



Case Study

# A HEALTHY SPELL OF LOW-CODE TECHNOLOGY



A passionate team of healthcare software developers carve a niche for themselves and build custom solutions for their customers with the help of low-code

Tailor-made sophistication  
For every customer

7+ Developers

1000+ Daily users

3 weeks Onboarding

5+ years Client engagement

“

WaveMaker is one of those platforms that delivered beyond the intro video. It helped us build serious real-life applications that are being used by 1000+ users to better patient care. Without any hidden costs.

”

Chandana Weerakoon  
CTO, Medical Wizard



The Company  
Medical Wizard

Industry  
Software (Healthcare)

Location  
Melbourne, Australia

# SNAPSHOT

## Business Scenario

- The Healthcare industry's ever-changing landscape required constant innovation and the ability to be nimble in developing digital solutions
- As an ISV catering to multiple clients, Medical Wizard needed a flexible Rapid Application Development (RAD) platform to add business value and automate repetitive work, with no vendor lock-in
- The adopted application development platform must be intuitive for their team of professional developers with a minimal learning curve making it easy to groom and retain diverse talent
- The team had to rapidly build applications that are enterprise-grade secure (comply with Govt. patient data security standards)
- Collaboration with health care professionals in terms of focus group discussions was impossible due to their busy schedules. Rapid prototyping was the only solution to collaborate with busy healthcare professionals



## Solution

- Quick prototyping and iterative development of new products based on end-user feedback using a low-code platform
- Modernizing legacy applications by interfacing with existing databases and applications through WaveMaker



## Results

- Three highly customizable and integrated modules catering to the healthcare industry were built from scratch
- Positive developer experience working on an open standards-based platform like WaveMaker, helping retain and attract good engineering talent
- Onboarding of new developers to the Wavemaker platform with minimal training within a week
- 5+ years of WaveMaker as a platform of choice evolving to a self-service model
- Ingrained security in all applications in adherence to government regulations
- Device agnostic solutions that provide information to healthcare professionals anywhere anytime
- Complex data entry workflows simplified and made paperless



Medical Wizard is an Independent Software Vendor (ISV) providing digital solutions to the healthcare industry in Australia for the past 25 years. The company has gained an impeccable reputation for providing the most comprehensive, progressive, and customizable digital Electronic Medical Record (EMR) solutions to over 130+ Day Hospitals and specialist suites across Australia. Medical Wizard focuses on building robust and modern clinical solutions for the healthcare industry which are in sync with the dynamics of the business environment and adhere to legislative and compliance requirements. The company aims to provide healthcare organizations the ability to manage their entire administrative and clinical operational workflows and therefore need to respond with accelerated agility to the client's workflow.

## BUSINESS SCENARIO

Health care professionals consisting of doctors, nurses, and medical workers have to treat a growing number of patients with limited resources. To aid them digitally, software vendors such as Medical Wizard need to innovate constantly to be ahead of the game. Rapid prototyping and iterative development helped in catering to the changing needs of healthcare professionals. To meet this requirement, Medical Wizard had been researching on low-code tools that could:

- ◆ Modernize with minimal disruption
- ◆ Mitigate business risks of platform vendor dynamics
- ◆ Manage and control development costs
- ◆ Provide deployment on-premise as well as cloud
- ◆ Be device-agnostic and rich in functionality

In this regard, Medical Wizard had a few challenges and parameters which had to be taken care of before it could undertake the development of its suite of products.

- **Modernization of legacy applications**

They needed to modernize their applications by reusing existing databases and legacy applications. They needed an intuitive, flexible but structured development platform that could abstract the mundane tasks to rapidly prototype based on client workflows.

- **Security of data**

Medical Wizard is responsible for the safety of all patient data stored in its databases and the resulting data flow and processes. Safety and security of patient information in the above products are paramount as legislated by the Australian government.



• **Legal compliance**








The stringent compliance requirements of the medico-legal framework in Australia in relation to patient safety and care mandate that all caregivers document and record the treatment process precisely. The responsiveness of the clinical module is therefore of prime importance. Additionally, the ability to deploy on different form factors such as desktop, mobile, tablet, and mobile was crucial.

