

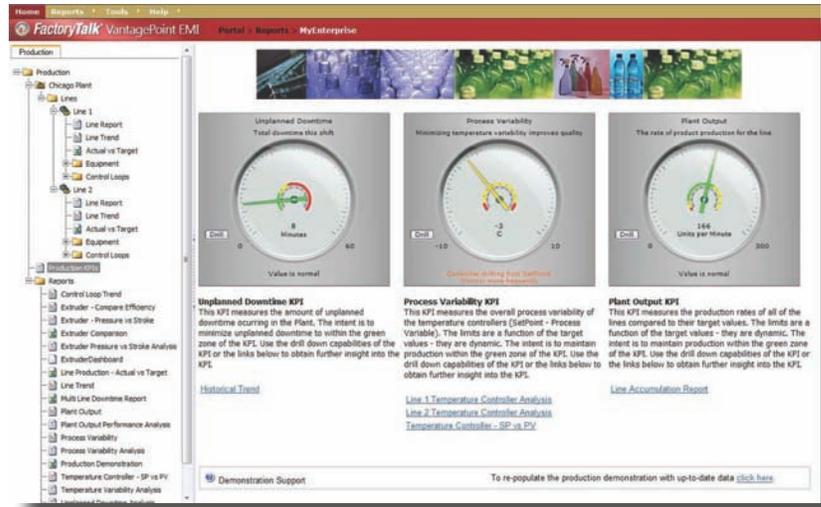
# FactoryTalk® VantagePoint EMI

Business Intelligence for Manufacturing

FactoryTalk® VantagePoint EMI is the gateway to data buried in your manufacturing and business systems. Users easily configure role-relevant reports, dashboards and KPIs that deliver deep, actionable manufacturing insight.

Help empower line workers, supervisors and management to make better, more-timely decisions to achieve greater throughput, with higher quality, better asset utilization and at lower cost with FactoryTalk® VantagePoint EMI from Rockwell Automation. FactoryTalk VantagePoint EMI (Enterprise Manufacturing Intelligence) connects to manufacturing data sources – real-time, historical, relational and transactional – to create a single virtual data resource that can access, aggregate, correlate and present role-appropriate information to information workers, supervisors and management with a web browser. With FactoryTalk VantagePoint EMI, your company can have better manufacturing insight and greater IT agility, helping you to achieve your most challenging manufacturing goals:

- Tighter Cost Control
- Optimal Production Performance
- Better Equipment Utilization
- Higher Product Quality
- More Efficient Supply Chain Management



## Meeting Manufacturing Goals

Aligning manufacturing operations with business goals is a dynamic information problem. It requires real-time visibility into operations for decision-makers throughout the supply chain: from the plant floor, all the way up to top management.

Until now, the costs and infrastructure associated with attempts to achieve that visibility have fallen primarily on corporate IT departments. Yet the data that fuels real manufacturing insight is most often generated in the manufacturing systems themselves. What's been needed is a manufacturing information system that can provide visibility and insight in a way that enables sound operational decision-making. FactoryTalk VantagePoint EMI does just that.

With its unique and powerful Unified Production Model, FactoryTalk VantagePoint EMI puts manufacturing data in the proper business context, correlates seemingly disparate manufacturing and business information, and aggregates information across multiple manufacturing lines and plants. Then it delivers relevant reports, dashboards and KPIs to users, supervisors and management through a simple web browser, empowering them with the information they need to help solve manufacturing problems before they impact the bottom line.

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## Goal: Analyze Production, Reduce Cost

Engineering, maintenance, quality and operations want to squeeze costs by analyzing and removing production bottlenecks and other inefficiencies. FactoryTalk VantagePoint EMI can integrate plant-floor information from historians, control systems and HMI systems. Users can find, graph, analyze, report on and share information helping to reduce costs and streamline production.

## Goal: Maximize Equipment Performance

Plant managers, engineering managers and maintenance managers want to maximize equipment performance. FactoryTalk VantagePoint EMI can integrate asset information (Enterprise Asset Management, Maintenance Management, Condition-based Monitoring) with plant-floor information to provide meaningful insight into equipment performance and condition. Real-time access to key equipment metrics, like OEE and downtime, empower users to drill down, analyze and resolve equipment problems.

