



# Diagnostics Management Application Development using Mendix

Digital  
Services

## Success Story

## Status Quo

The client is an established leader in MRI diagnosis, providing services in image diagnosis across multiple locations in the US. Being one of the busiest diagnosis centres, the client's system contains a large amount of patient's data and other related information. This created major complexities in tracking payments, report deliveries etc. To facilitate negotiations between healthcare centres and attorneys representing the patients, there arose a need for a platform. Hence, the client wanted to build an application for managing all the approvals, billing, delivery reports and monitors payment structure.

## Project overview

Leveraging Mendix, a web application was developed for diagnostic management which bridged the gap between the healthcare centres and attorneys. The developed application integrates features of Mendix which assisted the centres and attorneys in monitoring the approvals/denials procedure. Also, this application acts as a storage house in maintaining a record of the transactions and patient's data along with report delivery management. A key feature in the application was the ability to enhance HL7 negotiation between the attorneys and other healthcare centres. Over 1 million historical healthcare data were migrated to the system and maintained for historical record.

## Business requirement

The client needed an application that provided ease and automation in the existing system by accomplishing the following business goals.

- Develop an online portal to augment case management.
- Application integrating approvals, billings and delivery report.
- Facilitation of HL7 negotiations for the attorney with other healthcare centres.
- Scalable architecture that can cater to the future growth of the portal and associated system.

## Solution

Indium developed a web application using Mendix that provided the following features:

- An advanced system to enhance the usability for the end-users with a heavy focus on simplify the approvals and billing process.
- Application interaction with EXA to convert HL7 files into normal files.
- HL7 engine creation and integration.
- Approvals/ Denials options to reduce the amount of manual intervention thereby reducing the usage of Email & FAX for communication.
- A process which is both quicker and simpler so the workflows can be handled individually or in batches within minutes.

### Integrations

- HL7 standards and file format integration
  - To import required HL7 messages (ORM, ORU) into the application in a secured way.
- Scheduler implementation to handle daily events
  - To import order messages (HL7) at regular intervals into the application from the server.

## Business

Mendix

## Domain

Healthcare

## Tools

Mendix, HL7, EDA-835, ERA-837, SMTP, SFTP

## Key Highlights

- 60% reduction in manual effort via automation
- Data Security enhancement by 93% through encrypted data transfer
- Faster processing of claims elevated customer satisfaction by up to 20%

- EDA-835 & ERA-837 file format compliance for healthcare payments and remittance
  - EDI-837 - EDI file format to be imported into the application to generate bills.
  - ERA-835 – To send back the negotiated amount in the particular format.
- HIPPA compliance compatible
  - To enhance the security, users were made to change their password upon first time login into the application.
- SMTP (Simple Mail Transfer Protocol) & SFTP (Secure File Transfer Protocol) integration
  - SMTP - Mail will be sent to respective user on creation of new user & forgot password.
  - SFTP – Facilitate HL7 message interaction between application and server.

## Business Impact

- Encrypted data transfer increased the Data Security by 93% upon completion of the implementation process.
- Approval and denial procedures were made easier thereby increasing the efficiency and productivity of the stakeholders.
- The conversion of paper billing to electronic billing via the automated process reduced manual intervention by up to 60%.
- Attorneys were able to monitor and track pending payments in all the billing centres.





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