DCM Infotech

SCALING DIAGNOSTICS WITH AGENTIC AI


HIGHLIGHTS

 90%+ Accuracy – in handwritten TRF recognition using Agentic AI

 8–9 Staff Redeployed – to high-value roles

 100% Scalability – without hiring new staff

 Boosted Profitability – through faster, error-free workflows

DCM Infotech Limited

Sales@dcminfotech.com

www.dcminfotech.com

EXECUTIVE SUMMARY

In the fast-paced world of diagnostics and stem cell healthcare, scalability is not just a goal—it's a necessity. A leading Indian diagnostics company, serving over 5,000 partners nationwide, faced a major bottleneck in processing handwritten Test Requisition Forms (TRFs). These manually filled forms were essential for test execution but their complexity and reliance on human interpretation limited scalability.

DCM Infotech, a pioneer in AI-driven automation, stepped in with a transformative Agentic AI solution. By leveraging Google Vertex AI and Langchain, DCM automated the reading and interpretation of handwritten TRFs with over 90% accuracy—unlocking new levels of efficiency, scalability, and profitability for the client.
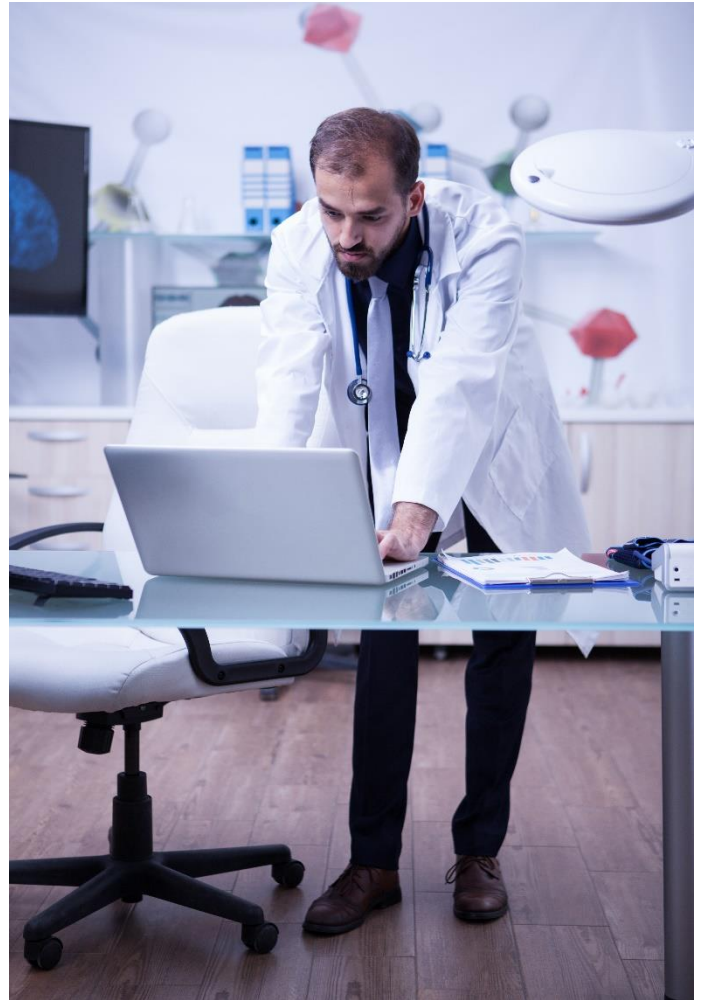
A B O U T   T H E   **C U S T O M E R**

The client is a well-established diagnostics and stem cell company in India, serving over 5,000 labs and collection centers nationwide. Each partner sends physical TRF forms—critical documents outlining required tests. These handwritten forms often contain dense information, tick marks, and notes that make digital processing challenging.

Two staff members handled each TRF—one for data entry and another for verification—creating a slow, error-prone workflow. Scaling operations meant doubling staff, which was unsustainable.

T H E   B U S I N E S S   **C H A L L E N G E**

TRF forms introduced multiple complexities: varied handwriting styles, dense layouts, and ambiguous tick marks. Previous automation vendors failed to achieve more than 60% accuracy, leaving the client skeptical about automation's feasibility.

However, after witnessing DCM Infotech's success in automating invoice processing for another enterprise, the client decided to collaborate with DCM to tackle this critical challenge.

OUR APPROACH

DCM combined its deep expertise in AI, NLP, OCR, and Agentic AI to design an intelligent agent that could autonomously read and interpret TRFs. Key Technologies Used:

- Google Vertex AI – for advanced handwriting recognition.
- Langchain Framework – for orchestrating LLMs and managing document workflows.
- Agentic AI – for reasoning, interpreting tick marks, and decision-making.

SOLUTION ARCHITECTURE

- OCR and Handwriting Recognition – Using Google Vertex AI's DOCUMENT_TEXT_DETECTION to extract handwritten content from TRFs.
- Langchain for Document Processing – Segmenting dense forms into manageable sections and improving accuracy with context-based embeddings.
- Agentic AI Layer – Agents interpret tick marks, cross-reference data, and flag ambiguities.

