

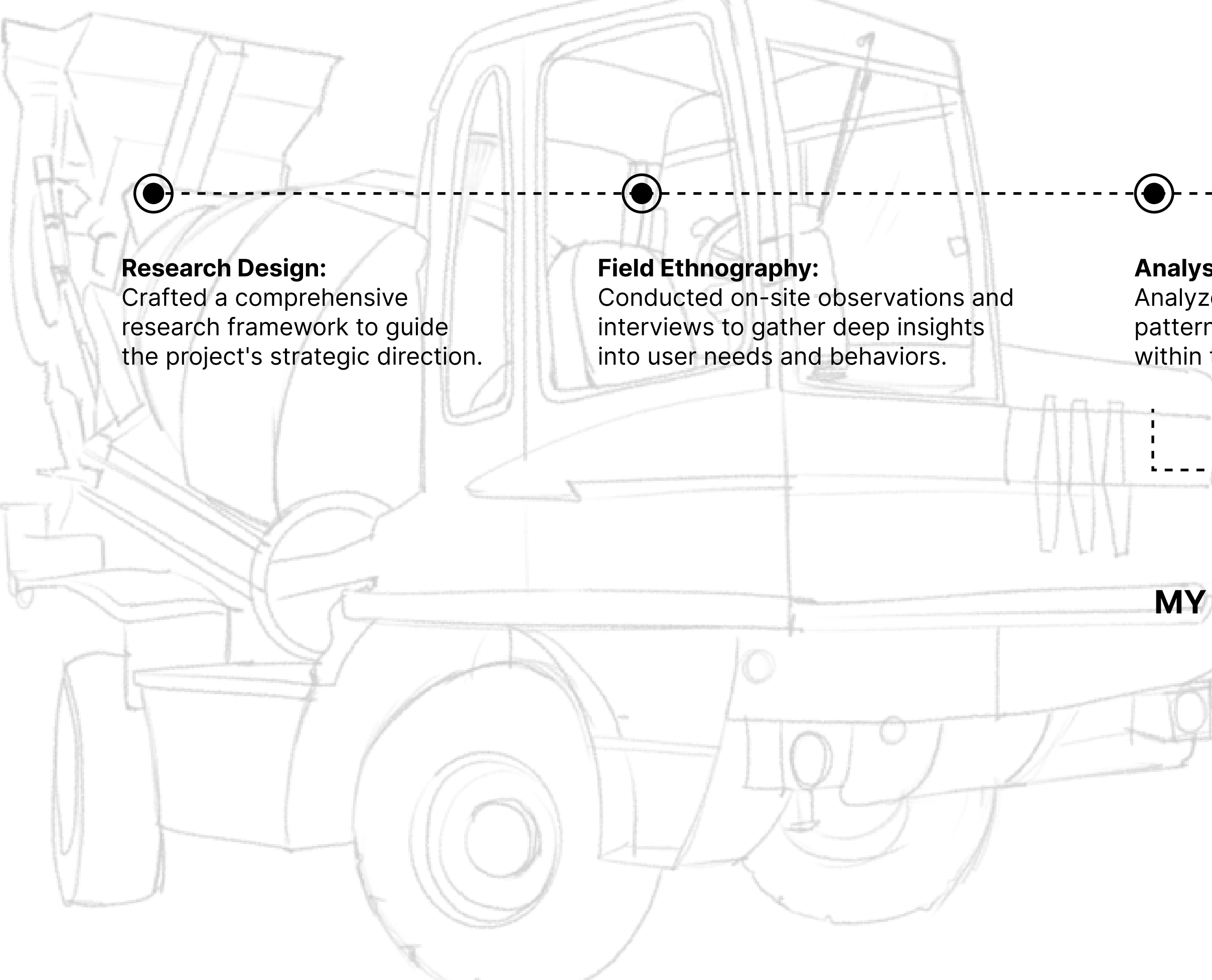
PROJECT SUMMIT

PROJECT BRIEF:

Our client, Ajax, a leading manufacturer of concrete mixers, sought to deepen their market penetration and establish a unique niche tailored to India's labor-intensive environment. Recognizing that the concreting equipment industry in India is still evolving and has not fully harnessed technology to optimize user workflows, they aimed to innovate through design. The goal was to create equipment specifically suited to the industry's needs, leveraging cutting-edge design to seize new opportunities and drive growth.

