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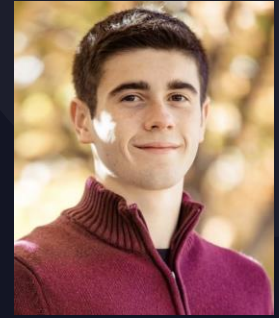**Shreya Rawale**
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Introduction to Variable Tech UI

Hypothesis

Rapidly developing tech can create tension between a user's current experience and an ideal one which makes adaptation tumultuous. As new technology emerges, consumers experience increased price of products, new learning curves, and reduced value of their older tech. With so many different generations, all with varying levels of technological savvy and intuition, a new approach is needed to **streamline technological changes.**

By understanding different user expectations, priorities, and unmet needs towards technology, Honda can develop a product that allows for **generational, progressive, technological advancement.** This technology evolution also provides for collaborations and partnerships with companies like Apple and Samsung while providing product updates with the speed and frequency of software updates to other consumer electronics.

01

Data Mining and Findings

Original Questionnaire

1. Are aesthetics important to you in regards to your personal style and choices? If so, how important?

2. How do you interact with technology on a daily basis?

3. What kind of technology do you use most? What do you like or dislike about it?

4. What factors make you decide to invest into a particular brand or product?

5. Does technology allow you to express your personality? How so?

6. How do software updates on your devices make you feel?

7. How do you feel about using Voice Assistants (Siri, Alexa, etc.) vs physical device interaction? How often do you use each?

8. Do you share your devices with others? If so, what concerns do you have when sharing devices?

9. Does a company's ethical or moral perception affect you? Is so, how?

10. What are your thoughts on more affordable/budget technology options?

11. Any additional comments or thoughts you'd like to share?

Revised Questionnaire

Theme	Define – "What does that mean to you?"	Specify – "Can you give me an example?"	Explain – "Why is that important to you?"	Feel – "What excites or worries you?" *(spectrum framing optional)*
Clear Communication	"When you say *clear communication*, what does that mean to you?"	"Can you recall a moment when communication felt really clear or really unclear?"	"What makes clarity valuable in your life, relationships, or decisions?"	"What's the difference in how you feel when things are clear vs. when they're not?" **Spectrum**: 1 = *"I feel confused or uncertain"* → 5 = *"I feel at ease and aligned"*
Control	"What does *having control* mean to you in your life or in general?"	"Can you think of a time when you felt totally in control? What stood out about that?"	"Why does having that kind of control matter to you?"	"What's something that excites you about being in control? What's something that makes you uneasy when you're not?" **Spectrum**: 1 = *"I feel powerless"* → 5 = *"I feel fully grounded and capable"*
Transparency	"When you talk about *transparency*, what comes to mind for you?"	"Think of a time when someone or something felt very open or very closed-off. What made it feel that way?"	"Why does transparency—or the lack of it—matter in your experience?"	"What's a hopeful outcome of transparency? What's a fear you associate with too much or too little of it?"
Social Influence	"What does *social influence* mean to you personally?"	"Can you think of a time when someone else's opinion or presence really shaped what you did or how you felt?"	"What role does social influence tend to play in your decisions or identity?"	"When is social influence energizing and helpful? When is it heavy or draining?" **Spectrum**: 1 = *"Pressure, judgment, or fear"* → 5 = *"Connection, validation, or belonging"*
Losing Control	"How would you describe the feeling of *losing control*?"	"Tell me about a situation where that happened. How did you respond?"	"What about that experience stuck with you?"	"When you lose control, what fears come up? Are there any moments where it's freeing?" **Spectrum**: 1 = *"Overwhelmed and helpless"* → 5 = *"Adaptable and still hopeful"*

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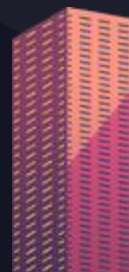
Data Mining

Key insights from interviews:

- **Personalization & expression:** highly value customization and self-expression

- **Technology as an extension of self:** convenience, portability, and all-in-one access.

