NetSuite Ups Its Manufacturing Game with Advanced Manufacturing from IQity

IQity Advanced Manufacturing

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NetSuite Ups Its Manufacturing Game with Advanced Manufacturing from IQity

NetSuite recently announced the acquisition of IQity software's cloud business. IQity's Advanced Manufacturing solution helps fill important gaps in NetSuite's solution for manufacturers. The solution brings critical functionality to better support manufacturing planning and scheduling, process manufacturing, and quality operations. Advanced Manufacturing also brings important mobile tools, manufacturing execution system (MES) support, and manufacturing operations management (MOM) support to NetSuite's enterprise resource planning (ERP) offering.

Gavin Davidson, Manufacturing Industry Lead at NetSuite, sees the acquisition as "one of the most significant in NetSuite's history." The Advanced Manufacturing capabilities move the needle significantly for NetSuite's discrete manufacturing customer base and make NetSuite a player in the process manufacturing industry, including the rapidly growing food and beverage vertical segment. There are already 40 customers of the solution. Not only do manufacturers benefit, but many other industries—including distributors and even retailers—could benefit from some of the features now available with NetSuite Advanced Manufacturing.

This report provides background on the genesis of Advanced Manufacturing, gives an overview of the areas covered by Advanced Manufacturing, provides an in-depth look at how the product functions, and gives insight into the known and possible future directions for Advanced Manufacturing.

Genesis of Advanced Manufacturing

IQity is the second business owned by David Gustovich and was founded in 2007. The first business he owned for over 23 years was a business consulting company that focused on helping manufacturing and supply chain companies. As he moved into the new millennium, he built a division focused on helping companies with system implementations and re-implementations. During this time he realized that cloud-based solutions were the future. So, Mr. Gustovich sold his interest in his first business and started IQity.

He felt that there was an opportunity to build a truly innovative cloud-based manufacturing solution powered via the Web and cloud. He and his experienced team bring a great appreciation of the pain points faced by manufacturers. The goal is to gain better visibility and control of management processes and business processes to help companies move the needle to improve visibility. Mr. Gustovich says that, "What companies don't understand is that they have a tremendous amount of hidden recoverable business value available. They don't have the ability to go after this hidden value in a coordinated or disciplined way because the business systems don't enable them to see that opportunity. In some ways, the business systems mask these opportunities."

This is the vision for IQ-Fusion—manufacturing product in the cloud. One of the design philosophies of the product was that they don't care where a company's manufacturing data resides. It can be on spreadsheets, in an access database, or entered by hand during the manufacturing process. The IQity product was built to help manage production operations profit through increased asset utilization and improved materials, quality, and resource management. The goal is to bring relevant data out of these disparate data sources and bring it into a unified architecture to correlate this data with other system data and provide a 360-degree view of the business. Cost, quality, service, throughput—doesn't matter what the data is, the goal is to bring it in.

When working with customers on the manufacturing solution improvements, the customers started asking IQity to deliver more capabilities such as financials and inventory management or an ERP system in the cloud. Mr. Gustovich wanted to partner with an ERP provider who believed in the cloud as much as he does. They narrowed the partners down to two—NetSuite and SAP's Business ByDesign. It became very clear to the IQity team that NetSuite had a far more flexible and extensible platform and was a far more mature product than they were seeing from SAP.

In 2012, IQity saw the growth of NetSuite. During this time, the concept of cloud computing for manufacturing was becoming more widely accepted. They started building the IQ-Fusion solution on the NetSuite platform. They were able to develop the solution very rapidly on the NetSuite platform to bring it to market. So, in 2013, IQity decided to move their solution to the NetSuite platform.

At the same time, the gaps in NetSuite's ERP filled by IQity's Advanced Manufacturing solution in support of manufacturers' needs had been fairly well known. NetSuite seemed to be stuck between trying to develop some of these capabilities and letting these be supported by a SuiteCloud Developer Network (SDN) partner such as IQity. Manufacturing operations processes such as capacity and resource planning, material routings, finite scheduling, and quality had been languishing on NetSuite's roadmap as a first priority or second priority for some time.

