FEWER MISSED RIDES, MORE HEALTHY PATIENTS

One Call Solves Massive Healthcare Problem with Safe and Reliable Transportation Product RelayRIDE

AT A GLANCE

- PubNub powers all realtime communication between patients (riders), drivers, and administrators.

- 10% improvement in schedule adherence.

- Reduced average cost of trips by 40% compared to traditional models.
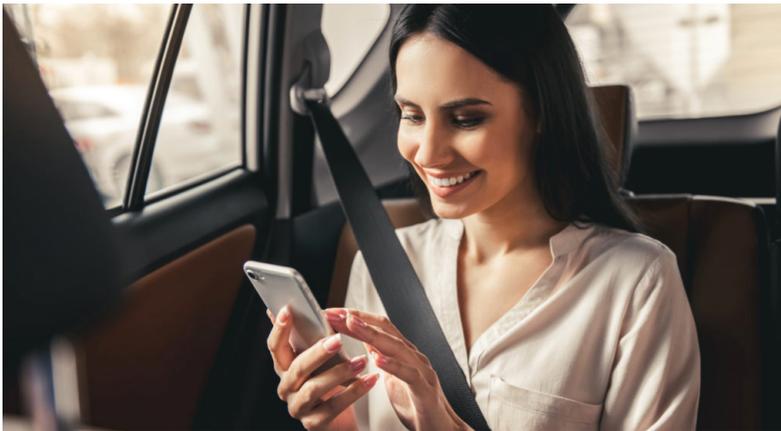
> " *From testing, to 1,500 rides a day today, to an estimated 15,000 rides a day in the coming months, we're confident PubNub can handle that growth.*"

Kabir Chandhoke
COO of SourceFuse

ORGANIZATIONS SNAPSHOT

- **One Call** is a leader in medical cost management for workers' compensation. Delivering benefit management, from diagnostics, to physical therapy, to transportation and translation, One Call has revenue of over $1.6B/year, and 2,800 employees.

- **SourceFuse** builds custom, full-scale web and mobile SaaS products, and has deployed over 1000 apps and solutions since their founding in 2005.

- Transportation may seem like a relatively small subset of the overall healthcare landscape, but it can have a dramatic impact on medical costs.

- And that's exactly what One Call, with SourceFuse, set out to solve by building **RelayRIDE**. RelayRIDE delivers safe and reliable healthcare transportation, featuring an Android/iOS app for patients, a realtime control dashboard for administrators, and direct integration with Lyft for drivers.

PubNub
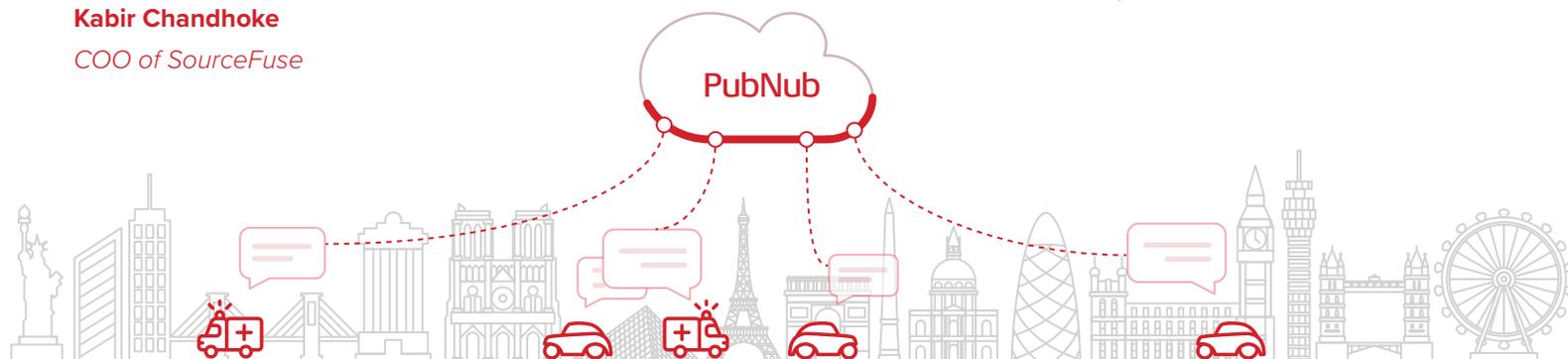
The Challenge

Healthcare transportation is an inefficient, archaic system.

