Mapping Study

User Experience Analysis of the True Fitness CS900 Treadmill in QuickStart and Manual Mode

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Project Overview

In the process of designing the optimal interaction between a treadmill and its users, it is necessary to map out every step necessary to properly utilize the machine. Preceding the case study will be a background of definitions pertinent to the study. During this case study we will map out the processes of both ‘quick start’ and ‘manual mode’. Each component of the user interface on this treadmill will be identified and explained. The case study will include qualitative and quantitative observations that will be used to help us design recommendations. Our goal is to determine every part of the machine that helps it to offer a perfect experience to the user, and improve the components that don’t with a better solution.

Background

Define:

Mapping

Mapping is best defined as the effort to create a seamless, advantageous relationship between controls and their movements. When we push a lever to the left, we expect the response to be movement to the left, but not too slow or fast, without jerking or lagging. This response is best when designed in relation to product as a whole, which can require some fine-tuning to find the best fit possible. The best utilization of mapping is the design that makes sense to the user with as little thought as necessary.

Navigation

Navigation is the process that the user engages in as they move through an interface. Optimal navigation lets the user know where they are, what's happening, what they can do, and how to get there. When appropriate navigation is instilled, the user has no questions or troubles reaching their goal, as it is nearly lying before their eyes. Navigation and take many forms such as linear, hierarchical, and webbed designs.
Wayfinding

Wayfinding is best described as a set of principles that help the user create a memorable, well structured, and simple navigation through an interface. While wayfinding encompasses navigation, the two are not the same. Wayfinding is more about the user’s experience through the interface, rather than the structure of the interface. Wayfinding includes other aspects that alert the user at decision points, make sure there aren’t too many decisions to make, and work the whole interface into an easy to digest system. When reflecting on one’s wayfinding experience, the user should have a clear understanding of the entire process and its purpose.

Case Study video at https://iu.box.com/s/2vr36jd4ihov5gmw3o8vjkk5ux5l4avf

Notes:
Company history:

True Fitness was founded in 1981 by CEO Frank Truslaske with the goal of creating unique products that would last for customers. They are now one of the leading providers of cardio equipment in the country. As a company, they use the latest technology and ideas to create tools that are safe, reliable, and easy to operate. The CS900 is one of their newest models of the classic treadmill.

Method:

In this project, we evaluated the design of the True Fitness Treadmill like we had not before used this version of a treadmill before. Our group member, Charlie, was the our user and had not before used a treadmill with this particular interface. W chose this treadmill because it seemed to have many different features to it, and also many different modes that it could be used in, such as, cardio challenge and calorie burner. Furthermore, we used video, notes, and pictures to record his experience. The frameworks we chose to analyze the treadmill are mapping, metaphors, feedback, and affordances and constraint.
Background on user interface: Screen

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>PART NAME</th>
<th>DETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Digital Interface</td>
<td>- Provides details on the current level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- States the current time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Gives the speed of the treadmill</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Tells the user how many calories they have burned as well as their distance traveled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Also gives the heart rate of the user</td>
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<td></td>
<td></td>
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<td>---</td>
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</tr>
<tr>
<td>2</td>
<td>- Forward and Backward arrows</td>
<td>- allows a user to change what song they are listening to by going forward or back if they have a music device plugged in</td>
</tr>
<tr>
<td>3</td>
<td>- Quick Speed Controls</td>
<td>- These controls allow a user to quickly change the level of speed that they are doing on the treadmill as a level from 1 to 10. They can hit the “activate quick speed” button to begin and the “clear entry” button to stop the treadmill.</td>
</tr>
</tbody>
</table>
| 4 | - Stages of Workout Buttons | - The stages of the workout are the “Cool Down”, “Advanced Options”, “HRC Cruise Control”, and “HRC Workouts”. (HRC stands for Heart Rate Control.)
- User can select which one of these options they would like to start a new part of the workout process.
- Cool down starts a slower pace
- Advanced options allows customization
- HRC Cruise Control focuses on staying at the same heart rate.
- HRC Workouts allows the selection from a set of predetermined workout options. |
<p>| 5 | - Enter | - This button allows the user to begin the change in the workout based on whatever stages of the workout button that they choose above. |
| 6 | - Change Display | - Button allows for changes to be made as to what the user is seeing in the digital interface section of the treadmill. |</p>
<table>
<thead>
<tr>
<th></th>
<th>Type of Workout Button</th>
<th>This allows for the selection of one of the workouts that are preset into the treadmill (sports training, speed ramp-up, cardio challenge, cardio burner, speed intervals, hill intervals, leg shaper, and glute buster).</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Up and down arrows</td>
<td>allows the user to change the volume or mute the ipod device that they have plugged into the treadmill</td>
</tr>
</tbody>
</table>