## Goal: Improve Product Quality

Production and quality managers seek to improve product quality. FactoryTalk VantagePoint EMI can integrate quality information from LIMS, SPC, and specification systems with manufacturing runtime and historical data to provide real insight into product quality. Providing such quality metrics as defect, rework rates, and scrap, allows users to drill into and resolve quality problems.

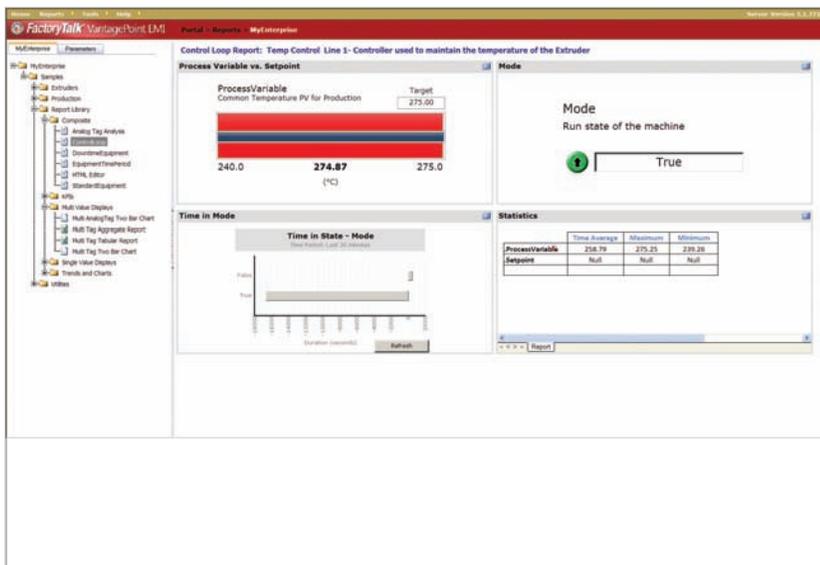
## Goal: Optimize Production Performance

Plant and production managers strive to optimize production performance. FactoryTalk VantagePoint EMI can integrate production information (schedule/cost from ERP/MES) with asset, quality and plant-floor information to provide enterprise-wide insight into manufacturing performance. Armed with FactoryTalk VantagePoint EMI Key Performance Indicators (KPI) and web reports, supervisors and managers can make decisions that can incrementally improve overall production performance.

*FactoryTalk VantagePoint EMI uses your greatest hidden asset – manufacturing data – to allow you to better align the manufacturing process with your business goals.*

## Goal: More Efficient Supply Chain

Plant, production and supply chain managers try to improve agility and responsiveness by optimizing supply chain management. FactoryTalk VantagePoint EMI can integrate production information with vendor and customer information to provide insight into the supply chain. Production supervisors and managers leverage supply chain data and performance metrics, like percentage of perfect delivery to improve supply chain management.



VantagePoint EMI Composite Control Loop Report



Users want reports across similar plants, production lines or equipment to be consistent across the organization, independent of their data sources. FactoryTalk VantagePoint EMI lets you model the business in a consistent manner no matter what the underlying data source to help standardize the way you report on and visualize manufacturing.

### Flexible

The Unified Production Model can be based on industry standards like ISA 95, or it can be developed from the ground up to ensure a high fidelity representation of any environment. The model can also be created automatically from configuration data in external systems. (E.g. Logix configuration files)

The model can then be extended and adapted as business priorities and information requirements change, and enriched as reports, dashboards, trends and KPIs are stored back into the UPM.

... and Delivers IT AGILITY

### Federated

Information systems evolve to address real world problems in manufacturing. Companies end up with a variety of different and sometimes incompatible systems. It may seem tempting to standardize, and to consolidate data into a single system, but the costs of such projects are high and implementation times are long.

FactoryTalk VantagePoint EMI's federated solution leaves the data in source systems, surfaces the data as needed, and warehouses the data when appropriate to allow companies to fully leverage their existing information assets, and to avoid the capital outlays associated with a 'rip and replace' approach.