- 3.6 million Americans miss medical appointments every year due to lack of reliable transportation.

- $6 billion is spent on healthcare-related transportation every year.

- Missed medical appointments cost the U.S. healthcare system more than $150 billion per year, and $10 billion of is caused by avoidable transportation problems.

One Call saw the problem with existing healthcare transportation solutions: a combination of patient, dispatcher, and contracted vehicle services manually communicating through a number of channels led to a massive number of missed rides, incorrect pick-up and drop-off locations, penalties and fees. One Call knew that using emerging technologies, the entire experience could be streamlined to provide a more cost-effective and positive experience for patients.
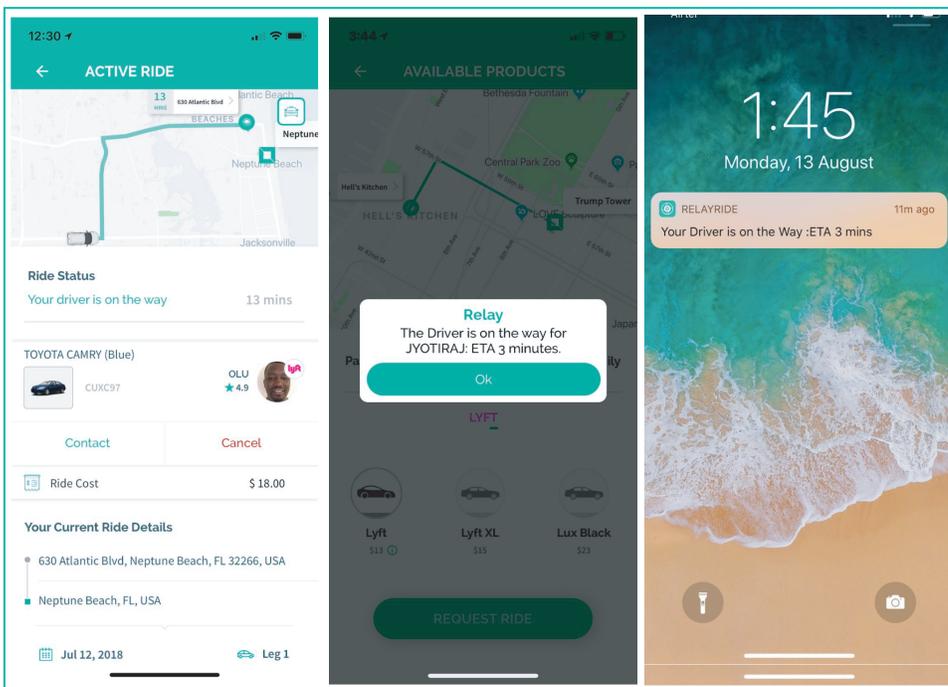

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> *The consequences of missed appointments was very real. Imagine missing a dialysis treatment. We set out to provide realtime visibility into the transportation rides. We wanted more granularity into each ride – average ETA, driver information for the patient, current geolocation, alerts when the rides were complete, and more. And the keyword is realtime,"*
>
> **Joseph McCullough**
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> *SVP Product at One Call*

RelayRIDE automates the process of ensuring patients in need of transportation are picked up on time in the correct location, and dropped off where they need to be before their appointment begins. This system cuts out the inefficient, manual calls between the control center, patients, and contracted drivers, verifying all stages of the journey, from scheduling to drop off, and provides everyone involved with realtime alerts and notifications.

