# seertech
### MISSION CRITICAL LEARNING

# How a leading semiconductor manufacturer saved $1M in costs and up to 10K training hours annually

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**To consistently achieve best-in-class** for safety, quality and productivity, manufacturers must create innovative, operationally integrated end-to-end standardized learning solutions that can be scaled across factories, employees and geographic locations.

# Finding talent in a labor shortage is hard

The recent surge to onshore manufacturing and new legislation to support it has left manufacturers scrambling to find skilled workers during a labor shortage era. According to research from Deloitte, close to one-third of the manufacturing workforce in 2022 was over 55 years old. A survey of manufacturing executives by the National Association of Manufacturers found that nearly 75% of respondents stated their greatest business challenge was attracting and retaining a quality workforce.

While manufacturers are tapping into new resources such as trade schools, community colleges, and even high schools to attract and retain talent, the industry faces a significant labor gap. A separate analysis by Deloitte and the Manufacturing Institute found by 2030, the industry will need to fill four million jobs. They warn more than half of the jobs could go unfilled unless more people enter the industry.

# Manufacturers are experiencing the following **workplace challenges:**

- Growth is outpacing workforce development
- A historically high employee turnover rate
- Requirement for highly skilled, specialized employees

- Difficulties tracking time-to-contribution KPIs
- Informal on-the-job training (OJT)
- Multiple disparate learning systems are currently used for training

One thing is clear: as manufacturers find talent sources, thousands of new employees will need onboarding and ongoing training, requiring manufacturers to invest in a globally scalable solution to support workforce development efficiently and effectively.

## How can factories quickly and effectively onboard and train employees to safely master their specific job functions and meet production demands?

It's been proven that reducing onboarding training by just one day per employee can equate to significant cost reductions – especially when applied to thousands of new hires globally. For factory employees, skill-based learning and development for their job function is not just 'nice-to-have'. Employees require mastery of mission-critical skills to ensure their safety and health, along with the ability to precisely and consistently execute their specific duties.

For most high-tech manufacturers we've partnered with, there are three key business imperatives behind workforce onboarding and training:

1. Ensuring the safety of their employees

2. Maintaining the quality of their products by eliminating human errors

3. Ensure the highest productivity while maintaining cost competitiveness

These three key imperatives have traditionally been difficult to scale consistently across multiple countries and factories. This is due to the organic nature of growth and fragmented adoption of operational practices and systems. To scale to meet demand consistently, manufacturers need to adopt a greatly improved, consolidated approach to managing operational and strategic training and certification as a core capability.

# A specific solution to address the business challenges of workforce optimization

Streamlining fragmented processes and disparate system solutions requires highly specific technical capabilities. Partnering with a technical consultant to provide the right capabilities is essential.

**Technical solutions need to:**

- Have the flexibility to adapt where required to meet the factory's needs

- Maintain a cohesive solution that is user-friendly

- Effectively support each manufacturer's onboarding, training, and development programs across the wider business

Due to the complexity and global scale of many manufacturing enterprises, partnering with a technology provider with proven expertise in delivering similar solutions is critical.

Seertech's on-the-job training solution, OJT³, has improved efficiency and effectiveness at both operational and strategic levels.

# How OJT³ optimizes workforce training

Seertech's proprietary OJT³ technology is a force multiplier, elevating workforce competence management. It uses a three-step process:

