alerted in near real time. Rolta's recommended Enterprise Architectural Strategy for OneView™ adopts a Pattern-Oriented approach. This allows organizations to relate real-time and historic data from plant-floor systems (Historians, LIMS, TIMS, etc.) as well as business systems (ERP, SCM, SRM, etc.) to provide action-oriented flows – data, knowledge, information, action, and feedback – lessons learnt.

⁴Gartner Inc., The Manufacturing Performance Dilemma, Part 2: From Enterprise Manufacturing Intelligence to Operations Intelligence, G00227465, 29 November 2011

FIGURE 7 Geospatially empowered Operation Integration Platform

Source: Rolta

FIGURE 8 Tightly integration with Engineering Design systems

Source: Rolta

There are some additional critical needs of many process industries. For process industries having assets spread across a wide geography, it is not enough to monitor/manage these assets in a purely BI manner but it is critical to include the geospatial perspective as well. Rolta OneView™ provides the much needed Geospatial Integration features e.g. comprehensive business view for geographically distributed assets/ customers/ vendors, unified & seamless web based view of tabular and spatial data, map auto-zoom to report data context, multidirectional interaction capabilities such as map to report, report to map, report prompting, drill-downs and drill through.

Another problem faced by the process industries is the inability to comprehend the actual performance of the assets with respect to the design specifications of those assets. This inability leads to a complete lack of visibility on important matters such as optimal asset utilization, asset maintenance needs etc. Rolta OneView™ provides excellent Engineering Design Systems integration-features e.g. engineering data, P&IDs, drawings, 3D model of an asset. This unified platform tracks operating parameters for each asset against engineering data; design documents, along with powerful search & review facilities.

Rolta OneView™ – Value Proposition

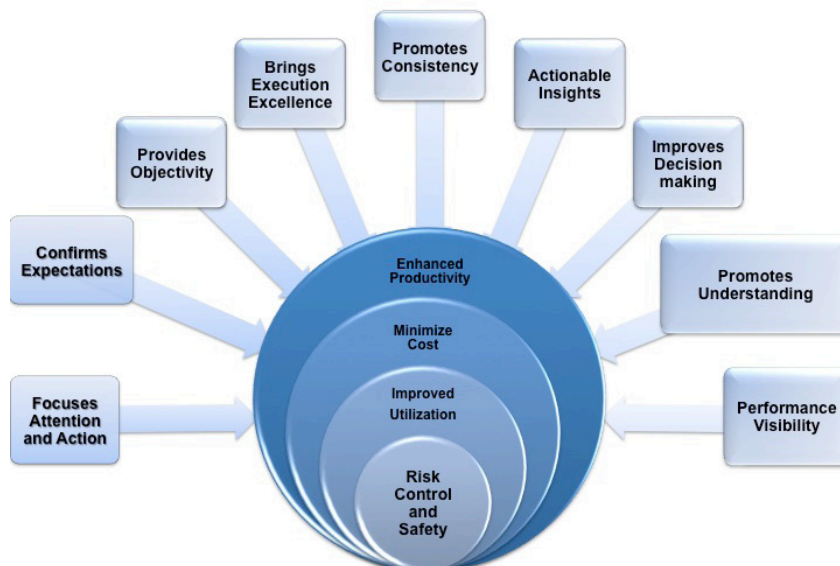
- Higher and Faster ROI – OneView™ provides 250+ pre-built analytics across 8 key functions, provides payback on customer's product investments within 3 months and provides TOV in weeks due to rapid adoption.
- Lower TCO – OneView™ provides TCO reduction of more than 50%, as it has been built on best-of-the-breed BI platforms from Oracle and SAP for easy extensibility, customization, reuse of existing services using SOA, high scalability and easy upgradability.
- Rapid Deployment – OneView™ provides 60+ pre-built connectors for operations and business systems, pre-built work processes; standards-based pluggable-architecture and rapid report-customization through rich metadata model.
- Feature-Rich and Complete – It provides extensive functional coverage for Process and Utilities industries, deeper cross functional and integrated insights into operational and business systems, extensible Data and DIMS, secure data access and cloud/mobile/BigData readiness.

