User Experience Portfolio

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(open me in Adobe Acrobat for my interactive elements to work.)

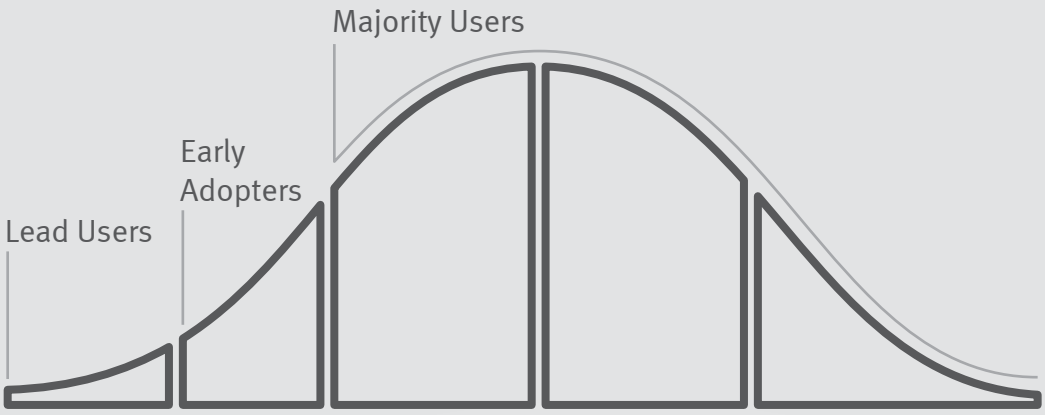
Volt User Experience Concept

This project was done as a exploration into the areas of efficient driving and persuasive design. The goal was to create an interaction scheme for the Chevy Volt that would be both easy and pleasurable to use while at the same time raising the driver's efficiency ever higher.

The design decisions, intentions and goals of the project were based on 3 months of field research, synthesis and analysis. The research was centered around contextual inquiry conducted in San Francisco and Chicago. Many hours were spent by myself and my fellows, in vehicles with normal people; observing, questioning and generally trying to understand the motivations of both highly efficient and completely average drivers.