Accuracy Optimization – DCM also redesigned TRF layouts with clearer tick boxes and spacing to improve readability.
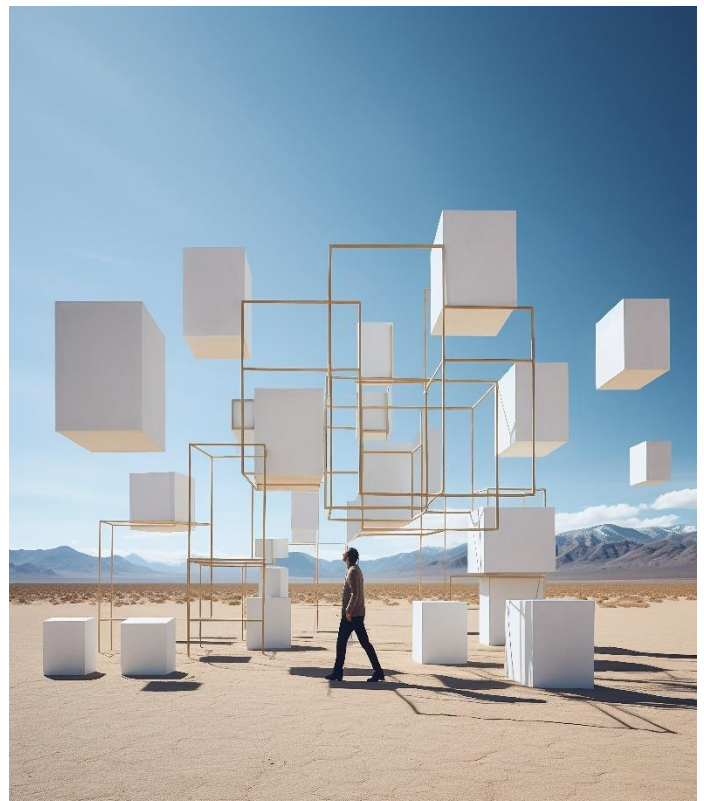
Proof of Concept

The PoC, conducted on sample TRFs, achieved over 90% accuracy—far exceeding prior attempts. The client appreciated DCM's technical precision and consultative recommendations, such as TRF redesigns, which further boosted accuracy.

Business Impact

- **Scalability Unlocked** – Automation allowed onboarding more partners without increasing headcount.
- **Productivity Gains** – 8–9 staff redeployed to revenue-generating roles.
- **Accuracy & Reliability** – Reduced human errors and faster turnaround.
- **Profitability Boost** – Improved operational efficiency and growth potential.

Industry Context

Indian diagnostics face challenges like fragmented infrastructure, manual workflows, and limited skilled staff. Agentic AI is transforming healthcare by enabling autonomous decision-making and workflow optimization. DCM's implementation stands as a benchmark in this domain.

Lessons Learned

- **Form Design Matters** – Collaborative redesign improves AI accuracy.
- **Domain Expertise is Crucial** – Understanding diagnostic workflows was key.
- **Agentic AI is the Future** – Autonomous agents extend beyond automation.

Future **R** o a d m a p
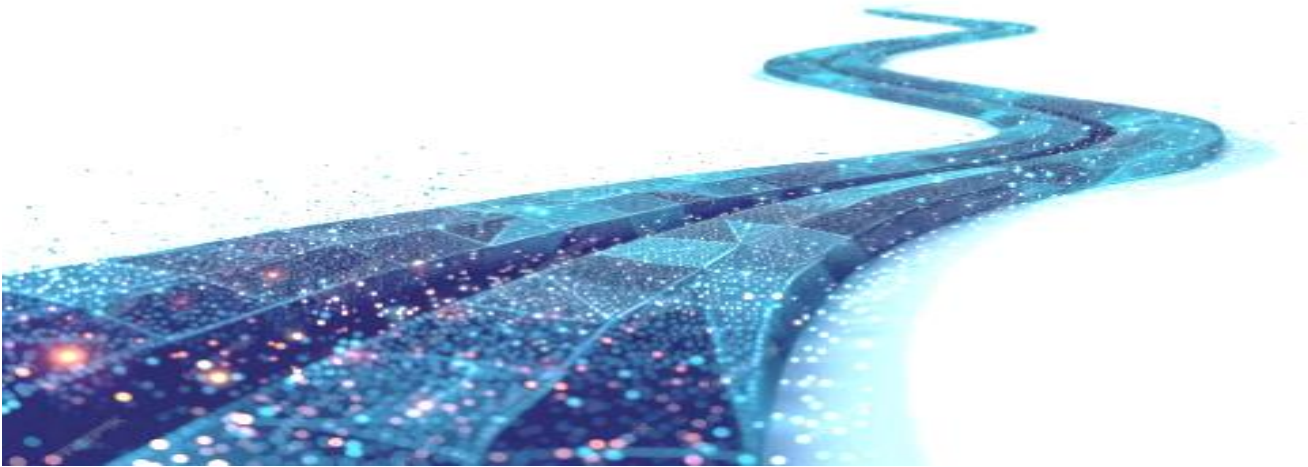
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CONCLUSION

DCM Infotech's Agentic AI solution revolutionized TRF form processing for one of India's largest diagnostics companies. By blending advanced technology with deep domain understanding, DCM delivered measurable impact—enabling scalability, profitability, and operational excellence.

ABOUT **DCM** INFOTECH

DCM Infotech Limited is a global technology and innovation company specializing in AI, automation, and digital transformation. With a focus on delivering intelligent, scalable, and secure solutions, DCM empowers enterprises across industries to achieve their digital goals.