As the two companies worked together, the synergies between NetSuite and IQity became very evident. The two continued to work together so as to not step on each other's toes and duplicate efforts until it became clear that IQity's solution developed on the NetSuite platform was a perfect fit. The Advanced Manufacturing solution is a significant step forward in the evolution of the NetSuite ERP product.

Advanced Manufacturing Areas of Focus

IQity's goal is to allow a manufacturing organization to focus on cost, quality, service, and throughput. The Advanced Manufacturing solution does this by extending the NetSuite ERP solution in six areas: mobilized, discrete and batch manufacturing, supply chain, planning and scheduling, MES and MOM, and quality, as depicted in figure 1.

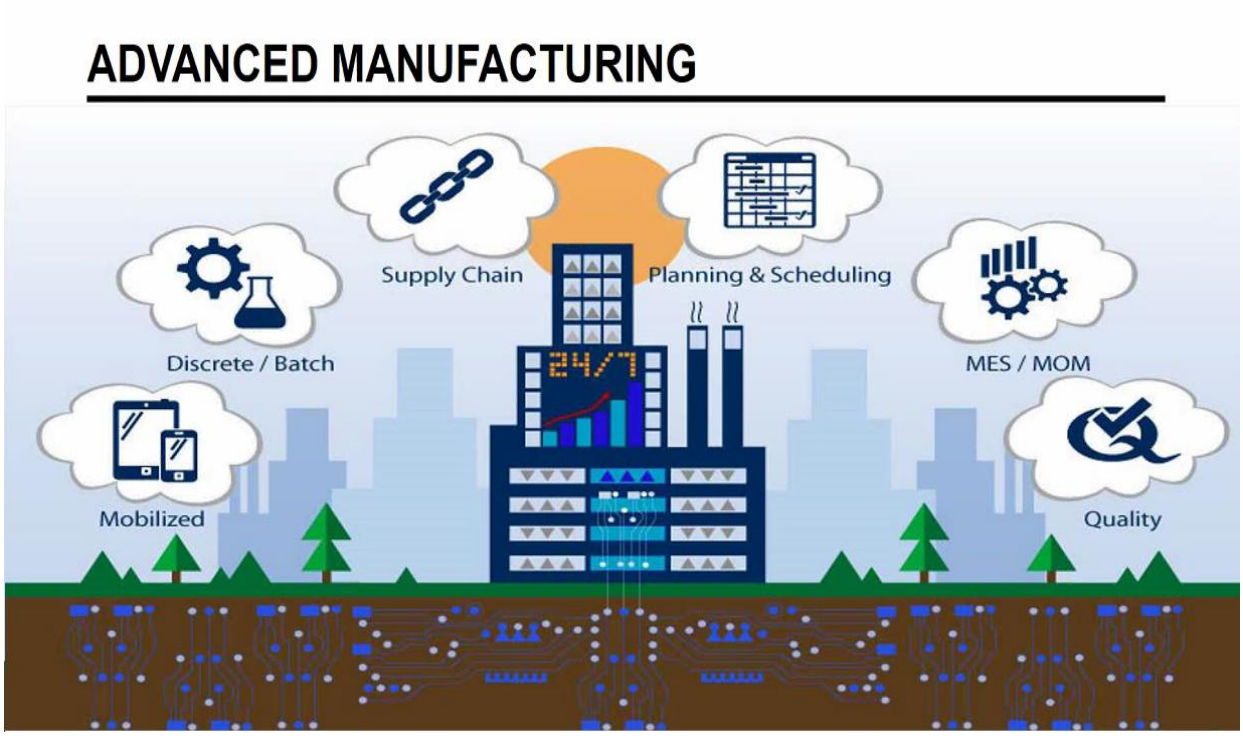

Figure 1. Advanced Manufacturing areas of focus

Mobilized

Mobility continues to play a key role in automating manufacturing operations. Tablet computers—both consumer and hardened devices for the manufacturing floor—are being used more and more. IQity developed a tablet application specifically for manufacturers to help collect all critical shop floor information.