- **Control & privacy:** desire for controlling devices and the safety of private information

- **Voice & physical interaction:** prefer physical, only use voice when busy

Unmet User Needs

Ease of use & Efficiency

Control & Transparency

Flexibility & Personalization

Adaptive Interaction Options

Unmet User Needs

Ease of use & Efficiency

Interfaces must allow quick, intuitive task completion without excessive effort or learning curves.

"Overall, he wants tech interactions to be smooth and require minimal effort to accomplish a task."

"She is driven by what the tech can do for her as a utility... Overall, she prefers a quick to use interface."

Unmet User Needs

Control and Transparency

Clear options for managing updates, privacy, and access are essential to avoid unexpected issues and maintain control.

> *"She is concerned that others will look through her photos or messages."*

> *"Concerned about someone seeing something she doesn't want them to."*

Unmet User Needs

Flexibility & Personalization

Interfaces should support both out-of-the-box simplicity and optional customization for those who value self-expression.

"Respondent uses their iPhone most... didn't really care about the UI but more about customizing it with different case, colors, wallpapers, etc."

"Some users enjoy self-expression, while others just want things to work out of the box."

Unmet User Needs

Adaptive Interaction Options

Users are not satisfied with voice control. They want optional, efficient, and context-aware interfaces that allow them to have hands-free use or receive frequent updates.

"She does not like voice assistants, feels like they're weird and not helpful."

"Sometimes I just want to change the music without taking my hands off the wheel. That should be easier."

02

Solutions

Honda Sandbox Overview

A revolutionary morphable car dashboard that responds dynamically to its environment, changing shape and providing visuals based on terrain, speed, weather, and more. This innovative interface will replace traditional screens and buttons with intuitive textures, pulses, and thermal cues that guide drivers while dramatically reducing visual clutter and distraction.

Unmet Needs:

Screen Fatigue

Minimalist Control Preference
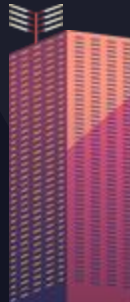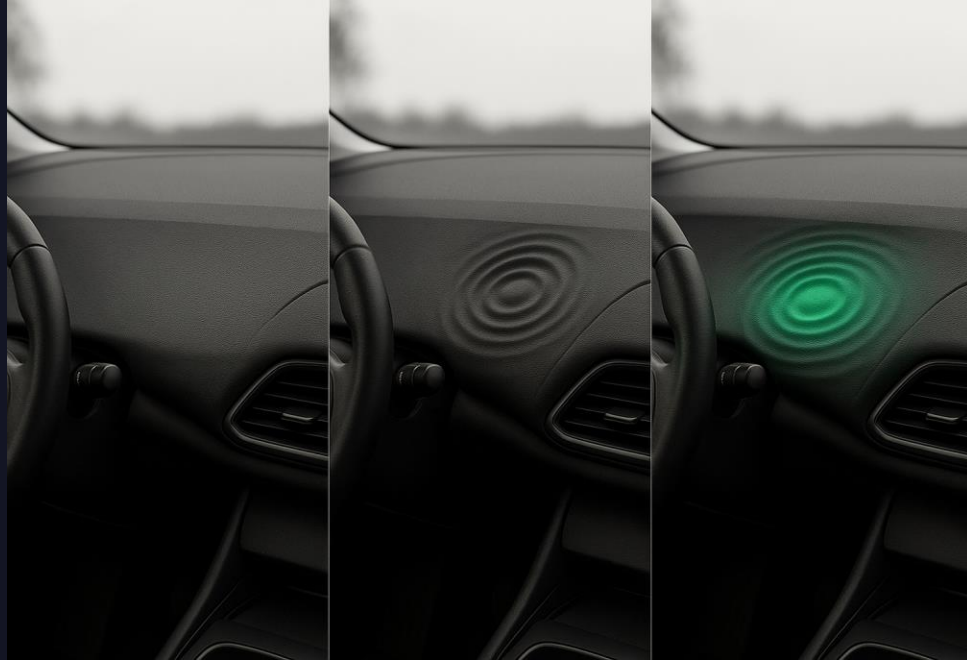
Tactile Interaction Necessity