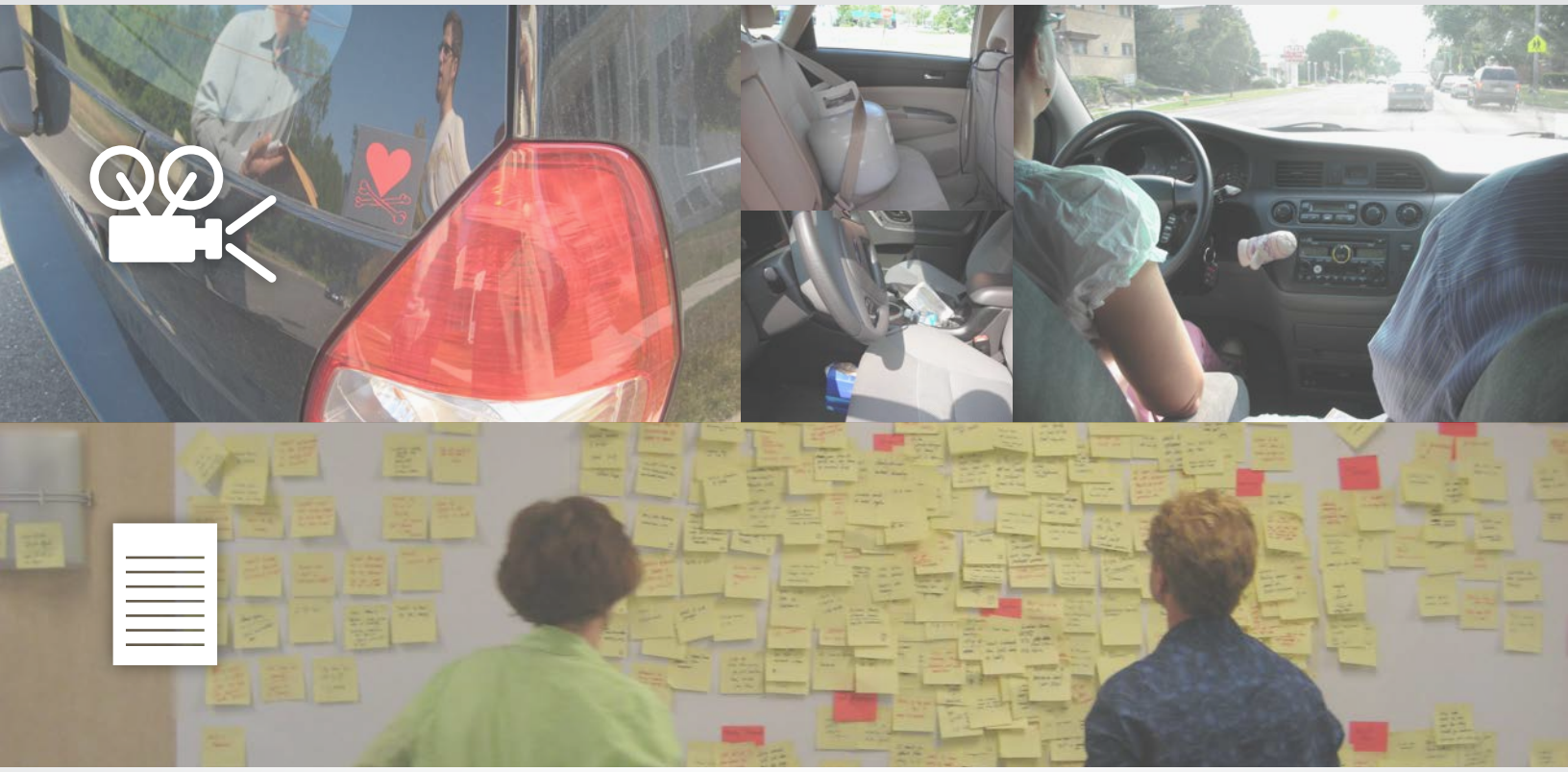
The concept is broken into three sections, based on the location of the interaction: Primary (a display directly in front of the driver that replaces the traditional cluster), Secondary (a display in the center of the vehicle) and Tertiary (a mobile device). Designed to function as a whole to attain greater gains than any element could on it's own. Each of these interfaces offers the driver information in different ways; helping, informing, persuading and moving from simple to complex as the user gets farther and farther from the primary driving task.

The following is an overview of the research that we conducted; including examples of the documents and methods used as well
as how the findings from the research affected the design. Then, mock-ups of the proposed interaction showing how the user moves through and works with the different displays.



To begin our research into driving efficiency, we began by defining our users and separating them into three different groups. We did this because of the problem that we were trying to solve; people already achieve high efficiencies while driving and it wasn't the how we were looking for, rather the why. We wanted to figure out why it is that only a small group that drives efficiently and how their motivations differ from those of the average driver. Once we understood the differences between the extreme and average individuals, we would be able to create an interaction that would promote similar behaviors.

With these distinctions along with a more generalized screener, were able to choose our research subjects. From there we moved onto organizing the logistics of conducting ride-along contextual inquiry interviews with drivers in both Chicago and San Francisco. For the interviews we created both a semi-structured interview guide as well as an observational check list. Armed with these the researchers set out in teams of two, one interviewer and one recorder/observer, on 1-2 hour drives with users doing their everyday driving activities. Users were observed and interviewed during their work commutes, everyday errands and normal day to day activities.

