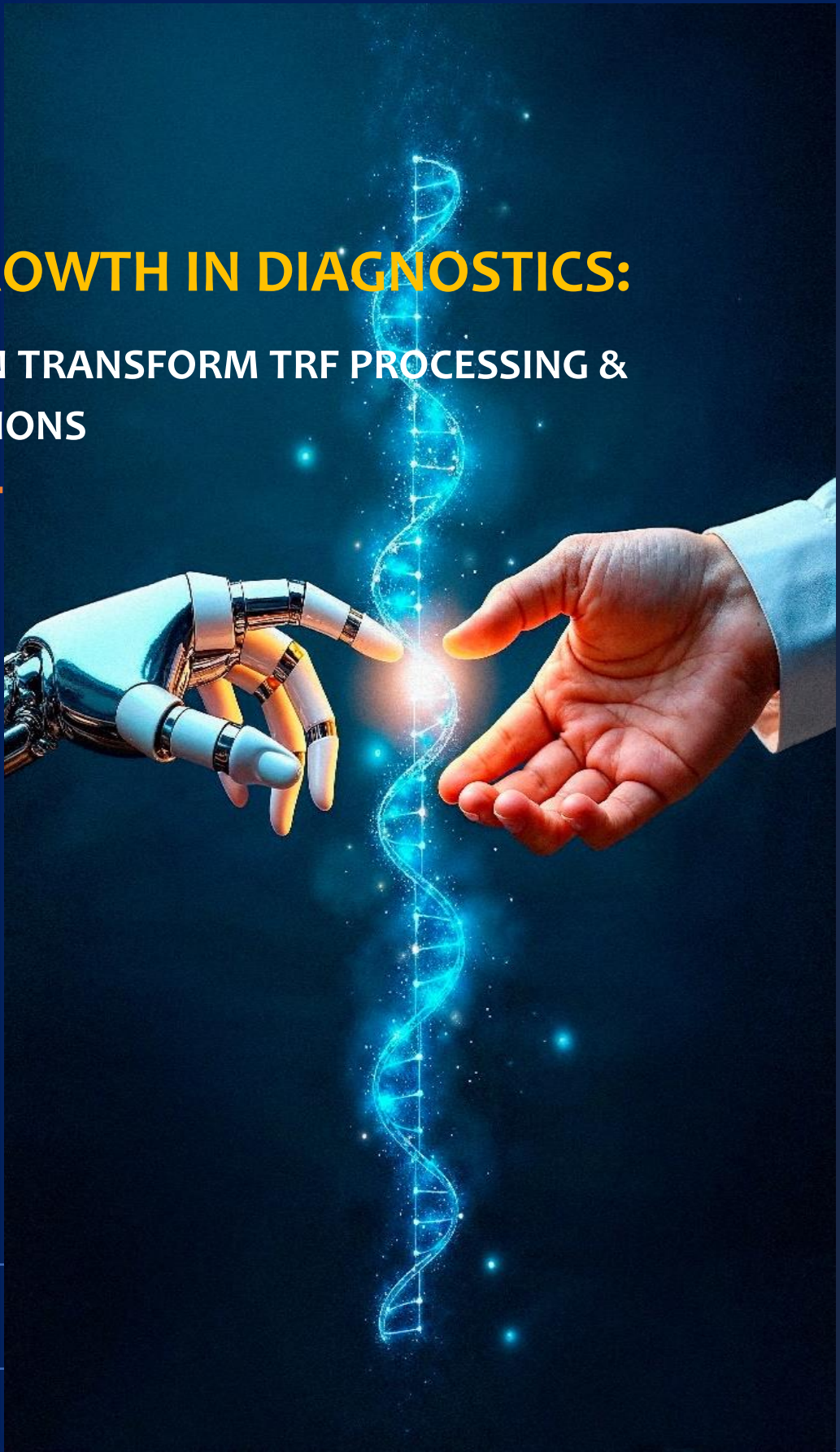


UNLOCKING GROWTH IN DIAGNOSTICS: HOW AGENTIC AI CAN TRANSFORM TRF PROCESSING & BACKOFFICE OPERATIONS



ORGANIZATION

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EXECUTIVE SUMMARY

Test Requisition Forms (TRFs) are the basic communication mechanism between a “Partner” pathology lab and the diagnostic lab when transferring a test sample. The physical handwritten paper forms sit at the heart of diagnostic operations, yet they remain one of the most error-prone, manual, and compliance-sensitive components of the pre-analytical workflow. Handwritten TRFs are prone to reading errors and are dependent on the skill of the person entering the data into the LIMS —leading to downstream delays, sample rejections, compliance risks, and unnecessary operational costs. With nearly 70% of lab errors originating in the pre-analytical phase, the industry urgently needs an intelligent, automated, and reliable solution.

Agentic AI introduces a transformational leap in how TRFs are captured, validated, interpreted, and processed. Unlike traditional rule-based automation or OCR, Agentic AI functions as an autonomous digital worker—able to understand, reason, correct, interact, and take action across the entire TRF lifecycle. It not only digitizes the form but ensures it is complete, compliant, and workflow-ready.

