MODEL BASED TEST

IS573 - FALL 2013 – DECEMBER 24

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1. BACKGROUND INFORMATION

We are supposed to use CogTool to produce a Keystroke-Level Model of a skilled user buying a product from an online shopping website. A task of buying Converse shoes from two different shopping website with different designs. One of the website is boyner.com, the other is morhipo.com. These two website is similar in terms of providing the same product but the product scale of morhipo.com is a little much.

2. COGTOOL DESIGNS

- MORHIPO

WIDGETS

Link: In the 1st and 2nd frames, my aim was to use menu widget with submenu widgets open under it on hover action. However, the design of the submenu and its layout did not correlate with the usual menu style. So I used link widgets(not buttons because they are textual) instead of menu header and menu items. Moreover, CogTool does not support menu-submenu interaction within different frames, so transition from a menu header to submenu item on another frame is not supported.

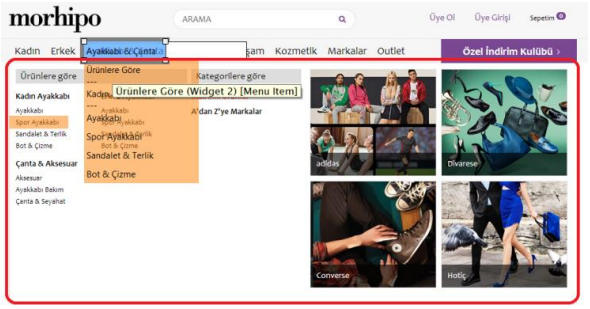

FIGURE 1- USING LINK WIDGET INSTEAD OF MENU WIDGET

Checkbox: Checkbox widgets are used in many frames to apply filtering.

Button: Button widgets are used in many frames in especially submitting forms.

Text Box: Text box widgets are used in the frames with keyboard related actions like typing credit card information.

PullDown: PullDown menu widgets are used in opened list of down items like expiration month and year of the credit card.

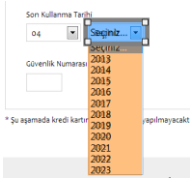

FIGURE 2- PULL DOWN MENU WIDGET

TRANSITIONS

Transition types are generally is mouse but with the typing actions keyboard type of transitions are used. Hover, click, press and release (for slide action) actions are used among these transitions. Self transitions are used for keyboard inputs.

Note: I think there should be an additional frame between frame 14th and 15th like the following after selecting a pull down item (04). The month and year pull down headers should be closed at a time:

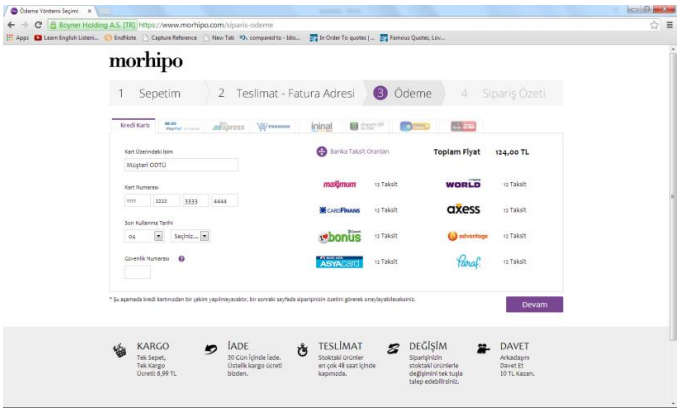

FIGURE 3 - ADDITIONAL FRAME BETWEEN 14TH AND 15TH FOR MORHIPO.COM

- BOYNER

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WIDGETS

Link: In the 1st frame and product selection frame (hyperlink with the shoes image), link widgets are used. Because they redirect the user to a different page.

Checkbox: Checkbox widgets are used in many frames to apply filtering.

Button: Button widgets are used in many frames in especially submitting forms.

Text Box: Text box widgets are used in the frames with keyboard related actions like typing credit card information.

PullDown: PullDown menu widgets are used in opened list of down items like expiration month and year of the credit card. If the pulldown header has to be used for transition element by clicking on, I used button widgets in place of them. Because CogTool does not support to make a transition from a pull down header in one frame to a pull down item in another frame.

(In the case of pullup menu in 14th frame of boyner.com I added an additional listbox item in case of not have to be clicking from the pull down menu. Because the interface can be misleading.)

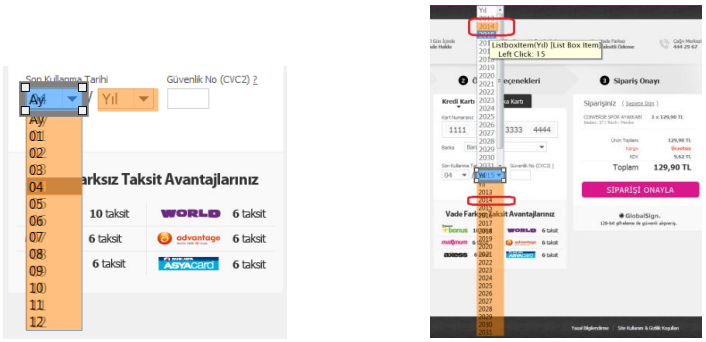

FIGURE 4 - PULL DOWN MENUS IN BOYNER.COM

TRANSITIONS

Transition types are generally is mouse but with the typing actions keyboard type of transitions are used. Click, press and release (for slide action) actions are used among these transitions. Self transitions are used for keyboard inputs.

