All the information you want is only a tap away
Project Concept

- A device that allows users to monitor information of their choice (weather, stocks, sports, etc.) at a glance.

- This device will use accelerometer data to detect sharp taps to the left/right sides of the frame in order to manually cycle between multiple information sources which will be obtained from an internet connection via 802.11b/g or Bluetooth.
Project Motivation

- Most modern technology (cell phone, computer, etc.) requires a user's interaction and full attention in order to convey information.

- Once initially customized by the user, this prototype will automatically cycle between information streams with the option of manually switching streams by tapping the sides of the device.
Competitive Analysis

- Ambient Devices
  - Based on a pager network
  - Different devices for different streams of information
  - Subscription required for customized information

- Wireless weather monitoring station
  - Single stream of information
  - E.g. Oregon Scientific
    - Sensor based
      - Professional Weather Center (WMR200)
    - “Feed” based
      - WeatherNow with MSN Direct Service (WMS801)
Requirements

- **Functional**
  - Retrieve data from the internet via an 802.11b/g or Bluetooth network connection
  - Parse and display data on LCD screen
  - Identify sharp taps to the left/right sides of the frame using accelerometer data

- **Timing**
  - Update data every 10 min
  - Retrieve data from internet in under 10 sec
  - If data is available, parse and display on LCD screen in under 10 sec
    - Else, display error message + cached information from the last update
  - Identify sharp taps and switch feeds in less than 1 sec

- **Reliability**
  - Attempt to reestablish network connection upon failure
  - Simple user interface (after initial configuration) with no physical buttons
  - Small movements must not cycle the data being displayed
Technical Specifications

- **Hardware**
  - gumstix
    - verdex XM4-bt
    - consoleLCD-vx
    - netwifimicroSD
  - Samsung 4.3” LCD
  - Accelerometer
  - Cell phone with:
    - Bluetooth
    - Data plan
  - Computer with:
    - Bluetooth
    - 802.11b/g

- **Protocols**
  - 802.11b/g
  - Bluetooth
  - RS232?
  - SPI?