1. **Plan** – Simplify skills gap analysis

2. **Execute** – Accelerate skills gap closure

3. **Prove** – Validate skills
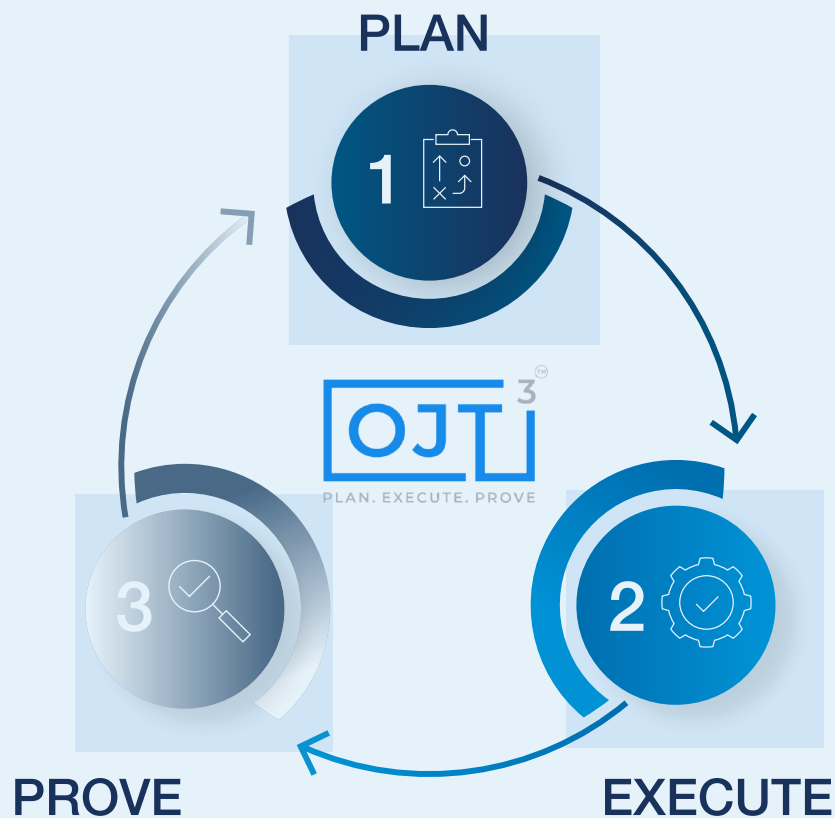


OJT³ is proven to boost productivity, ensure quality, and reduce costs by fueling continuous learning and skills development.

# Solution approach to address the business challenge

The first and perhaps most important step to achieving a best-in-class employee experience and closing the skills gap is the **leadership team's commitment to a strong change management process.** Streamlining fragmented processes and centralizing disparate systems demands disciplined project management skills, support from all key stakeholders, and proper team resources. This commitment lays the foundation for a successful transformation.

The scale of transformation for this global organization was immense, deeply entrenched in its long history. Over several years, a complex and multifaceted change management project was undertaken, requiring meticulous planning, communication, and continuous stakeholder engagement to sustain momentum. Addressing the change management challenge went beyond a technological solution. The more **significant obstacle was overcoming cultural and people challenges.** To put this into a better context, many of the manufacturing sites have not changed their processes in over a decade, and some employees' entire career was defined by supporting antiquated processes and systems. Thus, overcoming the change resistance required a compelling vision of the future state, cohesive cross-functional teamwork, and strong influencing skills to navigate the complex needs and interconnections across multiple stakeholders.

The first step in the change management process was to secure strong executive leadership support and form an internal project team responsible for overseeing the global project, in partnership with Seertech Solution's functional and technical consultation. One of the initial actions was for the

project team to conduct a formal **Change Impact Analysis** for all sites worldwide. Over the course of a year, the project team held multiple discovery sessions to uncover and understand the unique local business needs and processes. To implement more scalable, efficient, and effective business processes, it is crucial for the organization first align to a globally consistent process and system. This requires all stakeholders to be committed to fundamentally thinking differently and putting aside local interests for greater **enterprise-wide strategies.**

> "Overcoming the change resistance required a compelling vision of the future state, solid cross-functional teamwork, and strong influencing skills"

After extensive negotiation and collaboration with key stakeholders from each site, a new, globally consistent training process flow was defined. Furthermore, Seertech Solutions' learning management system (LMS) capabilities reinforced this process to improve efficiency and effectiveness at both operational and strategic levels.

Given the complexity and global scale of this organization, the project took multiple years to complete across all 20+ factories, but it has yielded tangible and positive results.

# Some of the key solution components included:

## Consolidation of multiple Learning Systems

This high-tech manufacturer previously utilized several different learning systems across the company. This was partly due to the differing learning needs between factory employees, who required operational-focused training, and non-factory business employees, who focused on professional skills like leadership training. To improve efficiency and consistency, this organization consolidated all of their learning platforms for the entire company onto Seertech Solutions' LMS. Centralization into a single, unified system that is flexible and scalable was the key step to gaining efficiency and consistency. It enabled data capture and reporting from a single system, enabling a scalable and centralized administrative support model for cost savings and consistent learning governance.

