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## Artificial Intelligence in Contract Manufacturing







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### How to alleviate the shortage of qualified personnel while raising quality

In the ongoing battle against the shortage of qualified personnel and for rising demands for quality, artificial intelligence (AI) is being touted as the next big thing for contract manufacturing. At least, that's what the visionaries are saying. But let's be honest. Do we really need AI? Pragmatic thinkers want to know. To answer this question, we sat down with two men who gave us a no-holds-barred look at the hottest trends in the sector.

Reinhard Trippacher and Peter Stelzer are both entrepreneurs pursuing the same goals, albeit from opposite sides of the fence. The goals in question are about finding what is really the best approach to mastering the challenges of industrial production.

### A market in transition

#### Qualified staff are in short supply

According to a study (EY Mittelstandsbarometer, 2022), 4 out of 5 companies are having trouble finding employees with the necessary qualifications, and this tendency is on the rise.

"The labor market in our region has dried up. We are simply not finding the specialists we need," confirms Reinhard Trippacher, Managing Director of RIKA BLECHKOMPONENTEN in Micheldorf, Austria. "Our company is one of the market leaders in contract manufacturing of sheet metal parts and needs qualified employees for further growth."

#### Increasing demands for quality

"Growing complexity and variety in products as well as calls for just-in-sequence delivery are no longer infrequent occurrences. The pressure on companies and their employees is increasing." Trippacher, however, is not just the boss – he is also a partner and mentor to his team. "What I want for my team is for them to go home after work with the assurance that they have done every-thing right. I don't want them worrying whether or not

they have overlooked something, because no one wants this kind of mental stress." The situation is aggravated because the baby boomers are marching on towards retirement, so companies are losing their expertise in production and quality processes.

### An innovation that makes sense

Peter Stelzer is CEO of ivii GmbH, an Austrian company dedicated to product development. He and his team developed an award-winning system that is now operating successfully at RIKA BLECHKOMPONENTEN.

It all started with a vision: "ivii started as a straight software company, specialized in image processing solutions for the logistics industry. It soon became clear that we needed to offer more

Elisabeth Gruber



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in order to compete with the big boys on the market. Especially for production industries, it had to be something unique, something that would put us heads above the crowd, and that would give our customers the feeling that they've gotten the best possible product," recalls Stelzer.

ivii (pronounced „ivy“) is a company with a fearless approach to product development, and as a spin-off the KNAPP AG, ivii dares to be different. Questioning the traditional ways of doing things is what they are good at. This is the why and the wherefore that the team of technologists, machine learning experts and designers came up with a game-changing innovation: The development of the ivii smartdesk, an intelligent assembly workstation.

### **The first challenge: Finding qualified employees**

Starting now, applicants without specialist qualifications are welcome. Why? Because they can get the qualifications they need just by working with the ivii smartdesk. Simple. Fast. And without the usual long training periods. Newbies can begin working immediately. The necessary knowledge is provided digitally, step by step. The heart of the system is iivi iriis, developed by ivii and integrated into the assembly workstation. It uses state-of-the-art sensor technology combined with cutting-edge AI. This technology guides the employee, checks manual assembly processes in real time, and provides instant feedback. When everything has been correctly completed, the



system gives the go-ahead for the next step in the process. Should errors occur, directions on how to correct them are provided. Once corrected, the employee may proceed, ensuring that their work is completed correctly.

Using the ivii smartdesk provides a company with access to a much larger pool of potential employees. "With our tool, it's possible for anyone to perfectly master the complex aspects of contract manufacturing rapidly and with little effort," states Stelzer with conviction. He then winks and adds, "Operating it is as simple easy as using an app. And it's at least as much fun."

### **The second challenge: Raising quality and gaining flexibility**

Within a short time, new assemblies and custom product adaptations can be taught to the ivii smartdesk by the employees themselves. This procedure is known as teach-in. Here, no AI expertise is required, as the system watches and learns what it needs to pay attention to. Areas requiring checks are marked and the different errors are taught. Depending on the complexity of the component, teaching-in takes no more than 10 minutes. Afterwards, the system can check and validate the quality of the product at any workstation, and at any location. This leads to higher quality, steady output and greater flexibility for the entire factory. This principle of teaching-in and recalling information supports the zero-error strategy



**Ruth Deimbacher, Project Manager, ivii:**  
"Using a simple, intuitive system for contract manufacturing is a tremendous help for these companies. It guides the employee, keeps track of quality during the whole process and corrects immediately where needed."







and quality improvement.

