Introduction to FactoryTalk VantagePoint
Agenda

Manufacturing Intelligence Overview

FactoryTalk® VantagePoint Key Components

Sneak Peek at FactoryTalk VantagePoint® 6.0
What Are Your Manufacturing Challenges?

- How are we doing against plan?
- Where are bottlenecks?
- What are downtime causes?
- What is capacity for new order?
- What is my first pass quality?
- What is my equipment utilization?
- What are downtime causes?
Which Way Would You Rather See Reports?

Information gathered manually from various plant systems with reports generated in Excel spreadsheets, then distributed in paper form…

Or, information delivered in real-time on your mobile device
The “Information” Integration Challenge

How many systems do you need to access to create a meaningful report?

Logistics
- Environmental Systems
- Metrics (DTD, BTS)
- Shipping
- Container Track’g
- Lot Tracking
- Rack Tagging
- Raw Mat Ordering & Inv
- Dock Inventory
- Schedule Optimization
- Inventory Control
- Line Side Replenishment
- Part Consumption

Quality
- Campaigns
- Shipping – Error Proofing
- External Metrics
- Internal Metrics
- Traceability
- Error Proofing
- Defect Tracking
- SPC
- Repair Bay OI
- Quarantine
- Scrap & Reject Reporting
- Birth History

Production
- Production Monitoring
- Downtime Analysis
- Production Counts
- Constraint ID & Analysis
- Schedule Execution/
- Hit to Hit
- Process Control Boards
- Dock Inventory
- Process Sheets
- Manual Production Count
- Cycle Time Analysis
- Sequencing

Maintenance
- Tool Monitoring
- Predictive
- Preventive
- Crisis
- Reliability & Maintenance
- Downtime Analysis
- Fluid Tracking
- Programmable Dev Supp
- Plant Design & Layout
- Die Re-Chroming

Management
- Information Portal
- Energy/Building Mgmt
- Cost Management
- Policy Deployment
- Best Practice
- Timekeeping
- Metrics for Workforce
- Issues Management
- Production Log
- Knowledge Management
- Training
FactoryTalk VantagePoint – Key Components

- **Connect to Data Sources**
  - Seamlessly integrate to FactoryTalk Platforms
  - Connect to 3rd Party Sources

- **Build a Logical Model**
  - Anyone can understand
  - References data directly from its source
  - Combines multiple data sources into a logical unit

- **Visualize & Analyze Data**
  - Develop reports from a variety of options available from FactoryTalk VantagePoint®
  - View Data from PC and Mobile Devices
  - World Class Trending Tool
Let's Start With The Model

- Build a Logical Model
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VantagePoint Unified Production Model (UPM)
Embrace & Extend Existing Investments in Your Production Systems
One Common Production Model

Logical Model Anyone Can Understand

Physical Connections to Data
Why is a Model Important?
Giving Data Context

- Example: Process information is stored by a historian.
- Typically you can get the data out of a historian and into Excel.
- The model allows you to combine process data with event data or alarm data or order data and increase the value of the data, by giving it context.
Why is a Model Important?

Location Transparency

- Should you need to know that the temperature of Tank 1 comes from a BrandX Historian, located in Server Room 3 of plant Y?
- Should you care when you migrate a BrandX Historian to a FactoryTalk Historian?
- When you build your analysis on the model, you only need to correct the connection layer, NOT the Trends/Dashboards/Excel reports.
Why is a Model Important?
Elevating the Level of ALL data / Unified View

- Using Brand X Historian in Plant 1 makes it challenging to review it against the process in Plant 2 that has a Brand Y Historian
- You cannot see information of one Historian vs. the other
- Ends up apples-to-oranges
- Unifying Historians into the model allows you to do the analysis off of any data coming from either Historian
- Allowing you to see apples-to-apples comparison
Why is a Model Important?
An Easy to Understand Model

- Individual plant areas may not use the same terms or same systems
- Using a model can be a way everyone is using the terms that make sense to them

What was the tank temperature when I made product XYZ?