## Improved Workforce Competence with Structured On-the-Job Training (OJT)

One of the most important goals for achieving training consistency on the factory floor was to **standardize and systemize the OJT process.** According to a study done by R. Jacobs, a professor of Workforce Development and Education at the Ohio State University, a structured OJT approach reduces the training time by approximately 80% compared to an unstructured OJT approach.

In the manufacturing context, most of the skills needed are mission-critical to the operation. Therefore, it is critical to to document and validate employee competency to ensure consistent product quality, employee safety, and compliance with legal/regulatory requirements. The basic framework of mission-critical employee competency is illustrated below:
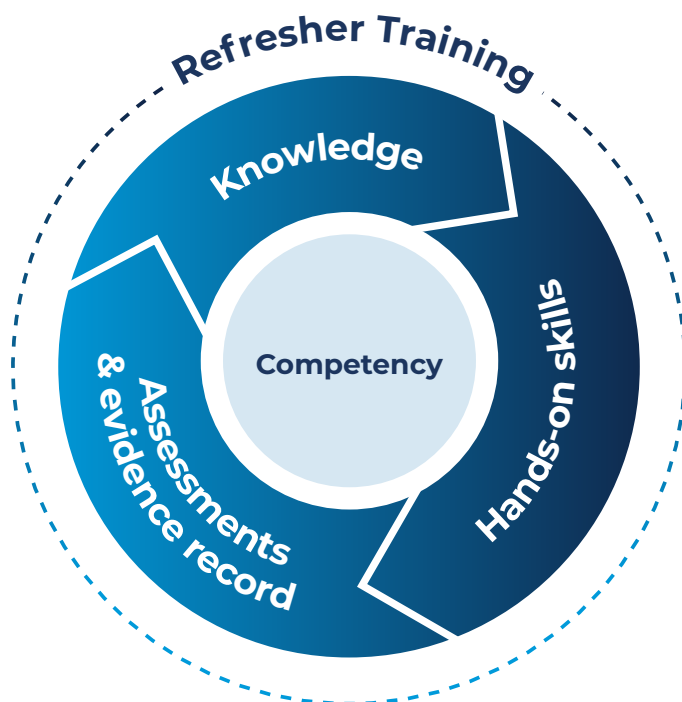


By systemizing the OJT process steps, Seertech Solutions provided the functional capability to satisfy this competency framework model. This new system solution enforces global consistency and governance, leading to improved training quality and accelerated skills development.

The **first step** in the process is the systemized **training plan**, where comprehensive skills and knowledge requirements are documented using embedded system functionality. This fully configurable solution displays a checklist of key learning objectives, tasks, and critical milestones of the training process. By adopting this approach, the organization was encouraged to improve the documentation of skills and knowledge while ensuring consistent delivery of training by all trainers, **reducing dependency on tribal knowledge**. Moreover, the training plan checklist was "save-as-you-go" to prevent the oversight of critical steps during multi-day, multi-modal training.

The **second step** involves assessing the trainees' competence in both knowledge and hands-on skills, upon completing the training plan. This validation process consists of two parts: an online **knowledge test** and a face-to-face **skills evaluation**, conducted by another peer employee or an auditor. Like the training plan module, the skills evaluation checklist captures all the criteria to ensure that trainees are evaluated against a **consistent set of standards**. This assessment step provides assurance that trainees are ready to perform their job tasks, and it provides **robust evidence for future audits**.

In addition, supervisors or training coordinators often face a heavy burden in manually managing the training schedule, pairing up the right trainer with the trainee, and tracking their progress. To address this challenge, the Seertech Solutions' LMS was configured to automate and maintain an up-to-date list of qualified trainers and skills evaluators. By leveraging the system's capabilities, supervisors can easily assign trainers and skills evaluators to trainees in the system, streamlining the entire training management process. Moreover, the assignment record provides an audit trail and **improves ownership of the training program** by the entire team.

The **third step** is the supervisor's **sign-off**. This final step completes the structured OJT process and signifies when the employee is **"certified" to work independently** on the process or equipment. Also, to maintain the employee's knowledge and skills over the course of their career, a refresher training frequency can be configured in the system. This activates automated reminders for employees and their supervisors about upcoming training expiration.

