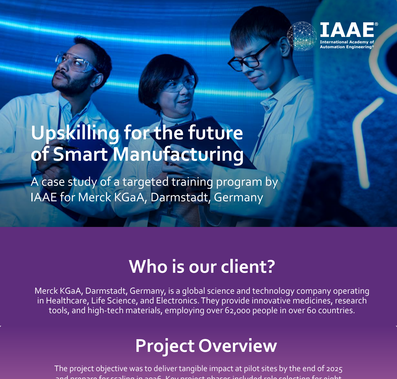

Upskilling for the future of Smart Manufacturing

A case study of a targeted training program by IAAE for Merck KGaA, Darmstadt, Germany

Who is our client?

Merck KGaA, Darmstadt, Germany, is a global science and technology company operating in Healthcare, Life Science, and Electronics. They provide innovative medicines, research tools, and high-tech materials, employing over 62,000 people in over 60 countries.

Project Overview

The project objective was to deliver tangible impact at pilot sites by the end of 2025 and prepare for scaling in 2026. Key project phases included role selection for eight common priority roles across the three sectors, conducting a Skill Gap Assessment and Analysis through site visits, designing Training Curriculum (Learning Paths), and delivering targeted learning sprints tailored to each role's digital maturity level.

01

Foundation & Assessment

Key activities included site visits, role selection, skill gap assessment and creation of detailed skill cards.

02

Design & Delivery

Focused on designing Learning Paths, developing and delivering three distinct Learning Sprints, and providing scaling guidance.

03

Tangible Impact by EOY, Ready to Scale

The project aimed to deliver immediate value to pilot sites, for the roles they had prioritized, while testing the Learning Sprint model for wider implementation.

Common Role Selection

- Process Engineer
- QC Scientist
- QA Specialist
- Site Leadership Team
- Technician / Expert
- Manufacturing Supervisor
- Operator
- Production Engineer

The 8 prioritized roles

Balancing Site Needs with Scalability

Roles were prioritized based on their likelihood of having an outsized impact on operational success at site level AND scalability of a common learning path across the business.

Sponsor Engagement and Change Management

Communicated with global program sponsors regularly to ensure close alignment with business needs and engaged site level stakeholders frequently to explain approach, assign mutual ownership responsibilities, and discuss expectations of participation.

Skills Assessment

In-Person Site Visits for Detailed Discussions

The team conducted multi-day site visits, using interview tools and surveys for each role.

Skills Gap Analysis

In-Person Site Visits for Detailed Discussions

The assessment and analysis process involved collecting job descriptions, digital roadmaps, and survey responses so as to build a complete skills table for each role, illustrating current and future skills needs, prioritized by greatest gaps relating to planned technology investments.

1 — Proficiency — 5

Learning Path Design

Role-Specific Learning Paths

A Learning Plan was designed for each of the 8 common roles, providing the ideal learning experience (balanced by 70-20-10 approach) for someone within each role.

Building Enablement Catalogs

For each role, a one-page catalog was created that listed all known company learning assets, newly developed learning resources, and recommended 3rd party training.

Three Tiers of SMARTfacturing Credentials

- Digital Operations Ready
- Connected Operations Ready
- Predictive Operations Ready

Learning Sprints for Impact

What is a Learning Sprint?

A 4-5 week learning program requiring 2-5 hours of weekly commitment, featuring weekly SME presentations and Q&A, self-paced assignments, and optional credentials.

Three Sprints To Test the Approach

Pilot Learning Sprints on Electronic Data Integrity, Next-Gen Industrial Automation, and the SMARTfacturing Champion Sprint were offered to the pilot sites including participants from three countries, three time zones, and having three different first languages!

Scorecards and Client Feedback

Measuring Success with Learning Sprint Scorecards

Each sprint was measured using a scorecard to track Technical, Implementation, and Impact Metrics so as to benchmark pilot outcomes.

SMARTfacturing Champion Sprint	Data Integrity Sprint	Next-Gen Automation Sprint
93% Positive Experience	79% Positive Experience	82% Positive Experience

Here is what our client says after their engagement with IAAE:

"As a leading global science and technology company our success hinges on the skills and capabilities of our workforce. By implementing targeted training programs tailored to our operational needs, we are not only enhancing our workforce's capabilities but also ensuring our readiness for the future of smart manufacturing."

– Frank Buchholz, Global SMARTfacturing Workforce Readiness Lead at Merck KGaA, Darmstadt, Germany

Scaling Guidance

The project concluded with the IAAE team sharing Scaling Guidance using a Persist, Pause, Pivot, and Pioneer framework, offering recommendations that would enable a future continuous workforce operating model across the organisation.

Persist — Keep what's working

Pause — Gather more evidence

Pioneer — New directions and funding needed

Pivot — Redirect energy and funding

Explore Your Needs with Our Team

Engage IAAE to assist upskilling your workforce

We consult

Our passion is helping clients with upskilling/scaling frameworks and workforce change management.

We source, develop, and deliver

Leverage our experiences in curating learning materials for roles, developing and delivering impactful programs.

We run learning programs and sprints

Let our team deliver award winning learning experiences for your people.

Build capability in your people to leverage digital manufacturing

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