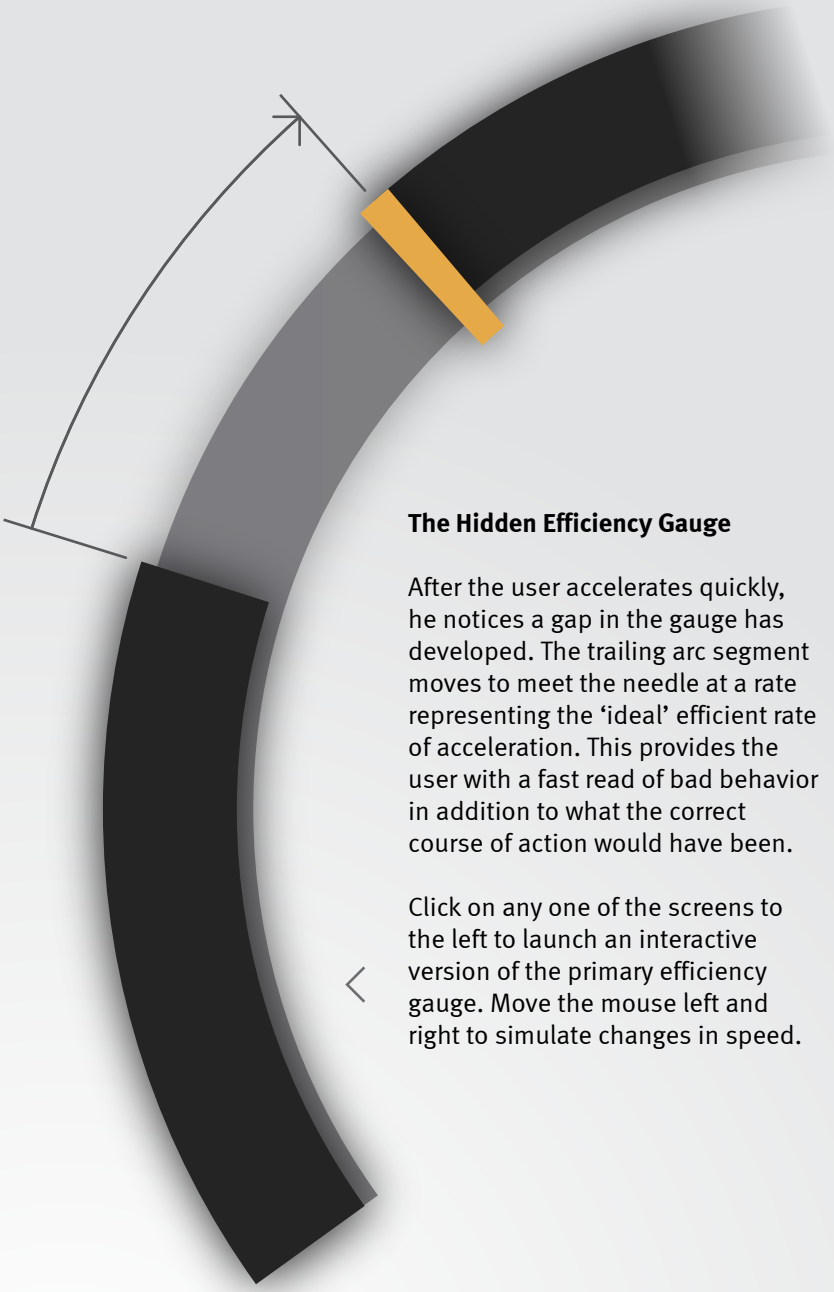


If you would like to see the various documents used while conducting this research or watch a thrilling example of one of the interviews that I conducted click on one of the two icons.

After each interview the team came together for a debrief, and began creating an affinity diagram that would eventually represent the complied and consolidated observations from all of the interviews in each city.

Each affinity diagram then went through a further reorganization and distillation process until we were able to create a list of our findings along with their relative importance in relation to each other. It was with these findings that we moved into the design phase of the project.