### Reusable

Deeper insight drives new business requirements and priorities that drive the need for new information, new analysis and new reports. FactoryTalk VantagePoint EMI allows creators of reports and other content to work directly against the Unified Production Model, eliminating the complexity of managing interfaces to multiple data sources and promoting the reuse of content.

The systems that contain manufacturing data are constantly changing as they are reconfigured, upgraded and replaced. Business intelligence solutions need to accommodate these changes. By separating reports and content from their data sources via the UPM, engineering efforts are minimized when data sources are modified.

### Programmable

Business intelligence software should serve as a platform for further integration efforts, and as an environment for the development of custom manufacturing applications. FactoryTalk VantagePoint EMI provides extensibility via a unique combination of web services, an object model and a relational interface. First, FactoryTalk VantagePoint EMI's service oriented architecture (SOA) exposes all functionality as web services. Second, programmers can directly access the Unified Production Model from within any .net programming environment on any workstation on the network. Finally, users can access data directly from the underlying SQL Server database.



VantagePoint EMI Composite Reporting

### Increased Functionality for Better Decision Making

FactoryTalk VantagePoint EMI connects to manufacturing and business data sources, and helps users to organize, analyze, secure and present information to drive better manufacturing decisions.

### Integration

FactoryTalk VantagePoint EMI features premier connectivity to Rockwell Automation products including the Logix family, FactoryTalk products, ProductionCentre and Pavilion Technologies. Comprehensive connectivity options are also available to integrate with databases, ERP systems, manufacturing and business applications, and 3rd party historians, HMI systems and control systems. A developer toolkit is available to create new connectors to other systems.

## Analysis

Data can be further processed and analyzed with FactoryTalk VantagePoint EMI's Analysis Services. Time series data can be synchronized, sampled and aggregated. Data can also be filtered, sorted, and subjected to custom aggregations and calculations. Scorecards and KPIs can be calculated and the results can be stored in the Unified Production Model. In addition, manual data can also be collected, processed and stored in the model.

## Security

Multiple security roles can be defined, and administrators can assign Microsoft Windows® users and Microsoft Windows groups to these roles to give them appropriate access to the system. Every item in the Unified Production Model has a set of permissions that specify each role's ability to read, write and execute operations on it.

## Presentation

Reports, dashboards, trends and KPIs are presented in the FactoryTalk VantagePoint EMI portal or in other portal environments. Users are authenticated at the portal, and see only role specific portal pages and content. All content is available in a browser, and no client installation is required.

Microsoft Excel is utilized as the report creation tool, and non-programmers with Excel skills can pull data from the Unified Production Model into Excel, process and format the data, and share their reports in the portal.

A dashboard builder allows users to build Flash dashboards and KPIs that are dynamically calculated and updated from the Unified Production Model.

Users can trend and plot real-time and historical data from multiple time periods using the Trend and XY tools, and can use cursors, statistics, zooming, panning, stacking and scaling features to analyze manufacturing operations.