Discrete and Batch

Core manufacturing capabilities were added to better support both discrete and batch (process) manufacturing. Process manufacturing operations including recipe and formula management and more complete batch control are part of Advanced Manufacturing. In addition, to better support all manufacturers, bill of material (BOM) routings and work center asset setup and tracking are part of the solution.

Supply Chain

Advanced Manufacturing provides organizations better control of working capital, so an organization can see how well the product is moving both inside and

outside the four walls of the company. This is enabled by a combination of the new manufacturing capabilities plus better management of all manufacturing operations.

Planning and Scheduling

NetSuite users now have access to a solid finite scheduling engine, not just infinite scheduling. Along with new scheduling features come tools to help plan and run the schedule(s). A key tenant of the scheduling is how to translate forecasted demand into a work/time relationship. The combined tools help organizations to better balance equipment, labor, and material resources, and tie these to demand signals.

MES and MOM

The tablet tools, barcode scanning, and an open adaptive planning intelligence (API)—which communicates to the human machine interface (HMI), supervisory control and data acquisition (SCADA), and OLE for process control (OPC) devices—all bring more MES capabilities to the solution so that organizations get better visibility and insight into operations. And, because of the cloud, these tools can be used by a manufacturer's supplier to input these supply chain values in real-time.

Quality

Harnessing quality data and being able to use the data is extremely important. What is mean time to failure (MTF), scrap-rates, or re-work? This data is critical in helping to drive six sigma or other process improvement initiatives. The quality data (lab tests) is another important component in unlocking hidden value to the enterprise and is the final area of focus for Advanced Manufacturing.

Advanced Manufacturing Product Highlights—Geared Towards Manufacturing Needs

Because it was developed using the NetSuite SDN, the NetSuite Advanced Manufacturing (IQity) solution is seamlessly integrated into NetSuite's ERP platform. Navigation, performing operations, running reports, and the entire user experience of IQity's Advanced Manufacturing solution is integrated into NetSuite ERP. Being built onto the NetSuite platform also means that the Advanced Manufacturing solution takes full advantage of the platform's reporting and analytics.

Work Centers

The heart of a manufacturing operation is where all the work is done—the work centers. And before any planning and scheduling can take place, the work centers need to be set up. Advanced Manufacturing does all the basics like setting up shop calendars, assets in the work center, and workloads.

Beyond the basics, Advanced Manufacturing's philosophy is to try to minimize the transactions that need to be performed by operators on the shop floor. To this end, a number of other standard operations can be set up to execute automatically such as the bin where material is issued from and where it is going. Figure 2 displays the set up of another operation called Work Order Completions, where additional default material settings are created.