1

**Training Plan**

2

Assessments

**Knowledge Test**

**Skills Evaluation**

3

**Sign-Off**

Refresher Training
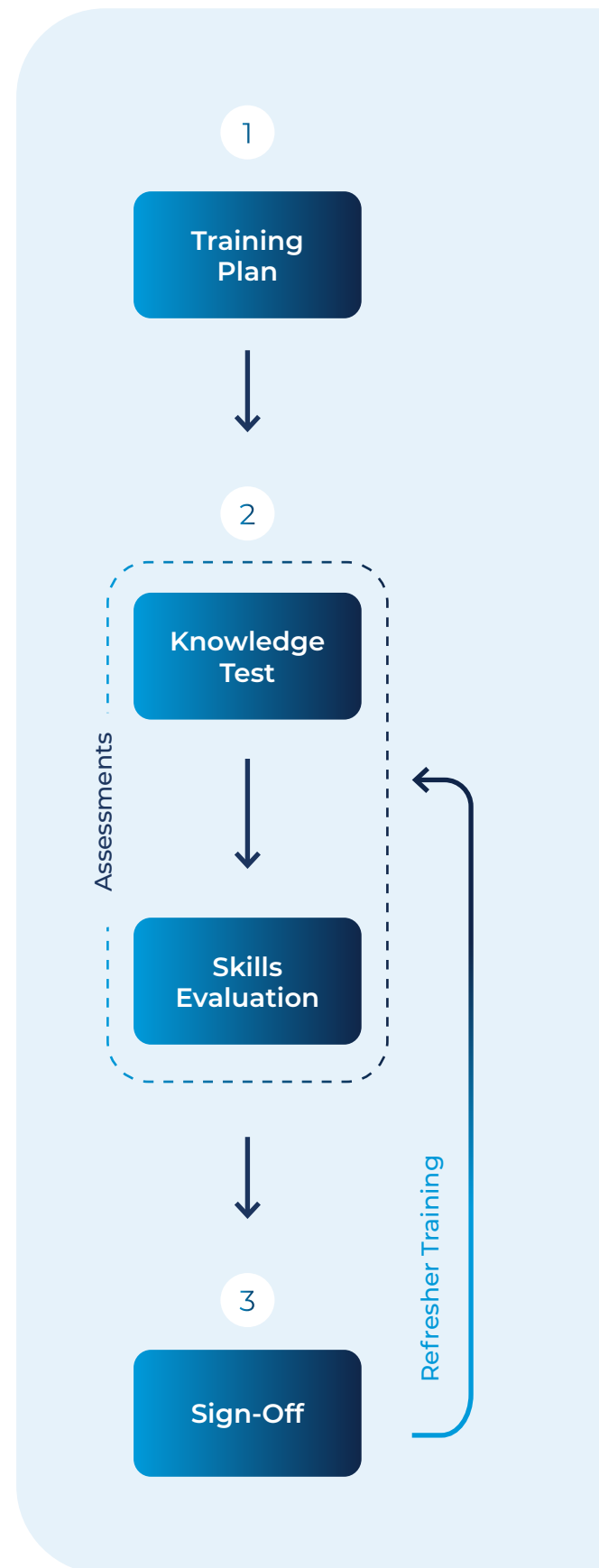
# Skills Matrix visibility

The task of managing shift coverage gap and assessing workforce skills requirements can be challenging and time-consuming. However, with Seertech's automated skills matrix dashboard, supervisors can streamline this process, allowing them to efficiently handle their workforce and also offer transparent career development paths.
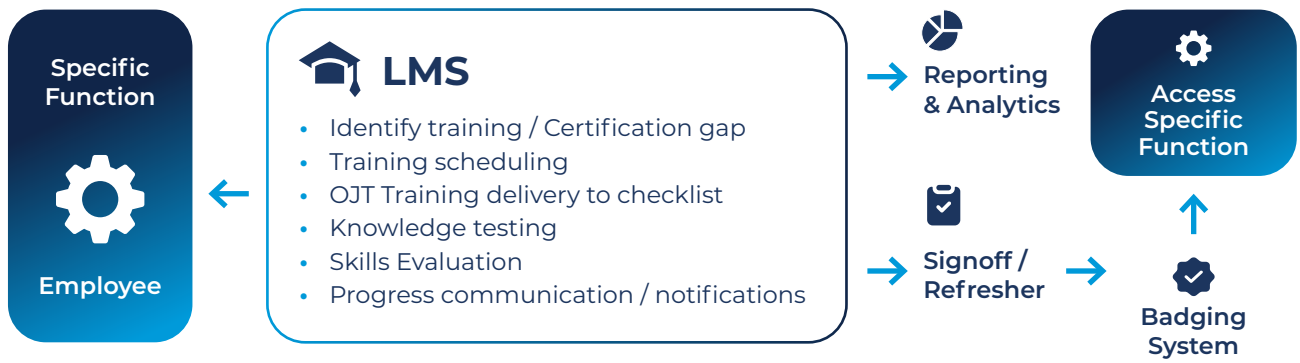
**Legend:**
- **C** Competent
- **I** Incomplete
- **D** Coming Due 30 days
- **X** Expired

