â â



PRODUCT BUILD | QA | UX | APPLICATION MODERNIZATION Major Property Rental Provider: Scheduling

Real Estate

Our client engaged gravity9 in providing a vast modernization of internal and customer-facing digital systems, intending to become a genuinely digital-first operator in the American property rental sector.

This case study looks at one such modernization project to improve the client's scheduling tool. Schedulers use this tool internally to manage maintenance technicians in the field, who are tasked with the repair and upkeep of the client's property portfolio.

Several issues became apparent when gravity9 reviewed the old version of the scheduling tool, including inadequate data on work orders and oversight of technicians and their work. The issues caused frustration for schedulers and customers needing their homes' maintenance issues to be met, unnecessary travel time for technicians, and business costs that could have been avoided.

gravity9 consulted with schedulers, understanding their pain points before creating low and high-fidelity concepts and workflows to show a better way of working. Development took place based on these plans, and the finished scheduling tool successfully provided real-time information and tools to prioritize maintenance work orders, task technicians to these orders, and manage their routes effectively.

The tool has reduced technician inefficiency, improved the scheduler's toolkit, and improved the customer experience, allowing homeowners' issues to be resolved in a more prioritized way.



Utilized Technology Stack

Cloud: Microsoft Azure Database: Microsoft SQL, CosmosDB Backend: Microsoft .NET, C# Frontend: ReactJS, Typescript

Other: Azure Service Bus, Event Hub, SignalR, GoogleAPI, Microservices

Review of Challenges

Our client is one of the largest suppliers to the property rental market in the United States. They selected gravity9 to consult and enable a wide-scale program of modernization across their business as part of a pivot to embrace technology and pioneer a digital approach to business in the property market not previously seen. This case study addresses just one part of that larger initiative.

The client's portfolio exceeds 55,000 properties, and maintenance technicians are dispatched to review properties at the end of rental terms or to carry out scheduled work. The client's scheduling tool manages that process and is used internally by client-employed schedulers; however, the previous version of the tool had severe issues. For example, there was no way to see how long a maintenance work order had been open, its severity, priority, or type. There was also no single way to track technicians and understand where they were (or for how long) or if other technicians were in the area to assist, if needed, with one tool.

These issues can combine to result in confusion, inefficiency, waste, and a frustrating customer experience, which could result in financial loss for the business and damage to its market reputation. For technicians, poor scheduling resulted in excess windshield time—unproductive time spent traveling that did not impact urgent customer needs.

"(gravity9) has simplified scheduling from a complexity of 10 to a complexity of 1."

Our Solution

Following extensive requirements gathering, iterative wireframing, interactive prototyping, user testing, and subsequent development, gravity9 provided the client with a bespoke, modernized solution that provides schedulers with real-time information about both work orders relating to client properties and maintenance technicians operating in the field, all against an attractive yet easy-to-navigate user interface.

Relevant information can be plotted visually against geographical maps integrated with Google Maps APIs that show the locations of client properties, open work orders (including information about those orders), and technicians operating at any given work order or traveling to work (including a visual representation of the optimal route to the site).

The result is a powerful tool for optimizing technicians' work priorities against their skill sets and even drafting additional technicians nearby to assist in completing an urgent work order more quickly. Technicians' time wasted traveling unoptimized routes to work is vastly reduced.

Schedulers have all the tools and information they need to efficiently manage property maintenance, maximize the use of available assets, and minimize frustration and discomfort for rental customers.

Our Approach

To modernize a complex tool that wasn't meeting its users' needs, gravity9's UX team stepped back and started by consulting those same users – the client's schedulers - to understand their needs from their perspective and how they would work with a tool built with them in mind.

The team then built high-level flows and low-fidelity mockups, incorporating all necessary data the user required to schedule, make decisions, and plan optimum routes for maintenance technicians in the field. With their approval, high-fidelity mockups were created to illustrate the finished tool and its functionality before development began. As development progressed, additional functionality was introduced: real-time event capture for display on maps within the tool, allowing work orders and technicians' progress to be tracked and understood both as data within the tool and visually against a map, thanks to integration with Google APIs. Routes were recalculated after the completion of work orders to get a more accurate time of arrival based on new traffic conditions. C# and .Net were used for backend functionality, while front-end development leveraged ReactJS and Typescript.

Subsequent Outcomes

gravity9's work on the scheduling tool has proven invaluable, successfully providing the client's schedulers with better tools to plan and manage work orders and more efficiently work with maintenance technicians in the field to maintain the client's properties, even tasking multiple technicians in the same area to speed up time-to-completion.

Technicians working on client properties benefit from efficient scheduling and more precise direction from the client, with a minimum of windshield time, meaning they spend less time unnecessarily traveling.

For end customers - residents living in the client's properties - more efficient scheduling meant their homes could be restored to the best possible condition quickly, minimizing any discomfort from critical issues and ensuring they maintain a favorable outlook towards the client.

The client benefits from more costeffective and time-effective asset use, reduced customer frustration from unresolved issues, and tools that directly help minimize damage-related costs by facilitating the triage of the most serious problems before others.

Visit our Insights page for more articles about emerging technology trends, the IT industry, interviews, and more!

"Thanks to this more powerful scheduling tool, work order completion time reduced by 38%"