daffodil

Success Story

Developing tele-health mobile application for a US-based healthcare tech firm

VivoDoc

Client:
VivoDoc

Industry:
Healthcare

Country:
US

Our Role:
Software Product Engineering

About the Client

VivoDoc is an online appointment scheduling platform that connects patients with top specialty physicians in the United States. The two-way telemedicine platform enables patients to reduce the wait time and helps to avoid physician burnout.

The healthcare marketplace has its presence in major cities of the United States and is continuously expanding to cater to a large user base of the country.

Key Facts

1000+ practitioners onboard	**60+** specialities	**HIPAA** compliant software

Services Used

🖱️ **Software Engineering**

Technology Stack

- ANGULAR
- node JS
- React Native
- PostgreSQL
- athenahealth
- kubernetes
- Google Cloud Platform
- dr chrono

The Situation

The average wait time to schedule an appointment with physicians in the United States is 24 days (and this varies based on the city and practice that a patient is looking for). Moreover, the healthcare system at the providers' end confronts several challenges such as Physician burnout, Fee-for-Service (FFS) Payment Model, and patient no-shows, etc.

VivoDoc had the idea to overcome these common yet crucial issues in the healthcare system. To convert this idea into a market fit solution, the client was on the look around for a technology partner who could help them with strategy, technology, architecture, time-to-market, and other related aspects of development. The telemedicine solution was expected to do the following:

- Allow patients to check physicians within the vicinity, view their available time-slots, and book them.

- Enable patients to check for insurance coverage before the appointment schedule. This also ensures that the providers or physicians do not face reimbursement issues.

- Integrate with third-party EHR platforms (Athena Health and Dr. Chrono) so that physicians can focus on their jobs (rather than patient information or history).

- Enable providers and physicians to manage the revenue cycle and other marketing components related to their care business.

The Solution

Team Daffodil, on understanding the app requirements proposed a development roadmap to VivoDoc. This included recommendations for a cloud architecture (with the most relevant managed cloud services), technology stack, third-party integrations, security factors and compliances, best development practices for faster time-to-market, and some must-haves that could give an edge to their app idea.

Using React Native, Angular, and NodeJS as core technologies, a mobile and web application was developed that aims to reduce the patient-physician appointment booking time. The web and mobile applications were developed with 4 user roles such as Patient (Mobile & Web), Physician (Mobile & Web), Admin (Web), and Super Admin (Web).

VivoDoc for Patients: The app allows patients to check the physicians in the vicinity, their available time-slots for an appointment, and book them online. The solution help patients to make informed choices with verified reviews by other patients and schedule appointments either in-person or through a video call (with a multi-specialty consultation facility).

VivoDoc for Physicians/Providers: The app allows physicians/providers to get onboarded with multiple practices and meet potential patients looking for their services, thereby increasing the efficiency of their practices.

VivoDoc Admin/Super Admin Role: The admin and super admin (depending upon the permissions) can have a bird' eye view of the practices on the platform. This includes the number of bookings through VivoDoc, count of practices onboarded, number of providers, type of subscription plans, etc.

Account Management

- **Microservices Architecture:** The application codebase was expected to become complex as the development progressed. To maintain scalability and fault isolation, the microservices architecture was adopted. By dividing the application into independently deployable, small-sized modules, the complexity of the codebase was reduced. Moreover, executing changes to small, independent modules offer space for frequent updates in the app.

- **Security Compliance:** The application stores sensitive patient health information (PHI) and thus to protect the data from any unauthorized use, the HIPAA compliance rules were followed.

- **EHR Integration:** To help physicians/providers maintain an electronic record of the patients and ensure interoperability of this data, the software was integrated with third-party EHR platforms (Athena Health and Dr. Chrono). Team Daffodil overcame the challenges associated with this integration, including complex onboarding process, trouble with API integrations, practice & provider level synchronization in both the EHR platforms.

- **Powerful Search Engine:** The search engine in the application is powered by elastic search, wherein, a number of permutations & combinations were applied to offer the most relevant output to the patients. With elastic search, it was ensured that irrespective of the load on the search engine, accurate and quick results are offered to the users.

- **Visibility of Available Slots:** Team Daffodil used the cache mechanism to ensure that the patients are able to check the recently updated slot of the physician.

- **Insurance Verification:** Patients are provided with the option to check their insurance compatibility with the physician or the provider at the time of booking. This is done using the pVerify service at the backend so that patients are ascertained that the insurance supports the selected physician/provider.

- **Payment to Practitioner:** Team Daffodil did thorough research to figure out a payment solution where the payment is directly done to the physician or the provider's account. For this, the Express service by Stripe was utilized.

- **Cloud Infrastructure:** The entire infrastructure of the application is hosted on the Google Cloud Platform. Team Daffodil utilized the best of GCP services for improved application performance.

One of the prime advantages of using GCP in this healthcare project was HIPAA-aligned workload. The workload contained various recommended security configurations related to role-based access control, data protection and retention, audit logging, monitoring, etc.