### Awarded „Product of the Year 2021“

The ivii smartdesk was named best product of the year by an expert jury at the LogiMAT trade fair in 2021. Its intelligent support for assembly and ease of operation convinced the judges.

Best practice

(Life hack with Reinhard Trippacher)

“This is my story and experience with the ivii smartdesk,” says Trippacher. “I didn’t buy it because of its talents in AI, but simply because we were looking for a new and better way to do error-free assembly work. I have been with RIKA now for more than 30 years and learned the job from the ground up. Back then, when we were short a man, I even drove the forklift. What has kept us going forward all these years? Commitment to our customers and our constant effort to be an attractive employer. Innovation and creativity are essential elements for every company. We were looking for a solution that would help us put to-



gether parts to make assemblies without having to think a lot about how the system worked. And without having to hire experts to do it. For us, it is important to continuously deliver the highest quality. That’s our bottom line.”

### The rest, as they say, is history

“At first, we were both curious and skeptical of the new ivii technology. We didn’t know how the who-

### Challenges for the producing industry / contract manufacturers

- Shortage of skilled workers
- Quality assurance
- Cost pressure
- Staying competitive

### Reasons for delaying the use of AI-based assembly workstations at companies

- Employees lack the competences
- Complex operation
- Not certain that its use will pay off
- Investment risk

### ivii smartdesk as a game changer

- Specialist qualification takes place on the job
- No previous knowledge necessary
- No expensive training
- Simple, intuitive operation
- Reduction in error costs
- ROI is ensured
- No investment risk
- Different financing models
- Together, we make sure that the customer requirements are fulfilled before the purchase

le system worked, or whether it would give us what we needed. Added to this were a few technical challenges for ivii in the implementation. Did I regret the purchase? Absolutely not. For me personally, ivii proves how artificial intelligence and automation work and, in doing so, makes the working lives of our employees better.”

### Always one step ahead

“Innovation is so important to us that we are not just ahead of our competitors, but sometimes we even get ahead of ourselves,” chuckles Trippacher. “This spurs us on and challenges us to re-main attractive to our employees and stay flexible for our customers.”



»» **“After introducing the system, spot checks were no longer necessary. Each individual assembly is checked for quality and documented by the ivii smartdesk. Thanks to this technology, both our customers and our employees are safe in the knowledge that we pay close attention to quality.”**

Ernst Schwarzenbrunner, Head of Production Planning at RIKA BLECHKOMPONENTEN



### The journey continues

“We continuously monitor the signals coming from our market. We ask ourselves what is missing, what is possible and how can we best serve our customers. And then we put it into action. This can mean, such as in the case with ivii, that I, as a pragmatist, go on a journey with a true vision-ary, Peter Stelzer, where the outcome isn't totally clear. Will we reach our destination? Looking back at the beginning, our journey began with the motto: “A pragmatist and a visionary set off on a big adventure.” It was a great adventure, and successful too. The best part of working with ivii is that the company continually improves its product based on the feedback of customers like us. However, our journey is not over. We have yet to see what astounding results we can achieve to-gether in the future,” says Trippacher. “It is important to us that we continue to deliver the highest quality to our customers. With ivii as a partner, we know we are well-prepared to meet these de-mands.”

### 12 reasons for using an AI system at RIKA BLECKKOMPONENTEN

- Easy to teach-in and information recall: Experienced RIKA employees without AI expertise can train the ivii smartdesk.
- The transfer of knowledge takes place independent of the workstation or location.
- Qualification as a service: The intelligent way to alleviate the shortage of skilled workers. The specialist qualification of employees takes place automatically in the work process. Long training periods are eliminated.
- All work steps are documented automatically.
- Production peaks, vacations and absences due to illness can be covered easily by contract workers.
- Rapid adaptation to customer requirements such as small lots, customization or sequence delivery, providing the flexibility that is so important for RIKA's customers.
- Move from spot checks to 100 % quality control.
- Less stress for quality inspectors, production management and employees.
- Reduction in error costs.
- Not dependent on the product manufacturer because the tool itself learns.
- Investment in a technology of the future.
- Company remains competitive and can continue to grow.

RIKA has always aimed to deliver first-class quality and has successfully grown from a metal-working shop into a market leader in contract manufacturing. The company produces complex sheet metal and fabricated parts from aluminum, stainless steel and steel plate. Their 212 employees process about 13,500 t of material a year, trending upwards. Without state-of-the-art technologies and operating resources, they would not be able to manage this.