Primary Display



The Hidden Efficiency Gauge

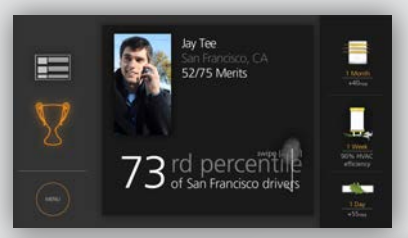
After the user accelerates quickly, he notices a gap in the gauge has developed. The trailing arc segment moves to meet the needle at a rate representing the 'ideal' efficient rate of acceleration. This provides the user with a fast read of bad behavior in addition to what the correct course of action would have been.

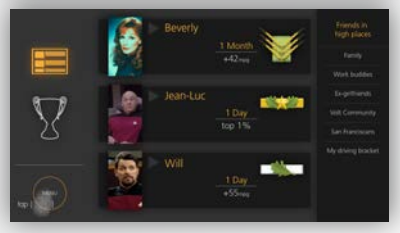
Click on any one of the screens to the left to launch an interactive version of the primary efficiency gauge. Move the mouse left and right to simulate changes in speed.

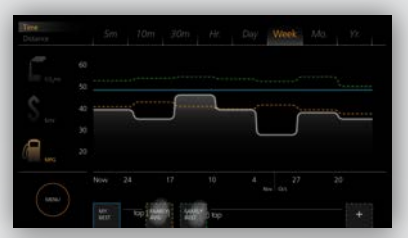
The Main display in the vehicle contains all of the primary driving information, e.g., speed, fuel and warning lights. It's main purpose is to provide the information that the user needs to control the vehicle.

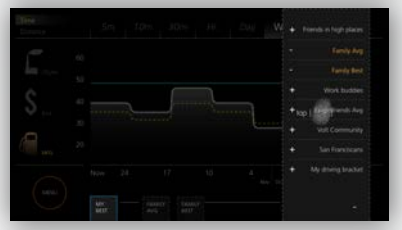
In the middle of the display is the numeric speed surrounded by a needle and arc of what appears to be a traditional gauge based speedometer. The added functionality of the of the arc and needle does not become apparent until the user accelerates or decelerates quickly. Once this occurs, the arc reveals itself as an efficiency gauge. The needle relates directly to vehicle speed, however the dark arc segments to the left and right of it act as both indicators of inefficiency and instructors.

