RIDEBUDDY

Abstract

RideBuddy is a personalized service that helps Corporate Mobility Service Providers deliver a safe and comfortable ride for their users. The primary objective was to provide a low-cost in-vehicle monitoring system that would address the privacy and security concerns of ride hailing users. The intention was to use audio analytics assisted by an array of microphones and a host of environmental sensors to monitor the cabin of the vehicle. All of the technology would be housed within the RideBuddy device, mounted inside the vehicle.

"During my UX design internship at Bosch, I contributed to cross-functional teamwork, UX research, and design management as part of the M/NXT Mobility Innovation Challenge—an innovation project incubator at Robert Bosch GmbH. I supported UX, research, and industrial design efforts across multiple phases, aiding the project in securing seed funding totaling 5 million euros. The project was instrumental in Bosch Ltd. being recognized among the 20 Most Innovative Companies in India at the CII Industrial Innovation Awards 2024."

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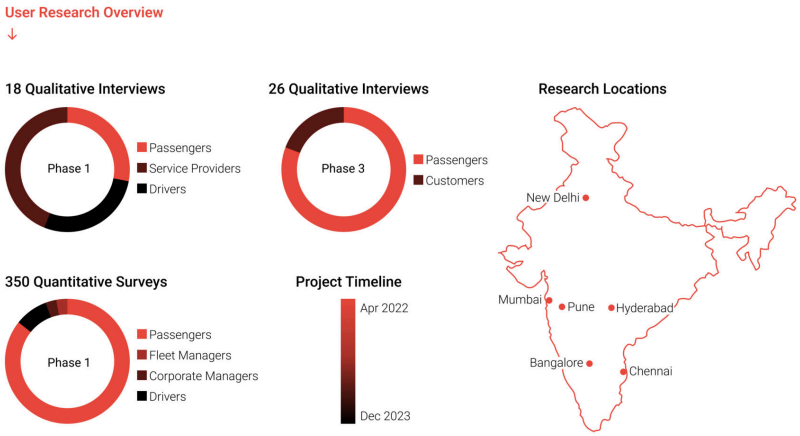
Research & Development

The project was executed in four phases. Phase 1 focused on identifying and defining the problem within the current ecosystem through qualitative user research. This phase began with user interviews involving three key target groups in the ride-hailing service ecosystem: Passengers, Mobility Service Providers, and Drivers.

The primary goal of the research was to gain a deeper understanding of each user group's experiences, behaviors, emotions, pain points, needs, and expectations. Insights from this research were then used to define the key requirements for RideBuddy as a solution to the challenges identified within the ecosystem



The derived insights were further validated through quantitative surveys conducted across multiple Tier 1 cities, which have the largest concentration of service users and providers. The user journeys for each group were mapped to identify key opportunity areas, forming the foundation for the initial solution concept and defining the most effective potential features and services.

Key Insights

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Passengers express reservations about being recorded due to concerns regarding privacy and potential data breaches. However, they are open to the idea of data collection as long as their privacy worries are effectively addressed, and there is a clear justification of how such data gathering would enhance their overall safety.	Passengers frequently display ingrained biases against drivers, and service providers face challenges in adequately protecting drivers from troublesome passengers due to the constraints in ensuring passenger accountability for their behavior.	Throughout the journey, there exists a deficiency in viable methods to report minor discomfort, not just the more severe instances. This hinders Service Providers' capacity to promptly step in and avert potential incidents as they unfold.
Relying solely on cost-effective and widely available GPS tracking, Service Providers derive all their data analytics. However, a malfunctioning GPS device could result in misinterpretations of service conditions.	Service Providers face challenges in conducting thorough investigations into complaints due to their limited grasp of situations and conditions surrounding the complaints. Often, they must contend with unverifiable information while trying to address the issues raised.	Timely and precise incident information during the ride is crucial for service providers. Access to such data enables them to assess occupants' conditions effectively and offer the necessary customer support.
Female passengers often find themselves compelled to anticipate worst-case scenarios while traveling, leading them to take precautionary actions regardless of the actual intentions of the driver.	Due to the absence of more advanced and efficient devices and strategies, Corporate Mobility Service Providers have limited and inadequate safety measures in place. Consequently, they often rely on restrictive measures for female passengers.	Passengers opt for solo travel when utilizing corporate cab services due to their uncertainty about the fellow passengers they might share the ride with. This uncertainty impacts their overall experience and comfort during the service.