Building RelayRIDE

Realtime communication and functionality is the key to getting patients to their appointments on time. Every step of the way, patients, drivers, and administrators need to be kept up-to-date on what is happening and be immediately notified if anything changes. Realtime gives the agents the ability to take immediate corrective action if anything goes wrong and accurately confirms that the patient has arrived at their appointment.
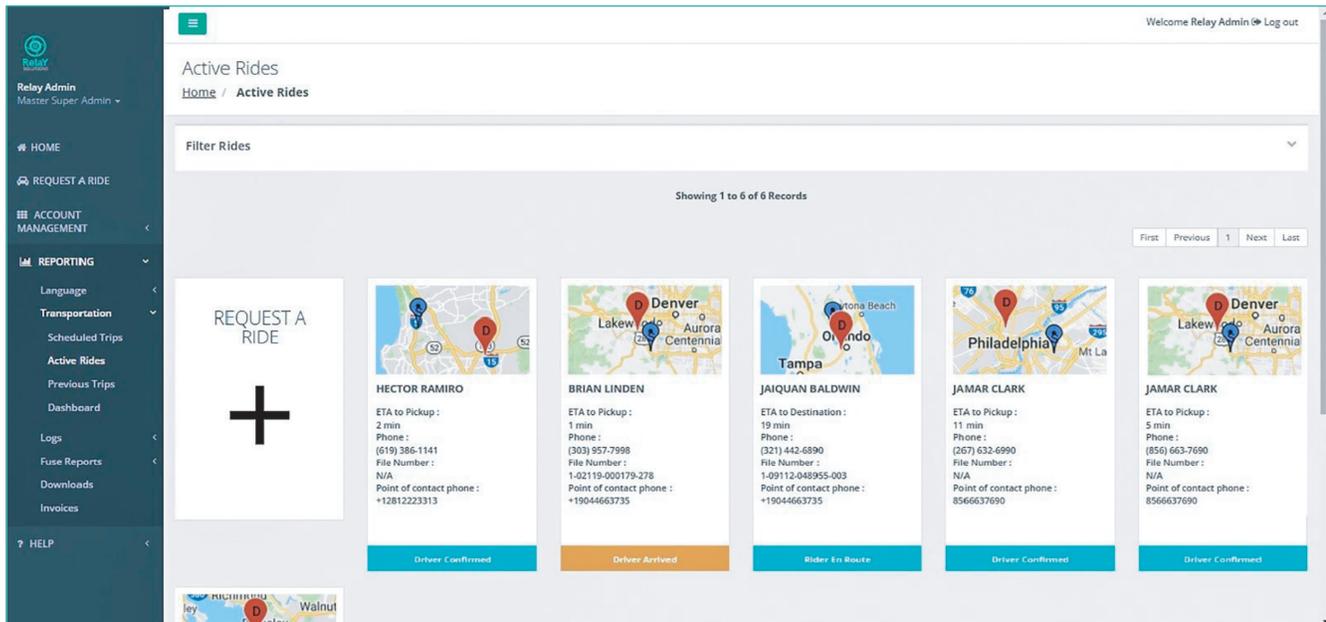
To build a reliable, realtime communication layer between each connected user, SourceFuse chose PubNub. PubNub's realtime platform is mission-critical for delivering reliable communication across every application in the product. This includes sending push and in-app notifications, streaming geolocation data from the Lyft API to the control dashboard, keeping the status of all rides up-to-date and synced on the control dashboard, and tracking links via SMS.

SourceFuse had tried open source solutions in the past for similar MVPs, but ran into issues with scaling and didn't want to have to deal with the complexities of security for realtime messaging. From message encryption, to authentication, to provisioning — these security considerations require substantial development time to build and maintain, drawing resources away from the core functionality SourceFuse needed to deliver. In choosing PubNub, SourceFuse was confident that security was solved, which would open up bandwidth for innovation and improve the user experience itself.

Adding Intelligence with Amazon Machine Learning

Reliable realtime communication made a massive impact on the success of RelayRIDE, but SourceFuse wanted to add cutting-edge cognitive services to the architecture to make the application even more efficient, delivered through

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> *RelayRIDE started out as a minimum viable product and now it's a large-scale application delivering thousands of rides a day. We needed something that would let us prove the concept quickly, then scale reliably as the product grew and matured. From testing, to 1,500 rides a day today, to an estimated 15,000 rides a day in the coming months, we're confident PubNub can handle that growth,"*
>
> **Kabir Chandhoke**
> *COO of SourceFuse*

automation and machine intelligence via Amazon Web Services.

