

IN YOUR FACE

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Concept

This project allows individuals to view customizable information right in their mirror without interrupting any usual activities. The prototype features a LCD screen controlled by a Wi-Fi enabled computer, delivering RSS Feeds directly to a user's mirror, while allowing them to control their content through simple gesture based-commands.

Motivation

Most products today are either multi-functional, such as a cell phone, or one-dimensional, such as weather readers, and all require some form of direct interaction, and leave a footprint in any area they are installed. This project will provide a fully integrated system leaving no footprint and allowing users to interact with the product through gestures which require no buttons, gloves or other external devices.

Competitive Analysis

- Cell Phones

- Many have browsers or applications which allow access to information
- Have many other features but require too much interaction

- Ambient products (all products are around \$99 and up)

- Wireless products which provide weather, health, energy, etc. information through an information network
- Just show one piece of information, focused on the network as well as consumer devices



- Gesture Based Controls (mostly prototypes)

- Uses a camera to detect hand motions and translate them into controls for a TV or computer
- Requires very steady motions and relies on complex computer vision software

Product Requirements

- Connects to Wi-Fi to download RSS Feed information.
- Parses information and displays RSS Feeds to the screen.
- Motion sensors accept motion input from users.
- Laptop processes sensor information to interpret user gestures.
- Gestures are translated into controls which affect the content on the screen.
- Timing Requirement: Time between gesture and action should be under a second.
- System should go into sleep mode, allowing user to return to a complete mirror upon request by user.
- Sensors should not be easily visible to user when using the device as a mirror or screen.

Technical Specifications

Hardware:

- [IR proximity sensors](#)
 - 3.1V @ 10cm to 0.4V @ 80cm
- **Arduino Nano Microprocessor**
 - 8 Analog Inputs for sensors
 - USB output
- Laptop
- LCD Monitor (with [mirror film](#))

Software:

- Graphical user interface