**Background on User Interface: Controls**
<table>
<thead>
<tr>
<th>NUMBER</th>
<th>PART NAME</th>
<th>DETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Start/Quick Start</td>
<td>- Hitting this button starts the treadmill off in the lowest speed that it has.</td>
</tr>
</tbody>
</table>
| 2      | Incline Up and Down Arrows | - The Up arrow allows the treadmill incline to be increased from the level position.  
        |                         | - The Down Arrow allows the incline to be lowered back to the level positions in intervals. |
| 3      | Pause/ Stop / Hold To Reset | - This button can either end the workout or can either pause the workout if the user hits the start button again.  
        |                         | - It also resets the entire machine when it is held down. |
| 4      | Speed + and - Buttons   | - Allow the user to increase the speed by pushing the + button without having to pick a certain level.  
        |                         | - Allow the user to decrease the speed in intervals by pressing the - button without having to navigate the levels. |
Quick Start Mode
To begin using the Quick Start Mode, the user only has to stand on the treadmill and hit the start button. This action begins the process of the belt moving and then adjustments can be made to the incline and the speed of the treadmill. The feedback that the user receives is simply that they are forced to start walking as the machine begins to move and they also hear a beep. When they hit “Stop” they hear the same sound as feedback and the workout stops.

Manual Mode
The Manual Mode allows for a more customized workout from the True treadmill. The user must stop the process by standing on the treadmill and pressing the start button. They then will hear the feedback “beep” noise as they are forced to begin walking. Then the user is able to pick from a list of custom workout they are:
- sport training
- speed ramp-up
- cardio challenge
- cardio burner
- speed intervals
- hill intervals
- leg shaper
- glute buster

This allows them to control other aspects of the workout like how many calories they want to burn and also a target heart rate.
Analysis (findings)

The quick start mode allows you to begin your work out in a timely manner. Using quick start gives you the liberty to bypass entering any information about yourself on the machine. Another benefit of quick start is that speed, incline and resistance. With buttons easily accessible the user is able to push the button and change the setting to the level at which they desire. It was the faster of the two options and also provided the user with appropriate feedback when the machine started, and when the speed or the incline changed. It also had good affordances and constraints with colored buttons and pictures making it very clear what the roles of the buttons were for the user.

Manual mode other hand, is more of a tedious procedure. The interface asks you to enter your weight, height, age and etc. A positive with using manual mode is that you are able to tailor your workout to your current goals. The options of workouts are: sports training, speed ramp-up, cardio challenge, cardio burner, speed intervals, hill intervals, leg shaper, and glute buster. These options were hard to understand how to start for the user. There is confusion on whether the Quickstart “Start” button must be hit first and then the type of workout can be changed as part of the manual mode. This was confusing because the only feedback was a blue light that would light up when that workout was started. There was no real sound noise to indicate to the user that they have switched workouts.

Therefore, the QuickStart mode ended up being much easier to use, but the Manual mode allowed for more options and possibly a more satisfying workout tailored to a user’s desires.

Conclusion

Summary

Our project involved breaking down the process of using the True Fitness Treadmill. We first performed our observations by physically going through the process of using the machine. This involved taking a recording as
well as detailed notes of the process that the user undergoes. Then, we mapped out all of the steps for both the Quick Start and the Manual Mode. We were able to then identify the feedback that the user is receiving and also where they are struggling with in terms of using the treadmill.

Our conclusions were that the Quick Start mode ended up being a much easier to use process in terms of the Affordances and Constraints that it offered as well as in terms of the mapping that we had done. It provided the user with a lot of feedback and also left very little room for error when using the treadmill. Furthermore, we found the manual mode to produce a more satisfying workout even though it was much more difficult for the user to understand how to use this mode. There was not a lot of feedback or instruction for the user on how they could begin one of these extra workouts.

**Design Recommendations**

As part of our design recommendations, our group changed the interface of the treadmill to incorporate the start and stop button into one single part of the design. We believed that by combining the enter and start button the user would experience less confusion on what they needed to do in order to begin the process. The stop button was also moved up so that the
additional part of the interface that was previously below the digital section was no longer necessary. It also allows the user to continue to look forward when they are walking because looking down to examine the start and stop buttons could potentially be dangerous for some users. We also incorporated the adjustment buttons for the incline and the speed on the sides of the start and stop button so they to were present right in front of a user. Other additional changes that we would want to see would be more feedback by sound when the user successfully begins their workout. For example, when hitting the start button there is a beep, but when attempting to start the manual mode only a light shows up which is very small and blue so it blends in with the interface.

References
All personal images and videos courtesy of Robert Mooney, Indiana University-Bloomington.


True Fitness Interface [Image]. Retrieved October 6, 2015, from:
http://www.truefitnesscanada.ca/true-ps850-treadmill-canada/

http://hci.ilikecake.ie/des_navigation.htm