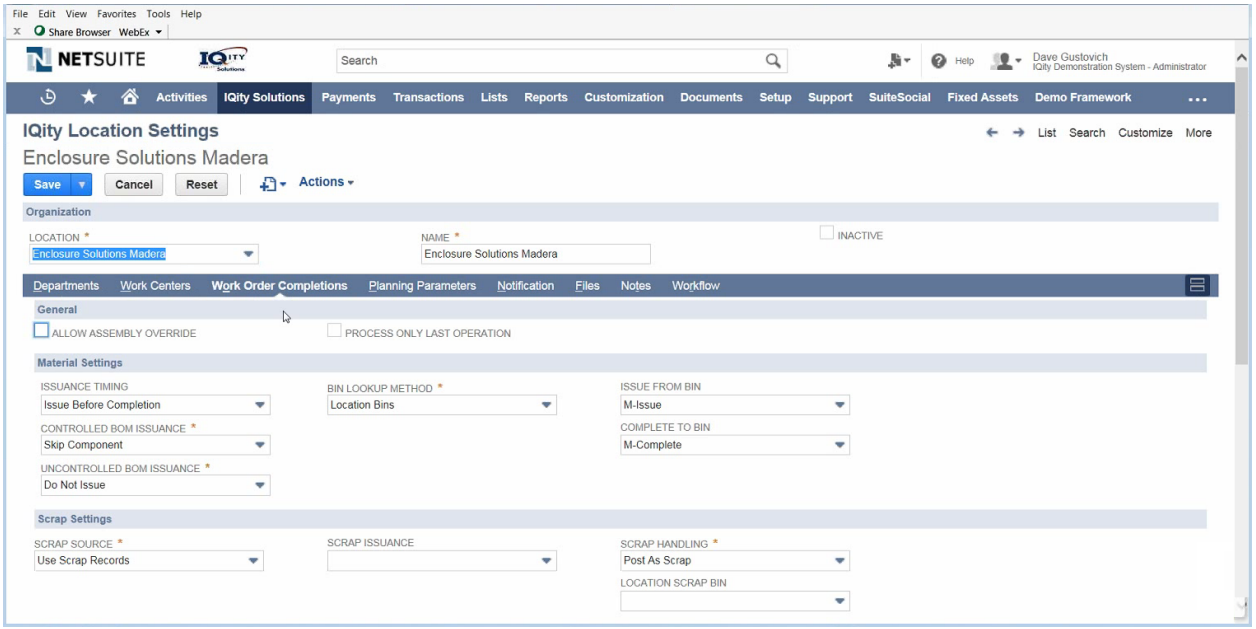

Figure 2. Work Order Completions

As figure 2 shows, here is where an organization can set up an extensive array of settings including those for materials, scrap, and labor. The system is set up to

allow the entry of actual material usage and how this should be handled or how to manage scrap. Of course, these settings then drive the posting of costing entries in the general ledger (GL) to support the real-time visibility of manufacturing operations and get better control of machine, labor, and other costs.

Now that we're able to set up and manage the work centers, we can do our rough cut capacity planning (RCCP) and finite scheduling. Advanced Manufacturing supports the creation of multiple what-if RCCP scenarios. The work orders can be viewed and managed using a number of different views in the system. In figure 3, we see the detailed view of a work center's calendar. The color changes from green to yellow (when work center is at 80 percent of available capacity) to red (when at 95 percent or above). These screens let a planner quickly view and manage work center usage.