Note: I think there should be an additional frame between frame 13th and 14th like the following after selecting a pull down item (04). The month and year pull down headers should be closed at a time:

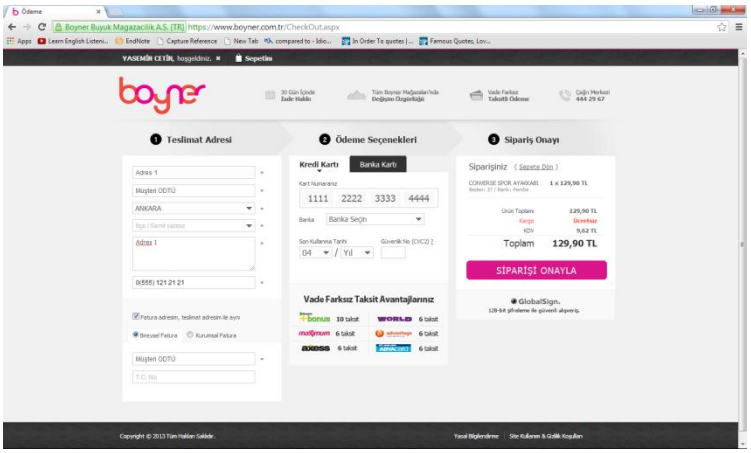

FIGURE 5 - ADDITIONAL FRAME BETWEEN 13TH AND 14TH FOR BOYNER.COM

3 3. ANALYSIS

TIME COMPARISON

According to the scripts demonstrated and computed for the proposed designs, the shopping process on boyner.com has taken less time from morhipo.com with 68.4'' over 88.1''.

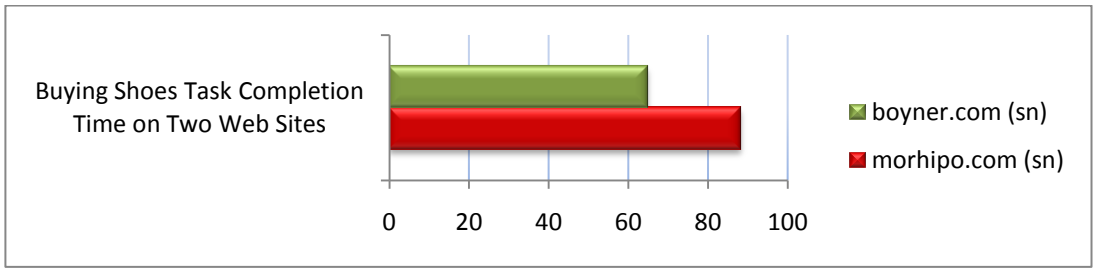

FIGURE 6 - TASK COMPLETION TIME COMPARISON

While designing the transitions, the system response times are experienced in the browser for two websites and approximately same response time amounts and think times (1.2s for nearly each frame) are set to eliminate these external factors on deciding on the fastest interaction design.

REASONS BEHIND

- With the support of the visualization, we can claim that in the first frame, the user is in cognition action with many procedural activities while vision in boyner.com, cognition and eye actions with more motor and vision activities in morhipo.com. I think, the reason behind that is the **menu appearance** with hover effect in morhipo.com. The user takes action for the reorganization of the interface elements instead of just clicking the obvious button like in boyner.com. Because the menu is already opened in boyner.com and the user can **easily recognize the intended button** and takes actions immediately (Figure 7).

FIGURE 7 - INITIAL FRAME MENU DIFFERENCE

- Reaching to the sports shoes page is 0.5'' shorter in boyner.com then morhipo.com. Because there is direct link in the opening page of the website to this category in boyner.com. However, the hover effect is making time consumption in morhipo.com (Figure 8).

FIGURE 8 - REACHING SPORTS SHOES LISTING PAGE

- However, through type and color filtering for shoes, the targeted ping converse shoes page is reached by morhipo.com earlier. Because for the color filtering, additional frame for scrolling is done in boyner.com by losing the user approximately 1''. You can see from the figure that, the user has made more eye movement and right hand usage in boyner.com because of this additional scrolling operation (Figure 9).

FIGURE 9 - REACHING PINK CONVERSE SHOES LIST

- Already opened size list saves 0.3'' for boyner.com. It is a one step choice instead of two steps with a pull down menu as in morhipo.com (Figure 10).

