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12/6/2011

Final Report

The best way to describe how to build a digital-physical system is to tell about our (Jared Gonzales and myself) own process in doing so. What we ended up creating was a project known as Auto's Life (http://dc-bdps.wikispaces.asu.edu/Auto%27s+Life). The process included first gaining an understanding of some design theory and then the practical process of actually making something.

First and foremost, the key to design is understanding the user, and what it is that they need and want. You must know who they are: their cultural background, skills, what they are attempting to do, the context within which they are attempting to do, etc. They are the central entity that you are designing for, so they must always be kept in mind.

Another key factor is functionality. Obviously, it needs to operate and function properly, but there is a lot more to it than just that. Good design should be useable in the manner that best fits the user. Sometimes this means making a system that is easy to learn and use and sometimes not. It all depends on the desired effect. However, certain characteristics should be more standard, like efficiency and safety.

What this all boils down to is that design is about creating an experience. This experience could be as basic as being aesthetically pleasing, bringing some simple joy of use in the morning, or it could be as complex and powerful as rehabilitating muscles after a stroke. Whether fun, creative, motivating, or helpful, good design elicits an emotional response through creating an experience that is centered on the users' needs and wants.

All that being said, how is this done? We started where design is the most important: the user. Luckily, we (a class full of car drivers) were essentially the users. To gather data we were able to conduct a self-probing ethnography. People are naturally prejudice and it is easy to fall into generalization and assumptions that may very well be wrong. Conducting a probe, especially on oneself, makes sure you step outside of these preconceived notions and gather qualitative, proven data.

With this data, we used an analysis method known as affinity diagramming. To sum it up in a sentence, the method requires you to review the data and create small notes, phrases, or

sentences on note cards or post-its, which can then be sorted into specific groups of relatedness. This method helps you find themes and patterns, or important areas of focus that are common points throughout the data. From this, we were able to decide on an overall concept that would guide our project: the sense of ownership and pride with one's car. We also had some underlying characteristics to keep in mind, such as how a person's history with their car- from road trips to little bumps and scrapes that accumulate- builds a relationship with it and how this may represent their lifestyle. People begin to personify their cars, creating a list of memories that enter their psyche, but how could this be physically/digitally represented?

It was at this stage that we brainstormed and rapidly produced as many ideas as we could which addressed these issues. It is important to note that no idea is a dumb or silly idea, especially at this stage of development. Every idea is valid and may lead to others, thus the concept is just to produce as many as possible. Once we had a collection of potential projects, the next step was to storyboard and sketch out our favorite ones (a sketch of ours can be found on the Auto's Life link in the opening paragraph). This allows you to dig deeper into a select few ideas and really see if there is anything intriguing that may be developed. It also allows you to visualize the experience of how someone may interact with your system, and as I stated earlier, the experience is what you are working to build.

By this time, we had decided on an idea: a social media page for your car, but the catch is that the car is in control of creating the content, not the user. Our next task was to create an overview that could be presented to others for feedback (once again, at the Auto's Life link above). This is a very important step because it forces you to write down clearly and concisely the essence of your project so that it can be easily described. Through this, any initial problems or holes in the concept should surface and be fixed before moving things along to an irreversible state.

Now it is time to build. This stage can be known as the rapid prototyping stage. A popular saying in film is that "the essence of writing is rewriting." The same holds true in design, the essence is to build and rebuild. The best design processes utilize this stage of development to its fullest because it is here where you really get to see interaction with your system, where you get to see that "experience" for the first time. Sometimes this stage can bring a project to a halt, as you may find your experience or your current design simply isn't working.

This is okay though, as it's better now than later, and I guarantee it will give you an idea of where to go next.

Once you have a final product, the rest is all business, and the design process is essentially done. However, continually getting feedback from the user community and updating/redesigning is always a good idea. Our project still has a ways to go, but I'm excited by our output so far.