Developing the Future of Connected Car Technology

Client CloudCar, Inc.

CloudCar, Inc. is a Silicon Valley-based startup, developing the future of connected car technology. They are focusing on “what’s next” and considering how the driver’s experience will evolve in the future.

CloudCar’s cloud-based platform integrates machine learning capabilities with voice-first infotainment to deliver a seamless and personalized experience. They work with service providers and leading automotive OEMs to offer cutting edge technology for their consumers and enhancing their driving experience, while maintaining their partners’ brand identity.
Their Challenge

Working with cutting-edge technology stack (Vertx/Kafka/Mongo) is always related with facing the problem of having engineers prepared well enough to execute your plans.

When a company is situated in the center of the software development world - Silicon Valley and the software developer market is extremely competitive, the logical step is to look abroad for technically proficient teams. Cutting costs is always a part of the reason that is driving such expansion as well. CloudCar wanted to expand their development team with an offshore one. The main goals of this expansion being to find a technically proficient team that can seamlessly integrate into their own.

Working with offshore teams is often associated with two major risks.

The first one being that the team you are working with is unable to complete the assigned tasks in time and with the expected quality, and the second one the synchronization of the parallel work of the local and offshore teams. Adding the types of skill related to them we can summarize them as :

- technical knowledge risk
- communication/ process risk

The client expectation was that we can provide a team that can help overcoming both of them, as we were referred as a capable software company from credible sources.
Our Solution

With enough senior engineers involved and prior experience working with Bay Area companies we knew that the key part of the preparation is having the right people in the team.

As a first step we sent an expert to work locally on-site in the client’s office and truly understand the project, the related challenges and the context it is developed in. We used that knowledge to propose the optimal team structure and process for the specific situation.

As it was the first time for our client to work with an offshore development team, they were closely involved. From the approval of the team members, discussion of specification and processes to the overall timeline and definitions of Done. The initial setup of the process took a month and was refined during the whole lifetime of the project, with active participation from both sides.

Tackling the two risks that our partners were concerned required different plans:

1. **Technical risk** – In order to minimize this risk, the team we have build had people in it with extensive technical background with the technologies used in the project (or similar).

   - **Collaborative interviews** - The CloudCar team had the chance to meet with Dreamix engineers and discuss plans and technical topics prior to acceptance of any of those engineers into the team. This proved to the CloudCar team that the selected engineers will be a good fit for their team not just technically but culturally as well.

   - **Joint Sprint Plannings** - The CloudCar and Dreamix team were planning together the sprints allowing for technical and estimation inputs to be shared between the teams.

   - **On-site workshops** - Synchronizing teams across the globe is easier if people know each other in person and working side by side for a while increases trust and respectively quality.
- **Short cycle of performance reviews** - the team performance is evaluated on a 2-3 month cycles in order to review and adapt if changes are needed.

- **Zero turnover** - Turnover is often overlooked, but is a factor that impacts the quality and timing of projects immensely. Loss of key engineers and know-how can turn into a disaster if not managed correctly. The Dreamix team was able to provide a stable team that was evolving during the time of the project and as there were no engineers leaving the project, the turnover was 0.

- **Communication/Process** - when working with a team on the other side of the globe with people from different cultures, an exact process and close monitoring of team dynamics is expected in order to guarantee success.

- **Scaled Scrum was selected as foundation of the teams plan and processes.** This allowed the teams to synchronize naturally, to define common definitions of done (and follow them) and have high level of transparency between them.

- **Single point of contact** - It is common occurrence for team members from different physical locations to discuss technical problems and challenges privately. Collaboration is always a good thing, but it requires a soft limit. Any decision taken during such discussions must be transparent to the whole team before it proceeds to being implemented. Here the single point of contact comes into place. This role guarantees correctness of the information between the teams. The potential for this role becoming a bottleneck is low, as it is merely a guarantee for communication spread and not a technical analysis and validation of the decision taken.

- **Document tracked daily scrums** - Action lists are used between the teams, which enforce clarifications and assign them roles and deadlines and are used during the Scrum of Scrums to increase transparency.

- **On-site engineers** - on-site engineers were present at the Cloud Car office for critical project phases

  - **Technical planings** - Tech Lead/Architects
  - **Sprint reviews covering critical features** - Developers
  - **Critical implementation phases where increased complexity of the functionality is expected** - Developers
The result

The project was a success and the risks outlined by the CloudCar team were proven to be well managed. We managed to migrate the entire backend of the solution from CoffeeScript and NodeJS to Vert.x and Java, which helped improve the performance and maintainability of the solution.

Building on that, we started working on newer versions of the solution and helped improving them to the extent where CloudCar could successfully present them to major automotive vendors and secure new partnerships.

We brought new energy and ideas immediately into the team and then dynamically adjusted the team size and structure depending on the needs of each phase of the development. Our involvement helped speed the process up and led to a successful release of the product.

All of that was happening while we were providing reasonable pricing, consultations regarding the development process and valuable expertise gained from previous projects.