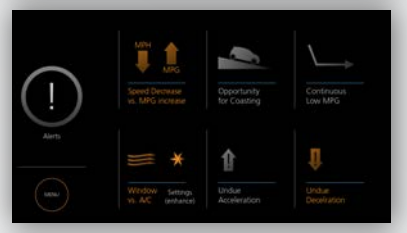
Secondary Display











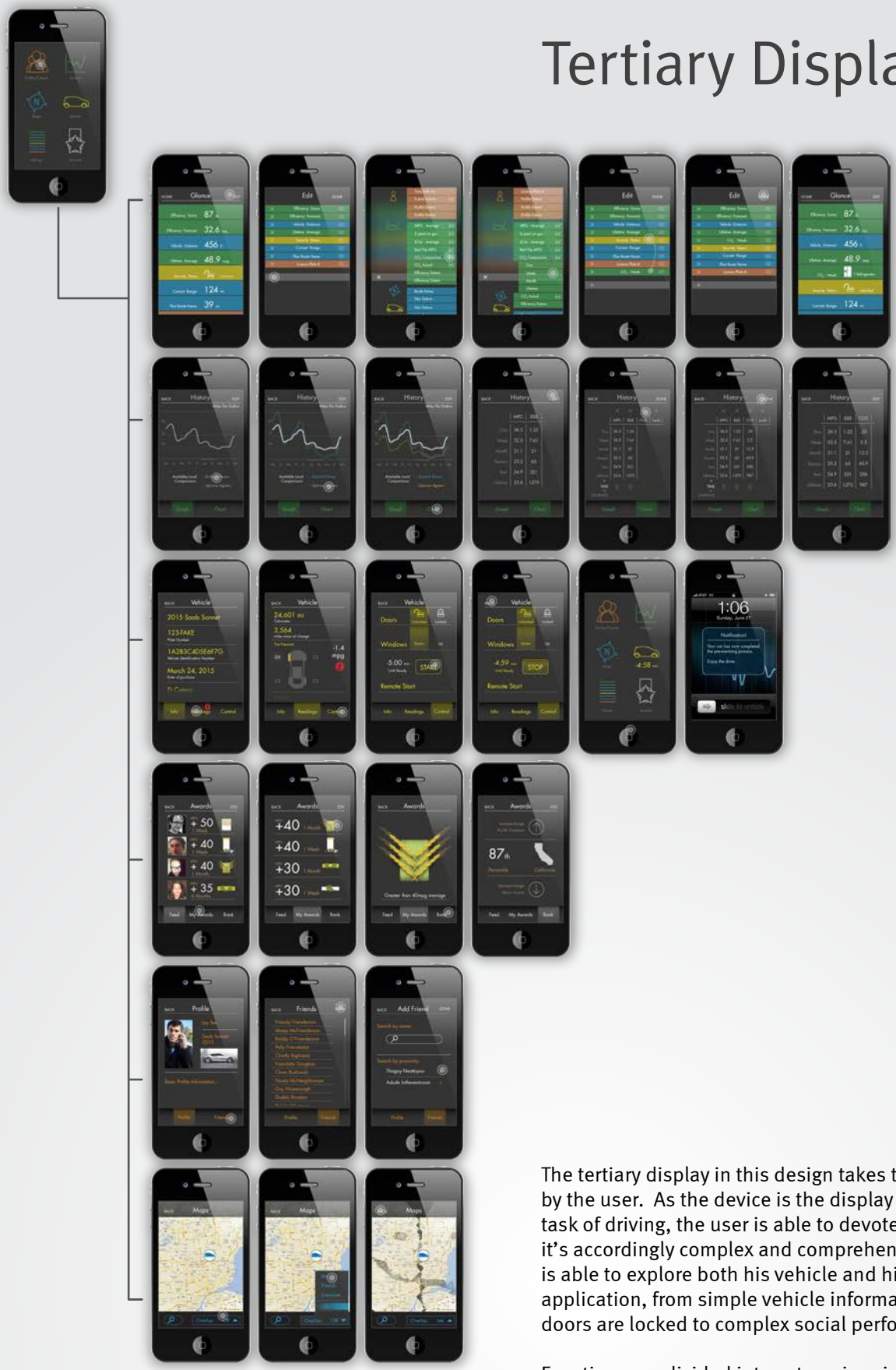
The secondary interaction of the design is located on the central display of the vehicle. This interaction focuses on conveying the user's driving performance, presented in a number of different metrics.

The 'History' page allows a user to understand his performance over time and distance through a number of different aggregated metrics. Allowing the user to see data presented in ways that are meaningful to him is more likely to affect behavior change.

The 'Rank' page accesses both the user's personal accomplishments and the accomplishments of the user's friends.

The 'Alerts page offers the user a way to fine-tune the assistance for efficient driving provided by the vehicle. This page allows the user to turn on and off driving aids that change based on the growing proficiency of the user.

Tertiary Display



The tertiary display in this design takes the form of a device carried by the user. As the device is the display farthest from the primary task of driving, the user is able to devote the most attention to it and it's accordingly complex and comprehensive information. The user is able to explore both his vehicle and his performance through the application, from simple vehicle information such as wether or not the doors are locked to complex social performance comparisons.

Functions are divided into categories similar to those present on the secondary display inside of the vehicle.

If you would like to see a clip of either the simulator testing (really bad video) or the in-vehicle testing, click on one of the two icons.

The reception to the concept was positive enough that we moved from the concept phase to a simulator testing phase and then an in-vehicle testing phase. After the results from the testing phases turned out to be quite positive, the primary display was picked up for the model year 2014, second generation Volt.