Industry Highlights

- **NABL Accreditations** :Many pathology labs aim for or maintain **NABL accreditation**, which enforces strict documentation, record-keeping, and data integrity..

- **Standardization of Request Forms** :There’s a push for a more **uniform TRF format** across labs, reducing ambiguity and making it easier to interpret clinician requests.



INTRODUCTION



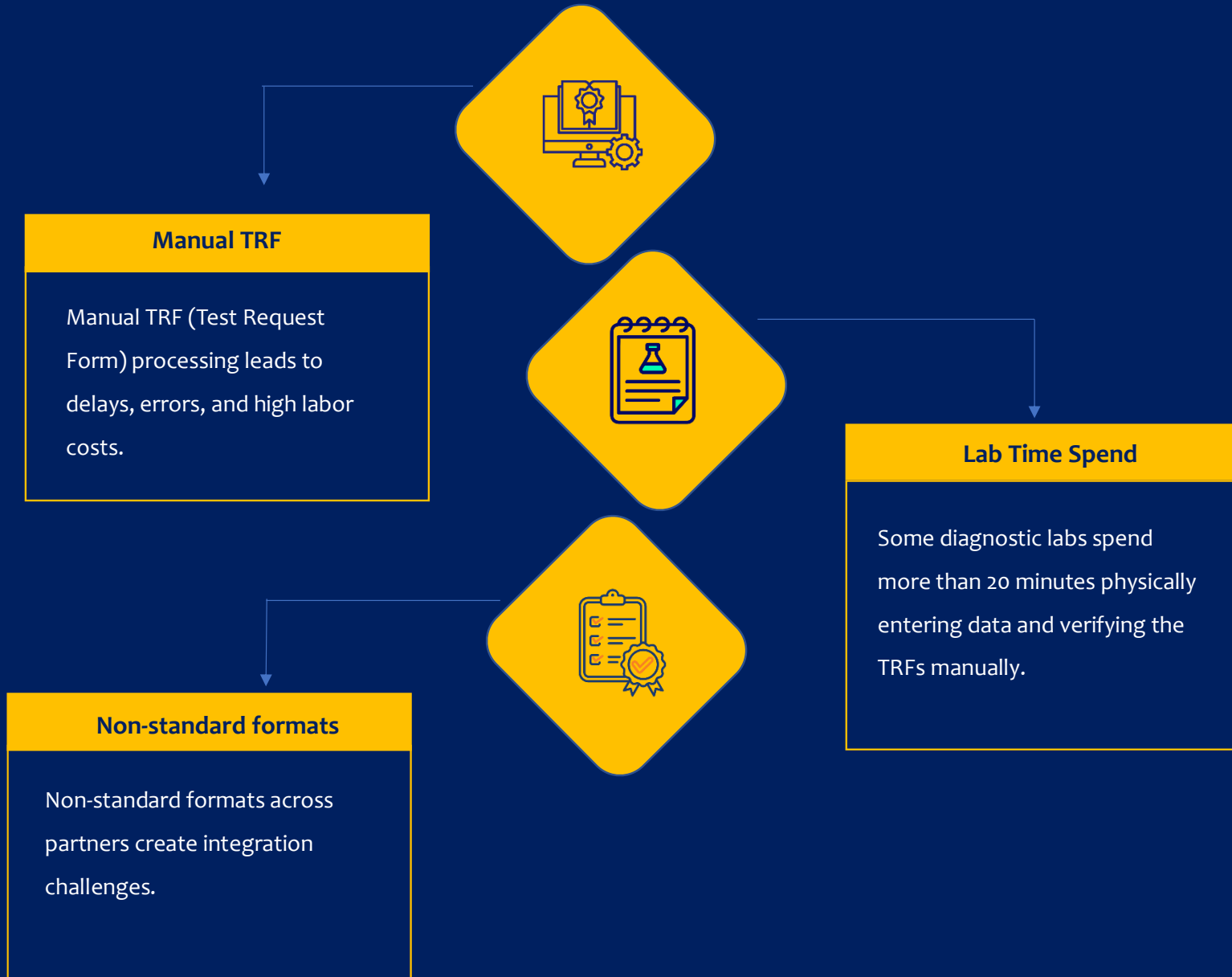
India's diagnostics industry is projected to reach ₹1,360 billion by FY2026 (14% CAGR), but manual processes like TRFs hinder scalability.

AI adoption in diagnostics is growing at 23.1% CAGR, yet back-office digitization lags behind.

The India laboratory automation market is projected to reach US\$ 203.8 million by 2033, from about US\$ 101.8 million in 2024.

The pathology labs market in India has a projected CAGR of ~10.7% between 2025 and 2030.