Core Features

Screen-Free Navigation

Thermo-Cues

Context-Aware Morphing

Driver Training Mode

Self-Cleaning Nano-Coating

Honda Sandbox Partnerships & Obstacles

Partnerships

Fleet & Mobility
Uber
Semi-Truck Manufactures
Car Rentals

AI & Data
Anthropic
OpenAI

Retail
Dealership
Car
Show/Expos

Technology Partners
Logitech, Meta, and Material Innovation Startups

Obstacles and Limitations

- Thermal Risk Management
  - Prevent hot spots & lags in thermal feedback systems

- Mechanical Durability
  - Ensuring morphing mechanisms remain responsive with age.

- Emergency Reliability
  - Critical systems must function even during power & system failures.

N.O.V.A. Overview

Navigational Operations & Vehicle Assistant

Offers an **all-encompassing assistant on wheels** that predicts, plans and executes functions all behind the scenes. NOVA uses a combination of user data streams like biometrics, location services, and other learned data to provide simplicity and efficiency for the user.
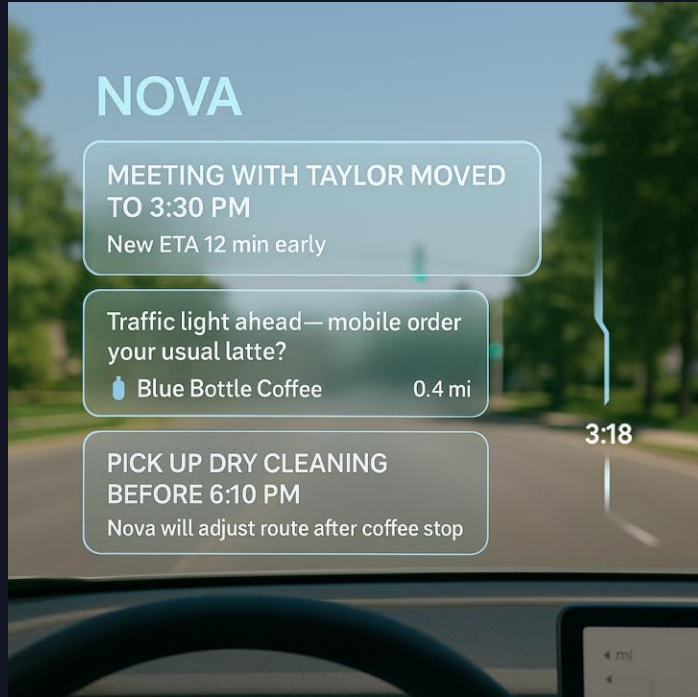
Unmet Needs

Context aware hands-free interaction

Seamless and intuitive task execution

Personalization and customization without high levels of effort

N.O.V.A. Features

NOVA

MEETING WITH TAYLOR MOVED TO 3:30 PM
New ETA 12 min early

Traffic light ahead— mobile order your usual latte?
Blue Bottle Coffee   0.4 mi

PICK UP DRY CLEANING BEFORE 6:10 PM
Nova will adjust route after coffee stop

3:18

Core Features

Utilization of existing vehicular features for NOVA interaction

Destination recommendations and dynamic route pivoting

Autonomous errand completion

N.O.V.A. Partnerships and Obstacles

Partnerships

Smart Services & Errands
Starbucks
DoorDash
Google/Outlook Calendar

AI & Data
OpenAI
NVIDIA

Biometrics
MyChart/Epic
IDEMIA

Navigation & Logistics
UPS / FedEx

Obstacles and Limitations

- Data privacy concerns

- Regulatory restrictions on autonomous decision-making

- Technical integration challenges

- Consumer trust and adoption hurdles

Magic UI Overview

Provides an **interactive system that replaces traditional menus and buttons** with personalized, user-defined gestures and voice commands. Using biometric recognition, the system instantly loads a driver's unique interaction vocabulary and adapts in real time to passenger presence.

