Study Shows AI and Analytics Deliver Rapid Value to Manufacturers

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Tech-Clarity Contact: Julie Fraser, +1 508-737-2128 Julie.fraser@tech-clarity.com

MESA Contact: Brandy Richardson +1 480-893-6883 brandy@mesa.org

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MESA International and Tech-Clarity Publish Making Manufacturing Analytics and AI Matter Based on a Survey of over 420 Manufacturing Professionals

Chandler, AZ and Media, PA, USA April 2, 2025 – The Manufacturing Enterprise Solutions Association International (MESA) worked with Tech-Clarity, Inc. to understand the maturity of artificial intelligence (AI) in manufacturing and best practices for manufacturers to achieve rapid business value. The next iteration of its long-standing Analytics that Matter research program resulted in the Making Manufacturing and AI Matter report. This data- and case study-laden report is now available for MESA Members in the Resource Library.

Findings Highlights

There's good news: Advanced industrial analytics is again the #1 most commonly cited type of software project delivering rapid benefits. 100% of the companies that deployed analytics and artificial intelligence (AI) have gained benefits. Benefits tend to align well with the drivers leading manufacturers to invest in digital transformation using analytics and AI. 99% of manufacturers are investing in operations analytics and AI in 2025 and 2026.

One compelling takeaway is that manufacturers should invest in analytics and AI soon if they have not already. A good way to start is with a small project or two that aligns with key business needs. Selecting use cases based on business value differentiates Top Performers from Others.

The report examines the current state of descriptive analytics, predictive analytics such as machine learning (ML), and supporting or guiding operations with generative AI. Each form is delivering benefits already, and some manufacturers have been using them for several years. Benefits appear to increase and extend to new areas over time.

The data shows that there are outstanding hurdles for industrial AI. The top challenge for both predictive and generative AI is inadequate data to train models or algorithms. For predictive analytics, a lack of data science skills and the inability to scale from pilot to larger implementations are the next two most common difficulties. The following two obstacles for genAI are cultural lack of trust and data governance.

The research finds that data governance and data operations are areas where most respondents could still improve. Most say data is usually consistent, but a minority report that data is reliable and consistent. In AI, data quality is crucial to gain trust and valuable outcomes. Most manufacturers still report not being good at moving data without manual handoffs.

Process and Demographics

MESA teamed with research firm Tech-Clarity to conduct a survey between December 2024 and January 2025. The survey sought to understand companies' goals, challenges, and successes with their analytics and AI initiatives. In addition to the survey, Tech-Clarity conducted interviews with manufacturers who have experience with AI and analytics in their operations. Quotes sharing insights from these interviews are included in the report.

The sample includes 423 responses from various discrete, batch, process, and mixed-mode production industries. The companies are distributed nearly evenly in five size bands, from less than $100M to over $5B, representing plants on every continent. They range from top executives to VPs, Directors, Managers, and Individual Contributors from a wide variety of disciplines, led by manufacturing, manufacturing engineering, and manufacturing IT.

Sponsors

The program has four sponsors: Aegis Software, Arch Systems, Epicor, and GE Vernova. These companies' representatives acted as support and reviewers throughout the survey and report development. These companies have offerings in manufacturing software, industrial data management, analytics, and AI and are supporting the industry's knowledge at this time of rapid transition in analytics and AI.

NOTE: Qualified members of the press can request the executive summary, the entire research report, charts, and graphs of specific data, or an interview from lead researcher Julie Fraser of Tech-Clarity, Julie.fraser@tech-clarity.com.

About Tech-Clarity, Inc.: Tech-Clarity is an independent research firm dedicated to making the business value of technology clear. We analyze how companies improve innovation, product development, design, engineering, manufacturing, and service performance through the use of digital transformation, best practices, software technology, industrial automation, and IT services. Our mission is to help manufacturers learn how to improve business results through the use of PLM, portfolio management, CAD, simulation, MES / MOM, IoT, quality, service, supply chain, analytics, and other solutions. www.tech-clarity.com

About MESA International: Manufacturing Enterprise Solutions Association (MESA) International has been helping the global manufacturing community use information technology to achieve business results through premier educational and research programs, best practice sharing, and networking since 1992. MESA is a 501(c)6 not-for-profit trade association. The Manufacturing Enterprise Solutions Association (MESA International™) is a global community of industry thought leaders actively driving business improvement through the effective application of technology and best practices. Visit us at www.mesa.org .

Company Contact:

MESA International

T. +1 480-893-6883
E. brandy@mesa.org
W. https://www.mesa.org

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