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http://www.eyetracking.com/News/EyeTracking-Blog/EntryId/57/King-Midas-and-the-Golden-Gaze
was this your link?, just state if you used external material

Human-Computer Interaction

16

Exercise sheet 4

Exercise 1 – Midas Touch 2

Solution: The Midas occur when Distinction between attention for exploration and attention for selection is required. Thus, the system is required to distinguish between;

1. Gaze intended to gather visual information.
2. Gaze intended to activate a specific command.

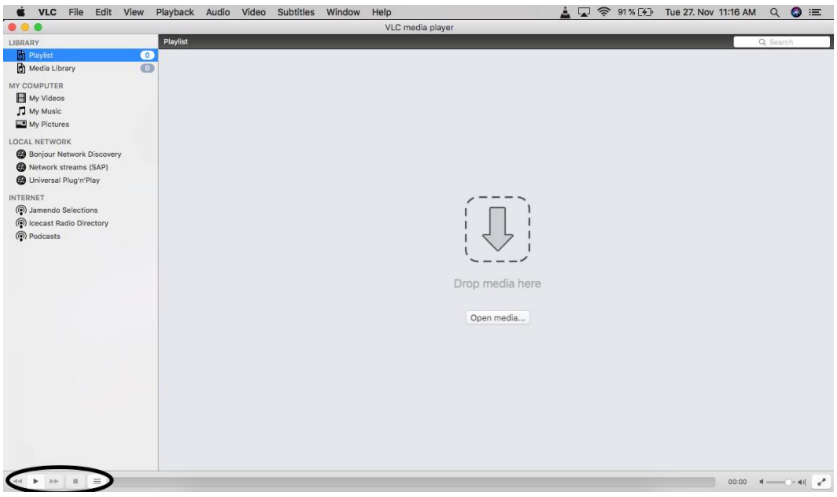
Otherwise, the user finds that everywhere he or she looks voluntarily or involuntarily. To combat the Midas Touch Problem, dwell time and blinks are used as clicking modalities in many gaze-controlled systems, but that doesn't really solve the issue because you don't know how many times user blink while reading paragraph because these actions often occur unconsciously.

Another example, sometimes when user read some words he wants to focus some words but unintentionally he switches to the third word rather than second after reading first word. The result is he interpret the wrong words.

Many methods are existing to address the Midas problem such as by gesture or voice. We can resolve this issue using gesture movement virtually. Another way we can use voice recognition i.e. in google map if user speak the name of specific location and say ok the map automatically recognize the voice of user and direct user on this way. Furthermore, fixation method is rated as less tiring and more intuitive – relevant with regard to user-friendliness, user satisfaction and possible long-term effects of novel interaction methods on users. Fixation method better suited for continuous, long-lasting and rapid interaction with an application. When users are appropriately trained in using the fixation method, they may consider this interaction method an intuitive, user-friendly means of communication with their environment.

Exercise 2 – Desktop WIMP interfaces 3

Solution: We select this VLC screen from Mac and explain 3 examples of good usability regarding the use of pointing.



Effective to use:

The VLC player design allows user to perform tasks accurately and completely by the use of pointing device. It serves the purpose of playing music or video fast because it is easier for pointing device to move faster on the corner of the screen.

1

Efficient to use:

The left bar design allows user to perform the task (browse/playlist/...) very easily. To listen music/watch video after opening vlc player, user needs to press one button and choose a track to complete the task based on the user's music/video type choice which is done very efficiently through a pointing device.

1

Have good utility:

To operate the vlc player, it has a good number of utilities for a user under the menus which can easily be attained through the pointing device in a very less time.

1

Exercise 3 – Fat Finger Problem 5

Solution part (1)

Fat finger problem is defined as having difficulty using a website on a touch-screen device because the fields or buttons of the system are too small for the width of the finger which results, to get a non-desired response because of not possibly seeing the exact target. One of the examples of a fat finger problem is using a non-mobile website on your iPhone and having trouble doing something simple like logging in because the fields are too small to touch for the width of the finger. 1

Solution part (2)

This watch does not play a good role in giving clear and easy access to the user about applications and a perfect example to show fat finger problem fig 4.1. Consider the scrollbar at the side, it is difficult to use the scroll bar in the corner which is not even properly visible. A user could easily end up pressing the wrong icon as they are very close to each other because here many of the target areas are located to each other which causes a problem of particularly selecting some target. 2

Figure 4.1: Fat Finger Problem
Source: https://goo.gl/wN6TFX

Solution part (3)

For avoid such type of "Fat Finger Problem" we can introduce "Dual Finger Selection" technique with the application, where two finger can be used for scrolling instead of one. It will help user to provide ease by creating difference between 2 finger usage and one finger usage. 2

Exercise 4 – Mobile Interface

Solution:

each 0.5P = 2P

1. Limited screen space. Since the phones today have a limited screen space, the designer can't have too much information and choices for the user on the same screen.
2. Placement of buttons. Studies have shown, that the best places for buttons roughly are in the center of the screen. This place however competes with where you want to show information to the user. The place where you most probably want to place the buttons from a design perspective is at the top or bottom of the screen, but this, again, makes them harder to reach.
3. Fat finger problem. As stated above, the fat finger problem is when the finger is big and un-precise in its key presses. This forces the UI designer to make the buttons large enough to be pressed, which might consume valuable screen space.
4. The context of where a mobile device can be used should be considered. It might be big difference between using a user interface in a store and out in the everyday life, where the user for instance is being distracted by other things.

Exercise 5 – Desk-Lamp Interface 4

Solution:

Scenario: A simple desk lamp has only an on/off switch, which is changed to an LCD screen. (*Assumptions: The screen has a touch display and is supposed to be the main input device. Additional electronics circuits can be added to provide the hardware for the new features suggested in this task.*)

Possible additional features:

- **Dimming feature**. With an LCD screen the user would be able to more precise see and adjust the light level with many more steps than only on and off, making it possible for them to dimmer the lamp. (*requires dimming circuits and a dimmable lamp*)
2 - **Bedtime color temperature adjuster**. The user enters the time when they usually go to bed via the LCD screen. A built-in clock then adjusts the color temperature of the lamp so that it during the evening, when the user is supposed to go to bed soon, has a warmer white color temperature than during the day. This follows the natural color temperature of the daylight better and might make it easier for the user to fall asleep at bedtime since too cold color temperature at the evening might prevent this. (*requires circuits and a lamp that can adjust color temperature*)

Gained features when switching to an LCD:

- Possible to communicate with the user through a user interface, which opens for much more features than only a binary one-way communication channel (which an on/off switch is).
1 - With a display it would be possible to give additional information to the user about e.g. power consumption, how long it has been switched on or for how long the lamp is assumed to continue to work until it will break according to its predicted life time.

Lost features when switching to an LCD:

- Less affordances. A well designed on off button has good affordance, making the user understand how to use it without providing instructions. Using an LCD screen, this would be much harder to achieve.
1 - Not being able to physically feel where the on/off button are with the fingers. If the backlight of the screen is turned off and it's very dark in the room, it would be very hard to know exactly where the on/off button on the screen is. If the backlight would be turned on it would have been possible to see where it is, but it would not have been easier to find without looking at it. In addition, it might be a disturbance if it's desired to have the room completely dark.