

Legacy Software Modernization For BioTech

How **modernization** of a legacy system and implementation of **real-time dashboards** empowered a leading BioTech manufacturer to accelerate drug development by **100+ days**, enabled **remote monitoring and control** of pharmaceutical production, and cut down onboarding of new hires **from three days to six hours**.

Industry:

Biotech

Duration:

6 months

Team:

four web-developers, UX engineer, QA engineer, and a project manager

Challenge

Market leaders need to continuously advance and innovate their products' software using modern technologies. Otherwise, their achievements can be ruined due to the high level of competition.

The software our customer uses for controlling the production process of medical treatments has a particular control module for administration, monitoring, and analysis. The problem was that this complex three-component module only had a desktop version. Old legacy code added even more complexity to the project and hindered software modernization and the implementation of new features.

At first sight, the requirements set for the project development team were quite clear, and the estimated time for the deployment was pretty short. The *instinctools team organized a [Discovery Workshop](#) with customers' representatives to prevent surprises. When diving deeper into the technology stack, the datasets the customer used, and other software details, our engineering team discovered new challenges that implied a different approach to solution delivery was needed.

First of all, the architectural approach of using NATS as a messaging system, selected for the existing solution, complicated and slowed down the development process and couldn't enable fast and real-time access to the data via web browser apps.

The challenge was related to the Pathfinding algorithm that wasn't appropriately described to repeat the work of the outdated application.

Solution

*instinctools engineering team of four web-developers, UX engineer, QA engineer, and a project manager were working on the project for six months. They managed to reverse-engineer the legacy code, going through more than 1,000 rows from XML files manually to understand the actual logic of the module and how the graphs and tables were built and organized.

In coordination with the back-end development team, *instinctools' engineers built the front-end part of the web application from scratch. We also implemented a modified Pathfinding algorithm that enabled us to embody the look and feel of the old application in the new one. Our experts compiled the NATS library using alpha source code from the repository and implemented numerous fixes to ensure everything worked as expected.

According to the project requirements, the *instinctools team enabled smooth application updates in real time using WebSocket and crafted a user-friendly design following the customers' brand book guidelines and tech specs.

The web application we built for a controlling module allowed its users to seamlessly monitor and control the process of medical treatments production on the manufacturing device directly or remotely. The user-friendly interface with real-time information updates helped administrators smoothly track and manage module operations and quickly react to potential issues.

With a new code written to modern standards, our customer will implement new features and modernize the application faster.

Key features

- Real-time updates on the dashboards in controlling, monitoring, and analysis components of the module;
- Visualized and structured data;
- Web access via a compatible browser;
- Responsive user interface and renewed corporate design.

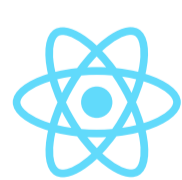
Business Value

The newly modernized process visualization module with increased performance and quality allowed our client to reduce employee training time and improve their workload efficiency. The final solution gave the company's customers the ability to easily integrate the visualization into any hardware capable of showing web applications.

Real-time dashboards and visualizations, accompanied by an intuitive user interface, allowed system managers to control the manufacturing process, reducing industrial incidents effectively.

The updated product, complete with the new functionality implemented by the *instinctools team, allowed our client to innovate faster and remain a market leader in its niche.

Technologies



ReactJS



Nats.io



Microsoft Azure DevOps



Figma

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