Historian Tag Value
BrandXHistorian.Server1.PLCA.area51.tank3453.t_z12.pv

Product 1291992 was made from 22:12:10.012 UTC to 23:45:51.292
Why is a Model Important?
Make the Model fit Your Needs

- Production Managers may want to see the logical layout of the plant that matches an ISA-95 Model
- But Maintenance may want to see this in a way that groups ALL like machines together, they see the SAME data, but can navigate to the information differently
- One Version of the Truth
Why is a Model Important?

Reusable Content

- Equipment definitions, calculations, asset properties, KPI’s, tag/object names, etc.
- Re-use Engineering across the 1000’s of assets in a manufacturing business
- Makes standardization and copy/paste (inter/intra-plant) feasible
- Can set reusable content that works for an item in the model
  - Note how Summary Status and KPI Details show for the Capper and Labeler
Why is the Unified Production Model a Big Deal

- Manufacturing systems by default each have unique context
- ‘Like’ assets rarely resemble each other at the physical layer
- Need to be able to create/use/re-use standard components in defining hierarchies, assets or objects
- Need ‘Reporting Standards’ across multiple lines, areas, plants, divisions
  - Facilitate corporate standardization AND plant flexibility/autonomy

Information from Multiple Systems is Necessary to Solve Business Problems
VantagePoint Unified Production Model (UPM)

References data directly at its source
“Single Version of the Truth”

Combines relevant data from multiple sources to present the entire picture!
Control / Plant Floor Operations / Production Scheduling Maintenance, Quality, etc.

Maps data from multiple sources into logical units
- Pumps, Valves, etc.
- Plants, Lines, Workcells, etc.
- Products, Ingredients, etc.

• My Enterprise
  • Cleveland Plant
  • Bangkok Plant
  • Line 1
    • Area 1
    • Area 2
      • Equipment
        • Pump 001
        • Pump 002
        • Mixer 001
        • Reports
          • Tank Report
          • Batch Trend
          • Actual vs Target
Data Connection Options

- Connect to Data Sources
  - Seamlessly integrate to FactoryTalk Platforms
  - Connect to 3rd Party Sources
FactoryTalk VantagePoint EMI
What Data Can I Connect To?

- Premier Integration with FactoryTalk products
  - FactoryTalk ProductionCentre® for Enterprise Integration
  - FactoryTalk Historian Site Edition (SE) and FactoryTalk Historian Machine Edition (ME) for monitoring process parameters
  - FactoryTalk Metrics for machine performance and downtime events
  - View SE for embedded Reporting and Advanced Trending
  - Simplified connectivity to leverage the strengths of the Logix platform

- 3rd Party Plant Systems Connectivity (Real-time, Historian, Databases)

- Process Solutions – Application Integration leveraging PlantPAx® Library of Process Objects

- Energy Intelligence – FactoryTalk VantagePoint EMI + Energy Reporting Content and FactoryTalk EnergyMetrix™
Save Time and Money
With Premier Integration to Live Data (Logix)

- Simplified connectivity to leverage the strengths of the Logix platform
- Dynamic object creation based on ‘known’ User-defined type (UDT) structures in the controller
  - Live Data Import wizard brings in structures from the Logix controller
  - A type definition is created automatically for each selected UDT definition in the controller if one does not already exist
  - Tag instances are created for each occurrence of selected UDT’s
Optimize Performance
FactoryTalk Live Data - Historian Connector

- Automatic correlation of FactoryTalk Live Data and FactoryTalk Historian tags
  - FactoryTalk Historian and FactoryTalk Live Data tags are linked if they reference the same data point in the controller
  - Makes reporting completely transparent to the underlying data source – you only need to know the FactoryTalk Live Data tag (logical) for a data value

- Cross correlation when using distributed historian solution
  - When tags are historized in multiple historians, the system can find the best source of information needed for a report / trend