• **Lean team of professional developers**

Medical Wizard has a lean IT team with around 7+ professional developers. They were averse to using any platform that conformed to vendor lock-in and proprietary code. Talent acquisition and retention based on a singular proprietary technology was a roadblock in building a better IT team.

## SOLUTION

In its journey to find a suitable development platform, Medical Wizard discovered WaveMaker Teams. In comparison to other platforms, WaveMaker Teams scored high on

 <b>Flexibility</b>	 <b>Seamless collaboration</b>
 <b>Security</b>	 <b>Affordable developer-based pricing</b>
 <b>Scalability</b>	 <b>Minimal onboarding time</b>
 <b>Code control</b>	

“  
*We looked at other offerings but picked WaveMaker primarily because of the flexibility it offered for software platform developers like us*  
 ”

Medical Wizard has been using WaveMaker to modernize its applications one step at a time. Primarily, by reusing the existing databases to read and write information to the web and legacy applications. A simple User Interface (UI) abstraction layer interfacing with the database created with WaveMaker was reused across applications to talk to data.

## RESULTS

Medical Wizard chose WaveMaker as its low-code partner in building meaningful products for the healthcare industry. Here are some benefits from this partnership.

- **A portfolio of product suites**

The Medical Wizard team built 3+ modules that are fully integrated and customizable for customer needs -- Theatre management app, patient portal, and a mobile app for doctors to capture images, make notes, and view patient records

- **Quick and easy customizations for clients**

They could easily integrate with external data, and also quickly respond to client workflows by using custom components. For instance, they could paint a quick UI by just using HTML. Being able to edit something in HTML and translating it into a UI widget is a powerful asset. This helped developers focus on core logic while abstracting the mundane. Also, they were able to add many JS libraries easily with effective results

- **Acquiring and retaining engineering talent**

WaveMaker's developer-centric features and open standards architecture helped build a team of diverse technical backgrounds. The platform was intuitive and helped onboard people quickly with a minimum learning curve. For 5+ years now, Medical Wizard has been working with WaveMaker on a self-service model with minimal support required.

“  
*The WaveMaker support team is fantastic. The team is eager to assist us and provide solutions to developer queries and issues real quick*  
”

- **Incorporating code security controls**

With out-of-the-box features on the platform like authentication, fine grain, and coarse grain authorization and protection against cross-site scripting, brute force attacks, and other vulnerabilities ensured that patient data is safe and secure. This allowed them to adhere to Australian healthcare regulations and policies.

- **Affordable and transparent licensing model**

WaveMaker offered a developer-based licensing model with no limits on the number of applications built or the number of end-users. This proved to be a sustainable model for an ISV enabling them to scale seamlessly.

- **Control over code**

The window of access given to the code (no lock-in) was just right for their use cases providing greater scalability and customization.