The estimated RoI achievable by customers, on top of current operating levels, are as follows:

- Typical reduction in downtime (5 - 10%)
- Getting it "First Time Right" (15 - 20%)
- Asset Efficiency (5 - 15%)
- Decrease in Operational Cost (15 - 25%)
- Reduced Supply Chain Cycle time (5 - 15%)
- Increased On-Spec Throughput (10 - 15%)
- Better Schedule Adherence (15 - 30%)
- Reduced Inventory Turns (10 - 15%)

Source: Rolta

Figure 9 Rolta OneView™ - Value Derivation



Source: Rolta

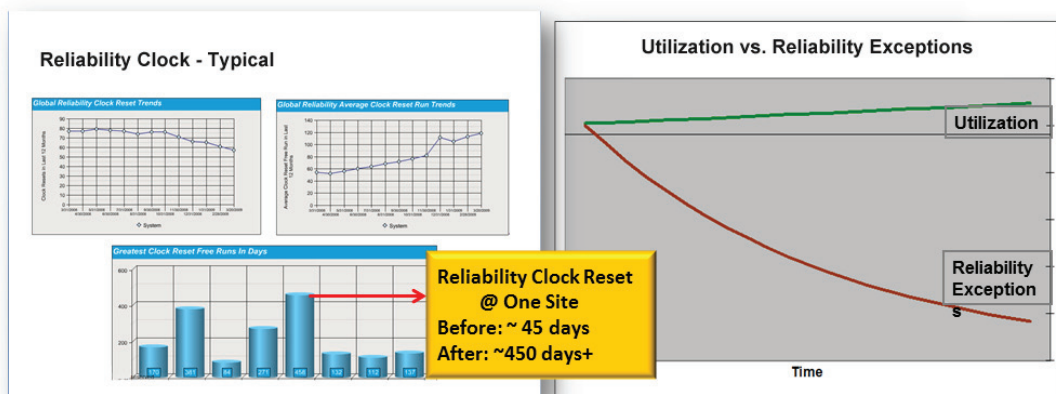
Case Study 1

A global Oil and Gas company owning 8 refineries wanted to increase the overall reliability of its plants and have better predictability and prevention of asset failures. This effort was aimed at integrating activities associated with 'Streamlined Reliability Centered Maintenance' (sRCM), preventive maintenance, condition monitoring and surveillance, inspection and testing, long-term planning, equipment performance and Causal analysis. However, biggest hurdle the company faced was that critical data was isolated in disparate systems and applications spread across different refineries as well as operator logs, various spreadsheets etc.

In just 4 months, Rolta delivered the entire Operational Excellence & Reliability Intelligence platform across 8 refineries integrating 28 different data sources of reliability, maintenance

and project. The resulting system delivers vital reliability information on more than 100,000 pieces of equipment to hundreds of operations throughout the refineries. This newly implemented analytics capability has created a new culture where reliability has become a shared responsibility across different functional and business areas. Some of the benefits achieved include -

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



Case Study 2

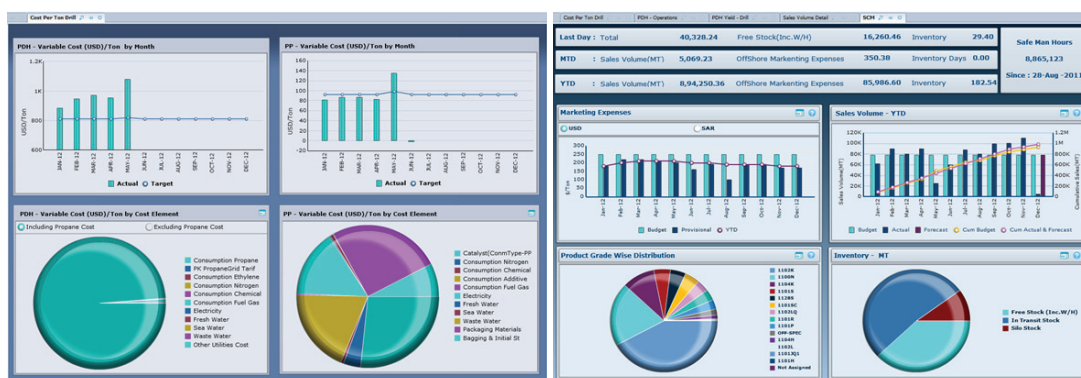
A major petrochemical manufacturing organization in the Middle East envisioned an integrated business intelligence platform to enable them in achieving OpX.

Their existing reporting standards, which used multiple excel formats with different calculations in silos, was a bottleneck in deriving "Single version of Truth".



Within 4 months, Rolta Solution powered by OneView™ delivered the key measures on Safety, Plant availability, Operational efficiencies, Quality, Cost, Profitability and Environment by integrating multiple applications seamlessly. It standardized the report definitions and frequencies providing the management team high confidence visibility on daily manufacturing intelligence. There was a great reduction in time and effort spent on collecting data thus enabling them to increase their time investments in analysis and strategy management.