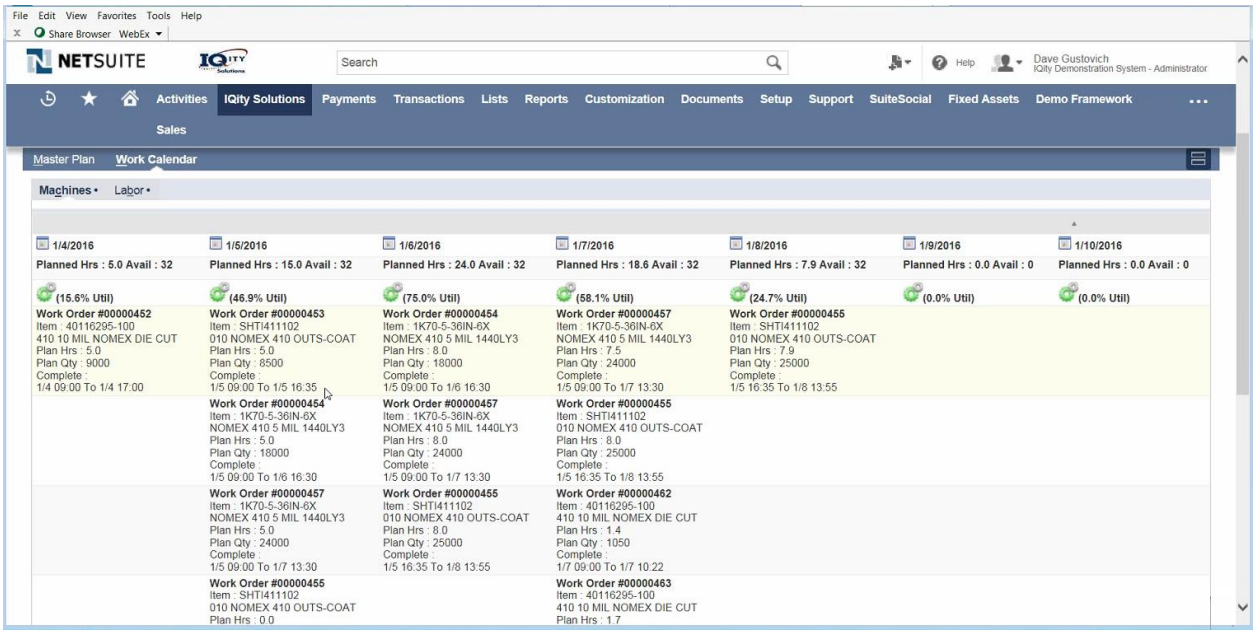

Figure 3. Work calendar screen in the Advanced Manufacturing solution

Advanced Manufacturing's tablet data entry screens are built for the shop floor. Figure 4 is one page of the use screens developed for tablet users. Operators on the shop floor can use these screens to perform all operations needed on a work order including material issue, labor, downtime, scrap, and production numbers. As numbers are entered by the operator, they are updated in real-time in NetSuite. This system is currently used by a large bakery—maker of bread and cookie dough—which runs three production lines which drop a batch of dough (2,000 lb) every six minutes per production line. Each batch has 15 lot-controlled ingredients and all are being processed via this tablet solution. (Note, the company offers optional concurrent licensing for shop floor operators. For example, a company may have 50 shop floor users but only need to purchase 7 or 8 concurrent licenses to support these users.)