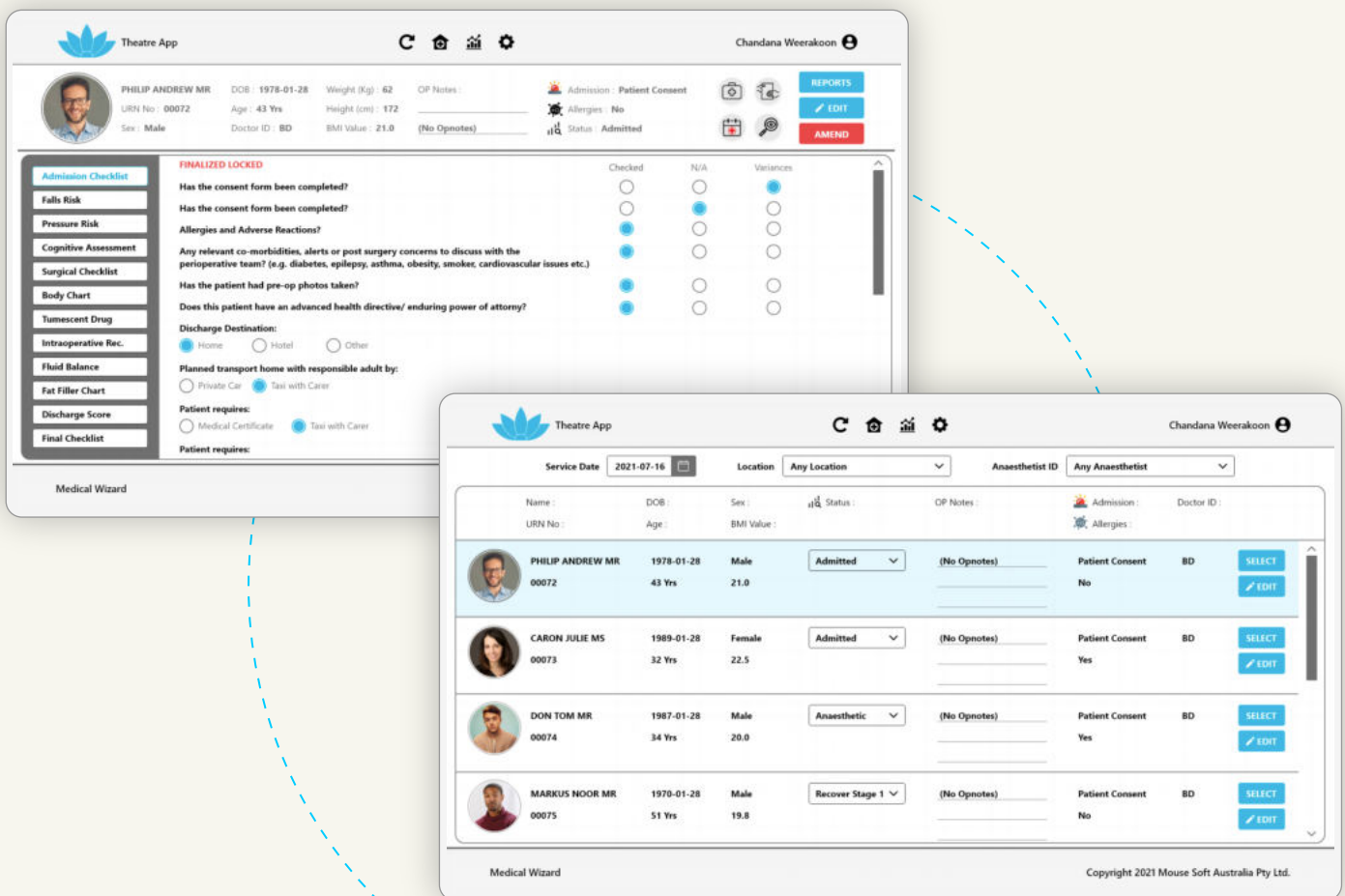
- **Multi-device, responsive applications**

Wavemaker enabled applications for mobile, desktop, and tablet making information and data accessible to healthcare professionals and patients anytime anywhere.

