New SaaS Health Startup Looks to QAT Global for Custom Application Development Project

Streamlined Workflow, Design for Regulatory Compliance & Usability, and Robust Architecture Key Success Factors

Customer Snapshot
- Health Solutions Provider
- SaaS Startup

Solution Snapshot
- New .NET SaaS custom application development project (deployed to Amazon Web Services)
- Original solution developed in 15 months (15 4-5 week sprints) from concept to production with 5-person offshore development team plus a US-based Solution Architect
- Brazilian resources used for development and testing
- Is a completely internationalized Web – Rich Internet Application (RIA)
- HIPPA and PCI Compliant
- Integrates with multiple third-party solutions, including National Provider Information Registry, document service, transactional email service, payment processing, and chat service
- Highly intuitive with a streamlined workflow
- Leverages open-source technologies
- Highly cost-effective
- Long term relationship with multiple releases to production planning over several years

Key Differentiators
- Brazilian Offshore capability
- Multi-location team
- Agility RPM
- Scrum Methodology and Project Management
- Established .NET Coding Standards, Tools, Architecture, Training, Best Practices and Processes
- nDaptive Application Framework
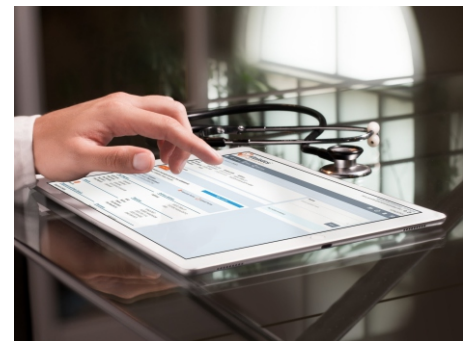- Small consulting company focused on the success of the customer

The Client and the Challenge

Vitalistics is a SaaS healthcare startup that recognized the opportunity to act on the upward trend in home sleep testing and pulse oximetry testing due to recent changes to the Affordable Care Act and Medicare mandating an intermediary to independently coordinate between physicians and DME suppliers. They desire to improve the quality of life for those who suffer from cardiac and respiratory modalities by being a national provider of diagnostic medical data. Vitalistics developed a plan to become a Medicare approved Independent Diagnostic Testing Facility (IDTF) and approached QAT Global with their idea for developing an easy to use platform for Durable Medical Equipment Companies (DME) and physicians to assist in qualifying Medicare insured patients for home oxygen and for ordering home sleep testing for all insured patients.

The web-based software application needed to manage test workflow to create efficiency, streamline processes, and ensure regulatory compliance in a user-friendly way. It also needed to be able to process the raw patient test data and create a comprehensive report that was automatically sent to the referring physician.

QAT Global's Approach

QAT Global assisted the customer in the requirements gathering and documentation process. Many meetings were held to brainstorm and develop wire-frame mock-ups of the web pages. One of the key challenges facing the development team was that this was a new custom application development project where the most commonly used oximeters currently being utilized in the industry each required decoding the data stream from each oximeter manufacturer without the benefit of documentation.

Over time, requirements were developed from a comprehensive assessment of competitive solutions and client meetings and design and implementation was under way. To provide the client with the optimal team for their project while keeping costs in mind for the startup, a development team was created that consisted of resources from both QAT Global's US and Brazilian teams. The customer enjoyed the benefits of working with a local solution architect throughout the project and a nearshore team that provided the required expert

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technical skills to deliver on their project at a great rate with the convenience of minimal time zone differences.

The requirements lead to a solution included three-components, which elegantly addressed the oximeter challenge and delivered the desired ease of use for the target market, that would become known as ODIE.

- ODIE Connect - ODIE Connect is primary component of the platform, serving as a home base for ordering and processing overnight oximetry and home sleep tests. It is a web-based application that includes a streamlined workflow for all types of users, automated alerts, role-based user dashboard, integrated faxing, online customized forms, and reports.

- ODIE Sync - ODIE Sync is a desktop tool that makes it easy to transfer a patient's oximeter test data into ODIE Connect for oximeters that require the use of a USB transfer cable/serial port.

- ODIE GO - ODIE GO is the planned future mobile application that will put the power of the ODIE system in the user's palm.