INDUSTRY CHALLENGES WITH HANDWRITTEN PHYSICAL TRFs



IMPACT ON PARTNER ECOSYSTEM GROWTH

Physical TRFs



Physical TRFs slow down partner interactions, and reduce transparency.

KPMG survey



75% of executives view partner ecosystems as critical for growth.

Manual Processes



Block efficiency and hinder ecosystem performance.



ROLE OF AGENTIC AI IN DIGITIZATION

Agentic AI leverages Large Learning Models (LLM), Optical Character Recognition (OCR), Natural Language Processing (NLP) and has Multi lingual capabilities to automatically convert handwritten Test Requisition Forms (TRFs) into structured digital data. We have worked on varied AI models such as Google vertex, Microsoft Co pilot studio, IBM watsonX and by combining them with OCR for accurate text extraction and NLP for contextual understanding, it achieves more than 91% accuracy in digitization, reducing manual entry errors and accelerating diagnostic workflows.

Benefits



Standardization, real-time integration with LIMS/CRM, compliance automation.



Research shows AI pipelines can eventually process TRFs in <1 second per page.



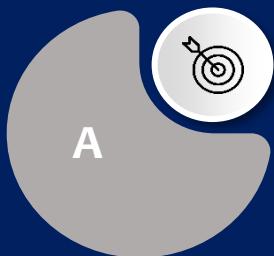
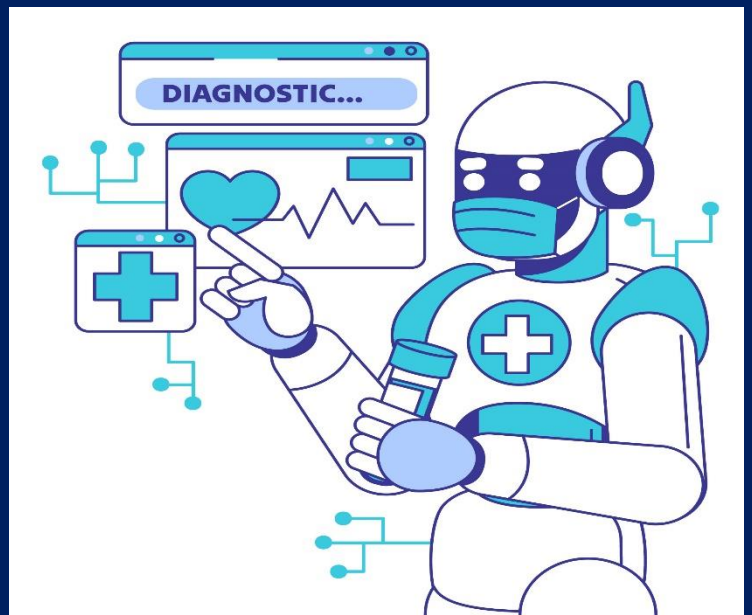
CASE STUDY: ACCELERATING TRF PROCESSING WITH AGENTIC AI

Before Implementation

A renowned stem cell organization's diagnostic operations relied on manual data entry for Test Requisition Forms (TRFs). Processing and verifying 10 handwritten TRFs required approximately 30 minutes, involving multiple steps: reading, validating patient details, mapping test codes, and updating the Laboratory Information Management System (LIMS). This manual workflow introduced delays and increased the risk of transcription errors.

DCM's Agentic AI Deployment

By integrating OCR for text extraction and NLP for contextual interpretation, Agentic AI automated TRF digitization. The same workload of 10 TRFs now takes less than 10 minutes, thanks to automated field mapping, error detection, and compliance checks. The system also ensures structured data output compatible with LIMS, reducing dependency on human intervention.

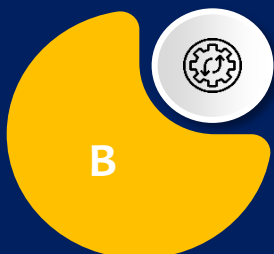


**Processing time reduced
by 66%**

**Cost reduction per page
by 90%**

Agentic AI reduced TRF processing from 30 minutes to under 10 minutes for the same workload.

Offers Self hosting option and flexibility of using any cloud and LLM models



91% digitization accuracy

Automated digitization improved data accuracy and readiness of global compliances like HIPPA

ROADMAP FOR AI ADOPTION IN DIAGNOSTICS



Phase 1: Digitize TRFs and integrate with LIMS.

Phase 2: Expand automation to billing, compliance, and logistics.

Phase 3: Predictive analytics and personalized health insights.

GAPS AND OPPORTUNITIES FOR AGENTIC AI IN BACK-OFFICE PROCESSES

Current gaps: Legacy ERP/LIMS systems, different formats followed by different labs for different forms, fragmented data silos, lack of AI compliance standards.

Opportunities: AI agents for billing automation, HR analytics (attrition prediction), procurement intelligence, compliance audit readiness.

Fix an appointment with our consultants to see how Agentic AI can help scale your business –

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ABOUT DCM INFOTECH LIMITED

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.

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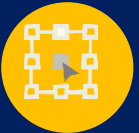


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