Journey Mapping

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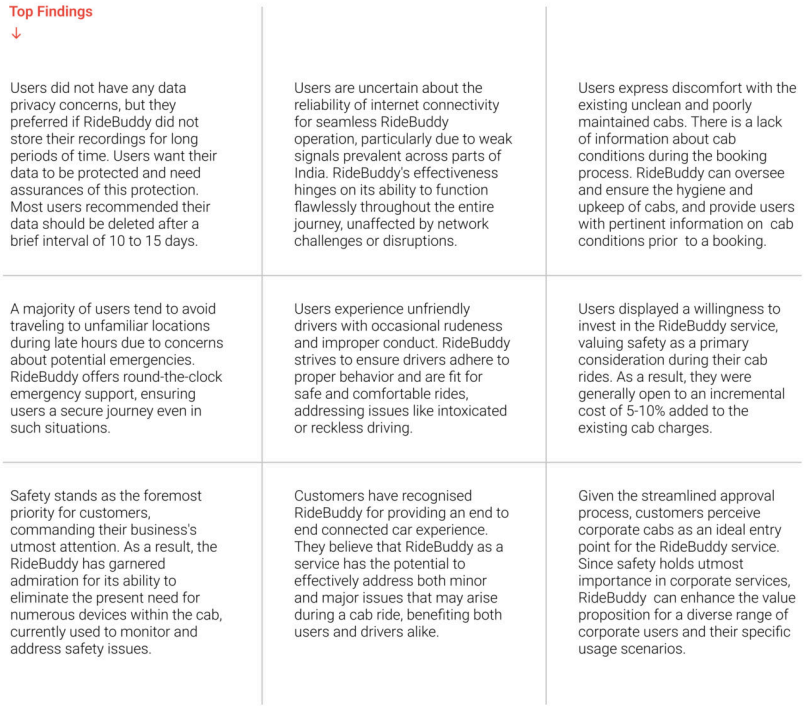
Phase 2 focused on deriving project requirements, where the intersection of opportunity areas, journey maps, and feature mapping formed the foundation for feature definition and prioritization. The initial concept design was developed and communicated through user stories and a high-level, non-specific feature set that was yet to be validated.

Phase 3 was dedicated to validating the initial concept and project direction. A mixed-method approach, combining qualitative and quantitative strategies, was used to assess the impact of proposed solutions on user groups. This phase aimed to understand how users ranked and valued different feature sets, while also gauging their willingness to opt in and pay for the service.

To ensure robustness, the findings were further tested through alternative forums, such as focus groups and hybrid data collection methods, spanning diverse ethnographic, geographic, employment, gender, and age groups.