The Impact

The client has been extremely satisfied by the way Daffodil has executed the entire project. The client was able to launch the solution in a timely and desired manner as Daffodil ensured that the deliverables were provided on time while maintaining the utmost quality. Daffodil has been providing extensive technical support to the client to maintain their app and plan for new features and updates.
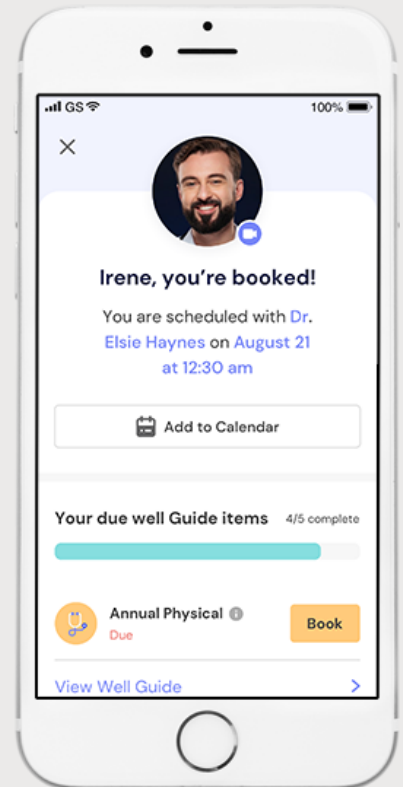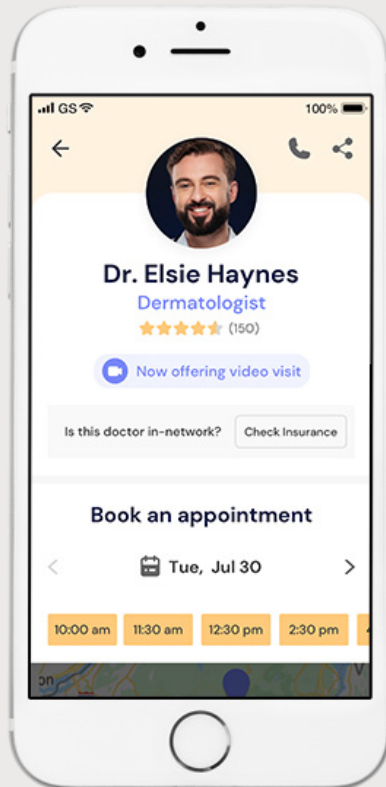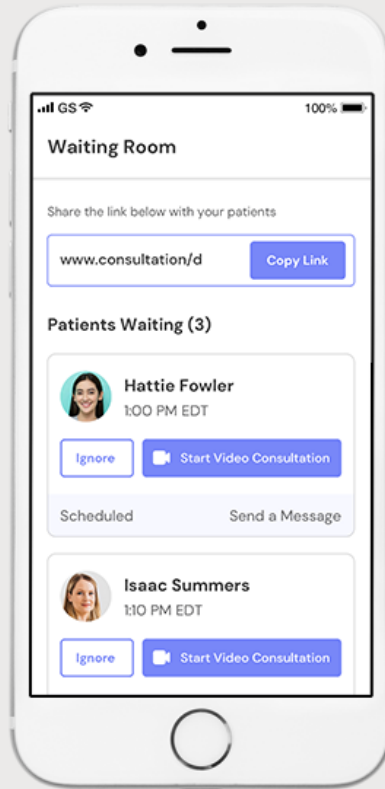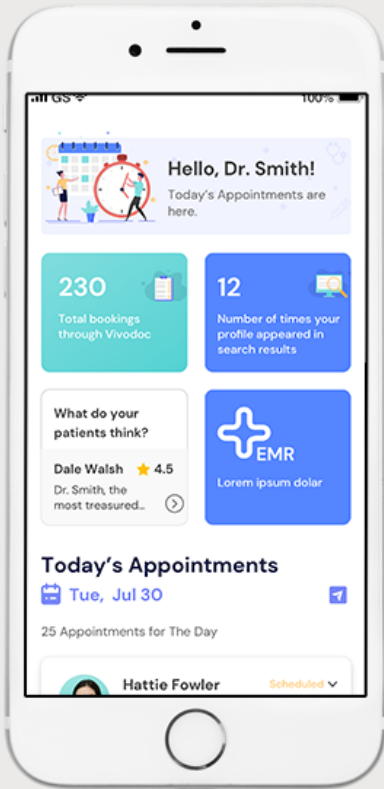
About Daffodil

For more than 20 years, Daffodil Software has been a trusted software technology partner to organizations across the globe. We take pride in our ability to look beyond technologies & deliver innovative solutions.

Daffodil is a CMMI level 3 accredited organization with innovation, tech agility & process orientation rooted deep within the core. Our team of 1000+ technologists strive to shape the tech industry and help businesses elevate their value proposition through technology.

Technology Partnerships & Certifications

Microsoft Partner Silver Application Development partner	**Google** Cloud Premier Partner	**aws** partner network
Microsoft Partner Silver Collaboration and Content	UiPath Partner Robotic Process Automation	PubNub®
CERTIFIED ISO 9001:2015 COMPANY	ISO 27001:2013	International Organization for Standardization ISO 20000

Awards & Accolades

Deloitte. Technology Fast500 APAC Winner	IT EUROPA EUROPEAN IT & SOFTWARE EXCELLENCE AWARDS	zinnov ZONES	Great Place To Work® Certified INDIA
W mobilewebaward 2020	INDIA'S MOST ADMIRED BRAND 2020 INDIA'S CHOICE	CMMI level 3	THE ECONOMIC TIMES Bt b BEST TECH BRANDS 2021

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