- Optimized Performance – Server Side Data Aggregation
  - Data aggregation is now performed at the server (e.g. Summary roll up by hour)
  - Significantly reduces the calculation loads on the FactoryTalk VantagePoint EMI Server
  - Allows for processing of aggregations at the best performing server
Production Intelligence for PlantPAx

- Save time connecting to a PlantPAx System
  - Pre-defined type packages directly align with the PlantPAx Process Library
  - Equipment definitions automatically created in the model
  - Out-of-the-box dashboards for process defined equipment
Visualization Options

- Visualize & Analyze Data
  - Develop reports from a variety of options available from FactoryTalk VantagePoint
  - View Data from PC and Mobile Devices
  - World Class Trending Tool
Many Reporting Tools Available
From Excel Through Enterprise Reports

- VantagePoint Reporting
  - Create a wide range of reports from dashboards to tabular reports using SQL access to the model

- VantagePoint Client Tools
  - Excel, Trend / XY Plotter, and HTML
  - Dashboard Builder

- Model-Based Report Elements
  - Charts & Grids
  - Status Indicators

- SharePoint
  - Excel Services and Web Parts

VantagePoint Portal
Mobile Clients
SharePoint Portal
VantagePoint Mobile Notifications and Reporting—Anywhere, Anytime

- **Reporting and Visualization**
  - Enterprise Reports
  - Charts, Status Indicators, Grid Reports
  - FactoryTalk Metrics Reports
  - FactoryTalk VantagePoint Energy Reports

- **Notification**
  - Event Trigger with Email
    - with Event Data
    - with Report
VantagePoint Reporting (VPR)  
More Reporting Options to Convey your Information

- Power to create a **wide range of enterprise reports from dashboards to tabular reports**
- Query the model (UPM) using MS Reporting Services (SSRS) reports or other Business Intelligence tools
- Access a **growing library of sample VPR reports** for FactoryTalk VantagePoint EMI
- Author and publish **VPR reports** to the FactoryTalk VantagePoint EMI Portal
Role Based, Real-time Reporting
Information the Way You Need to See It

FactoryTalk VantagePoint provides secure access to reports based on the logged-in user. This allows customized views with the appropriate information for each role in the organization.
Excel - The Most Common Reporting Tool

Shared Reports Save Valuable Time

- Create powerful Excel reports leveraging the FactoryTalk VantagePoint EMI Excel Add-In
- Retrieve data from any connected data source (Live or Historical values)
- Calculate, analyze and format reports using Excel functionality
- Publish reports to the Portal for Excel or SharePoint Excel Services for viewing by anyone with access to a browser

Now with SharePoint Excel Services
World Class Trending Delivers Actionable Information

- Diagnose and analyze data from any connected data source
- Access to real-time and historical data
- Powerful trend functionality - Pan, zoom, stack and synchronize
- Publish and share trends with others through the portal
- Pre-configured trends available in Sample Reports
Information at a Glance
Powerful Easy to Read Dashboards

- Create powerful dashboards that provide real-time data and manufacturing key performance indicators (KPIs)
- Dashboards provide dynamic information (periodic or on demand)
- Drill down capability to provide more detailed information
- Easy access to all dashboards via a browser
- Pre-configured dashboards available in Sample Reports
Collaborate on Manufacturing Information
SharePoint Integration

Leverage the power of SharePoint by integrating FactoryTalk VantagePoint EMI reporting content as standard web part.

“We believe that the value of manufacturing intelligence will only grow when software providers can integrate it with more traditional BI to provide enterprise-wide monitoring & analysis of manufacturing performance.” – Gartner
Highly Scalable Excel Reports
SharePoint Integration

- **Excel Services**
  - A faster way to create, format, and publish FactoryTalk VantagePoint Excel reports.
  - Users can publish FactoryTalk VantagePoint Excel Reports to either the FactoryTalk VantagePoint Portal or Excel Services.
  - Reports can be rendered in the FactoryTalk VantagePoint Portal or the SharePoint Portal via Web Parts.
  - More scalable for higher volumes of Excel reports.