In effect, QAT Global co-designed the solution alongside the customer over the course of the project. The customer joined the development team in daily SCRUM meetings. These meetings provided continuous project statuses updates along with regular demo's showing progress within each sprint.

The result was a solution which includes:

1. Complex page designs and work flows that manage interactions between the Durable Medical Equipment companies (DME's), Physicians, and Vitalistics

2. Capability to directly fax in/out of Vitalistics system enables DME suppliers direct access to ordering physicians, saving them time and money

3. Auto-population of forms eliminates healthcare providers from having to manually populate each form, saving time and reducing errors

4. Physician directory that auto-populates based on registered National Provider Identifier number

5. Automated tracking system allowing DME providers to follow progress of each patient, with email reminders for important milestones

6. Bar coding of documents for ease of filing, retrieval and inspection

7. Cloud based system allowing healthcare providers to access patient data from anywhere

8. HIPPA compliant system that uses single sign on and ClickOnce technology to deliver users with optimal ease of use

9. Low-cost office version that enables DME providers to service and track patients not requiring IDTF services

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At a Glance

Skills Used
- .NET Framework
- WebAPI
- MVC Web
- Azure SQL
- PowerBI
- SQL Server
- Amazon Web Services

Technologies Used
- Windows 2012 R2 Server hosted in AWS as a Web Host
- Windows 2012 R2 Server hosted in AWS as a Database Host
- Azure SQL Instance holding replicated data, used for reporting
- PowerBI for Analytics/Reporting
- .NET 4.5.1
- Microsoft MVC5
- Microsoft WebAPI
- Microsoft ClickOnce
- OAUTH
- Team Foundation Server (Version Control)
- Team Foundation Server (CI Build/Deployment)
- QAT nDaptive Framework
- Dapper ORM
- Enterprise Library 6 Logging Application Block
- Enterprise Library 6 Exception Handling Block
- Enterprise Library 6 Unity Application Block

Integrations
- Sharefile (API integration with Citrix file management system)
- UpDox (API Integration with Fax services)
- Stripe (Plugin/API for Payment Processing)
- LiveChat (Plugin live support chat)
- NPI Registry (National Provider Identifier ETL)
- SendGrid (API Integration for transactional emails)

Team
- 5 developers
- 1 Architect
- 1 UI/Designer
- 4 Product Owners

About QAT Global

QAT Global is a global information technology (IT) services company providing Agile-based software development, IT consulting, technology and distributed development services. We pride ourselves in being a leader in the delivery of enterprise business solutions through the innovative use of technologies such as Enterprise Java and .NET as well as Open Source components.

QAT Global focuses on delivering business results by helping clients find ways to capitalize on change, leverage emerging technologies effectively, and out-innovate competitors through collaborative engagements. The company leverages an enhanced global delivery model, innovative enterprise development framework for distributed environments, repeatable process methodology based in Agile and Scrum, multimedia communication tools, and deep industry expertise to provide high-value IT services. This approach enables its clients to improve their end user's experience, expand market reach, improve time to market, and reduce operating costs and risks.

QAT Global serves government agencies, companies ranging from early stage startups to Global 2000 companies, and leading software vendors.

Founded in 1995, and headquartered in Omaha, Nebraska, QAT Global has operations in the United States and Brazil.

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The operational software application developed streamlines workflow operations, eliminates paperwork, and provides all users with intuitive and easy to use management software.

Technical Details

- Windows based application responsible for communication with Oximeters (ODIE Sync). QAT was given 5 different hardware devices, and developers were required to deconstruct the data stream without SDKs or documentation. This application was extended to then upload the data to a backend server for processing. The application is written in C#, and distributed via ClickOnce.

- A Windows Service managed polling process that allows for scheduled tasks to be performed in a web environment, like checking for new faxes or getting fax delivery updates (Poller).

- A .NET MVC Web Application front-end utilizing OAUTH tokens for shared authentication with the WebAPI backend (ODIE Connect)

- A WebAPI back-end that services ODIE Connect, Poller, and ODIE Sync

- A SQL Server database for operational data

- An Azure SQL Instance for reporting data

Need more information ?
Please visit our web site www.qat.com, or contact sales@qat.com