



JR AUTOMATION™
A Hitachi Group Company

Takes Leap of Faith with Digital Transformation Saving Seven Figures

CASE STUDY

TOTAL SAVINGS BENEFIT

\$1.4
MILLION

\$500K

MECHANICAL
ENGINEERING
PRINT BOOK
MANAGEMENT
SAVINGS

\$600K

BUILDER
PRINT BOOK
MANAGEMENT
SAVINGS

\$200K

DIGITAL
EFFICIENCY
SAVINGS

\$20K

PRINT
SUPPLIES
SAVINGS

BUSINESS OVERVIEW

Founded in 1980, JR Automation, a wholly owned subsidiary of Hitachi, Ltd. (TSE: 6501), is known for designing, building, and integrating the most advanced automation solutions worldwide. Leveraging the latest technology, innovative thinking, and decades of specialized experience, JR Automation has achieved levels of success that most organizations could only dream of.

Most recently acquired by the Hitachi Group for more than \$1.4 billion dollars, the world has just begun to realize the true power of automation.

JR Automation's cross-functional teams conceptualize, design, build, wire, program, install, and improve custom solutions for a variety of industries – spanning from aerospace & defense, amusement, automotive, battery & energy, construction, consumer products, logistics & warehouse operations. From assembly automation, dispensing, and vision systems; to process

design, controls engineering, and software integration — JR Automation has built custom technology solutions for nearly every application, process, and industry.

“We offer a wide variety of specialty automation solutions which keep us sharp in a variety of industry sectors. We have people making roller coasters and we have people building automation equipment. This lets us take our innovative ideas from one industry to another. Ultimately, we get to help everybody win,” said Ross Walters, Director of Engineering Services.

Today with over 23 locations worldwide, 1.2 million square feet of facility floorspace, and over 2000 dedicated employees, JR Automation thrives on innovation – relentlessly evolving to meet growing customer demands.

Holding true to what has worked for decades, they continue to focus on advancing processes while staying at the forefront of technology.

BUSINESS CHALLENGES

“When I first began at JR Automation, over 22 years ago, we built everything off of prints. With no access to computers on the shop floor and no models to reference, we had to build everything off drawings,” said Walters.

Prior to the implementation of digital tools, processes leveraged experienced shop floor individuals’ ability to build machines without the need to reference drawings.

However, due to rapid business growth and expansion, JR Automation’s traditional processes were put to the test. With an uptick of builders on the shop floor, an increase in product complexity, and designs with over 18,000 pieces - the need for closed-loop change quickly became a desire.

Originally seeking to replace traditional knowledge required to assemble complex machines, the company introduced kiosks on the shop floor. This provided engineers with the ability to publish Creo View files to the shop floor so builders could complete their work. It wasn’t long after the implementation of Creo View that the application became our “go-to” for assembling designs.

While the implementation of kiosks was a step in the right direction, eventually shared kiosks also became a challenge. With an increase of workers on the shop floor, builders had no choice but to walk back and forth in order to visualize and assemble designs. These complications only intensified as products became more complex.

Meanwhile, steadfast processes still relied on physical print booklets when it came to viewing detailed product information. This especially became a challenge when builders needed to redline or change an original design.

Similar to many organizations, challenges arose when it came to searching for the correct prints, managing paper booklets and updating print designs. With manual error prone operations redline quality and accuracy quickly became a problem.

PROBLEM:

MECHANICAL ENGINEERS SPEND **5%** OF THEIR TIME MANAGING THE PRINT PACKAGE

BENEFIT:

 **80%**
EFFICIENCY GAIN

GOALS:

REDUCE ENGINEERING TIME SPENT MANAGING PRINT PACKAGES TO **1%**

80%

REDUCTION FROM THE “AS IS” STATE

\$500K

MECHANICAL MANAGEMENT BOOK MANAGEMENT SAVINGS

Not only did this affect operational efficiency, but at times it also inadvertently impacted the customer experience. With rework stemming from incorrect designs, file management complications, and misplaced product information the need for closed-loop change processes had never been greater.

Evaluating process efficiencies, JR Automation uncovered shocking results revealing that engineers were spending 5% of their time managing print packages and machine builders were spending 8% of their time managing, maintaining, searching and reworking print packages.

