

Strangely Familiar: Repurposing Everyday Devices

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Context:

Today nearly all domestic devices and appliances contain digital circuits. We find them in our washing machines, radio's, toasters, microwaves, alarm clock's, VCR's, toothbrushes and telephones.

If we begin to trace the history of these domestic devices we soon see how we have accepted a shift from a comprehensive world of simple analogue control (digital absence) to a world of digital control - manifested through buttons, screens, repetitive GUI's and instruction manuals. In the process we, the consumer, often suffer.

Manufacturers often exploit the potential power of digital technology by loading unwanted or superfluous features into devices – purely because the capacity is available. Feature creep (sometimes known as *requirements creep*) is a term used to describe a tendency for a product's functionality to increase during product development, beyond those originally foreseen. Feature creep is often driven by a client's growing "wish list" to gain market advantage over its competitors.

As a result devices often converge. This convergence usually means that the inherent physical characteristics and personality of each individual object becomes blurred. To take an example, our mobile phone is now a calculator, an address book, an alarm clock, a stopwatch, a to-do list, a games platform, a web browser, a camera, and finally a phone. Yet our interaction with these 'virtual devices' remains the same: through a single object, a numerical

keypad and a small LCD screen. This convergence usually means that we lose any recognizable features (affordances or clues) that were inherent to the original device. The virtual nature of these objects means we often struggle with our conceptual model of their use. This means that nowadays we expect feature redundancy and steep learning curves.

Designers need to address this unbalance. Currently we expect users to accept devices that contain more and more controls, logic and behaviors due to our desire to innovate technologically and create market dominance. We need to understand that within this process the bonus of any added functionality gets lost in the users struggle to regain control.

The Brief:

The aim of this project is not to create new innovative products for technology sake. Rather, the aim is to rethink existing products, harness their existing functionality and make them more understandable, meaningful and delightful to use.

Our vehicle for investigation will be everyday digital devices found in the domestic environment. Our aim is to analyze these devices and explore alternative propositions by recognizing the lost qualities of the physical and tangible world, and merge these intelligently with the functional benefits of the digital world.

We encourage you to explore more meaningful interactions (interactive behaviors) that are more poetic, simple, understandable and intuitive.

For the duration of this project you will be asked to work in pairs. For your 3.5-week investigation we will provide you with a domestic appliance from the following list:

- 1. Radio alarm clock**
- 2. Telephone answering machine**

Throughout this project you will be working primarily in 3D, combined with electronics. You should consider form and scale carefully in your final outcome. We encourage you not to limit your concept in terms of scale (object or environment) or network capability (here and now, or elsewhere).

Process:

During this project we expect you to complete the following process:

Phase 1: Analyze

- Analyze the existing technology
- Analyze the existing functionality
- Analyze the existing interactions
- Analyze the existing form
- Understand the value of affordances and physicality (tangible UI's)

Phase 2: Repurpose and Redesign

- Decide on which element of the device that you want to harness, or delete
- Decide which devices you want to combine or separate in a new way, and why
- Think of any new features you might want to introduce, and why
- Think of new interactive behaviors and controls to access this new functionality
- Think of how the form of the object might reflect these new behaviors and features

Phase 3: Iterate

- Present these new behaviors and interactions (play, act, video)
- Iterate, design, iterate, design etc.

Phase 4: Build and Present

- Build a working prototype (using existing hardware and new sensors)
- Present the prototype to the group (in pairs)

What you will learn:

- Teamwork
- Critical analysis
- Functionality flow charts
- Modeling in card & foam
- Video prototyping
- Basic electronics
- 'Tinkering' with electronics
- Sensors and actuators
- Theory of microcontrollers
- Communication and presentation techniques

Criteria for Success:

1. Team working & attendance (20%)

Team working and collaboration will be key to your success in this project. It is also important for everyone to attend all classes. Absence will be noted.

2. Visualization & Online Documentation (20%)

One of the key skills a designer needs to learn is the importance of communication. Without good communication ideas are often misinterpreted. In this project we will be asking you to develop your communication skills through visualization techniques. We will introduce you to various methods and techniques for creating visualizations – merely as pointers to those people unfamiliar with visualizing their ideas. Throughout the project we will be assessing your attempts to visualize your process.

You will be required to document your work throughout the 3.5-week period. This might include video, photographs, sketches, etc. of your work. We will be marking your process and method of working, as well as your final results. This material will also contribute to your mandatory online documentation.

4. Final Proposal (60%)

The final proposal will be marked on the following:

- Imagination
- Analysis and problem solving
- Realism. The ability to design something that will live in the real world
- Craft. The ability to design and craft a beautiful experience
- Prototyping. Ability to prototype ideas appropriately
- Context. Ability to situate the work intelligently