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# MANUFACTURING

## TECH INSIGHTS

### In My Opinion

MATHEW DANIEL,  
VP-OPERATIONS,  
SCIEMETRIC INSTRUMENTS

### CIO Insights

EDWARD RODDEN,  
CIO,  
SUGARCREEK



### Company of the Month



REZA SADEGHI,  
CSO,  
DASSAULT SYSTÈMES BIOVIA

# Rockwell Automation Fuelling an Era of Smart Manufacturing

Danielle Blake Moret,  
President & CEO

\$15

44790  
S. Grimmer Blvd  
#202 Fremont  
CA 94538



# ***Dassault Systèmes BIOVIA: Speeding Product Development for Science-driven Organizations***



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**We are in a unique position as our solutions bring together the capabilities that systems have with respect to manufacturing, monitoring and scientific capabilities in this area**

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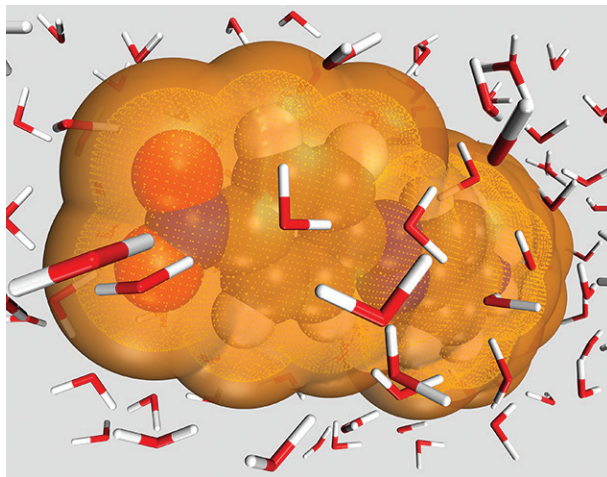
**B**IOVIA was born in 2014 by combining Dassault Systèmes’ activities in BioIntelligence, its collaborative 3DEXPERIENCE technologies and the pioneering life sciences and material sciences applications resulting from the acquisition of Accelrys. BIOVIA has since then been focusing on biological, chemical and materials modeling and simulation, research and open collaborative discovery, along with process manufacturing intelligence. Today, from material design to molecular simulation to chemical manufacturing, the company is creating an unmatched scientific innovation environment that can help science- and process-driven firms develop better products faster and more cost effectively. The BIOVIA suite of products integrates the diversity of science, information requirements and experimental processes from discovery to manufacturing with proven capabilities in collaborative science, unified lab management, process production operations and quality and regulatory management.

The amalgamation of the company’s 3DEXPERIENCE platform with Accelrys’ strong suite of applications opens up the extensive prospect to support and increase systemic collaboration, data and content reuse alongside product lifecycle management. These capabilities are allowing production operations in process industries to abbreviate time to market and enhance profitability by leveraging process and quality data.

Combining process development, manufacturing and quality environments to drive effective process design, performance and improvement, BIOVIA offers a Process Production Operations (PPO) solution. According to Reza Sadeghi, CSO of Dassault Systèmes BIOVIA, their PPO offering provides the data integration, aggregation, and analytical tools that take the Manufacturing Execution System (MES) space to the next level in terms of process understanding. “The ability to break down data silos with integration of data from MES databases with data historians,

LIMS systems, ERP systems, and other data sources, and then to organize all of that data within the context of a single batch provides a holistic view of the manufacturing process that can't be achieved by looking at any single source of data," he adds.

In addition, the analytical tools available in the PPO suite go beyond the usual control charting to enable true investigative and what-if analysis not only within one process step but with correlation of upstream activities to downstream results. "Our customers find the automated monitoring and dashboarding capabilities within the product suite to be highly valuable," says Sadeghi. "By using 'monitor by exception' alerting, customers are able to focus on critical areas of the production process that require their attention rather than reviewing hundreds of control charts every day."



### **RDQM Innovation Framework**


Many steps and functional roles are involved in getting a new product from the very earliest stages of conception to the retail store shelf. Each of these steps adds cost, and presumably value, to the process; in a broader view, innovation in the consumer packaged goods industry can be broken down into four key elements: Research, Development, Quality and Manufacturing (RDQM). "Our RDQM framework identifies the greatest opportunity earliest in the innovation process by assessing the potential for innovation success or failure during the research and development phases," adds Sadeghi. In the CPG industry, marketing support costs for a significant new product can be measured in the hundreds of millions of dollars globally, which makes it extremely important to "fail fast." By identifying the potential for innovation success or failure during R&D, companies in the formulated space are better

equipped to make the go/no-go decision before incurring the high cost associated with failure later on during the Q&M phases. They can also limit the financial expenditure on efforts that do not have potential for success.