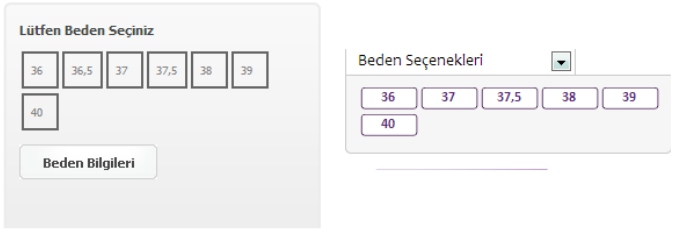

FIGURE 10 - SIZE OPTIONS MENU DIFFERENCE

- Unnecessary delivery address frame lose 3.5'' for morhipo.com. In boyner.com, after logging in the delivery address is shown in the same page with payment (Figure 11).

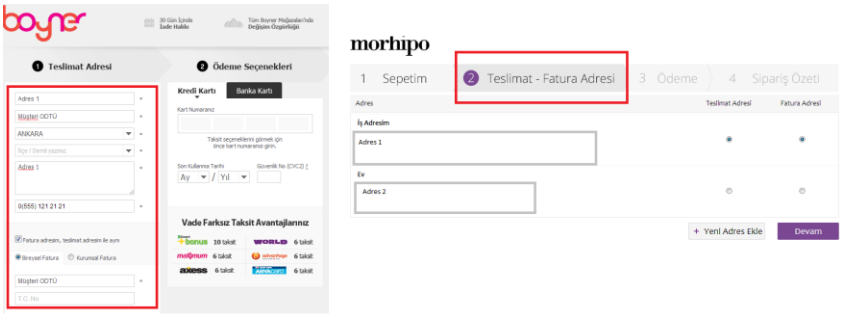

FIGURE 11 - DELIVERY ADDRESS STEP

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- Another relatively amount of time is gained in boyner.com in the filling credit card payment information frame. Among the frames 12th and 15th of boyner.com the payment is completed with the filled information. The total amount of time through these frames takes only approximately 24'' while the payment information flow takes 38'' between 12th and 17th frames of morhipo.com. The reason is that in morhipo.com the payment is divided into 3 steps in different frames (interface steps) and the user is filling information step by step in each frame which is a time consuming action (Figure 12).

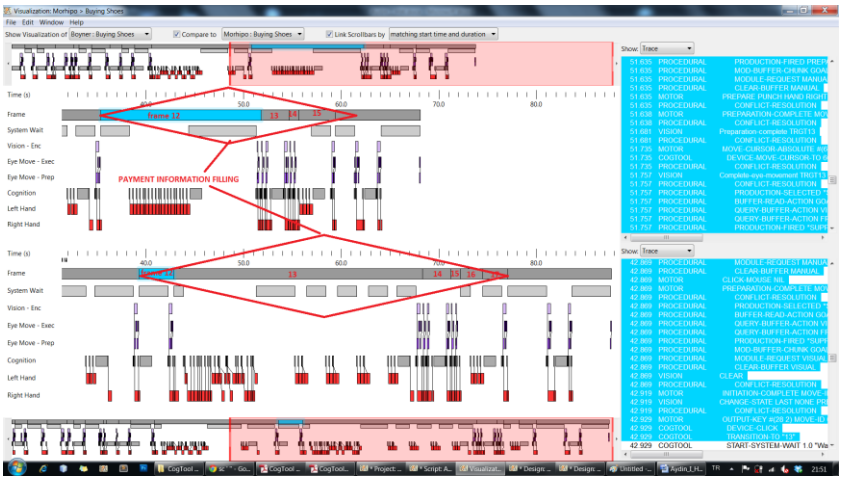

FIGURE 12 - TOTAL PAYMENT INFORMATION FILLING FRAMES

- Furthermore in these frames the total eye movement is lower in boyner.com from morhipo.com (Figure 12).
- The right hand mouse clicking actions are concentrated and relatively low in boyner.com. Because the distances between the textbox are lower (because they are all at the same page). And for the credit card number division to four pieces, in morhipo.com the user have to move mouse and click one more to change the division to fill all the 16 digits to textboxes. However,

in boyner.com, the there is only one text box for credit card number and filling to that box takes 7'' instead of 11'' as in morhipo.com(Figure 12).

- Till the frame number 11 the amount of time spent on both website is close.

4. SUGGESTIONS

- ## MORHIPO

According to the results, there is relatively much more eye and hand movement in morhipo.com. This can be because there are redundant frames reaching the same goal with boyner.com. So as in boyner.com, there can be one payment information page which also includes the deliver address etc. Also using less submenu items can save time to accomplish the tasks. However, we should keep in mind that morphipo.com has relatively much more product options than boyner.com, so categorization and hierarchical menu structure can really be necessary.

- ## BOYNER

Although morhipo.com has simpler interface, gathering similar functional interfaces together is smart idea. To eliminate the time lost in the early frames because of sliders, boyner.com can eliminate filter options which are not applicable for the current product to lower the needs for sliders.

5. REFERENCES

[1] http://cogtool.hcii.cs.cmu.edu/use-today/documentation-and-other-support

[2] http://cogtool.hcii.cs.cmu.edu/use-today/examples

[3] http://cogtool.hcii.cs.cmu.edu/forum/sliders-cogtool

[4] http://www.boyner.com.tr/

[5] http://www.morhipo.com/