Quantitative Research
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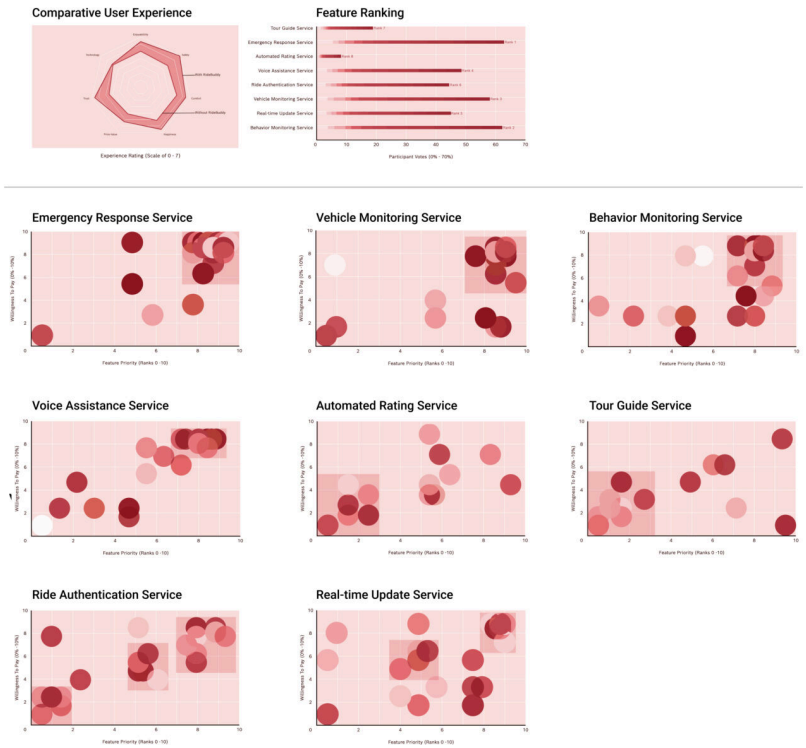
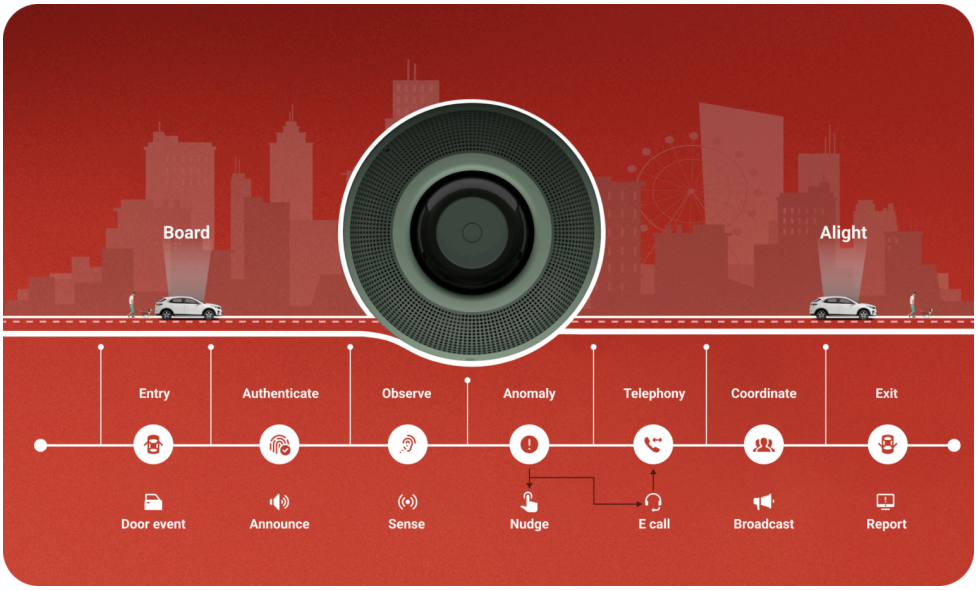


The study results were consolidated and documented to capture the newly validated project direction and feature sets, while also serving as a reflection of the previous project phases. This process ensured a clear, visible, and traceable correlation between each phase. By maintaining a user-centric approach, the project established a solid foundation for its evolution into the final solution.

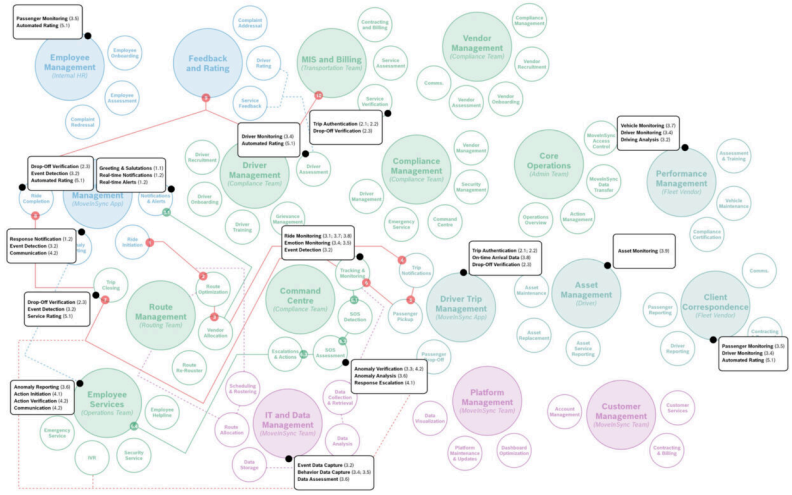
Service Design

Phase 4 focused on developing the RideBuddy service framework and presenting the first tangible solution to potential customers: the Minimum Viable Product (MVP).

The service flow was designed using collected generative data and validated insights from previous phases. A structured framework outlining how the service would function was visualized and refined, ensuring a user-driven approach that maximized its impact on the ride-hailing service ecosystem.



