



NORTHWEST ANALYTICS



*NWA Focus EMI<sup>®</sup>  
The Foundation of Industry 4.0*

# Foundational Industry 4.0 Manufacturing Analytics



As a foundational Industry 4.0 technology, the NWA Focus EMI® platform delivers real-time process analytics, alarm notifications, and role-based visualizations from existing manufacturing data sources. By leveraging an organization's existing technology investments, NWA Focus EMI increases both the current and future value of those investments, while accelerating the ROI of any subsequent Industry 4.0 technology or analytics additions like machine learning, IIoT and others.

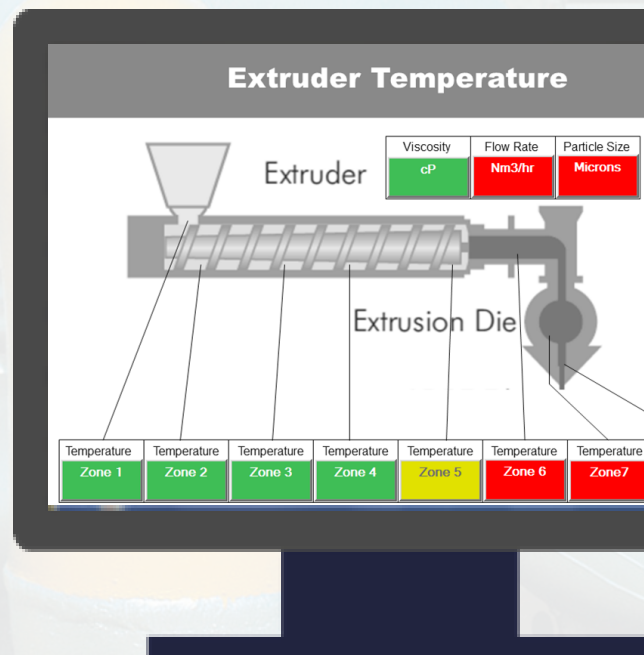
90% of the world's data has been created in the last two years, yet many companies find they are not looking at the right data, in the right way, at the right time. The challenge is converting that data into the intelligence needed to make real-time actionable decisions.

The Industry 4.0 manufacturing analytics of NWA Focus EMI are designed specifically to deliver the real-time intelligence required to address the market's top needs, reduce costs, increase yields and improve quality in an environment of escalating competition and customer demands.

As a result, NWA Focus EMI helps all levels of the organization – from operators and process engineers to corporate management – be able to automatically identify potential issues before they impact final product quality and take the necessary preventative measures to proactively address the issues.

For a manufacturer to achieve true, enterprise-level manufacturing intelligence, their solution at a minimum must deliver in real-time:

- Cross-platform data integration;
- Data contextualization and aggregation;
- Comprehensive, robust analytics;
- Powerful, role-based visualization;



# Real-time Process Knowledge

Leading operations require real-time analysis of data from any and all processes to react with quick, educated decisions. This makes Industry 4.0 manufacturing analytics one of the top requirements for high-performance manufacturing. The **ARC Advisory Group** detailed the Top 10 Best Practices, and NWA Focus EMI® exceeds them all.

The NWA Focus EMI platform delivers real-time process analytics and visualization services from existing manufacturing data sources.



- Propagation to all stakeholders and enterprise-level systems.
- **Direct connections** to all major process databases (Historians, LIMS, MES, etc.) via industry-standard integration technology with support for ODBC, OLEdb, and user defined SQL. This is all accomplished without requiring redundant data storage.



- **Simplified data modeling** using highly granular Data Set definitions that simplify and speed implementation across multiple data sources, creating the data, context, and analytics definitions needed by a comprehensive EMI solution.



- **Role-specific, configurable dashboards** monitoring Key Quality Indicators from multiple sources in real-time, with alerts based on specifications, SPC limits, trends, or unusual patterns; and instant access to exception reports, drill-down capability, and SPC charts to deliver the information needed to make the right decisions at the right time.



- **Comprehensive analytics** for off-line problem solving, process capability analysis, continuous process improvement, investigation, and routine process management and reporting.



- **Notification Services** delivering active alarm and status information for automatic, immediate e-mail and SMS (text message) notification that include issue-specific information and graphics.



- **Web-based publishing** for instant distribution of the most current analytics and reporting across the enterprise.

# Accelerating Industry 4.0 Manufacturing Analytics

Industry 4.0 Manufacturing Analytics Requirements	NWA Focus EMI Functionality
Data Integration & Aggregation	NWA Focus EMI Core connects directly to and aggregates data from all process data sources such as Process Historians, LIMS, Quality Information Systems, MES and ERP, as well as custom (be-spoke) and
Data Contextualization & Modeling	Provides structure for defining data aggregated across multiple data sources and supports established models such as ISA-95.
Data Analysis	Includes a full suite of manufacturing- centered analytics including SPC, pattern and trend detection, process capability, and support for advanced methods such as multivariate modeling. Additionally, it enables other 3rd-party analytics packages as well.
Visualization & Reporting	Delivers real-time, role-based visualization to support decision making at all levels of the enterprise.
Propagation	Push reporting on all available network and web-based infrastructures.

\*Gartner/AMR

## Accelerating Value

The NWA Focus EMI manufacturing analytics platform uses fast and direct connections to access data in existing silos (Process Historians, LIMS, plant floor systems, ERP, spreadsheets and more). No data duplication, data lakes or data warehouses are required. And with industry-standard connectivity, data from other Industry 4.0 technologies – IIoT sensors, AR, VR, etc. – are incorporated easily and seamlessly into a company's overall analytics program.