PROJECT SCOPE:

This project was a research-led market growth strategy initiative, culminating in consulting, regarding equipment design solutions, focused on innovative conceptualization. Through in-depth research and analysis, we developed forward-thinking strategies to drive market penetration and create a unique niche for the client in India's concreting equipment industry.



- Research Design:** Crafted a comprehensive research framework to guide the project's strategic direction.
- Field Ethnography:** Conducted on-site observations and interviews to gather deep insights into user needs and behaviors.
- Analysis:** Analyzed data to identify key patterns and opportunities within the market.
- Design Workshop:** Facilitated collaborative sessions to brainstorm and refine innovative ideas.
- Design Conceptualization:** Developed and visualized creative design concepts tailored to the client's unique context.

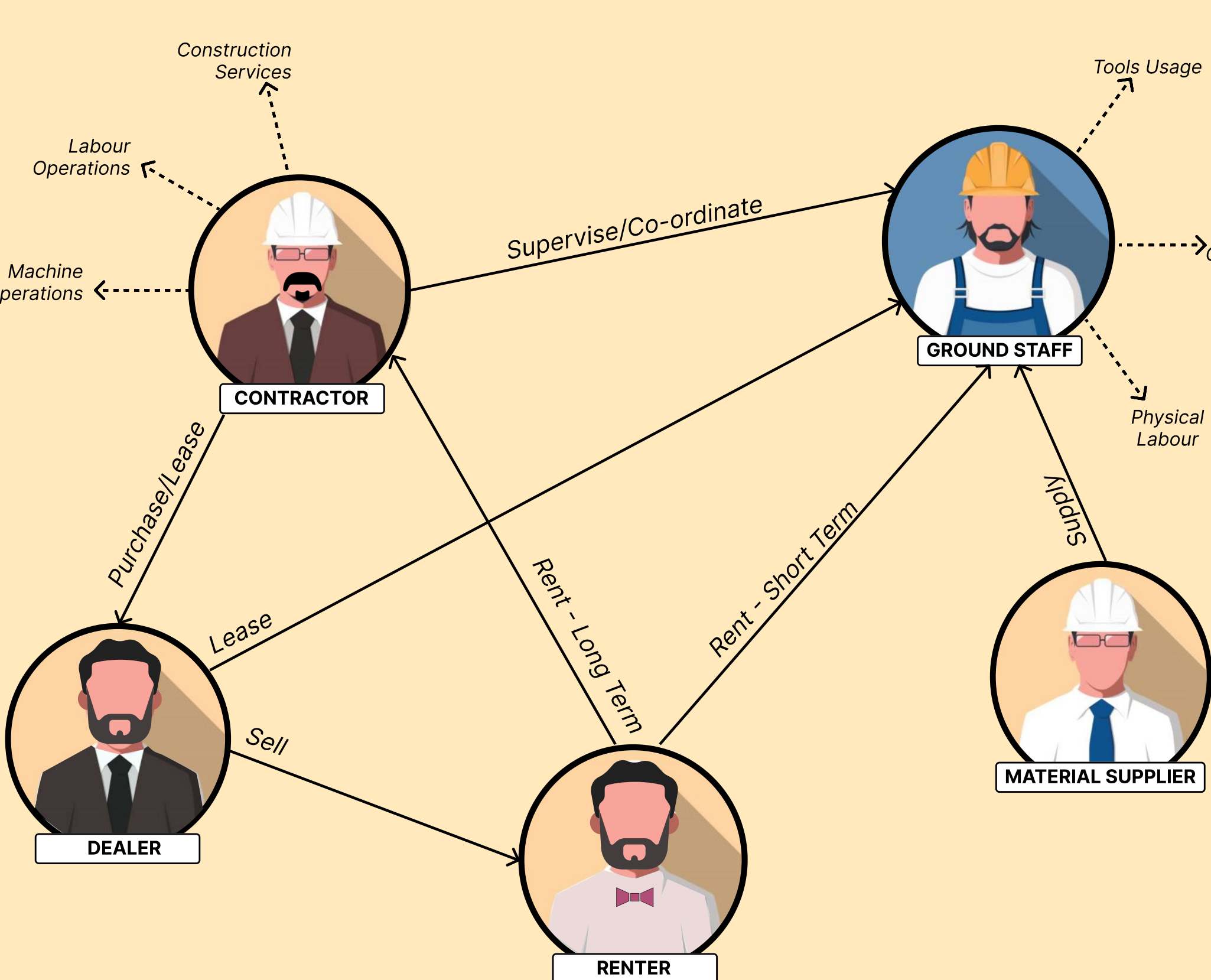
MY INVOLVEMENT

- Identifying Hits and Misses of the existing product in market
- Studying and analyzing different use cases of the materials, labor and equipment in concrete industry
- Understanding journey of concrete and equipment usage in various cases of construction
- Identifying key issues, bottlenecks and challenges in the journeys
- Proposing strategic solutions aligning with the brands interventions in solving the priority identified issues

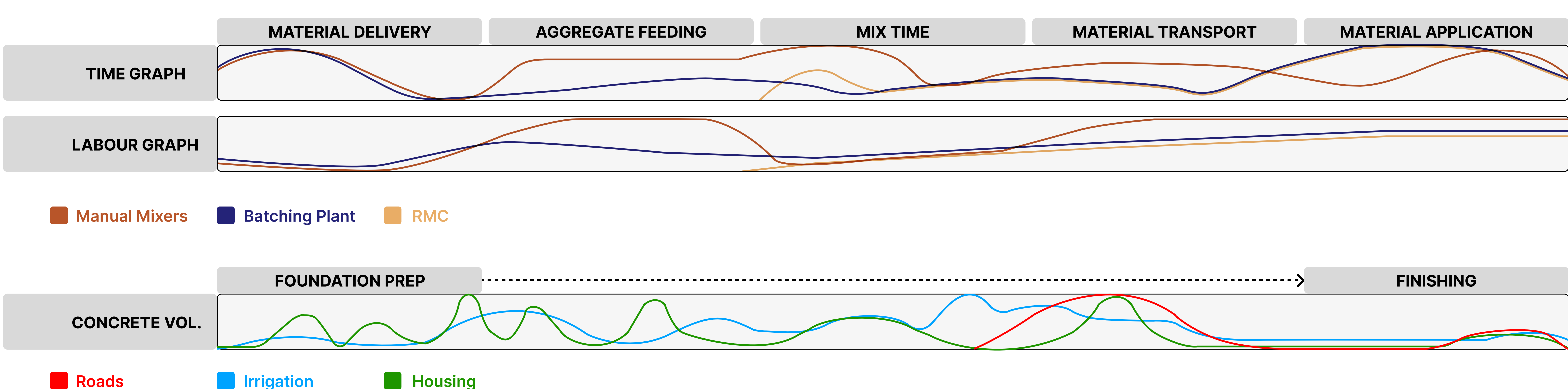
HOUSING



SYSTEM UNDERSTANDING



USAGE JOURNEY OF CONCRETE



RESEARCH ANALYSIS APPROACH:

1. Understanding the Landscape

We conducted in-depth research and interviews with stakeholders, including contractors, equipment dealers, and ground staff, to identify key inefficiencies in construction practices. We also mapped out usage and journey of concrete across use cases and equipment utilization. This helped us pinpoint challenges like high labor dependency, equipment management issues, and inefficient utilization of SLCMs.

2. Defining the Problem

From our research, we transformed key industry challenges into opportunities by reframing issues like varying concrete demands and labor-intensive processes. These opportunities were then articulated as "How Might We" (HMW) statements to guide solution-focused brainstorming. Through brainstorming, we generated a range of ideas, which were refined and conceptualized into practical solutions, aligning them with stakeholder needs and industry demands.

DESIGN STRATEGIES

- Modifications to Existing Product Workflow:** Enhance and streamline the current workflow by analyzing the usage of machines, tools, and labor to improve efficiency and productivity.
- Adapt Products for Specific Use Cases:** Tailor products specifically for housing, irrigation, and road construction, ensuring optimal performance and efficiency in each unique scenario.
- Market Disruption:** Identify gaps in the market where current machinery falls short in terms of volume, distance, speed, and variance in concrete deployment, and develop innovative solutions to fill these gaps.

