

Customized Innovation: Finding the Tools to Automate



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The manufacturing drive to operate leaner and more efficiently is currently being courted by the arrival of affordable custom automation for the shop floor. From straightforward pallet wrapper applications to complex and robust distribution systems, automation has a foothold in the competitive, modern manufacturing environment. Through applications that integrate seamlessly into your enterprise software solution, manufacturers are soliciting and creating custom programs that make production faster, easier and more accurate.

The possibilities for new automation programs is rather unrestrained, so what area should you focus on first? The spark typically begins either internally with an area that your hard working and creative staff has identified for improvement or externally from a valued customer with a requirement or challenge. Once the project for automation has been identified, where do you turn to get the program started?

You have two options: Team up with your ERP vendor or develop it on your own. Both choices are viable and realistic possibilities, but the benefits and reasoning behind each method differs for each manufacturer, depending on the skill set of your organization and the willingness of the ERP vendor. Below, we discuss the benefits of each option, plus offer a few success stories from manufacturers facing challenges similar to yours.

Option 1 - Working Directly With Your ERP Vendor:

When a manufacturer owns an extended, comprehensive ERP and MES solution, they typically oppose bolting on third-party programs. Ideally, everything should be interconnected, from the PLCs on the shop floor that send and receive data with the process monitoring module to the actual costing tools that analyze multiple areas of the business to determine the true cost of a product. The benefits of never struggling with customization issues or interface disparities from thirdparty add-ons are great

So some manufacturers use their software company as their development company. Collaborating together as a team to solve an automation challenge is a win/win for both parties. The manufacturing company receives the custom automation program it requires and the ERP vendor now has a desired application to offer other customers. But how do you go about partnering with your ERP vendor? How do you approach them and get the ball rolling?

First, the ERP vendor has to employ some sort of custom programming division. IQMS has a dedicated team of programmers and developers called the Automation Group. Tasked with expanding the EnterpriseIQ ERP and MES solution's interface capabilities and pushing the boundary between shop floor hardware and IQMS' software, the Automation Group works collaboratively with clients to automate processes and find solutions to individual business needs.

At IQMS, it begins with a development request. Be sure to be upfront about the details of the project, including needs, background, goals at outcome and other requirements. The key is to be clear on what is trying to be achieved, not what should be designed. Well-thought out goals prevent feature creep, continuous redesigning and other changes that add more time and cost. The innovative programs that the Automation Group have worked on range from small in scale to highly detailed and technical in scope. Here are a few examples of IQMS customers who joined forces with the Automation Group:

Gamsee Industries in Knoxfield, Victoria, Australia Coordinate Measuring Machine (CMM) Import Tool



Situated across the globe in Southeast Australia, Gamsee Industries specializes in products for the medical, packaging, industrial, consumer, childcare and automotive industries. Gamsee brought on a new client who required substantial dimensional work and subsequent analysis, so the manufacturer turned to IQMS for a solution. Gamsee believes that whenever it has a new need, the first question should be, “Can IQMS do this for us?”

To assist Gamsee, IQMS’ Automation Group recommended its Coordinate Measuring Machine (CMM) Import Tool, an application that allows Gamsee to automatically export data straight out of its CMM and into EnterpriseIQ for analysis in the Statistical Process Control (SPC) module. The CMM Import Tool reduces time spent manually inputting inspection data, line by line, as well as eliminates potential data entry errors.

Gamsee experienced a few surprise benefits from collaborating with IQMS, rather than integrating a third-party solution: Gamsee’s employees immediately had greater familiarity with the CMM Import Tool in their everyday activities, due to the recognizable interface. Additionally, the ease of one extended system prevented Gamsee’s users from having to jump from one program to another.

Plastikon Manufacturing in Hayward, California Multi-Label Printer Application



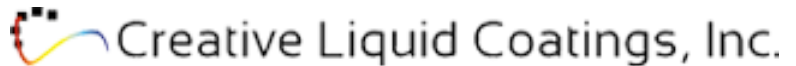
Plastikon Manufacturing is a global automotive manufacturer headquartered in Hayward, California. Previously, Plastikon had invested a great deal of money into its legacy ERP system for modifications, preventing Plastikon from upgrading due to the prohibitive cost of rewriting the code for each one of its alterations. When Plastikon made the switch to IQMS in 2013, the company knew from the start that it wanted all of its features and programs to be completely incorporated and written by IQMS to prevent past update issues and challenges.

Plastikon sought out IQMS’ Automation Group because it was looking to increase the visual management of its automotive parts, specifically the easy identification

of its right handed and left handed parts being produced from the same family tool. This development request replicated a functionality Plastikon had in its old system, but unlike in the past, Plastikon will have no trouble upgrading with the new automation program.

After a collaborative discussion regarding Plastikon's needs, IQMS designed and delivered a custom Multi-Label Printer Application. Using the IQMS RealTime monitoring system, the new program simplifies the printing of labels for different inventory items being produced from one Bill of Material (BOM). In real time, information is automatically sent to two separate printers, allowing right hand kanbans to be printed on white labels and left hand kanbans on yellow for easy identification and increased accuracy.