### **Fulfilling Evolving Needs**

According to Sadeghi, one of the challenges in the MES domain is the amount of time it can take to fully implement and validate an MES solution, and customers can't take advantage of process information during that time. "Several of our customers have leveraged BIOVIA Discoverant PRIMR, a lightweight, easy-to-implement data entry tool, in order to gain access to process data while the MES implementation is ongoing," he adds. Then, using the data integration capabilities within Discoverant, they can continue using data captured both in PRIMR and in the MES system after the more robust MES is online. "The MES domain has gone beyond the traditional concerns of manufacturing planning, control, and data capture, to an understanding of the manufacturing process. True insights based on solid analysis can be fed back into the process to enable improved process performance and predictability," explains Sadeghi.

BIOVIA has been fulfilling all the evolving needs of customers worldwide according to the technological trends. "The firms in life sciences are shifting to biologics, which has opened a tremendous opportunity for solution providers like us to reevaluate our portfolio in support of a very complex manufacturing process," asserts Sadeghi. "We are in a unique position as our solutions bring together the capabilities that systems have with respect to manufacturing, monitoring and scientific capabilities in this area." As the company moves towards these advanced products that need to be manufactured in support of life science and pharma and new classes of therapeutic drugs, BIOVIA finds themselves to be in a unique position to transform this industry.

Other Dassault Systèmes brands in the manufacturing intelligence project space include DELMIA—powered by the 3DEXPERIENCE platform, assisting global businesses to re-imagine their planning, management and optimization of industrial operations. DELMIA allows manufacturers to virtually experience their entire factory production from the impact of design to determining how to meet global demand. On the other hand, their EXALEAD brand enables organizations to gather, align and enrich Big Data—transform large volumes of heterogeneous, multi-source data into meaningful, real-time information intelligence to help users improve business processes and gain competitive advantage. 



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## TECH INSIGHTS

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## TOP 10 MANUFACTURING EXECUTION SYSTEM PROVIDERS 2016

**M**anufacturing may be enduring headwinds, but the industry stands testimony to technological renaissance revamping appearance, systems, and processes of the modern-day factory. Breakthrough technologies and concepts like big data, the IoT, cloud and analytics are impacting the factory environments, transforming them into data-driven enterprises. The consolidation of all these pieces is driving Manufacturing Execution System (MES) to new levels of Ubiquitousness and efficiency.

En route meeting increasingly complex customer requirements, manufacturing companies are optimizing production times, boosting inventory turns, and enhancing efficiency with advanced MES. In addition, centralized UI-focused MES has evolved as an invaluable business tool with real-time visibility for improving efficiencies and cutting costs.

As MES maturity is aiding in productivity, companies are looking at more out-of-the-box implementations that integrate

and align the plant floor information systems with business systems. While globalizing their production operations, MES adoption will dramatically streamline the multiple site operations and provide improved visibility.

With a myriad of transformations taking place in the manufacturing sector, it has become challenging for CIOs to select the right vendor for tackling the impediments in this realm. To help organizations select vendors offering the most promising solutions, Manufacturing Tech Insights presents the “Top 10 MES Solution Providers”

A distinguished panel of prominent CEOs, CIOs, VCs, and analysts, along with the Manufacturing Tech Insights’ editorial board has assessed hundreds of MES solution providers and shortlisted the ones that are at the forefront of providing cutting-edge technology solutions. The listing provides a look into how the solutions in this domain are put into use, so that you can gain a comprehensive understanding of how they will optimize business processes.

We present to you Top 10 MES Solution Providers-2016.

### Dassault Systèmes’ BIOVIA

recognized by  magazine as

TOP 10  
MANUFACTURING EXECUTION  
SYSTEM PROVIDERS - 2016 

*An annual listing of 10 companies that are at the forefront of providing manufacturing execution system solutions and impacting the marketplace*

#### Company:

Dassault Systèmes  
BIOVIA

#### Description:

Empowering production operations in process industries to shorten time to market and maximize profitability by leveraging process and quality data

#### Key Person:

Max Carnecchia  
CEO  
Reza Sadeghi  
CSO

#### Website:

[www.3dsbiovia.com](http://www.3dsbiovia.com)