DCM Infotech

CASE STUDY · DIAGNOSTIC OPERATIONS AUTOMATION

Transforming multilingual diagnostic operations through intelligent TRF automation

Enabling faster processing, standardized operations and scalable growth across a distributed diagnostic network

Company overview

- Fast-growing regional diagnostics organization
- Strong presence across Gujarat, Rajasthan, Maharashtra, Tamil Nadu and Madhya Pradesh
- Large B2B ecosystem of hospitals, doctors, clinics and collection centres
- Operations spanning urban, semi-urban and regional healthcare markets

Operating environment

- High-volume TRF and prescription processing
- English, Gujarati, Hindi and mixed-language documents
- Handwritten forms, abbreviations and varied document structures
- Distributed partner network requiring standardized downstream data

01 · OVERVIEW

Transforming multilingual diagnostic operations

A fast-growing regional diagnostic network was processing high volumes of Test Requisition Forms (TRFs) and prescriptions received from doctors, hospitals, clinics and collection centres. As its B2B network expanded, documents arriving in English, Gujarati, Hindi and mixed-language formats increased operational complexity. The organization needed a scalable way to improve processing efficiency without allowing language and manpower dependency to constrain growth.

>90%
English extraction accuracy

>85%
Gujarati extraction accuracy

Multilingual
English + Gujarati + mixed language

Scalable
Higher volume without proportional manpower

02 · CHALLENGES

Language and volume limited growth

Manual processing dependency

Growing volumes required manual reading, interpretation and data entry, increasing operational effort.

Regional language complexity

TRFs and prescriptions arrived in English, Gujarati, Hindi and mixed-language formats.

Processing standardization

Different handwriting, scripts, abbreviations and layouts made consistent processing difficult.

Scalability

Expansion risked requiring proportional increases in manpower and language-specific expertise.

03 · SOLUTION

AI extraction with human validation

Multilingual document intelligence

AI-powered processing interpreted English, Gujarati and mixed-language healthcare documents.

Context-aware extraction

Captured patient demographics, physician details, prescribed tests, clinical and administrative information.

Validation workflow

Operators could verify extracted data, correct inaccuracies and review low-confidence fields.

Structured integration

Normalized information into consistent formats for downstream operational systems.

04 · BUSINESS IMPACT

Above 85% accuracy in both languages

>90% English accuracy

Greater than 90% extraction accuracy achieved on English TRFs and prescriptions.

>85% Gujarati accuracy

Better than 85% extraction accuracy achieved on Gujarati-language forms and prescriptions.

Productivity standardization

Teams shifted toward validation while processing became more consistent across locations.

Scalable growth

Additional transaction volumes could be absorbed without proportional manpower growth.

05 · BUSINESS CHALLENGE

From language-dependent processing to a scalable operating model

How multilingual document intelligence strengthened diagnostic operations and expansion readiness

The organization had built a growing B2B network across hospitals, clinics, doctors and collection centres. As volumes increased, more TRFs and prescriptions entered operations in different scripts, handwriting styles and language combinations. Manual processing created dependency on people who could interpret both diagnostic terminology and regional languages, while inconsistent source formats made standardization difficult.

> **How could the organization scale diagnostic volumes and expand its network without allowing document-processing complexity and manpower requirements to become a growth bottleneck?**

06 · SOLUTION IMPLEMENTATION

Delivered in stages, English first

01

Establishing the English baseline

The solution first processed English TRFs and prescriptions, establishing a strong baseline with greater than 90% extraction accuracy.

02

Extending to regional languages

The architecture was extended to Gujarati and mixed-language healthcare content, addressing non-Latin scripts and regional handwriting variation.

03

Contextual data extraction

The platform interpreted meaning rather than only characters, identifying patient details, physician information, tests, clinical instructions and administrative fields.

04

Validation integration

Extracted information was normalized into structured data, with human validation for corrections and low-confidence fields before downstream processing.

07 · IMPACT & BUSINESS BENEFITS

Faster, more consistent operations

Operational efficiency

Operators could focus more on validating extracted information instead of manually reading and entering complete documents.

Standardized operations

Information from different languages, scripts and document formats could be converted into a consistent structured format.

Reduced language dependency

Operations became less dependent on individual employees capable of reading specific regional languages.

Scalability

Additional transaction volumes could be absorbed without proportional increases in manpower.

Faster processing

Automated extraction supported faster registration and document-processing workflows.

Business agility

The organization gained greater confidence to expand across regional markets without document complexity becoming a major operational constraint.

08 · STRATEGIC OUTCOME

The implementation moved document processing from a manpower-dependent activity toward a scalable, AI-assisted operating model. By combining multilingual document understanding, contextual extraction, validation and structured data integration, the diagnostic organization created a stronger foundation for operational efficiency, regional expansion and future growth.

www.dcminfotech.com/agentic-ai.html