Service Blueprint



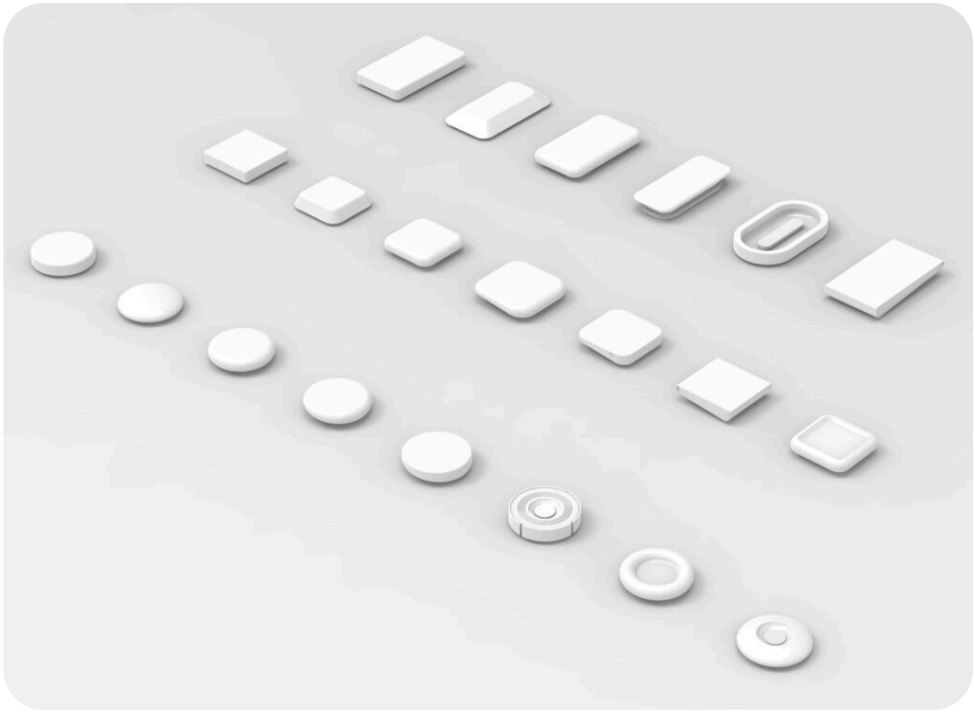
A deep dive into the existing ecosystem enabled the mapping of the **service blueprint**, identifying the roles and interactions of all stakeholders involved in various stages of service delivery. This served as the foundation for overlaying potential touchpoints and service steps where RideBuddy could provide the most effective assistance.

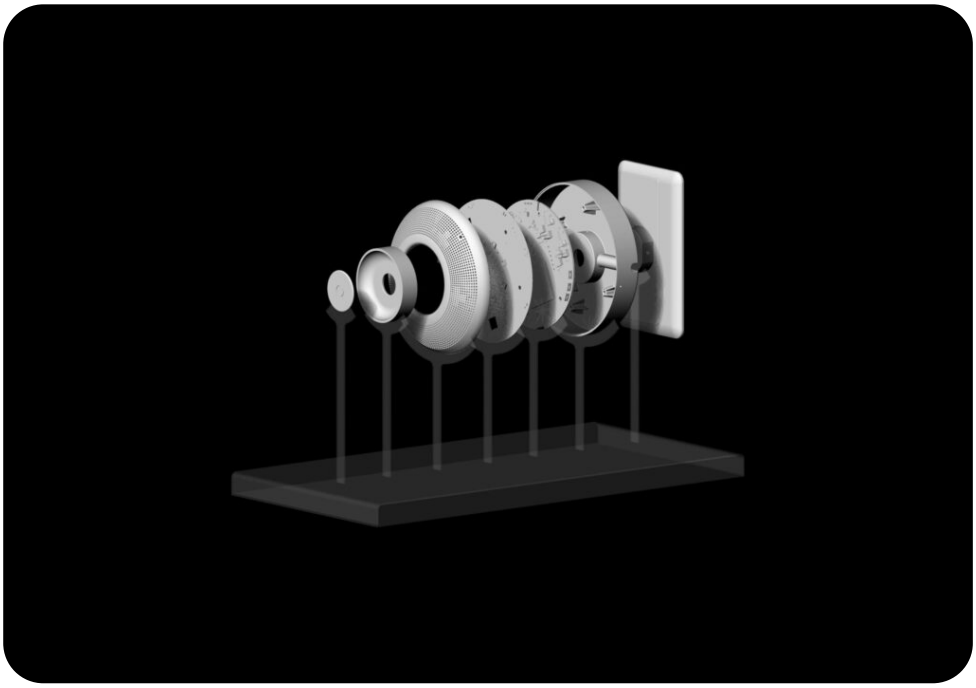
The service framework was then evaluated based on impact, timeline, complexity, and resource requirements, ultimately shaping the MVP and laying the groundwork for the future roadmap.