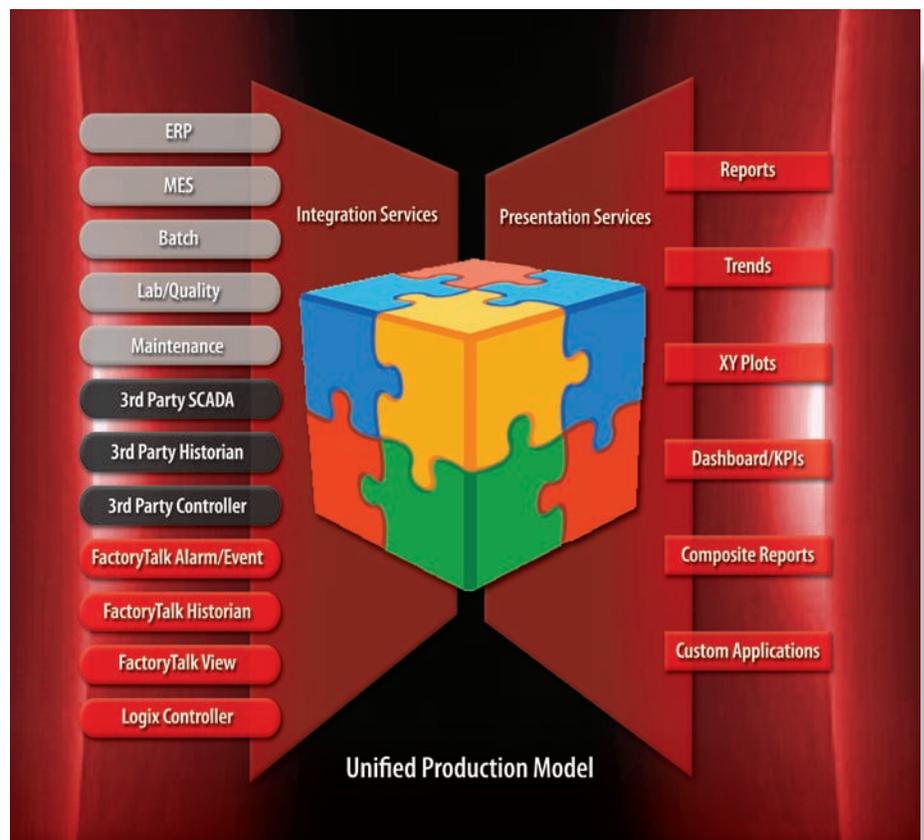
## Extensibility

Solution templates that provide advanced aggregation and online analytic processing capabilities, scheduled and event driven analysis and reporting, and notification and workflow capabilities are available from Rockwell Automation via the Knowledgebase.

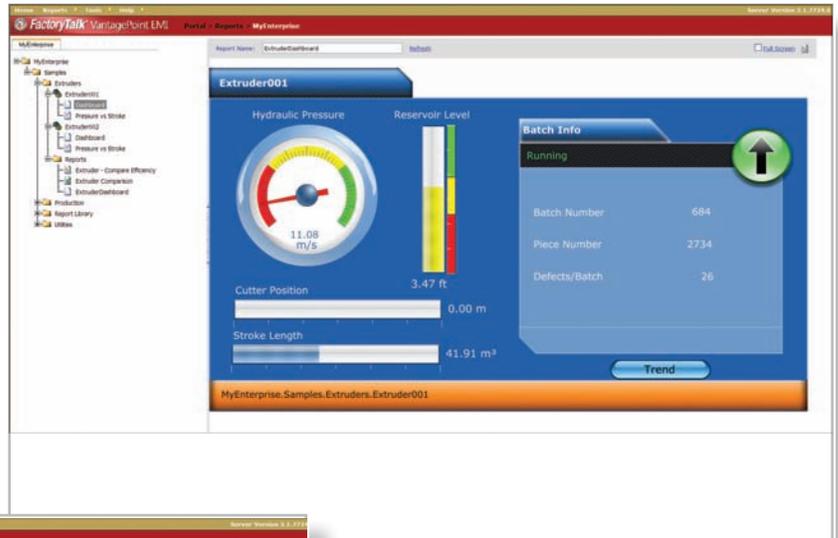
*FactoryTalk VantagePoint EMI scales from a single data source and a handful of users to hundreds of data sources multiple locations and thousands of users.*

Composite manufacturing applications can build on these templates, and interact directly with the Unified Production Model, reading data from the model, saving data to the model, and extending the model by creating new connectors, classes and instances. This allows developers to quickly focus on how best to process and present information, rather than spending time working out how to access and manage information from diverse sources.