Creative Liquid Coatings, Inc. Paint Line Carousel Scheduler



Creative Liquid Coatings

applies paint and coatings on exterior automotive parts for vehicles such as the Jeep Wrangler, Ford F150, Corvette, Mustang and Dodge Viper. Creative Liquid Coatings faced a time consuming and tedious process scheduling its multiple paint lines, with steps that included communicating the daily schedule on a white board with dry erase markers. Creative Liquid Coatings appealed to the Automation Group for a large scale, visual scheduler that integrated with the IQMS ERP system.

Creative Liquid Coatings' proprietary needs required specific functionality unique to its environment, so the Automation Group developed the Paint Line Carousel Scheduler. Relevant customer requirements associated with each paint line carrier number (including part description, part number, color, etc.) found on IQMS generated sales and production orders are entered into the system and then assigned to a specific paint line. From there, the information for multiple paint line turns each day can be communicated to the production floor on a 55" television monitor located in the paint line loading area.

This new application updates the schedule in real time and allows Creative Liquid Coatings to react to changes in daily requirements with all the necessary information readily available. Once the information is updated, it is communicated immediately to the production floor. The new scheduling application creates an environment where effective strategies can be utilized to develop cost conscious and more efficient schedules.

Option 2 - Develop it on Your Own:

Enlisting the services of your ERP vendor is not for every company. Some manufacturers may prefer to develop programs on their own, using their talented internal staff who understand the intricacies of their specific business processes. For those customers, IQMS offers a special development kit to create custom applications.

The WebAPI Software Development Kit comes with all the tools needed to empower developers to write custom applications for the EnterpriseIQ manufacturing ERP and MES software solution. Most modern programming platforms and languages (Android, ASP.net, Windows, Visual Studio(.Net)) can be used to develop applications and the WebAPI kit includes a specific list of EnterpriseIQ web services that allow your programmer to encapsulate core EnterpriseIQ logic with the JSON data exchange format.

A common concern with custom programming is the inability to update once modifications have been made. IQMS eliminates this challenge by maintaining the compatibility of the WebAPI Software Development Kit and releasing a corresponding version with each release of the EnterpriseIQ software. Many IQMS customers have taken advantage of the WebAPI toolkit for automation projects that may seem small in scope, but pack a big punch when it comes to making daily work easier, increasing efficiency and improving accuracy. Here are a few examples of IQMS customers who are utilizing the WebAPI toolkit:

Donatelle in New Brighton, Minnesota WebAPI Software Development Kit

A full service medical device manufacturer for 40 years, Donatelle applies its expertise

from product development through assembly and packaging to help create products that save lives. Donatelle uses the WebAPI toolkit for two reasons: automation and efficiency. With its own capable in-house development team, Donatelle preferred to program its automation applications on its own, rather than contract directly with IQMS.



One of Donatelle's first projects was to automate its career application process. When applying for a job with Donatelle, applicants fill out a form on the website and that data is saved in a separate database. Following submittal, the Human Resources department would re-key that data in the applicant maintenance module within IQMS. But this process was time consuming and Donatelle found themselves spending more time performing data entry than actually reviewing applications.

With a program developed from the tools in the WebAPI kit, Donatelle can now automatically transfer the applicant data into EnterpriseIQ, thus allowing its Human Resources personnel to focus more on the hiring process. The WebAPI toolkit allows Donatelle to develop programs that help its employees do more with less and focus on what is most important for the organization.

United Lens Company in Southbridge, Massachusetts WebAPI Software Development Kit

A family owned business for nearly the last century, United Lens Company specializes in the production of thin film coated, polished and precision machined optics (such as mirrors, prisms and windows) to the aerospace, defense, telecom, medical, commercial, semiconductor and laser industries.



Due to the nature of the optics market, United Lens performs an exceptional amount of quotes every day that require calculations based on weight and size. United Lens' previous method of quoting was time consuming and did not offer all of the specifications needed to give United Lens' customers the best price possible, so the manufacturer developed a proprietary custom quote program to fit its specific needs.

Using the WebAPI toolkit, United Lens then proceeded to develop an application that feeds the quote directly into the EnterpriseIQ system for use in bills of materials (BOMs). Overall, the new process delivers the quoting functionality that United Lens requires, while eliminating duplicate data entry and maintaining all the information in one central location. The new custom quote program has significantly dropped United Lens' response time from days to minutes and has allowed the company to win more jobs.

Custom automation on the shop floor is the way of the future for the manufacturing industry. But finding the tools to get that automation program developed and into your plant is not always that simple. Some ERP vendors do not employ a special development team to design the programs you need or they do not welcome that sort of collaboration. To add insult to injury after they reject the idea of working together, some ERP vendors may also not offer the tools to allow you to do it on your own. Investment in a long-term ERP solution should be a partnership. Be sure to seek out the ERP vendor that wants to work with you and offers the tools that allow your organization to be its very best.

About IQMS

Since 1989, IQMS has been designing and developing ERP software for the repetitive, process and discrete manufacturing industries. Today, IQMS provides a comprehensive real-time MES and manufacturing ERP software solution to the automotive, medical, packing, consumer goods and other manufacturing markets. The innovative, single-database enterprise software solution, EnterpriseIQ, offers a scalable system designed to adeptly grow with the client and complete business functionality, including accounting, quality control, supply chain, CRM and eBusiness. With offices across North America, Europe and Asia, IQMS serves manufacturers around the world.

If you would like to learn more about IQMS' comprehensive ERP solution, please visit www.iqms.com.