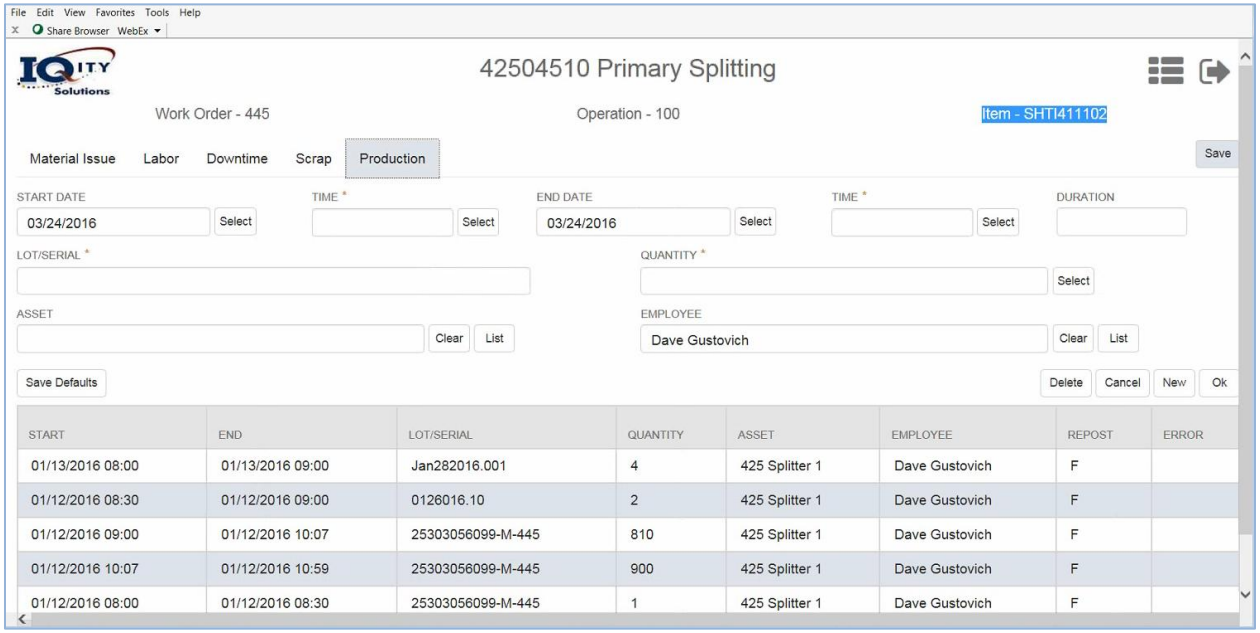

Figure 4. Tablet data entry screen in the Advanced Manufacturing solution

A suite of manufacturing and quality and inspection reports is delivered to support business operations. There are a series of manufacturing reports to view downtime in a number of ways—either in detail, by category, or by reason. Similar reports are delivered for product loss and operations. The report shows hours earned, run time, percent efficiency, how much produced or scrapped, down-time hours, labor hours, etc. Like any report delivered on the NetSuite analytics platform the data in the report can be sorted, re-arranged and sliced and diced to meet the user's individual requirements.

Work Bench Operations

Another gap in NetSuite filled by IQity was around more complex manufacturing operations needed to build a product including the manufacturing routings and tracking manufacturing operations. In Advanced Manufacturing, these are called work bench operations. The operations can be set up for different processes—discrete, batch, assembly, or continuous. Here is where the user sets up planning, assets, material output, labor requirements, work instructions, and quality and inspection requirements, and can add files and notes to the operation. The work bench is also where recipes can be set up in support of process manufacturing operations.

The work bench is also where labor is brought into finite planning and scheduling. In the work bench, the labor requirements are entered by skill code and amount of labor required by that skill code to complete the task. (The labor can be defined as a fixed number of minutes or a percentage of the step's cycle). Not only does this help manage the actual production runs, but organizations can also accrue labor hours and determine what resources are needed to produce the planned products.

The quality and inspection steps on a product are also created from within the work bench. Advanced Manufacturing supports the set up of various measurement standards and attributes for quality steps. These include sample frequency, target value, upper and lower limits, and what corrective steps to take. The type of corrective step taken can then be used to trigger the subsequent action to take, if any. Here is where other attributes can be selected, such as whether the test is mandatory to complete the work order, requires a signature, or requires a certificate.