| Name | Shift | Job Role | Safety Training | CPR Certification | Lockout / Tagout | Bloodborne Pathogens | Fall Protection | Electrical Safety | Equipment Group 1 | Weekly Maintenance | Monthly Maintenance | Troubleshooting | Pump Rebuild | Annual Maintenance |
|------|-------|----------|-----------------|-------------------|------------------|----------------------|-----------------|-------------------|-------------------|--------------------|---------------------|-----------------|--------------|--------------------|
| John | Day | Equipment Technician | | C | C | C | C | I | | C | C | C | C | I |
| Danny | Day | Equipment Technician | | C | C | I | C | I | | C | I | I | I | I |
| Sarah | Day | Equipment Technician | | C | X | I | C | X | | D | C | C | C | C |
| Tom | Night | Equipment Technician | | C | C | C | C | C | | C | C | I | I | I |
| Alice | Night | Equipment Technician | | C | C | I | C | C | | C | C | C | C | C |
| Frank | Night | Equipment Technician | | C | C | D | C | X | | C | C | C | I | I |

## Automating Training Assignments

With hundreds of mandatory training assignments across thousands of employees with various job functions, manually assigning the correct set of training can be difficult. Using the Seertech Solutions' capabilities, most of the training assignment tasks are now automated, and **over 1 million automated assignments** have been executed since inception. This means that over 1 million opportunities for human error were avoided through automated, consistent, and controlled assignments.

## Auto Gating Factory Equipment & Facility Access

Factories contain hundreds of pieces of equipment so ensuring that only qualified employees operate them safely and properly is a mission-critical need. An automated, integrated system solution was implemented to connect Seertech Solutions' training record status to the company's badge system. It provided the mechanism for employee access control for factory equipment operation and/or facility access. If the employee's training was not up-to-date, they would be automatically restricted from accessing equipment or facilities. This integration utilized the employee's badge as the access control vehicle, but other options like facial or fingerprint biometrics could also be utilized. The Seertech Solutions' unique flexibility to integrate with other business processes sets it apart from other learning systems on the market, and it has become a critical requirement for many manufacturing organizations.

**Specific Function**

**Employee**

**LMS**
- Identify training / Certification gap
- Training scheduling
- OJT Training delivery to checklist
- Knowledge testing
- Skills Evaluation
- Progress communication / notifications

Reporting & Analytics

Signoff / Refresher

Access Specific Function

Badging System

# Measuring Success

The multi-year change management and enterprise-wide system implementation have been a rewarding journey, seamlessly integrated without any disruption to factory production capacity. The key success metrics demonstrated significant **Cost Savings** and remarkable improvements in **Productivity, Quality,** and **Safety.**