ANALYSIS

OPPORTUNITIES



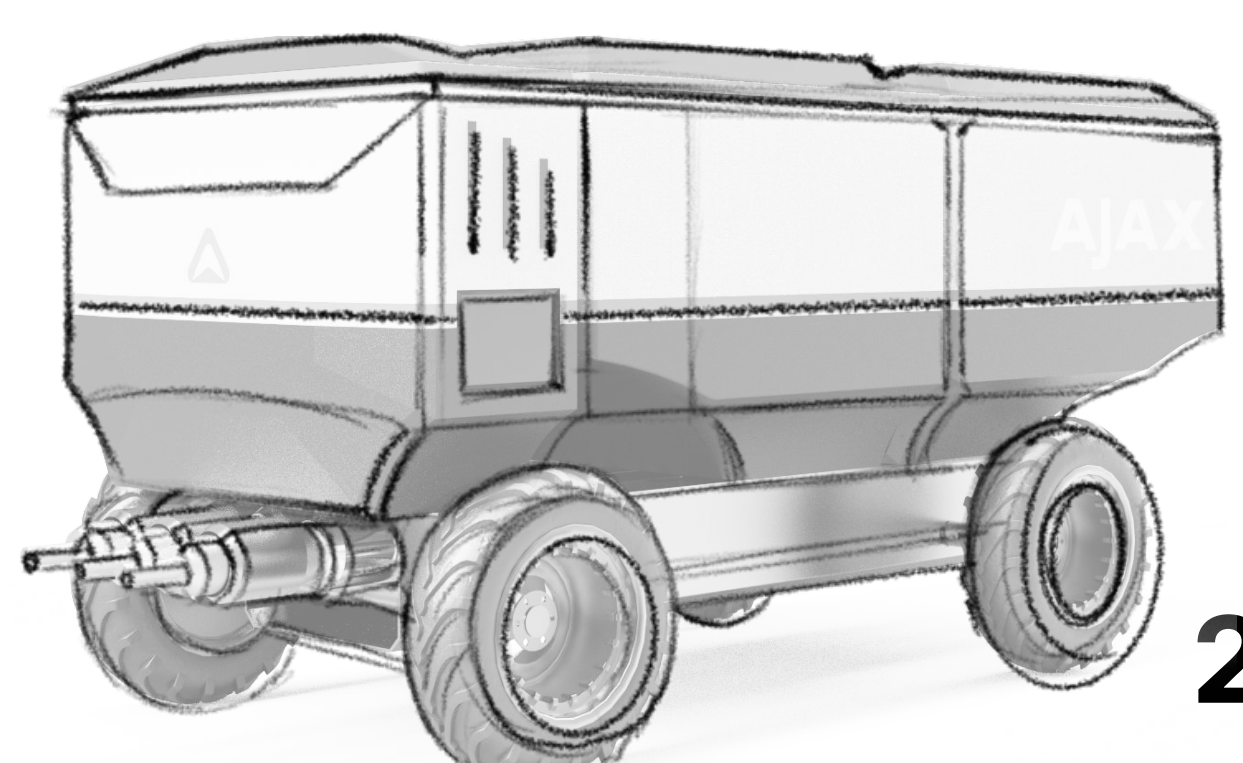
- Varying Concrete Requirements:** Different phases need varying concrete amounts, with slab and footing phases demanding sudden surges met by RMC, while column and wall phases have lower demands.
- Small Demands:** RMCs are used for demands over 6m³ while manual mixers, though cost-inefficient, are preferred for smaller demands.
- Pumping Challenges:** Pumping to higher levels faces issues like high cost and high reliance on manual labor.
- SLCM Limitations:** High demand in mass housing sites relies on batching plants or RMCs. Multiple SLCMs can help but serve as backup sources.
- SLCMs for Spikes:** SLCMs supplement batching plants to manage sudden spikes in concrete demand.

- How might we develop adaptable concrete delivery systems that efficiently meet varying needs across different construction phases?
- How might we design advanced and cost and labour effective pumping technologies when delivering concrete to higher levels?
- How might we create cost-efficient solutions for small concrete demands to balance usage of RMCs and manual mixers?
- How might we leverage SLCMs to complement batching plants and improving supply chain flexibility?