Customer feedback after implementation indicated that the solution allowed them to strengthen their internal process and bring huge improvement in efficiency to avoid lost profit opportunity incidents. The control on their inventory and supply chain processes improved drastically by providing right information to the business analysts. One of the executive management team member commented that the netback and sales volume distribution analysis has paid back the entire investment made on the solution within just weeks.



Source: Rolta

Case Study 3

A leading multi-site petrochemical company in USA wanted to enable effective decision making throughout the corporation by setting and measuring specific goals, getting accurate & timely information to the appropriate decision makers across the hierarchy. Developing the foundation and feedback information available at the appropriate time was defined as the business critical goal.

Rolta OneView™ solution provided an integrated intelligence platform across a variety of data, applications and processes from distributed high value CMMS, Reliability, Historian, LIMS, PSM, Supply chain, Purchasing, Safety, Maintenance, Reliability and Financial systems and delivered the role-based KPIs using intuitive user interfaces and drill-down functionalities for judicious and knowledgeable decisions.

Source: Rolta

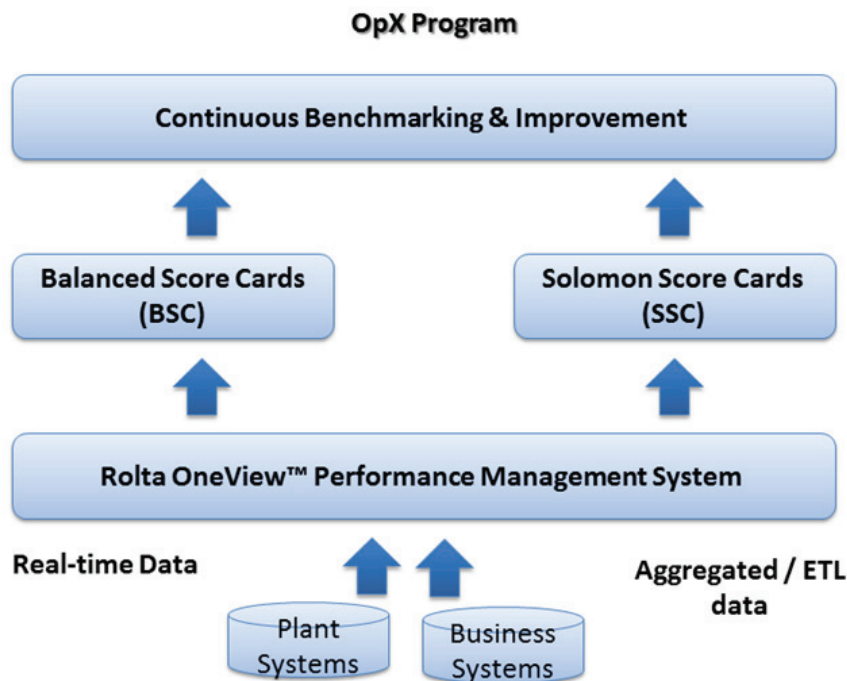


Case Study 4

For one of the Petroleum companies in Middle East, Rolta OneView™ is being considered for realizing not only balanced scorecards for performance management, but also for automating the process for collecting data for

performance benchmarking such as Solomon score cards. This also, reduces the effort required in data-gathering and benchmarking, by having an automated system for continuous data collection.

Source: Rolta



Conclusion

A solid OI foundation is a key milestone in manufacturing organization's pursuit of Operational Excellence (OpX). Rolta OneView™ Enterprise Suite is a powerful solution that helps in aligning strategy, investments and key measures for operational excellence and delivering integrated business insights & consistent actionable intelligence across the enterprise. It is an integrated framework of Real-time Intelligence, Performance Management, Performance Analytics and Strategy Management. Rolta OneView™ provides pre-built industry-specific domain knowledge model and KPIs (for Oil & Gas Upstream, Refineries Downstream, Petrochemicals & Chemicals, Energy & Utilities, Pharmaceuticals and Metals), a comprehensive

connector framework for diverse operational and business systems, leading industry-standard BI & Analytics, Cascaded Balanced Score Cards and collaboration environment that facilitates the journey to Manufacturing 2.0 and OpX.

Furthermore the user extensible framework will permit organizations to evolve and enrich the solution over time as they traverse the BI maturity model. Thus Rolta OneView™ enables organizations in creating competitive advantage by discovering new opportunities of optimization, Safe operations, Cost control, Human reliability, Asset reliability, Energy optimization, Regulatory compliance and Sustainability practices.

Source: Rolta

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's solutions framework includes Geospatial Fusion™, a suite to integrate disparate spatial and business data; Rolta OneView™, a BI solution for operational excellence; and Rolta iPerspective™, a unique platform for SOA and "Cloud" enablement. Rolta is a multinational organization headquartered



ROLTA

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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.

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