With Amazon Connect and Amazon Polly, SourceFuse was able to intelligently automate phone calls and SMS alerts to users, removing even more manual processes. And because PubNub is flexible and easily-integratable with 3rd party cognitive services, the two technologies seamlessly work hand in hand.

Extensibility: From Monolith to Microservices

RelayRIDE's initial architecture was monolithic, however maintaining that pattern was becoming a challenge as the project and the team grew. On top of that, the product continued to add new providers like the Amazon cognitive services as well as new customer integrations, which led to the decision to move to a microservices-oriented architecture to ensure scale.

PubNub's extensible and flexible realtime platform was an optimal solution to fit in the microservices-oriented design, due to its compatibility with other systems and loosely coupled framework. This allows SourceFuse to quickly innovate their product and deploy new features.
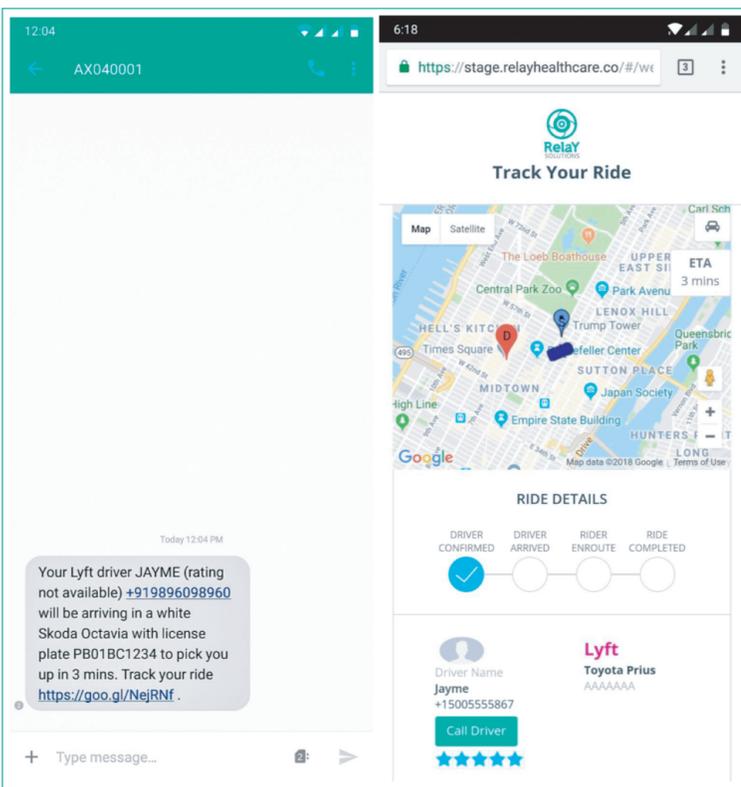
> *Combining PubNub and Amazon Machine Learning together, you get massive efficiency for an operation of this scale. It's a great synergy of Amazon's Machine Learning and PubNub,"*

Kabir Chandhoke
COO of SourceFuse

> *We wanted micro-teams to work on features and capabilities, and be decoupled from what others were building. We treat PubNub as a microservice in itself, as it fulfills the independent capability for our system, realtime messaging,"*

Kabir Chandhoke
COO of SourceFuse

Result

In implementing PubNub to power all realtime communication between patients, drivers, and administrators, RelayRIDE was able to launch their MVP faster, improve and scale to handle their rapid growth, and exceed their technical expectations. But the results have also shown in the impact of the product itself.

RelayRIDE has already seen a 10% improvement in schedule adherence, which has led to substantial cost savings as transportation providers no longer need to charge penalties for patient no-show. Considering that as many as 3.6 million patients miss appointments each year due to lack of transportation, this is a major improvement.

Additionally, before PubNub, 40% of calls from administrators were to confirm that patients were dropped off where and when they needed to be. Staffing this process required both headcount and financial resources. Since implementing PubNub to send a realtime alert for variance issues, confirmation calls have dropped substantially.

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RelayRIDE is an omnichannel solution. We're trying to make this service work across all demographics, different ages or high-tech or low-tech. PubNub enables us to quickly prove out concepts, test new technologies, and innovate on new features,"

Kabir Chandhoke
COO of SourceFuse