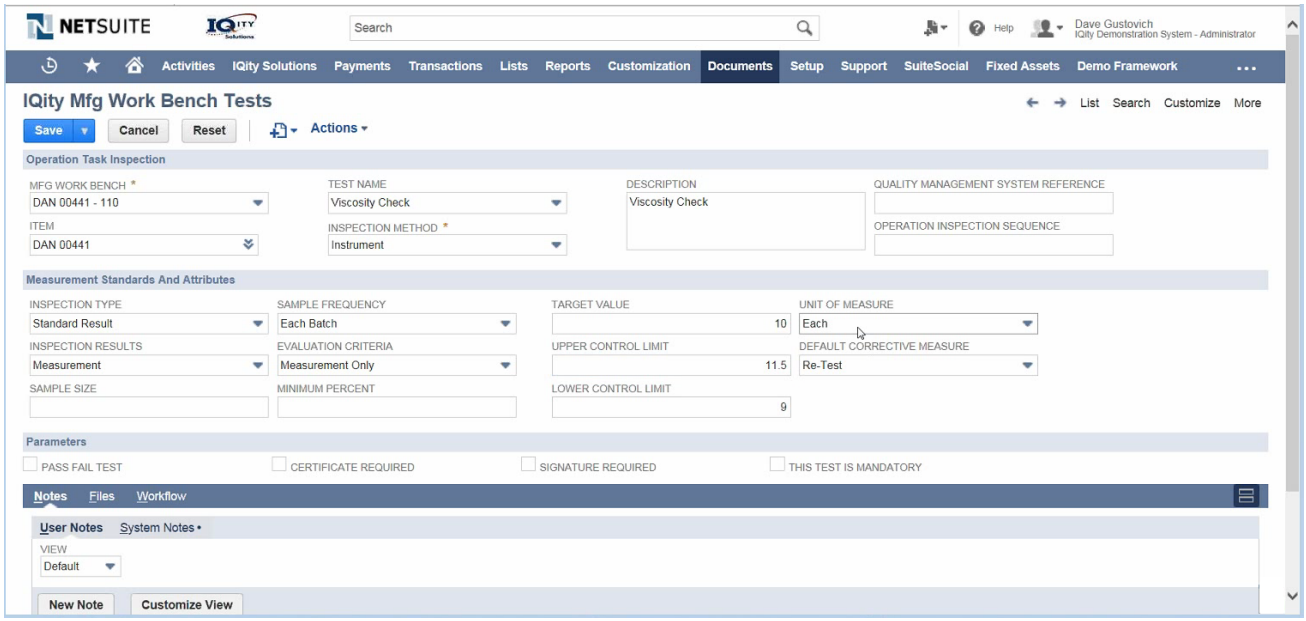

Figure 5. Work Bench quality tests in the Advanced Manufacturing solution

Looking Ahead—And What Else is In It for You

NetSuite ERP's adoption in the manufacturing space hasn't always been solely because of the solution's deep support for manufacturing operations. NetSuite has won manufacturing deals because of complete, end-to-end ERP features including full customer relationship management (CRM) functionality, e-commerce, deep financial management, along with being the leading pure SaaS ERP player. But with the acquisition of IQity's Advanced Manufacturing, people will start looking at NetSuite differently. These capabilities have moved NetSuite up yet another rung in the marketplace. It is now able to compete effectively with midmarket manufacturing ERP providers.

This acquisition is a clear win for both NetSuite and IQity, but those benefiting most will be NetSuite's manufacturing customers. Immediate plans in the roadmap include rebranding IQity to NetSuite Advanced Manufacturing, integrating the IQity team, translating the product for global markets, and roadmap consolidation. With the new capabilities, NetSuite can continue to move up-market in their target markets which include industrial machinery, food and beverage, hi-tech electronics, consumer electronics, medical devices, and industrial supply.

As NetSuite's Gavin Davidson points out, "Not too long ago, talk of doing MES in the cloud was hearsay. Now, the information to support the complex, multi-tiered manufacturing operations has to come from the suppliers across the country and around the world. This is where Advanced Manufacturing comes in." Again, cloud computing has opened up the opportunities to more easily connect these parties.

Mr. Gustovich is excited about his team working with NetSuite and becoming part of the now nearly 5,000-employee-strong organization. The additional resources that NetSuite can bring to bear should help accelerate product development and move the needle even further. The product will also be immediately available via all of NetSuite's channels. After having gotten over this hurdle, one can see how NetSuite will be able to take advantage of the connected, location-irrelevant, internet of things (IoT) manufacturing world like few others.

About the Author

Senior ERP Analyst Ted Rohm covers the areas of enterprise resource planning (ERP), enterprise asset management (EAM), configure price quote (CPQ), supply chain management (SCM), and IT service management (ITSM), with a particular expertise in manufacturing. He has over 20 years of experience in large-scale selection, design, development, and implementation projects, primarily in the biotech/pharma industry.

Prior to joining TEC, Rohm worked for a number of companies including Oracle, Syntex, and Genentech (now part of The Roche Group). Rohm worked with Genentech for 13 years, starting as a senior programmer analyst responsible for building custom applications using the Oracle Tool suite in support of sales and marketing and product distribution. He then became senior manager of commercial systems, where he directed the development, deployment, and operations of enterprise-wide applications for the sales and marketing departments. Rohm was the principal systems architect during his last few years at Genentech, focusing mainly on the implementation of SAP ERP and its integration with other systems.

Rohm holds a bachelor's degree in electrical engineering from Columbia University and a bachelor's degree in physics from Allegheny College.

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