Unmet needs:

Prevent the private information leakage

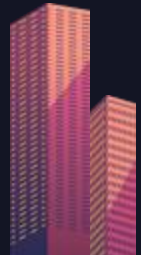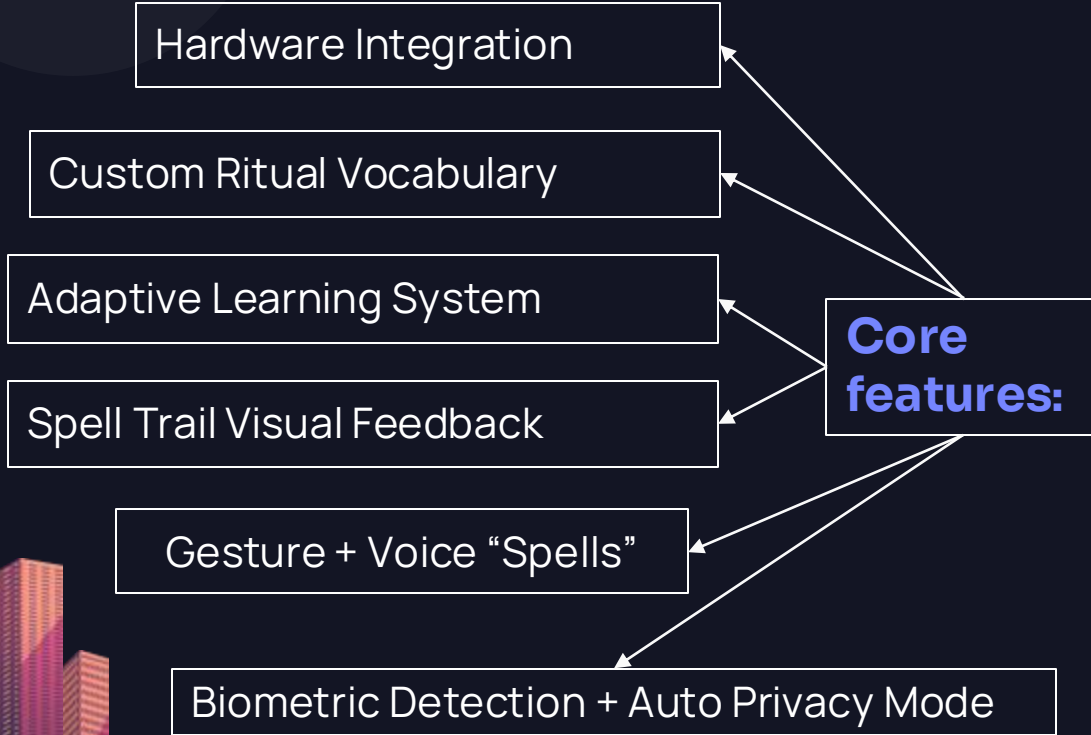Reduce the inconvenience brought by voice assistant

Deal with the headache caused by staring at the screen

Magic UI Features

Hardware Integration

Custom Ritual Vocabulary

Adaptive Learning System

Spell Trail Visual Feedback

Gesture + Voice "Spells"

Biometric Detection + Auto Privacy Mode

Core features:

Magic UI Partnerships and Obstacles

Partnerships

AR & Gesture Integration
Apple
Meta

Culture Building
Influencers

AI & Data
OpenAI
NVIDIA

Biometrics
Apple
IDEMIA

UI Design
Disney / Warner Bros
Unity

Obstacles and Limitations

- Gesture recognition in motion
- User learning curve
- Biometric data security
- AI adaptability
- Increased hardware requirements
- Market Differences
- MBUX, Carplay, & Tesla

Thank You!

Any Questions?

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