**38% reduction in time-to-contribution** for US factory technicians

**$1M** cost savings annually

**~10K person-hours saved** annually through going paperless and via system automation

**1M+** automated training assignments, eliminating manual tasks

**Developed over 13K structured OJT** and counting, as the organization continues its journey to better document skills and knowledge
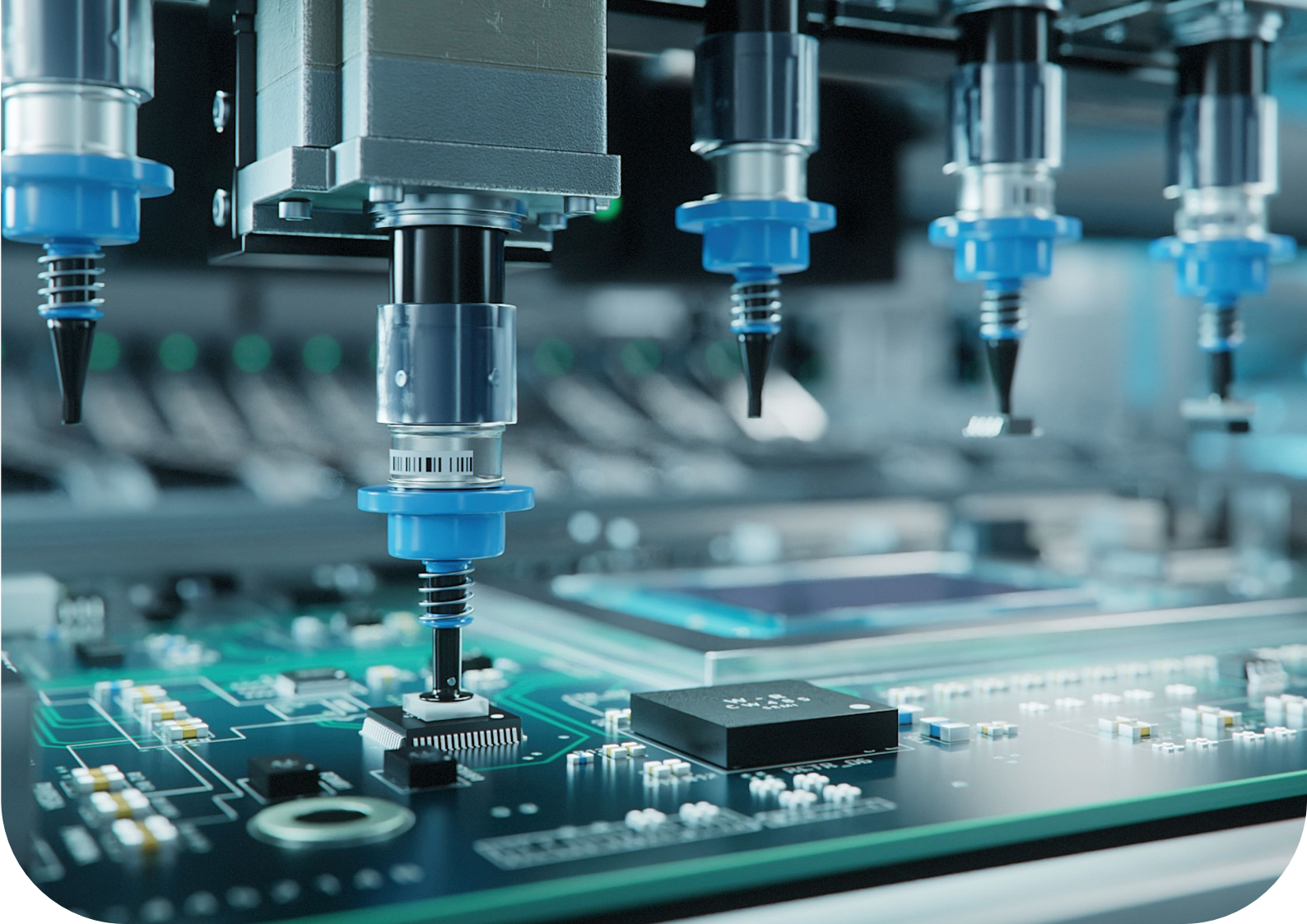
**Eliminated ~90% of human error** and safety incidents associated with inconsistent training

