

Insights

Drawing from the observations gathered during user testing, we generated insights and design criteria, illustrated with the help of current products and quotes from users. These will be used to guide the creation of informed concepts.

Observation

Insight

Existing Application

Attraction

How do you get the user's interest in the first place?

Real-time Feedback

Participants indicated they would have preferred real-time feedback at each of the "main places" in their homes. "I was most curious in the kitchen, but there was no readout in the kitchen."

Providing real-time feedback near the point of consumption effectively initiates engagement.



Speedometers provide crucial real-time feedback in context.

Simple Indicators

Showing only the current energy usage didn't give participants a quick overall sense of how "good" they were doing with energy consumption. "I had no real sense of how I was doing....at 7am it read 500 Watts and now it read 52 Watts."

Indicators should communicate complex energy information simply in order to invite the user to learn.



Crosswalk signals make it abundantly clear when it is safe to walk.

Engagement

It is novel to see previously invisible energy flows made visible for the first time. However, this interest wanes with continued use. How should we sustain interest?

Goals/Comparison

The system did not offer any clearly defined goals, and participants often quickly lost interest in the feedback. One participant said he "got worn out playing with it" and suggested "some sort of incentive, benchmark to help keep me interactive with it."

Helping to form and obtain goals through self or others-oriented comparison is an effective way to sustain engagement.

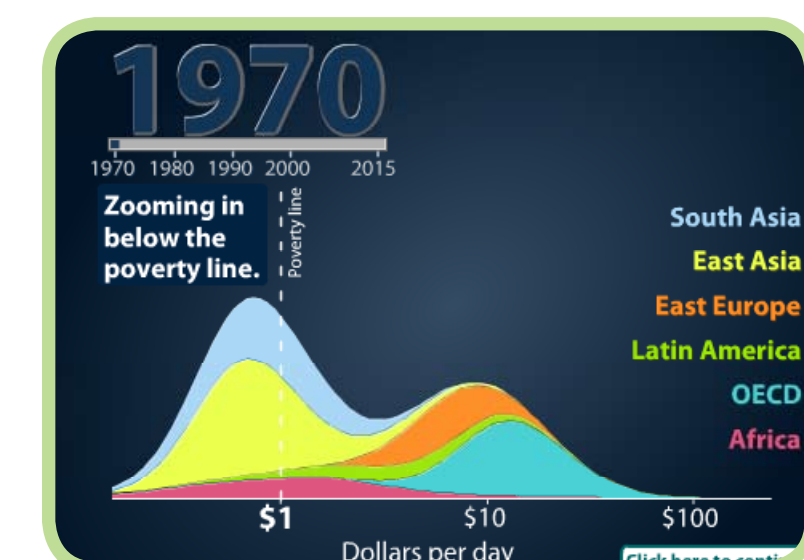


MyFoodDiary.com offers software that helps you manage personal nutrition and weight-loss goals.

Deep Info

After noting a jump in energy consumption, participants often desired to better understand what happened. "I'd see the light jump and I'd run over to try and figure out what happened."

Displaying energy data in a simple and entertaining way is important for informing and engaging. Advanced users will want complete data for analysis.



Gapminder's Trendalyzer converts boring and complex statistics into engaging interactive animations.

Extension

As behaviors and appliances are made more efficient, it becomes harder to offer effective feedback. How can the product remain relevant?

Limited Lifetime

Participants with energy efficient homes found it difficult to figure out how they could improve. "An already-efficient household may find it hard to shave much off what's already been done by replacing your bulbs"

The product's role may be scaffolding that is no longer needed after a certain point. A service model would be appropriate for supporting this planned obsolescence.

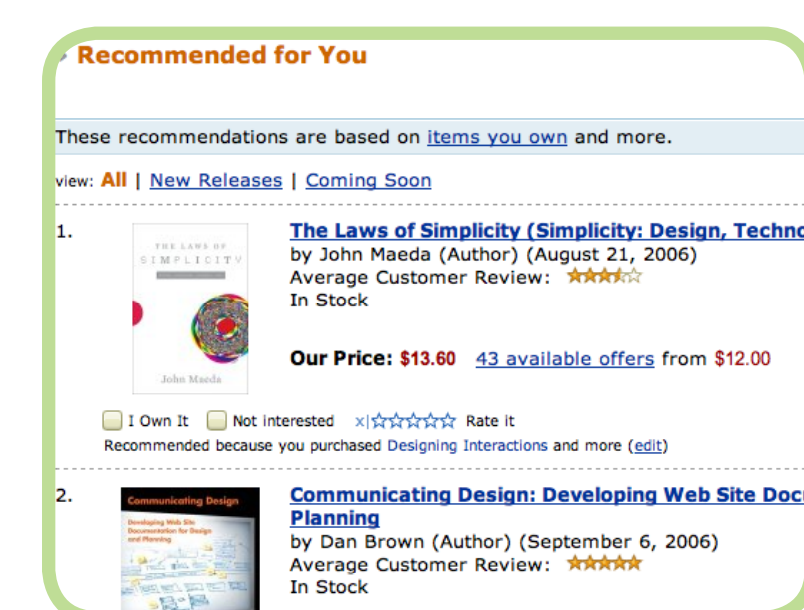


Training wheels can be discarded with time as they help you learn to ride unsupported.

Adapting Over Time

Energy conscious participants were often frustrated by the lack of prescriptive feedback. "I need to know what to do. Don't need to know how much I'm consuming, but instead I need to know what I need to do to change that." (www.worldchanging.com)

The product may offer prescriptive feedback. The suggestions offered could change with time, helping users fine-tune their efficiency over time.



The Amazon recommendation system offers continually improving recommendations for purchases you would enjoy.

Adding Value

Participants expressed a desire for the product to do more than just measure energy. One indicated that the product had symbolic value, embodying a "rule to try and save energy." Another suggested that it could offer financial incentives from the government.

The product may offer value beyond energy savings. It could offer artistic or symbolic value, social validation, solar-energy management, or support for an open-source home interface architecture.



The iPod is more than an MP3 player. It is also a music store, library and lifestyle.