### • Legal compliance

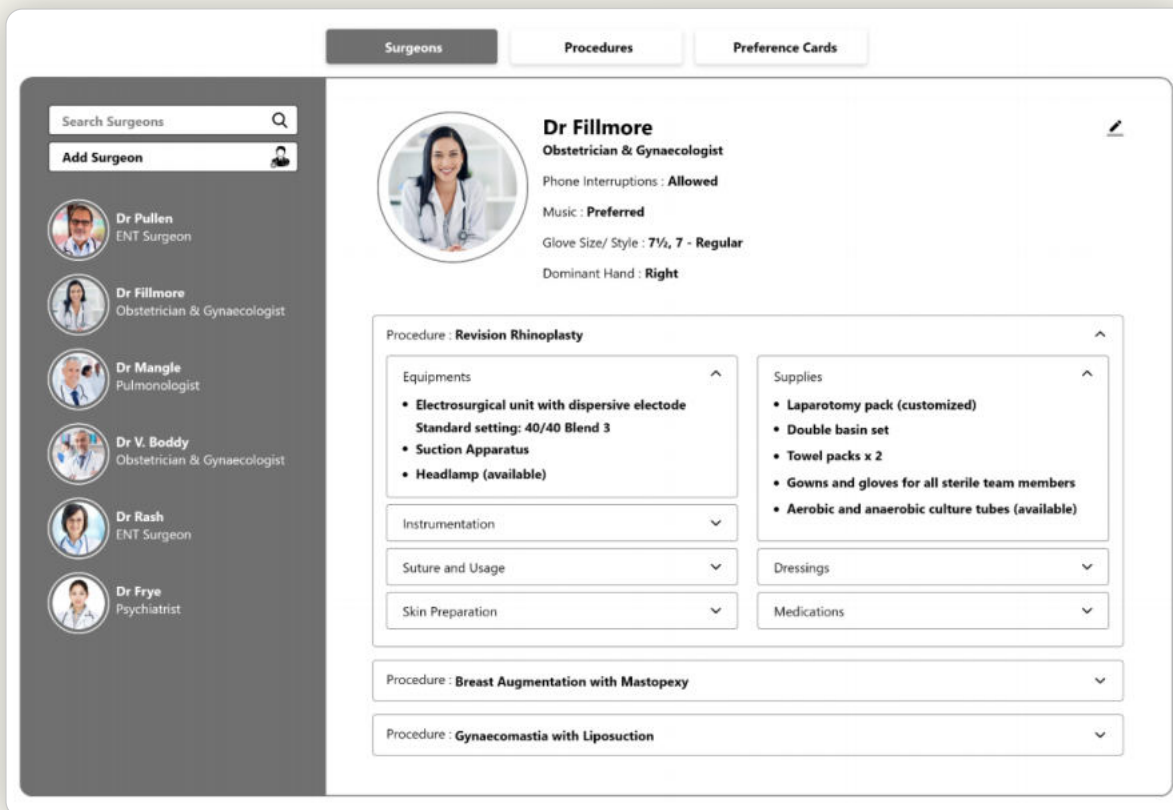
Applications were made more responsive to ensure legal compliance and better user experiences by capturing information effectively. To ensure responsiveness, features such as automatic patient deterioration alerts, adverse event tracking, and process audit reports were built into the application.

The Theatre Management Application is an intranet-based application that is designed to manage the entire patient journey seamlessly from the point of pre-admission consultation right through to patient discharge and post-op follow-up. Through an extensive rapid prototyping process, this application was iteratively developed to make it simple for use while providing rich functionality with solid safety and security baked into the product from the ground up. The application is device agnostic and can be used on tablets, touch-enabled devices as well as desktops. Clever design approaches that mimicked the paper forms provided the user with a familiar layout while leveraging the benefits of an electronic system. This allowed users to onboard easily without intervention and prior training.



Medical Wizard was able to add important and relevant features into this application such as:

- Patient record management
- Provide web and mobile access to the application
- Custom authentication for health providers using a unique PIN entered using a dialer
- Paperless smart admission forms for patients
- A signature pad for patient consent
- Patient vitals tracking and monitoring backed by automated alerts on triggers
- Patient history dashboard
- Individual event and handover tracker
- Report generation



All this could be achieved while adhering to medical regulations and compliance. The signature component using jQuery was incorporated within just an hour.

**Medical Wizard Patient Portal** is a patient-facing application that is used by many Medical Wizard clients to vastly improve patient engagement and collaboration. The use of this application has resulted in significant savings in staff costs all the while improving the quality of data gathering and patient care across the board. A Remote Execution Server (RES) is used to obtain information from the related backend which is then sent to the server requesting the information. Medical Wizard can customize the patient portal based on each customer's unique workflows, which is not just limited to branding but is also data-driven. What is remarkable is that no additional effort was required to create the data flow per customer.

Medical Wizard is now in the process of creating new applications like the clinical record application with WaveMaker. They are also in the process of upgrading a mobile-based application to capture photos, notes, and full clinical details of patients. Their plans include launching a complete cloud-based clinical module as a separate offering.

With WaveMaker, Medical Wizard leverages low-code for more than just speed, it also offers them easily customizable solutions without compromising on security or scale. With its roots firmly in the ecosystem of open standards, Wavemaker in partnership with like-minded and passionate customers like Medical Wizard is changing the way software is crafted.

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To know more about how you can bring customization into your digital journey  
write to us at [info@wavemaker.com](mailto:info@wavemaker.com)

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