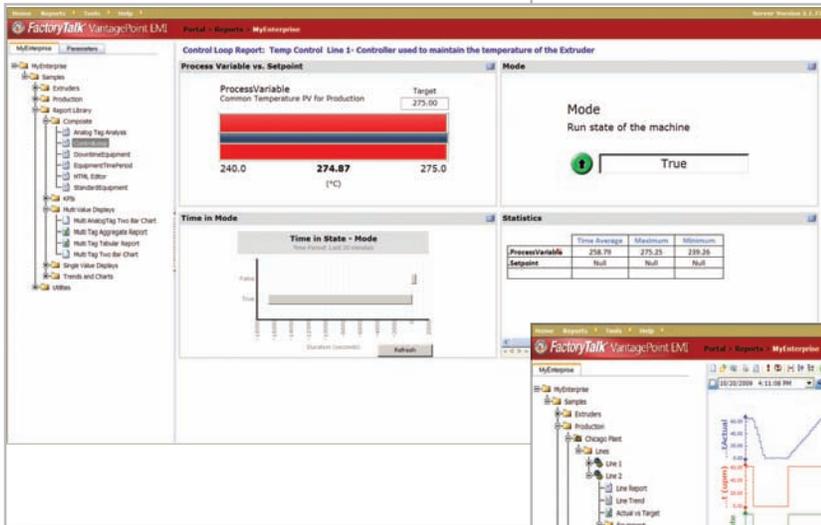
Examples of composite manufacturing applications built with FactoryTalk VantagePoint EMI include energy management applications, oil and gas asset management applications, batch analysis and reporting applications and down time reporting applications.



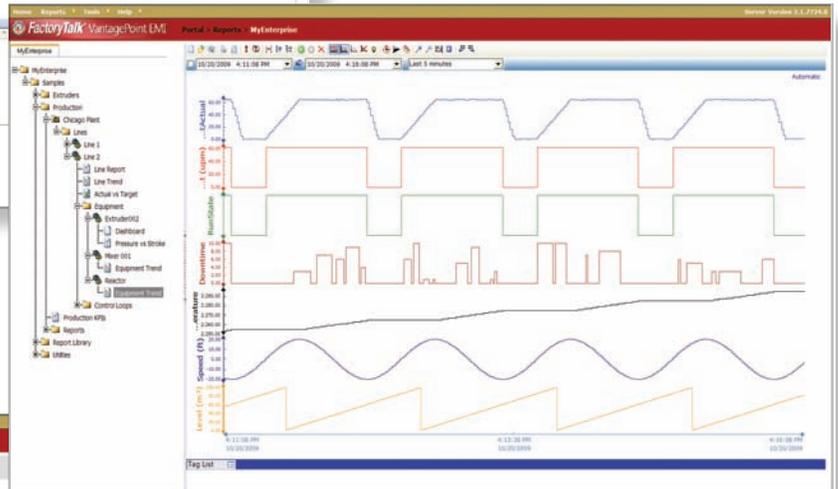
FactoryTalk VantagePoint EMI provides a foundation for your manufacturing strategy that builds additional breadth and functionality on your current systems as you need it, and where you need it.



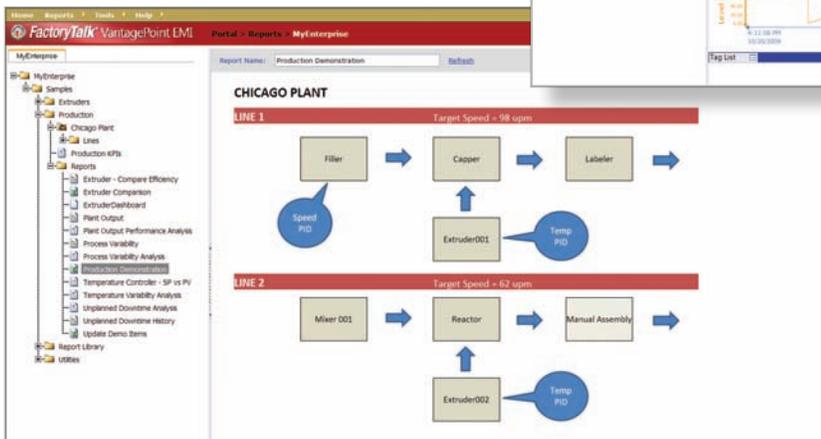
VantagePoint EMI Dashboard Report



VantagePoint EMI Control Loop Report



VantagePoint EMI Stacked Equipment Trend



VantagePoint EMI Multi Tag Excel Report

## Case Studies

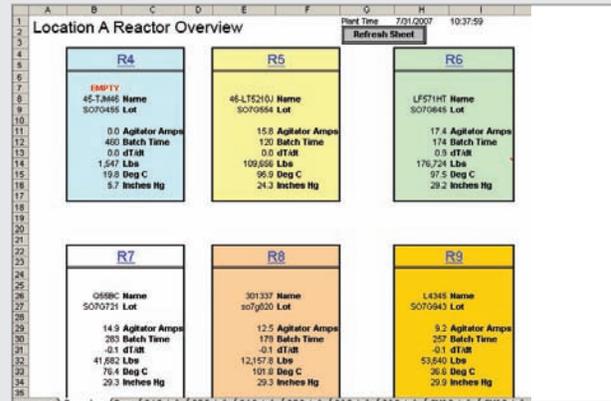
### FactoryTalk VantagePoint EMI...