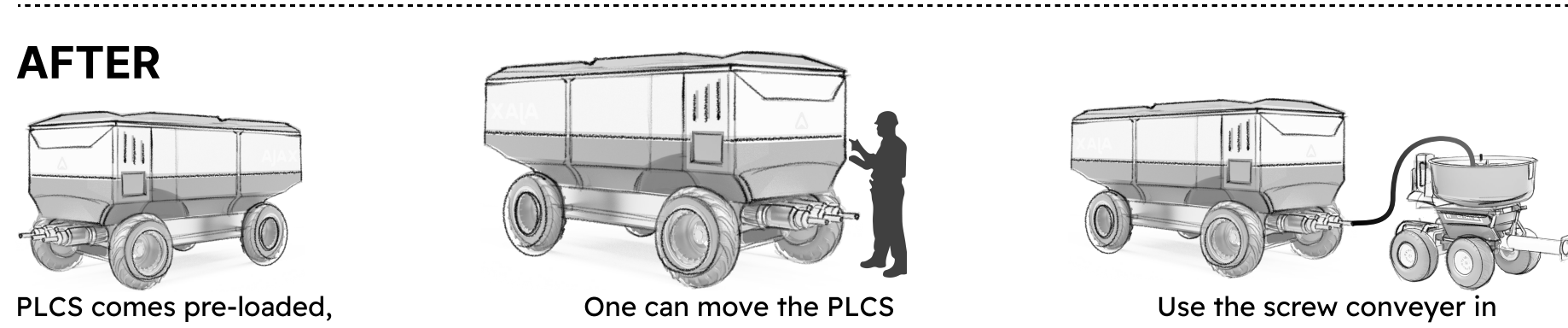
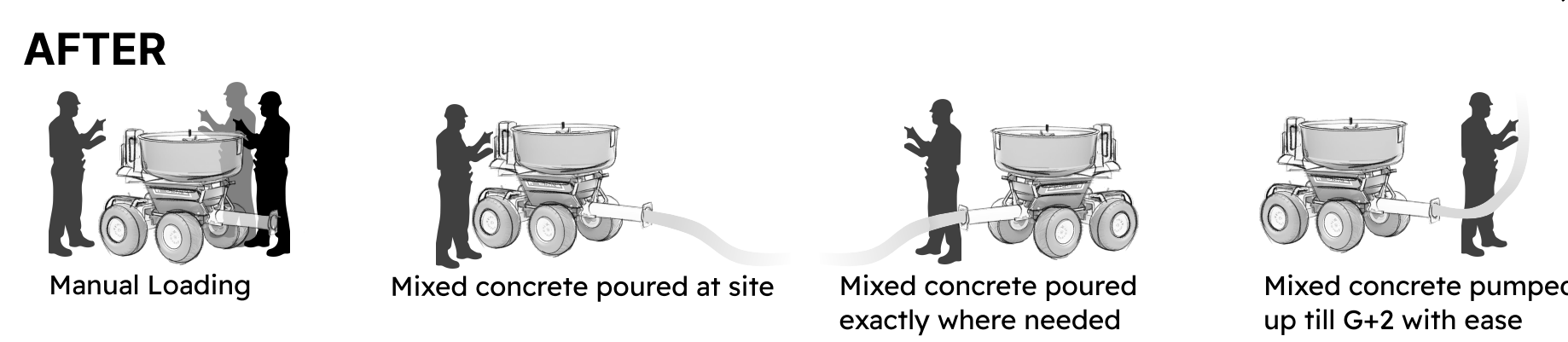
1. 360 UTILITY CONCRETE MIXER

- Solves The SDCM creates a whole new Z-axis for delivery
- Mixed concrete poured exactly where needed



2. MOBILE CONCRETE SILO

- Solves for requirement variance
- Quality assurance through proportionate mixing, pilferage reduction and contamination prevention
- Solves for congested site movement and labour intensive material management



