

Case Study

High Performance Personal Health Record Solution with Advanced Interoperability and User Experience

The Client

In 2013, this Personal Health Records (PHR) solution provider set out to improve care coordination for chronic illness patients. They developed a secure digital platform that enables patients to manage and share their health data via a web or mobile app while providing healthcare providers with a web-based system for practice management and patient communication.

The solution incorporates a secure provisioning model for protected medical record exchange, enhancing interoperability and streamlining chronic care management.

The Problem

In an effort to expand their market presence and better meet patient needs, the client hired a company to help them develop a Health Information Exchange (HIE)-enabled Personal Health Records (PHR) solution.

However, development stalled due to a lack of healthcare domain expertise. The client prioritized deep healthcare knowledge and technical capabilities in their search for a replacement vendor to drive the project to fruition. By ensuring it was highly scalable and interoperable.

Key requirements for the project included:

- ✓ Challenges with interoperability between providers and the application.
- ✓ Mobile and web apps need the same capabilities.
- ✓ Require complete CCDAs data transfer into the web and mobile applications.
- ✓ Client's customers will have ability to white-label the application.



Technology Environment

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

LANGUAGES

Mobile Technology

- Xamarin F.W.
- MVC Cross Architecture
- Xamarin Android
- Xamarin iOS
- XCode

Web Technology

- .Net Entity F.W. 4.5
- MVC.NET 5
- C# Web API
- Microsoft SQL Server
- Java, jQuery, Bootstrap

PLATFORMS/SERVERS

- Elastic Beanstalk
- RDS
- Cloud Trail
- Cloud Watch
- S3

TOOLS

- Microsoft Visual Studio 2019
- iOS - Simulators with XCode
- Android – Emulator: Xamarin installer
- Microsoft SQL Server 2014 Mgmt Studio
- Mirth tool for HL7 conversions to FHIR

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

Telliant led the project scoping by thoroughly reviewing the product. The review revealed that extensive improvements to the basic architecture were needed to create a robust, scalable web and mobile solution incorporating enhanced API connections with provisioning.

The new app will collect, store, and share patient records with better workflows, advanced encryption, biometrics, and compliance features to support market growth and stability.

- ✓ Datamotion and HPD APIs are used to achieve advanced HIE goals securely and Mirth tool to convert HL7 to FHIR in AWS.
- ✓ Advanced tenant and subtenant provisioning
- ✓ White Labeling for customer customization.
- ✓ Improved CCDA data collection, storage, and sharing.
- ✓ Enhanced biometric security was built to secure mobile and web-based applications.
- ✓ “This is Me” feature for emergency sharing.
- ✓ Encrypted data at rest, configured using T4G instances, to support HIPAA security reqs.

The Results

The HIE-enabled PHR was launched 4 months later– under budget. The new applications resulted in a 65% increase in app downloads and a 50% increase in subscriptions.

The automated transmission of medical records from provider to patient expanded usability between more providers. Reading and transferring CCDA file data and complete medical records benefited both patient and provider with a more complete solution for communication and information sharing.

Both web and mobile apps experienced enhanced scalability and application performance improvements to handle their higher subscription rates.