#### Proven Business Intelligence for Manufacturing

Hexion Specialty Chemicals is the world's largest producer of thermosetting resins and formaldehyde used for building products. With numerous acquisitions, Hexion inherited plants with completely different control systems and historians (including OSI PI, Wonderware InSQL, GE Proficy and Delta V), but needed a single analysis and reporting solution that could integrate all these disparate systems. After considerable research, Hexion selected FactoryTalk VantagePoint EMI.

With FactoryTalk VantagePoint EMI, Hexion was able to aggregate data from all of the company's disparate control and historian systems, providing analysis and reporting that can be shared in a portal and accessible to users via a web browser. They were able to build a standard, reusable set of reports, dashboards and KPIs and provide access to them at the various levels throughout the enterprise. This capability provided a clear growth path to link plant operations to enterprise computing applications so corporate staff can use plant data for better business decision making.

With FactoryTalk VantagePoint EMI in place, production managers had new tools to help achieve on-track production orders. Research and development labs could now monitor product quality and test new resin formulations remotely; and shipping and inventory could be monitored easily, based on simple tank levels. Process engineers could monitor overall equipment efficiency (OEE) and could drill down to resolve problems or optimize batch production phases. Site engineers even had visibility now to track energy consumption.



*Hexion Specialty Chemicals plant overviews now share a common look and feel.*

### FactoryTalk VantagePoint EMI...

#### Integrates All Disparate Systems

Arkansas Steel Associates LLC is a leading producer of railroad tie plates for the U.S., Canada and Mexico with growing service to railroads in the rest of the world. After the company's acquisition in 1989, they went through accelerated growth and modernization throughout their operations. In addition to plant upgrades, Arkansas Steel also made major improvements to both plant control systems and enterprise computing applications. They upgraded the human-machine interface (HMI) systems and added Wonderware InSQL Server databases for collecting all process data from the furnace and caster systems.

By adding FactoryTalk VantagePoint EMI to their reporting and laboratory information management system (LIMS), Arkansas Steel was able to integrate all their systems including their control systems, historians, HMI systems, MES tracking and enterprise applications. VantagePoint EMI's Unified Production Model allows for creation of a logical model of all plant operations delivering information to operators via dashboards in the VantagePoint portal.



*Arkansas Steel's caster dashboard provides an instant status overview.*

## Find out more About FactoryTalk® VantagePoint EMI and all of Rockwell Automation's Manufacturing Intelligence Software Solutions

Join us for our live Discover Webcast series featuring our latest FactoryTalk products. Each 60-minute live presentation will show you how our solutions can help you harness the power of your manufacturing information. The latest schedule of webcasts and registration information can be found at:

<http://discover.rockwellautomation.com/go/webcasts>

There is also an extensive library of video presentations and demos available for FactoryTalk VantagePoint and VantagePoint EMI, including more detailed presentations on:

- **Trend:** Ad hoc trending using signals from a variety of data sources (26:03)
- **Alarm & Event History:** Using VantagePoint to report against the FactoryTalk Alarm & Event History (5:16)
- **Historian:** VantagePoint as the premier client for FactoryTalk Historian SE (and, yes soon, ME) (3:18)
- **Calculation Tags:** Using VantagePoint's powerful calculation engine to create Calculation Tags (11:22)
- **Composite Reports:** Creating composite reports (multiple report objects in a single portal page) in VantagePoint (13:53)
- **Portal:** Creating and using reports in the VantagePoint Portal (14:28)
- **Live Data:** Connecting to FactoryTalk Live Data sources with VantagePoint (11:36)

They can all be accessed through our Discover Rockwell Software portal at:

<http://discover.rockwellautomation.com/mi>

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