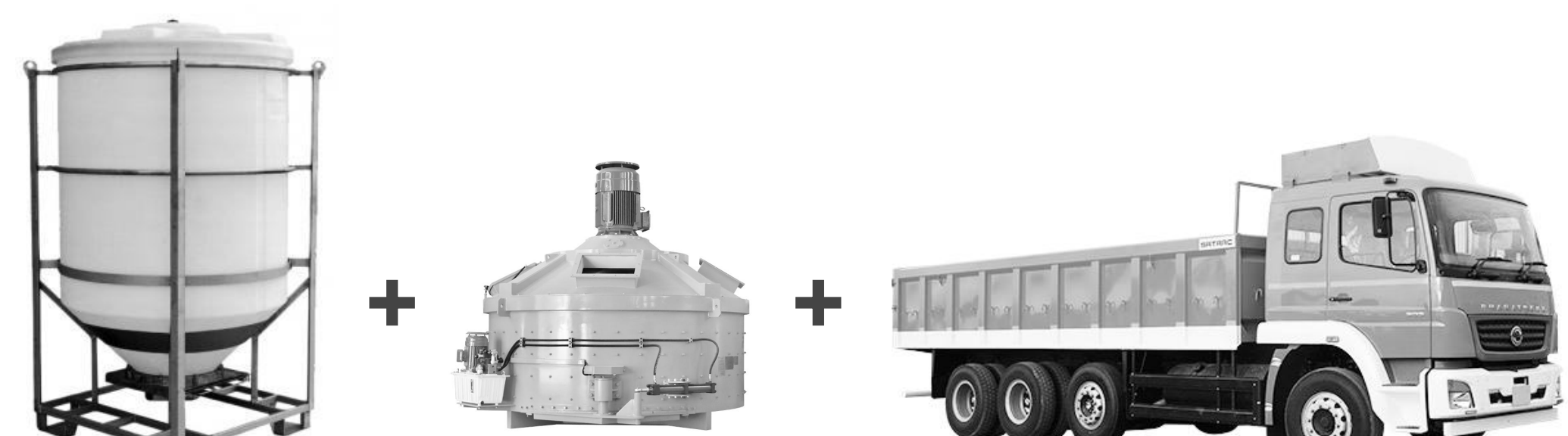
ANALYSIS

OPPORTUNITIES



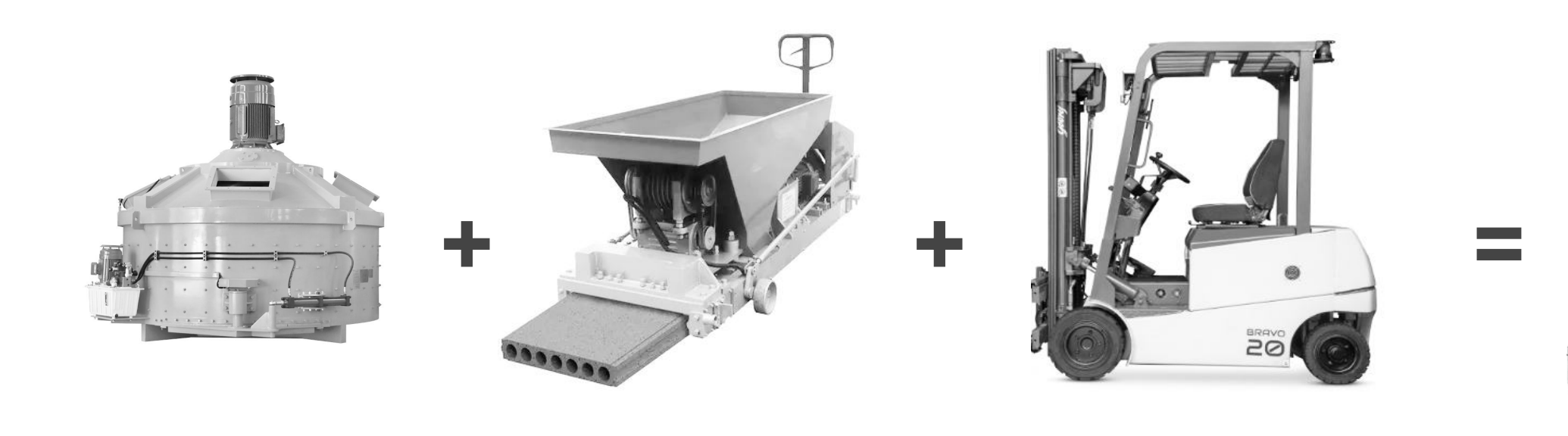
- Improvised Mix Design:** Water ratio is often increased to ensure concrete passes through pumps.
- Emergency Breakdowns:** JCB claws mix concrete during equipment breakdowns, which is not ideal.
- Accessibility Issues:** Narrow roads and irregular terrain makes it difficult for traditional mixers to be closer to the drop point.
- Logistic Challenges:** Material drop on linear sites is difficult due to limited loading areas.
- Sensory Validation:** Manual checks for mix pollutants like stones are time-consuming.
- Labor-Intensive Spreading:** Spreading concrete requires significant manual labor.