**Achieved >99%** on-time mandatory training completion rate across all factories worldwide
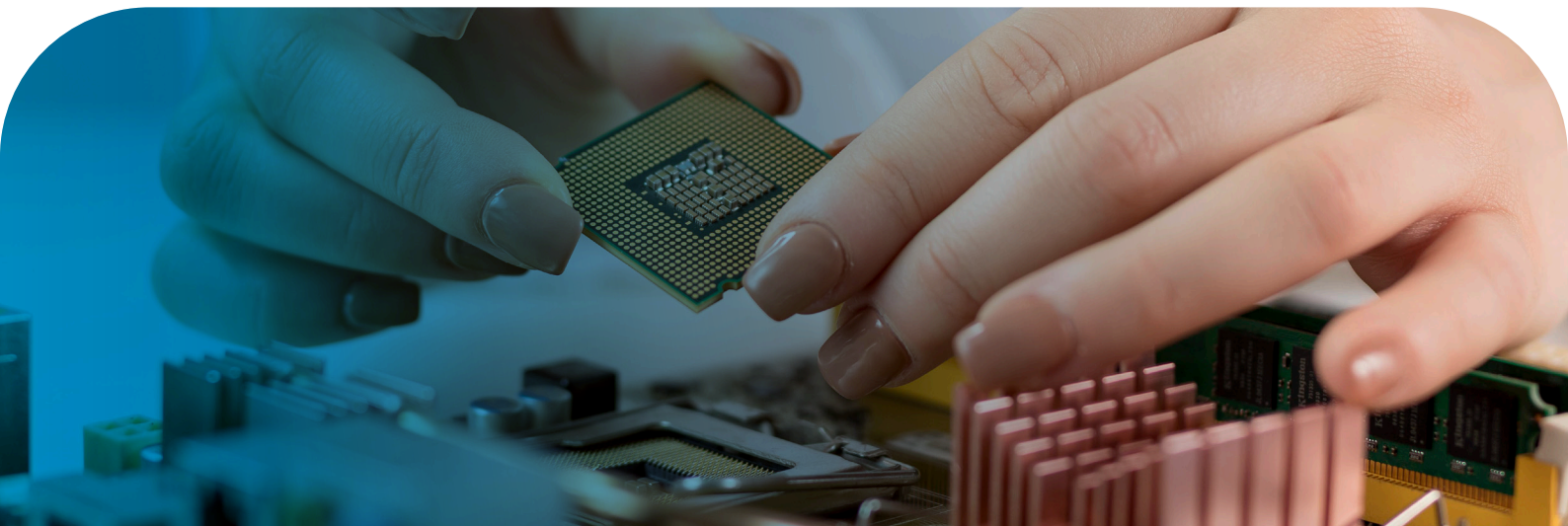
# Summary

To address the manufacturing skills gap and its impact on the US economy, it is essential to understand its root causes thoroughly. However, this is just the beginning of the journey. Manufacturing companies must adopt a strategic and holistic approach to bridge the skills gap effectively and become the employer of choice. This involves creating end-to-end talent processes to identify, recruit, onboard, retain, and develop employees more efficiently.

One of the most important first steps in this journey is to address the fragmentation and disparities in the training processes and supporting systems. Only by establishing enterprise-wide standardization, companies can begin to work on improving employee training consistency and effectiveness, but this requires a strong change management process.

Through standardization efforts for both business processes and the learning management system, companies can enhance the overall employee experience, boost productivity, ensure high-quality output, and achieve cost savings. A comprehensive solution will enable organizations to achieve their goal of developing a skilled and competent workforce capable of meeting the demands of the manufacturing industry.

# Get in Touch

If you are interested in learning more about this case study and how it could benefit your organization, we encourage you to reach out to us. With over 20 years of experience, we have been assisting complex organizations, including manufacturing companies, in managing their enterprise-wide learning and certification requirements.

At Seertech Solutions, we have the expertise and flexibility to design and manage a comprehensive learning solution tailored to your specific needs. Our capabilities allow us to consolidate multiple learning systems into a single platform, providing support for a wide range of training requirements. Whether it's heavily regulated and compliance-driven training, revenue-driven learning e-commerce, or standard corporate learning needs, we have you covered.

Please feel free to contact us for an initial consultation to discuss how our solutions can address your organization's unique challenges and contribute to your success in developing a skilled and competent workforce. We look forward to the opportunity to collaborate with you and support your learning and development endeavors.

# We are the last LMS you will ever need

| 6m+ | 19 | 97% | 20+ | 190+ | $2B | 42k |
|---|---|---|---|---|---|---|
| Active users | Best practice awards | Customer retention rate | Years of experience | Countries use our LMS | Orders booker per years | Average customer size |

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**References**

1. Michael Steinhart, "Tech and Semiconductor Industries Take Stock in 2023," Deloitte, 2023.

2. Craig Giffi, Ben Dollar, and Paul Wellner, "The Jobs are here, but where are the people," Deloitte, November 14, 2018.

3. Michelle Bangert, "Training is required to meet the needs of today's manufacturers," Quality Magazine, June 1, 2021.

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MISSION CRITICAL LEARNING

# A learning solution that can handle complexity

Managing training in a heavily regulated, compliance-driven industry is a complex task. Lucky for you, we thrive on solving for complexity. Our learning solution is flexible yet powerful, handling even the most complex learning needs.

# Let's chat

info@seertechsolutions.com

**seertechsolutions.com**