



Figure 1 - Fitbit Alta HR displaying clock and heart rate.

Device

Fitbit Alta HR is a wearable computing device built around fitness. It is most similar to a pedometer with many other built in functions designed to track important health and activity markers. Data gathered from the device can be synchronized to a mobile application via Bluetooth, where users can review progress and fitness goals.

(a)

First impressions about the device

The first thing that comes to mind in terms of a good design was the way information is displayed on the screen. The screen is small, and the interface is seamless, simple, and easy to read. The device does not get in the way of normal tasks when worn and is not as noticeable compared to traditional “smart watch”.

A clear flaw about the device was the ability to view data on the device. Since the screen is not a touch-screen, the user must “tap” the device to cycle through the information from clock, to heart rate, to distance travelled. Occasionally, the device may be unresponsive, which will require the user to “tap” multiple times.

Functions and Tasks

1. Heart rate monitor

A typical task involves the user to be physically active. While running on a treadmill, the user wants to engage in “high intensity” intervals which requires the heart to reach a certain threshold of beats per minute. The user is able to quickly glance at the device and read their heart rate while running.

Functionality is equal to what the user wants to do. That is to have the ability to read their heart rate while exercising.

2. Call, Text, Calendar alerts

While the user is active or in situations where it is not ideal to have their phone out, such as in a meeting, are able to receive notifications via vibrations from the device without distracting the user and their surroundings.

Functionality is equal. Intention of the function is to notify the user that they have a call, or message at a glance. It does not replace the phone or a smart watch because you cannot answer calls or reply to messages from it. In terms of safety, it is not a good idea to be texting and being distracted while exercising. Thus, the functionality is equal to what the user wants to do.

3. Reminders to move

The user wants to be reminded to be more active throughout the day. The device sends a vibration and a message when the user has been sedentary for a long period of time or when they are near their daily activity goal.

Functionality is greater than what the user wants. The device will send reminders you to move too frequently and in times when it is not the best time to be active, such as in the middle of lecture. Additionally, the vibrations can be misinterpreted as call and text messages.

4. Sleep tracking and Sleep stages

The user wants to track how many hours a day they are sleeping, their sleeping patterns, and how often they wake up in the middle of the night.

Functionality is greater than what the user intended. All data collected can be seen on mobile application with the paired device. The device has a built-in alarm as well as reminders to sleep when it gets late. It encourages the user to change their sleeping habits.

5. Gesture that shows the screen

When the user brings their arm from a resting position to a viewing position (action to look at the device), the screen automatically “lights up” from a dim light. This is so that the device preserves battery and displays the information to the user only when needed.

The user wants to view their heart rate, time, or step count when they look at the device. Thus, the functionality is equal to what the user wants.



Figure 2 - Fitbit App that displays detailed information logged by the device over a period. Users can select a time frame within the graph to see a more precise depiction of the data.

(b)

Usability Goals

1. **Utility** – To be able to customize what to display on the device according priority.
2. **Effectiveness** – To be able to be more active throughout the day by keeping track of number of steps and distance travelled.
3. **Learnability** – It is easy to learn. Tapping on the screen of the device will cycle through the information.

User Experience Goals

1. **Motivating** – When the user is close to their daily step count goal, the device displays text. For example, “Only 128 steps left to go!”.
2. **Satisfying** – Data collected (heart rate, step count, calories burned, distance travelled) is interesting to see progress.
3. **Aesthetically pleasing** – Device is minimalistic, intended to resemble a bracelet or jewellery.

(c)

Usability Goal Questions

1. Does it contain all the necessary information that the user would like to see?
2. How well do the user achieve their fitness goals?
3. Is using the device intuitive?

User Experience Goal Questions

1. What kind of techniques are used to keep users on track of their personal goals?
2. How well does the user enjoy using the device?
3. Does it cater to younger or older people?

In general, the device fares well regarding these questions. Users can change what they want to display on the screen, use data to motivate to achieve goals, easy to pick up and use for all ages, notification and reward system to keep users engaged, and enjoyable to use.

(d)

Possible Improvements

Allow customization for colour of text on the screen. Currently, majority of the screen is black with white text. This will make the device more visually appealing and a better overall user experience. Moreover, adding a small button on the device to cycle through the displays and to include a timer would be a great addition to usability.

(e)

Proof of Concept Interface: Mouse Video

Usability Goal:

1. Learnability – difficult to grasp at first, but as time goes on the user can adapt and learn quickly. Skill learned is transferable to other pointer devices (optical, ball, trackball, touchpad).

User Experience Goal:

1. Engaging – motivates the user to continue to use the mouse with it by making it easier to navigate to things on the screen.

Questions:

1. How well can someone who has never been exposed to technology be able to use the device?
2. What is keeping the user to continue to use the device as opposed to another pointing device?