- How might we develop reliable solutions for consistent concrete mixing across site and during equipment breakdowns?
- How might we address logistic challenges on linear sites, and reduce the labor intensity of concrete spreading?



3. MBS - MOBILE BATCHING STATION

- The concrete gets mixed at delivery point
- Saves on labor intensive material management and loading
- The MBS can quickly move between sites dispensing the required amount of quality assured concrete



4. ROAD - EXTRUDER

- Facilitates concretization where previously avoided
- Solves for linear site movement and labour intensive laying process

ANALYSIS

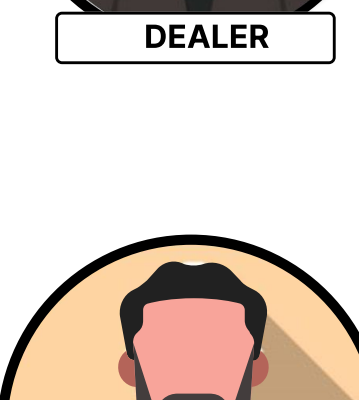
OPPORTUNITIES



"Investments are huge to start a construction company. Construction is a capital intensive business."



"We have an understanding among us. We share and borrow equipment from one another based on our needs."



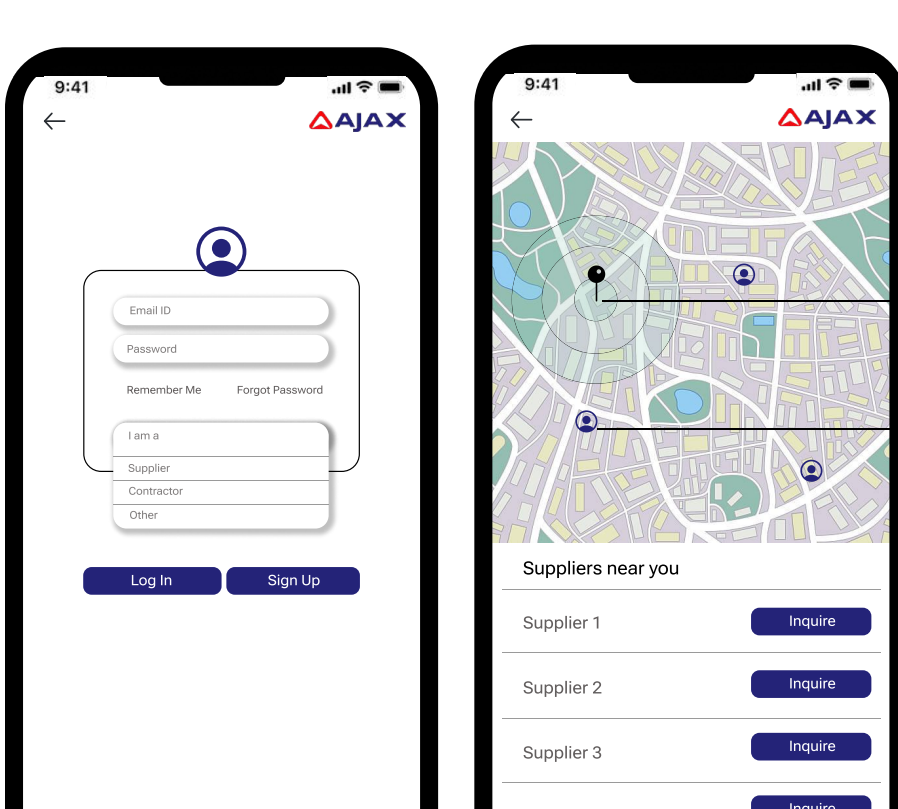
"20 percent of the parts are running parts that are required 80 percent of the times."

"We cannot stick to standard working hours. Anytime a customer faces an issue like a breakdown he calls us, and we have to attend to it."