With limited access to material management and communication tools, JR Automation decided it was time to reevaluate the redline process entirely.

In order to justify additional digital tools, JR Automation set goals to specifically reduce the time it was taking builders and engineers to manage print packages by 80%. They also planned to increase efficiency by 5% or more during the assembly phase, enhancing communication on the shop floor. Any efficiency gains would come from time saved on machine assembly and tactical coordination which was estimated to be taking up 30% of a builder’s day.

BUILDER PRINT MANAGEMENT

PROBLEM:

MACHINE BUILDERS SPEND TIME MANAGING, MAINTAINING, SEARCHING, OR REWORKING THE PRINT PACKAGE **8%**

BENEFIT:

 **80%**
EFFICIENCY GAIN

GOALS:

REDUCE BUILDER TIME SPENT MANAGING PRINT PACKAGES TO **1.5%**

80%

REDUCTION FROM THE “AS IS” STATE

\$600K

BUILDER PRINT BOOK MANAGEMENT SAVINGS

SOLUTIONS

As JR Automation began to explore technology options and impacts, naturally, the ability to leverage PLM came into question. “At the time, I didn’t even know what PLM was or why JR Automation wanted it. From an outside perspective, it looked like a complex tool that had a lot of options”, Walters recalled.

Seeking a simple way for low-tech machine builders to get last minute design changes to engineering, this worried Walters especially because he knew that builders required a solution that was intuitive.

Showcasing a solution that could easily enhance the Windchill user experience, EAC demoed a product known as PTC Navigate. Although JR Automation was relieved to see the user experience within Windchill could be enhanced, they still desired more for their users. “It didn’t show us everything we wanted to see. I couldn’t see reports or make redlines. It just couldn’t do much of what we really wanted to do on our shop floors,” said Walters.

Despite the fact JR Automation was not completely satisfied, they also knew they didn’t have the capacity to build a custom app in-house.

“Our builders spend a majority of their day in Creo View. We didn’t want them to be wasting time bouncing between apps. To us the perfect solution required a single-user interface that would assist with all tasks involved in production. “We started bouncing ideas off the EAC developers as to what this could look like for us.

Together we came up with a plan – we would create a customized app that made it easy for our users to get to drawings, CAD files and other related documents in a single portal.”

After a rigorous process to evaluate cost, functionality, implementation time, ongoing licensing costs, training and other considerations, JR Automation unveiled they would gain an ROI of \$1.4 million dollars from EAC Productivity Apps.

DIGITAL EFFICIENCY SAVINGS

PROBLEM:

SPENDING TOO MUCH TIME WALKING BACK & FORTH BETWEEN KIOSKS OR TRYING TO ASSEMBLE FROM ASSEMBLY DRAWINGS

LIMITED ACCESS TO COMMUNICATION AND MATERIAL MANAGEMENT TOOLS

BENEFIT:

 **60%**
EFFICIENCY GAIN

\$200K
MECHANICAL ENGINEERS BOOK MANAGEMENT SAVINGS

GOAL:

INCREASE EFFICIENCY BY **5%** DURING THE ASSEMBLY & COMMUNICATION PHASES

The savings from EAC Apps created a justification big enough for JR Automation to buy a tablet for every single builder. They also provided a direct line to the mechanical engineers, which would enable all the redlining tools to be in one place. This would greatly reduce inefficiencies across the shop floor.

JR Automation worked with EAC to develop a customized EAC Productivity App that would satisfy the simple, straight forward platform the builders requested. “With EAC Apps we were able to create custom commands in Creo View that would allow our workers to select a part and pull up a drawing, which was really convenient,” said Walters.

THE RESULT

By providing all the information needed on a single screen, with user friendly workflows and easy-to-submit redlines – the builders were pleasantly surprised by EAC Productivity Apps.

For JR Automation, the use of digital tools has begun to replace the processes and knowledge that was previously required to assemble machines. As the business continues to grow, so do the efficiencies. It no longer takes the experience of a worker who has been in the trade for 20 years, now they can put an 18 year old that was onboarded six months ago and achieve the same or similar result because of technology.

