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## Case Study

# Transforming a Surgical Healthcare Software: Security, Workflows, and User Experience

## The Client

Since 2013, this client has developed advanced solutions for surgical environments. Their flagship product is an innovative, cloud-based system that enhances patient safety, objectively tracks surgical risks, and reduces medical liability costs.

Their platform digitizes the entire surgical process, from the initial decision for surgery to postoperative care, allowing healthcare teams to capture data at critical checkpoints. Utilizing visualization, the system facilitates immediate alerts to improve patient safety and procedure outcomes.

By integrating seamlessly into existing workflows, the solution enhances communication among surgical teams and provides data-driven insights to mitigate risks and optimize operational efficiency.

## The Problem

As demand for their solution increased, performance bottlenecks, architectural limitations, and interoperability challenges surfaced, making it difficult to expand their platform efficiently while maintaining compliance and reliability. Fundamentally, the client's system lacked the flexibility, scalability, and stability necessary to support long-term growth. To address these issues, the client needed a healthcare technology partner with deep expertise in HIPAA compliance and PHI security to enhance their web and mobile applications.

- ✔ Short-term product vision, leading to performance gaps
- ✔ Existing solution does not comply with HIPAA and PHI Security standards
- ✔ Challenges with interoperability with hospital systems
- ✔ Desire to improve user experience across platforms
- ✔ Architectural limitations



## Technology Environment

Telliant recommended and utilized the most suitable tech-stack options to ensure ease of maintenance and upgrade.

### LANGUAGES

- Web Application - PHP
- X Code
- Laravel Database - Postre
- SQL Mobile - React Native

### PLATFORMS/SERVERS

- AWS

### TOOLS

- HIPAA
- FHIR
- GDPR
- HL7
- ABBY FineReader SDK

## About Us

Telliant Systems, offers a diverse selection of custom software product development services, such as product strategy, software design, application development, QA/Testing, and application management services. Expert teams are available to develop web, enterprise, and mobile applications, including iOS and Android development.

## Solution Highlights

Through project scoping, Telliant defined a highly stable, scalable web and mobile application built with new workflow, encryption, and compliance functionalities for a long-term product strategy. Updated cloud infrastructure for increased scalability and application performance.

- ✓ Improved User and Enhanced Multi-Tenant, Role-Based Security.
- ✓ Simplified Appointment Scheduling and New Patient Creation.
- ✓ Workflow Improvements between Hospital, Admin, Provider, and Patients for Error Detection and Prevention.
- ✓ Implemented HIPAA, PHI, and GDPR Compliance Protocols.
- ✓ Improved UX/CX Customer Experience in Web and Mobile Applications.
- ✓ Incorporated AES-256, TLS 1.3 Data Encryption, and TDE for Database Encryption.
- ✓ Admin Portal Improvements for Beneficial Organization Management
- ✓ New Analytics Reporting for Tracking Errors and Care Quality.

## The Results

The app. was successfully launched within the 3-month timeframe, supporting a much larger concurrent live user base without performance degradation.

The enhancements in customer experience and workflow optimization had marketable effects on internal and external users. The compliance challenges were solved. The application offers much more multifaceted logic, and the workflow is improved. Future-ready architecture to support feature expansion.