The NWA Focus EMI platform is built on foundational univariate analytics. These pervasive analytics are the most widely used and understood in manufacturing, delivering immediate, understandable and actionable results. And unlike most other Industry 4.0 analytics approaches, the foundational analytics of NWA Focus EMI ensures high usability across the enterprise, while also enabling higher-order analytics types and techniques like multivariate machine learning, artificial intelligence, and more.

# Focusing the Right People on the Right Solutions



Remove the guesswork from when to adjust processes and know what needs immediate attention with easy-to-understand, analytics-based indicators.

The analytics-based visualizations deliver instant clarity regarding unit health and indicate immediately where time and resources should be spent to increase quality, efficiencies and operational excellence.

From shift comparisons and day-to-day differences in output to energy usage variations, understand which fluctuations indicate truly significant changes from normal operating states.

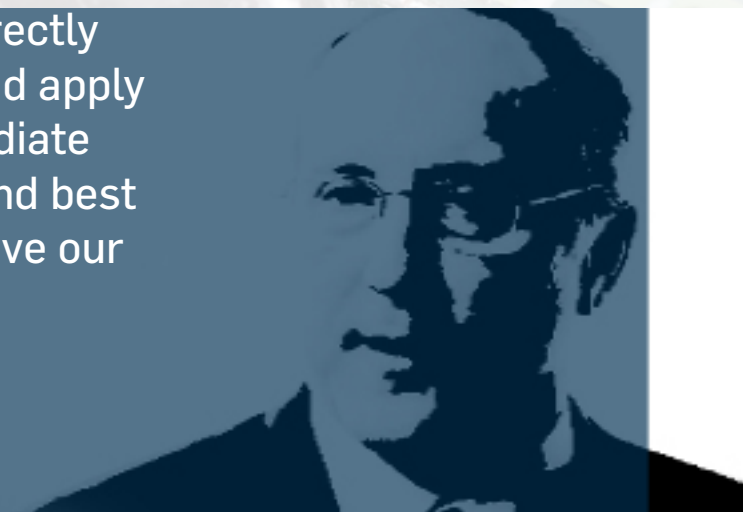
Enterprise-level, analytics-based dashboards improve internal operations while strengthening customer and vendor relationships, delivering a clear advantage in increasingly competitive markets.

## Accelerating Results

Time-to-value is measured in hours, not weeks. NWA Focus EMI's unique data integration approach allows for unparalleled data-source connectivity speed. Analyzed data can start being visualized for users in the first 4-8 hours of implementation. The average solution payback is only 2-6 months from implementation completion, with many customers realizing full payback within the first week.

**“NWA Focus EMI, with its ability to directly access data from multiple databases and apply analytics in real-time, is giving us immediate access to critical process information and best practices that most influence and improve our production and output.”**

Dr. Lloyd Colegrove  
The Dow Chemical Company



# An Enterprise Platform for Analytics Excellence

## Scalable Manufacturing Analytics

The NWA Focus EMI platform is the shortest path to scalable Industry 4.0 manufacturing analytics success.

NWA takes the lead every step of the way to develop and implement the perfect manufacturing analytics solution configured specifically for each organization. It starts with understanding corporate objectives. Existing methods and infrastructure are evaluated and a plan is formulated. Implementation is accomplished in a surprisingly short period of time with the assistance of both NWA and appropriate NWA business partners. Once installed, NWA is there to train users and company trainers. It's all part of getting the best manufacturing analytics solution in place with the least amount of time, money and resources to realize ROI as quickly as possible. From beginning to end, it truly is accelerated Industry 4.0 manufacturing analytics.

Assessment – Inventory existing legacy manufacturing systems, data structures and the data contained therein

- Review existing system resources and structure
- Develop road map for full manufacturing analytics capability
- Match available data and analytics to user's needs (role-specific content)

Implementation – Optimal time to a functional, complete system is critical for maximum effectiveness

- Install, connect and test manufacturing analytics functions
- Train staff for ongoing maintenance

Training – Train staff on using NWA Focus EMI for decision support for maximum results

- Train-the-trainer – Extend training reach and create long-term self-reliance for internal training
- From on site or at NWA corporate headquarters, Northwest Analytics provides a variety of training options to bring end-users up to speed quickly.

Advanced Services – NWA Focus EMI brings change to operational management models that require careful planning for maximum ROI.

- Process targeting guidance
- Pre- and post-install ROI (scoping, realization)
- Analytics selection and application

# Award Winning. Industry Leading



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The NWA Focus EMI® platform enables existing and new analytics approaches, techniques, and packages, while serving as a gateway to Industry 4.0. It allows manufacturing enterprises to add Industry 4.0 technologies, such as machine learning and IIoT.

This simultaneously accelerates the overall return on investment (ROI).

## FROST & SULLIVAN

"NWA Focus EMI's is unique because its global analytics layer connects to all existing, disparate manufacturing process data sources, as well as processes the data generated by new Industry 4.0 technologies without replicating any of it. This flexibility helps manufacturers drive their process improvement efforts, reduce costs, increase yields, improve overall quality, and address dynamic customer demands."

Sankara Narayanan Senior Industry Analyst  
*Frost & Sullivan*

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BEST  
2018 PRACTICES  
AWARD

GLOBAL FOUNDATIONAL  
MANUFACTURING ANALYTICS FOR INDUSTRY 4.0  
ENABLING TECHNOLOGY LEADERSHIP AWARD

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