

STEERING the FUTURE SAFELY

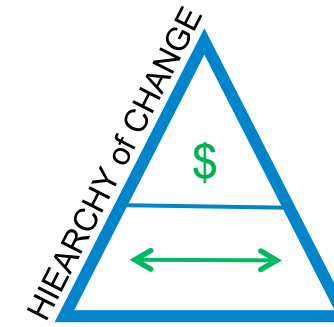
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INITIAL INTERVIEWS

- Pros and cons of current steering wheel
- Changes users have noticed over their years of driving
- Changes users hope to see
- Easiest functions of current steering wheel
- Hardest/negative parts of current steering wheels
- Functionality concerning volume, music, phone, blinkers, windshield wipers, etc.
- Comfort in hand placement, stress, material, grip, temperature, etc.
- Amount of interaction with controls/buttons

What do people **NEED** instead of **WANT**.

APPLICATION



LIFESTYLE CHOICES

Fit innovation into life
without disruption

MARKETABILITY &
FUNCTIONALITY

WANT vs. NEED
Does product **ADVANCE** society?

INTERACTION &
ENTHUSIASM

CHANGE IDEAS
PERTAINING TO
EFFECT

FUTURE-PROOFING
TESLA MOTORS: ~~CUSTOMERS~~ ENTHUSIASTS

SCIENCE of a STEERING WHEEL

- Driver inputs
- Recirculating ball/ rack and steering wheels
- Hydraulic steering
- Electric Power Steering (gives more weight to driver)
- Tilt Wheel
- Telescopic Wheel
- Adjustable Steering Column
- Quick Release

EMPATHY

PROS:

- Not obstructive
- Don't have to overthink while driving
- Prominent/first thing in thing car
- All areas function

CHANGES:

- Biofeedback
- Alertness
- Grip

Users need a steering for their cars that can regulate temperature to a safe degree, calibrate and warn drivers of misalignment in the axels, and create a safer, more ergonomically correct experience (until self driving cars are ready for production).

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Problem Statement

IDEATE

1. "From the first link, I learned what's it like to experiment with the problem is and how it interacts with the solution. The experimental results confirmed that the range of thumb movement in the upper location of the steering pad was bigger than the lower location, and the direction of contact area changes with control positions. Consequently, fundamental design guidelines for the layout of controls around the steering wheel were discussed by characteristics of thumb behavior." From this article I began to wonder how they collected data about thumb behavior and how they measured it. This helps to explain the process we will go through which involves researching to he'll make our design better and solve any problems that may arise."
2. "From the second link, I there was lots of things that connected what I already knew. For example, that curvature of the steering wheel can help with a better driving position by adjusting the curvature so that it's comfortable. He more comfortable the steering wheel is the better. If the steering wheel is not comfortable and puts a lot of stress on your muscles then it can cause major injuries."
3. "For our design we should make it comfortable for drivers so that they can drive for multiple hours without any pain or injuries." The third link decides how the best positions for hands is at 10 and 2. For our design we want to create a removable grip mount for the steering wheel. We can put the grip mount on 10 and 2 because it's the most frequent hand position and the mount will help with keeping your hands position in the same place."

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From Marshall's Blog

FEEDBACK/PROTOTYPE

- Creating a wheel that could regulate temperature and warn of misalignment was too extreme, so we had to settle for just the ergonomics side and button functionality.
- Due to feedback we had to change parts of our design. We found that most users shift their grip, so we had to examine which areas were most important. .
- Added extra grips, changed width.

FINAL DESIGN

