

ACTIVITIES **2**

Transforming Industrial Workplaces with Robotics and Automation

Becoming a Robotic Systems Integrator for Next-generation Manufacturing

Whether we see it or not, automation and robotics touch every aspect of our lives, from the cars we drive, to the food we eat, to our cellphones, home electronics, medicine, medical care, even to the way our online purchases are sorted and delivered to us at home. As shrinking workforces pose a challenge for society in developed countries in particular, the technologies and solutions that enable automation will be essential to future industry. In December 2019, JR Automation, a robotic systems integration business in the USA, joined Hitachi Group. This article describes the work that JR Automation is doing on innovation in industry and presents examples of collaborative creation prompted by the spread of COVID-19.

Automation Solutions Bringing Innovation to Industry

Amid the emerging challenges for society posed by the low birthrates and aging populations of developed countries in particular, and the associated shrinking of the workforce, the use of robotics for automating industrial plants continues to grow. Robotic system integration (SI) is the configuration of complex automation systems that feature large numbers of robots, an expanding market with a mean annual growth rate of more than 10% projected out to 2023.

These systems are used in a wide variety of industries, including automobiles, food, home appliances, medical and pharmaceutical products, and logistics, with demand for automation systems and solutions from the manufacturing and distribution sectors continuing to expand and evolve. As well as enhancing workplace safety, these systems also ensure high-quality and consistent execution and make it possible to get products to market quickly. On the other hand, the handling of complex parts and products requires elaborate solutions, meaning that system integrators need high levels of technical expertise and knowledge

to seamlessly integrate the various subsystems, hardware, and software into a single optimal process.

JR Automation, a robotic systems integration business headquartered in Holland, Michigan in the USA, was acquired by Hitachi as a group company in December 2019. The objectives of the acquisition were to gain a presence in a robotics SI market in North America that is enjoying rapid growth and to combine the technologies and customer bases of the two companies to accelerate the development of a total seamless solutions business that brings workplace and management together.

Robotic Systems Integrator Supporting Automation in Industry

Established in 1980, JR Automation has been helping its customers install automated manufacturing systems for more than 40 years through its involvement in the design and building of automated equipment worldwide. The company serves a diverse group of customers in a variety of industries, including logistics and warehouse automation, healthcare, automotive, aerospace, amusement, and more. Technical capabilities range from micro-precision

Use of Robotics for Production Line Automation



applications to friction stir welding to carbon fiber processing and volume manufacturing. With a team working at 23 locations across North America, Europe, and Asia, the teams have built custom technology solutions for every application, process, and industry.

CEO Bryan Jones describes the work of the company as follows, “Our practice at JR Automation is always to work as a team toward the common goal of delivering benefits to customers. A spirit of dedication is deeply rooted in our corporate culture and this vision remains unchanged as we expand globally. Today, our 2,000 employees spread across North America, Europe, and Asia work as one company to support corporate customers in the manufacturing and distribution industries through the development and deployment of automation solutions.”



Bryan Jones
CEO, JR Automation

In December 2019, JR Automation joined Hitachi Group in a strategic effort towards offering a seamless connection between the physical and cyber space for industrial manufacturers and distributors worldwide. With this partnership, JR Automation aims to provide customers a unique, single-source solution for the complete integration of their physical assets and data information, offering greater speed, flexibility, and efficiencies towards achieving their Industrie 4.0 visions.

Custom Solutions Closely Aligned with Customer Needs

The very nature of JR Automation’s core business, automation systems development and supply, make finding efficiencies by utilizing standardized methodologies a challenge. Accordingly, the company has been in the practice of treating each project as a new opportunity to find the cutting edge of technology and process. It has also seen great benefits in streamlining the way in which projects are executed, share industry knowledge and lessons learned, employ common designs where possible, and keep all team members energized around a common vision.

JR Automation’s business units across North America, Europe, and Asia are not simply a collection of standalone locations. They represent a fully integrated global network of team members, partners, technical capabilities, and varied industry expertise that allow the company to create customized automated solutions more efficiently. Customers get the best of both worlds: full access to the resources and

Global Map of JR Automation Operations



expertise and dedicated, personal relationships with their local business units. Global business unit integration also allows JR Automation to level out workloads by strategically allocating capacity and resources.