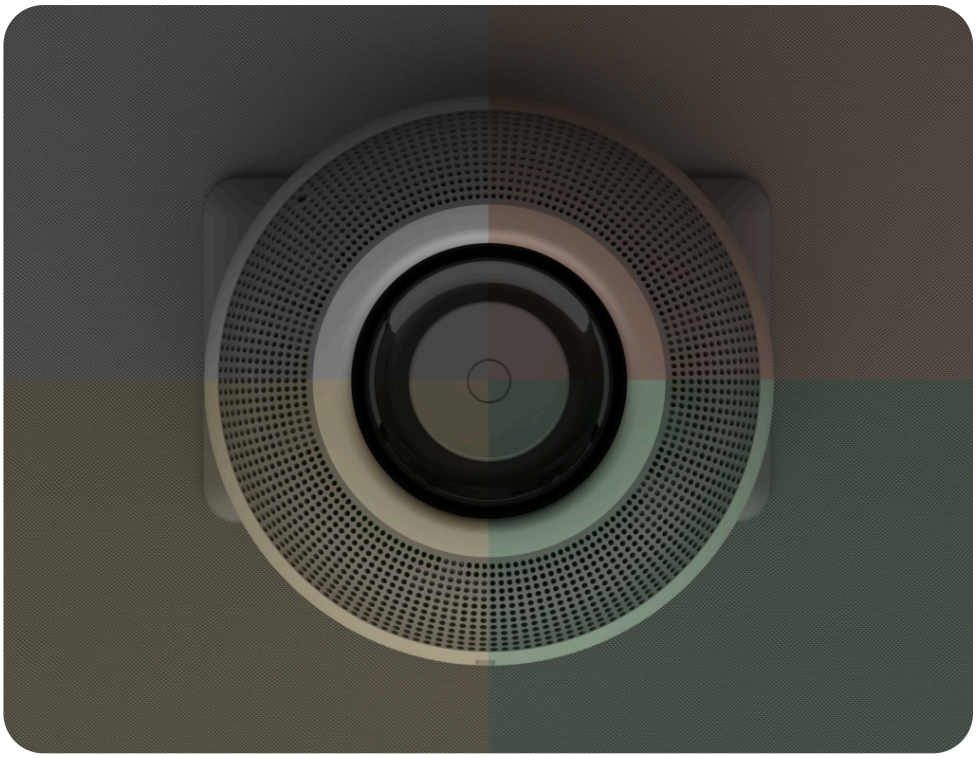
Industrial Design

The industrial design process ran in parallel with other activities and was strongly influenced by insights gained throughout each phase. The concept design for RideBuddy's visual identity evolved through form studies, ergonomic evaluations, and functional refinements.

Close collaboration with tech, sales, hardware, software, and manufacturing partners ensured the design remained grounded and feasible. At this stage, the focus was on creating a working prototype that would house evolving technology, which presented challenges from both aesthetic and usability perspectives.







The first **A-samples** were deployed within Bosch's in-house corporate mobility fleet, equipped with internal hardware, speakers, microphones, sensors, indicators, buttons, power unit, memory, storage, and basic software functionality capable of autonomous audio analytics. Initial usability testing, functional testing, and service analysis provided valuable insights, guiding the next steps for improvement. Based on these findings, key updates were implemented to refine and optimize the solution before moving to the B-sample.

The approach to developing the **B-sample** differed in that the design constraints influenced the technical requirements of the internal hardware and software, rather than the other way around. A fresh exploration of materials, forms, aesthetics, functionality, and innovation led to two distinct design directions: one emphasizing seriousness, security, and sleekness, while the other focused on being approachable, cute, friendly, and reliable.