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