One example of the way in which the company standardizes its approach for all locations is its proven project execution process (PEP). This is a proprietary program management system through which all projects are executed. This standardized system keeps projects on track through all the major phases, gives stakeholders clear responsibilities and timelines, and efficiently aligns all necessary internal and external resources. Most projects pass through 50 or more deliverables prior to completion, but the PEP process is intentionally flexible to allow for enhanced customer collaboration.

Bryan Jones explained it by saying, “The systems that serve as the platform for PEP and product lifecycle management (PLM) allow us to utilize best practice from our operations around the world, enhancing efficiency in key areas. Combined with our extensive technical knowledge, this helps get products to market quickly.”

Every JR Automation project team also uses their internal guidance tool, the tollgate workbook, to assemble the proper process steps and deliverables. Experience has shown that with superior upfront project definitions, better problem identification and resolution, and the expertise to flexibly manage projects, its teams are better equipped to execute change management with their customers. Throughout the life of a project, JR Automation employ reliable processes for risk assessment and mitigation informed by the company’s experience in a broad range of industries. This helps assure projects will be completed successfully.

JR Automation has adopted a standardized approach to the way they execute and manage projects. Having invested in the harmonization and globalization of the skills of customer support personnel in its after-sales service departments, it is able to offer a true one-stop shop for service, parts, and training. Customer service staff is on call 24/7, 365 days a year. When customers call the emergency support hotline, a JR Automation employee answers the call and will rapidly connect them with the resources they need, even in the middle of the night.

PEP at JR Automation

| Project phase | | Customer involvement |
|---------------|----------------------------|--|
| 1 | Quote and order acceptance | Kick-off event Agreement on scope, requirements, and timing |
| 2 | Concept | Concept approval Agreement on engineered concepts |
| 3 | Development | Design approval Agreement on final design and system configuration |
| 4 | Build and ship | Factory acceptance testing Equipment run-off and approval at JR Automation |
| 5 | Install and close | Site acceptance testing Equipment run-off and approval at customer location |

PEP: project execution process

Mask Production Line with Automation Solution from JR Automation



To better track and monitor aftermarket activities, JR Automation's in-house software development team uses a customized dashboard created in its global customer relationship management (CRM) system. This dashboard allows the integrator to proactively engage its customers by reaching out exactly when their equipment is due for maintenance, or by providing recommendations on replacing or refurbishing a robot that could be more efficient. JR Automation shares Hitachi's vision for becoming a truly global enterprise. The company works on the adoption of common processes and standards by leveraging the knowledge, experience, and best practices from each of its divisions.

Automation Technology and Expertise Put to Use in the COVID-19 Pandemic

Not only is JR Automation committed to innovation and continuous improvement; the company remains inspired to push the boundaries of what is possible through automation technology. In response to the spread of COVID-19, its collective focus quickly turned to finding ways to help provide critical personal protective equipment (PPE) and other essentials to front-line workers working in healthcare.

Many of the company's customers were retrofitting factories to manufacture medical masks, face shields, gloves, and other immediate PPE items, and the company began receiving inquiries early spring. In March 2020, JR Automation and Esys Automation, one of its group companies, worked with General Motors to deploy a medical mask assembly line in just six days. This line, which was

originally scoped to produce 50,000 masks per day, quickly began making 200,000 per day. FSA Technologies, another JR Automation group company in Romania, delivered an assembly line for medical masks in just two weeks. The company also worked with a number of new and existing customers to produce protective equipment and devices such as medical masks, gowns, gloves, hospital beds, diagnostic testing kits, and more.

Decades of experience in delivering compliant, rigorously tested equipment to the healthcare industry has allowed JR Automation to help manufacturers bring much-needed PPE products to market faster. The company is currently engineering, building, and installing number of programs related to COVID-19 relief, and its teams across the world are working tirelessly to do what they can to support these critical efforts.

Becoming a Robotic Systems Integrator Serving Future Industry

Along with utilizing their respective customer bases and resources to strengthen their robotics SI business in North America, Hitachi and JR Automation plan to create new value in customer businesses and across their entire operations by leveraging Hitachi's strengths in products, operational technology (OT), and IT and through the use of artificial intelligence (AI), control technology, and Lumada to supply total seamless solutions that bring workplace and management together.

Bryan Jones summed up the future of Hitachi and JR Automation by saying, "The driving force behind JR Automation and Hitachi is a shared commitment to meeting the needs of customers and communities. I wholeheartedly look forward to our growing together though this new partnership."