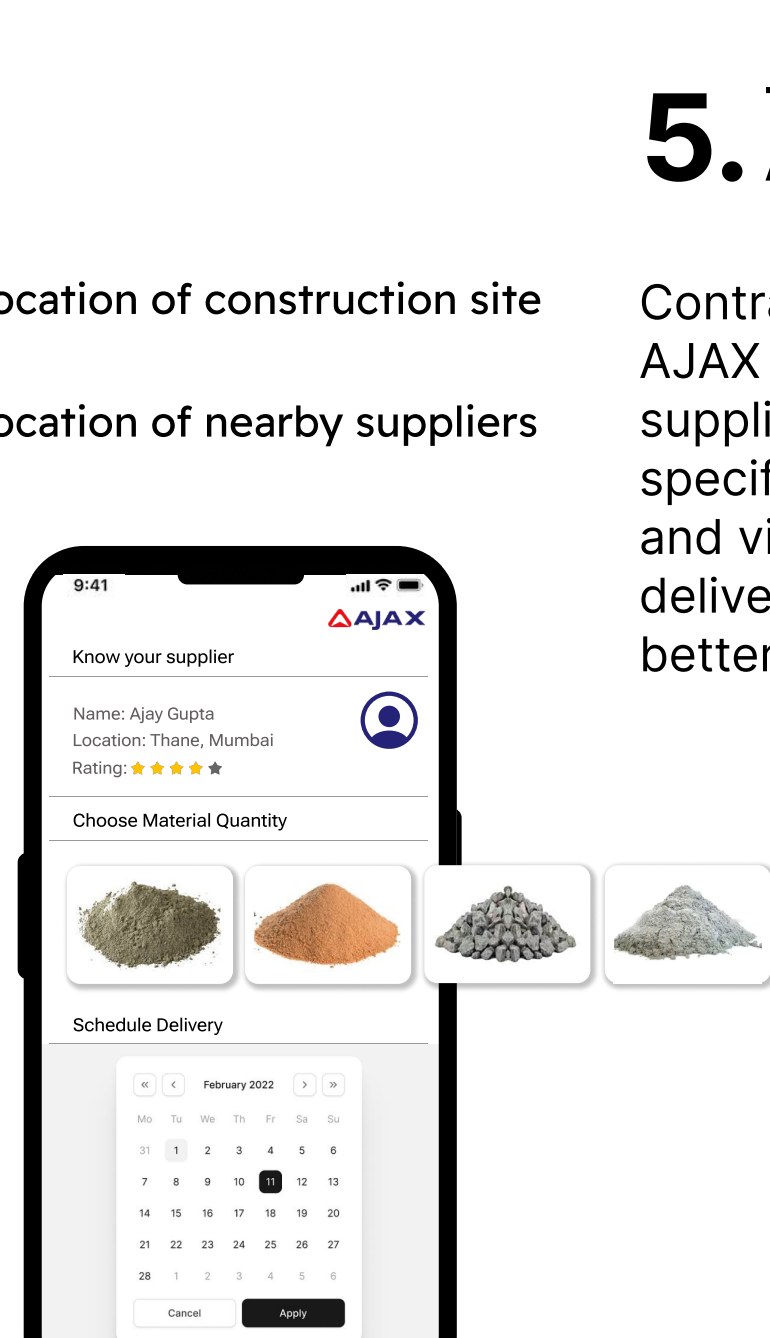
"Contracting can be very cumbersome. One is responsible for the tendering and labour. Renting on the other hand is very stress-free once the machine is rented."

"When we don't have any projects, we give our machines on rent instead of keeping them idle."

- HMW help small and small contractors in a capital-intensive industry by creating shared ownership or rental models for equipment?
- HMW streamline contracting and equipment maintenance to maximize utilization and minimize downtime?
- HMW simplify the contracting process by providing flexible and scalable equipment solutions?



- Integrating technology with material procurement.
- Time and Cost Efficiency
- Flexibility and Convenience
- Optimized Delivery
- Enhanced Collaboration



5. THE ENDURANCE APP

Contractors can now use the AJAX app to find nearby suppliers, place orders for specific grades and quantities, and view supplier ratings and delivery windows, enabling better labor and time planning.