*Increased scalability for Excel reports and updated web parts in one add-on*
Eventing/Notification
Receive Notifications for Increased Efficiencies

- An Event/Notification is comprised of a **Trigger** and **Actions**

**Triggers** can be:
- Any tags with a historical data provider*
- Time/Schedule

**Actions** can be:
- Generating one or more published reports
- Sending emails, also with attached reports
- Sending SMS to a mobile phone email address

*Live data sources are not supported, use FT A&E!
Accelerate Application Development
Sample Content

- Six different model views ranging from Basic to Advanced
- New FactoryTalk Portal Info Pages
  - Information pages explaining the contents of the samples available directly in the FactoryTalk Portal
- Calculated Tag Examples
  - 246 Calculated tag examples provide a variety of sample expressions
- Simple Model Type Packages
  - ISA-95 Type package makes it easy for users to build an equipment model hierarchy
- Status Item Indicators
  - Create an overview screen of your application without having to build a report or dashboard
Integration with FactoryTalk Metrics
Downtime and OEE for Increased Efficiency

- Monitor plant-floor equipment and provide accurate, timely, granular, and specific information on machine performance
- Provide detailed machine event history to document performance
- Understand the root causes of inefficiency, waste, lost capacity, and machine downtime
- Refine, streamline, and prioritize your process improvement initiatives
- Reduce downtime, decrease cycle time, and increase overall production
FactoryTalk VantagePoint Energy

- FactoryTalk VantagePoint EMI utilizing energy data from:
  - Allen-Bradley® and 3rd Party Power Monitors
  - Intelligent Motor Control products
  - IntelliCENTER® Motor Control Centers
  - Other Energy Data Sources

- Model components with predefined content

- Framework for building an enterprise energy management solution utilizing FactoryTalk VantagePoint EMI capabilities to correlate production data with energy information to drive intelligent decision making.
Integration with FactoryTalk EnergyMetrix
Conserve Energy and Save Money

- Capture, historize, analyze and report the flow of data, correlate data sources within the plant, and enable monitoring and optimizing energy usage.

- Integration with power monitoring devices allows you to leverage rebates, energy incentives, off-peak purchasing plans, and other cost savings measures.
FactoryTalk VantagePoint KPI

Highlights

- A native Windows 8.1 application that visually shows off your FactoryTalk VantagePoint system in a simple but powerful way
- It uses KPIs (Key Performance Indicators) to focus your attention

- With your KPI’s you can:
  - Visually represent your data as a gauge, bar graph or indicator
  - Collaborate by sending an e-mail with instructions and attaching a KPI
  - Drill down to more specific detail
  - Leverage Live Tiles to provide continuous updates by pinning a KPI on the Start page
  - See a map view of your KPI’s based on geographic location

Available for download from the Microsoft Store
FactoryTalk VantagePoint 6.0 – A Brief Sneak Peek!

- Delivering Value to End Users
  - Improved capability “Out of the box”
  - Extending solution with mobility / portability capability

- Delivering value to System Integrators
  - Providing tools and capabilities to accelerate design / deployment time
  - Improved Diagnostics and Troubleshooting Capability
  - Additional Data Connectors

- Delivering value to Machine builders
  - Providing the framework for the information enabled machine.
  - Ability to visualize data without the need for custom development.

- Mobility / Portability

- Ease of Use

- Productivity Enhancements

- Connectivity
Welcome to the FactoryTalk VantagePoint mobile app.
Add favorite views and view the model on the go.
We care what you think!

Please take a couple minutes to complete a quick session survey to tell us how we’re doing.

- On the mobile app:
  1. Locate session using Schedule or Agenda Builder
  2. Click on the thumbs up icon on the lower right corner of the session detail
  3. Complete survey
  4. Click the Submit Form button

Thank you!!
Thank You!!