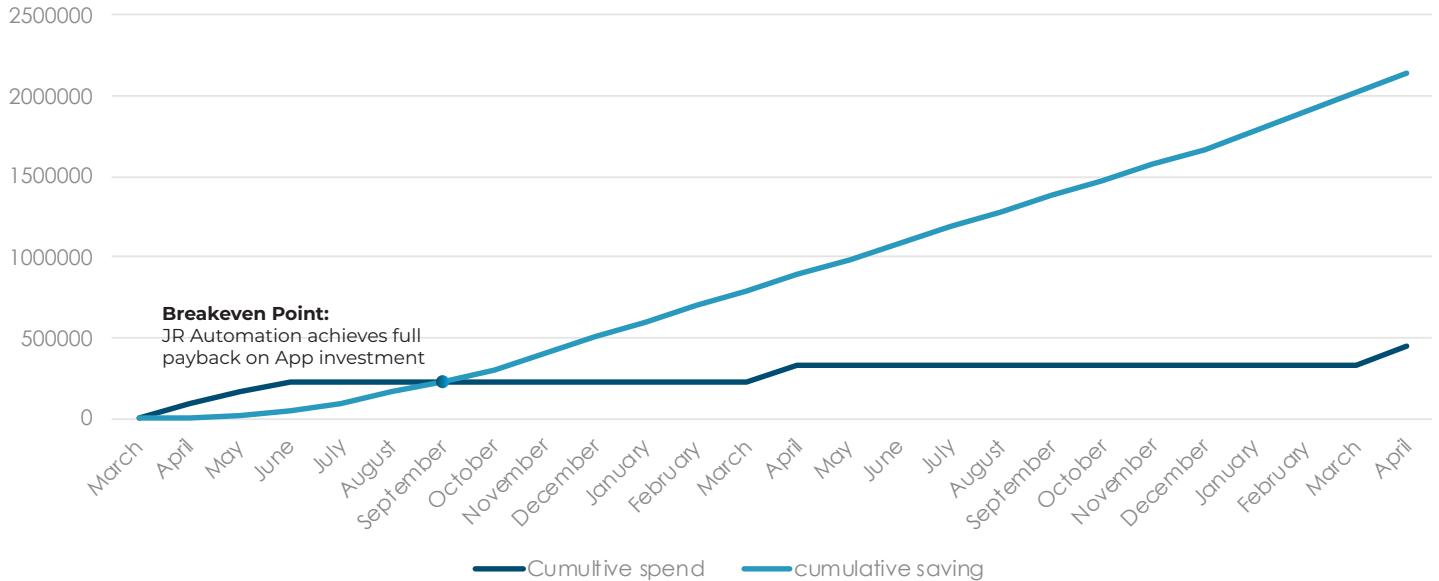
In less than a year, JR Automation was quickly able to obtain the ROI from the use of EAC Apps. Not only were they easy to install, train, and utilize on the shop floor, but they also have provided a cumulative savings over a series of time.

More than confident that the implementation of EAC Apps has brought efficiency and clarity for builders on the floor, they also enabled JR Automation to achieve a digital transformation that was scalable.



We're not the engineers, we're just trying to consume the data. We're not trying to create it. EAC Apps have been a really simple, intuitive tool for us that met all of our requirements.

TABLET & REDLINING BUSINESS CASE



With the new processes, JR Automation's builders no longer need to share a kiosk, enabling efficiencies for more than 200 workers who use redline apps today. They have also eliminated the need for paper, print supplies, and additional booklets saving them additional costs. The customized EAC Apps have also improved accuracy with customer shipment orders and product designs.

"I have been continually impressed with

EAC's ability to step up to the challenge. Initially, the things I was asking for, were not easy to solve. They weren't things that other people have solved or have asked to solve. But seeing the value in what was being asked and not quickly saying no, just because it was hard.

Sometimes the things that are hard, are the things that we should do. I just appreciate how EAC just attacked that and we got to where we are today.

Over 200 workers continue to utilize custom apps on the shop floor today. In the future they foresee additional features being added to enhance further operational efficiencies.

"I think the next focus round of changes is going to be around seeing a report. Our builders want to be able to see reporting or they want to connect the model to ERP. By doing this, they will be able to click on a part, and it will be able to show them where the part is located, if the part is inside the building, when it is due and things like that."

EAC Apps continue to allow JR Automation to scale business operations and enhance shop floor experiences.