

Accelerating Shopfloor Employee Efficiency with Generative AI

CLIENT OVERVIEW

A large manufacturing client recently opened a new plant in North America. With a newly onboarded team of shopfloor employees, the company needed to quickly bring the team up to speed and ensure they could manage the assembly line efficiently.



CHALLENGE

The client faced the challenge of quickly onboarding the new team to handle complex machinery with minimal disruption to production. Machine downtime, caused by a lack of familiarity with equipment and processes, posed significant risks to productivity. The goal was to minimize downtime while empowering employees to make data-driven decisions in real time.

SOLUTION



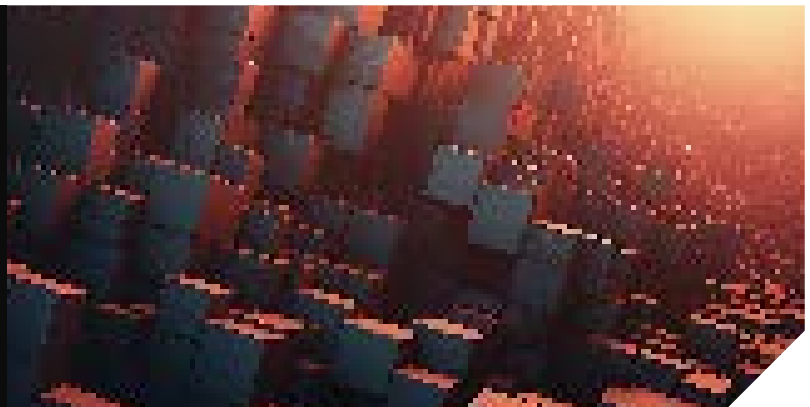
C5i worked with the client to provide real-time, intelligent support to shopfloor employees by implementing a Generative AI-driven solution. The GenAI assistant, integrated into mobile and tablet devices, allows employees to access interactive guides, troubleshooting steps, and on-the-job training modules. Based on documents like SOPs, machine designs, and real-time operational data, the AI assistant responds to natural language queries such as:

- Troubleshooting: "What do I do if this machine jams?"
- Escalation: "Who do I contact if the machine cannot be fixed on-site?"
- Recovery: "How do I reduce changeover time after maintenance?"

The AI system leverages historical downtime data, machine performance metrics, user manuals, machine manuals, troubleshooting guides, escalation matrix, and training videos to suggest how to resolve issues, improve efficiency, and streamline operations. Employees can access tailored training modules on the fly, addressing specific skill gaps and accelerating their learning curve.

C5i leveraged Azure AI's services, namely Blob Storage, CosmosDB, Azure Data Factory, Azure Search, and Azure AI Services, and delivered the solution via Private Cloud Infrastructure in the Client's Azure instance. Behind the scenes, we leveraged the RAG Models and GPT-4 to generate contextual and relevant insights for the Shopfloor Employees. Role-based access control was enabled to personalize the insights for them.

OUTCOME



With the Generative AI assistant exposed via a responsive web application, the client significantly reduced downtime and enabled a faster ramp-up for new employees. Key metrics showed improvement within the first few months:

- Downtime Duration reduced by 20%
- Mean Time to Repair (MTTR) decreased by 15%
- Overall Equipment Effectiveness (OEE) improved by 10%
- Enhanced employee confidence and reduced errors in machine handling

CONCLUSION

Generative AI helped expedite the onboarding process and enhanced shopfloor efficiency by providing real-time, contextualized support. By integrating AI into daily operations, the client enabled employees to operate at peak performance, significantly reducing operational disruptions and driving productivity gains.

About Us

C5i is a pure-play AI & Analytics provider that combines the power of human perspective with AI technology to deliver trustworthy intelligence. The company drives value through a comprehensive solution set, integrating multifunctional teams that have technical and business domain expertise with a robust suite of products, solutions, and accelerators tailored for various horizontal and industry-specific use cases. At the core, C5i's focus is to deliver business impact at speed and scale by driving adoption of AI-assisted decision-making.

C5i caters to some of the world's largest enterprises, including many Fortune 500 companies. The company's clients span Technology, Media, and Telecom (TMT), Pharma & Lifesciences, CPG, Retail, Banking, and other sectors. C5i has been recognized by leading industry analysts like Gartner and Forrester for its Analytics and AI capabilities and proprietary AI-based platforms.



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