



Case Study

Quality Engineering for Patient Access Solutions (PAS) to Healthcare Providers

Overview

A leading provider of Patient Access Solutions that helps healthcare facilities with configurable, fully integrated, end-to-end solutions was looking for a reliable partner to handle its QA-related challenges. XTGlobal helped the client in designing a better automation testing strategy for applications integrated with multiple third-party APIs, resulting in more efficient defect removal, faster ROI, and 30% lower testing costs.

BACKGROUND

Industry

Healthcare – Patient Access Solution

Delivery Mode

Offshore Delivery Center

QA Scope

Manual & Automation Testing

About the Client

The client is a leading solution provider in the Patient Access Solutions Market.

Patient Access Solutions (PAS) are applications used by healthcare facilities such as hospitals and clinics to make sure that patients entering the facility have access to right care at the right time and at the right place. The PAS system takes care of various activities conducted within the facility on a daily basis such as scheduling, document storage, messaging, payment facilitation, service tracking, referral facilitation, self-check-in for patients, insurance eligibility verification, insurance discovery, data transfer to

insurance companies and several others. Besides, these systems also help healthcare providers to collaborate better with healthcare payers for claims, reimbursements, and revenue management.

PAS systems have now become a very important part of the healthcare industry due to a number of factors: increasing number of patient visits, increasing customer expectations for faster and better service, and most importantly the need for seamless integration among healthcare providers, insurance companies and patients.

A Typical PAS Includes the Following Functional Groups :



DIGITAL
SCHEDULING



MESSAGING
HUB



DIGITAL
DOCUMENTS
MANAGER



PAYMENT
FACILITATOR



SERVICE
TRACKER



PATIENT
SELF CHECK-IN



REFERRAL
FACILITATOR



ELIGIBILITY
VERIFICATION



INSURANCE
DISCOVERY



MEDICAL
NECESSITY
CHECK

KEY CHALLENGES

The client's PAS was originally built on traditional software platforms.

In order to meet the increasing demand for efficient services, the client was considering modernizing their PAS system with modern platforms, cloud-based environments, and DevOps. XTGlobal was involved in the software development process, including testing for the client. Modernization of the PAS involved upgrading a number of software components, which can be quite challenging, especially when each of these components needs to be tested properly before it is operational. The client faced a few challenges within the QA and testing phase, which were handled by XTGlobal:

- Designing a better automation testing strategy for applications integrated with multiple third-party APIs.
- Testing the EDI 270 healthcare eligibility/benefit inquiry, which requires ensuring that the EDI file specifications are in place.
- The client's software modernization development program required multiple software development teams working across geographies (Europe, USA, and India) in different time zones in sync.
- Besides testing the front-end logic that was developed in Angular, it involved working with multiple third-party APIs that had inputs in JSON file format and required testing at Webservice/API level.
- Client's document resources provided a holistic picture of workflow prior to the test planning. However, the data flow behind the third-party APIs and the possible degree of defects were unknown until the integration was developed. This introduced a few ad hoc changes in the requirements in the middle of development.
- Mirth, a third-party tool, converted HL7 docs to JSON in the production environment. There were a few constraints because of the multiple third-party systems and APIs. This influenced the scope of automation to start from JSON level testing, which in general, starts at front-end UI.
- The Software Delivery Team expanded in size at a fast pace as there was a need to deliver multiple modules in parallel. New members that were added to the QA team needed to learn and understand the product overview and functionality within a short time span before they go on to testing the items. The delay in the knowledge transition to new inductees/team members might have a serious impact on the quality of the testing and the timelines.
- Working from home during the pandemic during the year 2020 was the new normal to everyone in the team.

XTGLOBAL'S SOLUTIONS

QA Process

- XTGlobal formed a pilot team with diverse talents and expertise in leading team, documentation, manual and automation testing. This team had the required skills to cascade the knowledge and the workflow process to the teams that joined in the later phases and to lead the testing function during the project delivery.
- XTGlobal's team attended the product overview and training workshops delivered by the client team. In addition to the document resources provided by the client's team, the QA team did their own internal documentation, with respect to the testing function.
- QA SCRUM stand-ups at the beginning and the end of the day ensured that they covered the inputs and questions from other teams, working across different geographies in various time zones.
- Collaborative workshops and orientation sessions with digital platforms on Zoom helped bring new inductees up to speed and on same page on functionality as others.
- Manual functional testing and automation testing reduced the time in testing cycles during regression testing.
- Delivered Test Metrics at frequent test cycles.

Technology

- REST Assured (JAR Library) integrated with Selenium were used to perform the API Testing/RESTful Web Services.



- Performed the file type conversions JSON files <> EDI 270 before submitting with systems of insurance providers.



- Working with APIs and Angular applications together made the testing sync with the project goal.

RESULTS



Over 50% Increase in Productivity



Better Defect Removal Efficiency in Test Cycles before UAT Helped the Client to Reduce the Issues in Production for their Customers



Test Findings Leveraged RCA (Root Cause Analysis) to Provide Better Insights



Test Metrics Helped to Plan Better the Level of Effort Required in Further Phases



Over 30% Reduction in Testing Costs Because of Offshoring



Early ROI Because of Faster Time to Market

With XTGlobal's QA support, the client could accelerate their software delivery pipeline while ensuring quality and improved test coverage. Easy-to-integrate tools aligned with agile practices and standardized test lifecycles with defined processes and metrics ensured better adoption of advanced technologies.


For more information on XTGlobal's QA and Testing Services, [Visit our Website](#) or Contact us at:



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