Task 1 – Reflection on Virtual Controls on Touch Devices

General game interaction is an interesting subject in development for touch devices. This is because games have been developed for physical buttons for a very long time and now game developers are attempting to port established gameplay concepts on the growing mobile market without access to the physical buttons.

A common result of this is that controls are based around tap gestures as this is seemingly the same interaction as with a traditional button. This is generally not an appreciated approach and many believe that traditional game control simply isn't possible on touch devices, I think it is.

To realize traditional game concepts on touch devices I believe that one must simply "think outside the box", as cliché as it may sound. The expected action is from the traditional controls should be reattached to input methods that are possible with the touch interface and allow for the same detailed control, because the touch display of modern devices is by no means a clumsy input media.

With this in mind I aspired to take on a certain issue regarding traditional gameplay controls as interpreted for touch devices. This is virtual "actions button" used to perform for instance an attack or jump in the game.

Figure 1: Screenshot from the touch device game Eternity Warriors. The virtual d-pad has been marked in yellow and virtual actions buttons to the right are marked with red.

One of the games which were used for my group's project was Eternity Warriors. In figure 1 we can see the control input solution for this game. While the virtual d-pad, used for steering the players character, worked well the action buttons, used for various attacks, felt less natural. The action buttons were sometimes hard to locate, as they would be covered by the users thumb when used, and the tapping felt awkward as there was no other feedback than the actual animation of the characters attacks. I decided to design a possible touch interface solution to this problem.

In traditional gaming some concepts exists for button interaction. One is scrolling the scroll wheel of the mouse or tapping the "back buttons" of a gamepad (figure 2) to switch in between actions performed by the main action button (typically the left mouse button of the mouse or a button located to the right on the gamepad).

Figure 2: Typical interaction of a traditional gamepad control.

For my design I wanted to go for the scrolling solution and replace it for a drag or sweep gesture as I found these to be close to each other while also intuitive for their respective contexts. Using a "scroll" solution for the choice of action the actual interface for performance could be narrowed down to just one virtual button. This would mean that the user would not risk missing the button as her thumb would only need to be in the same position all of the time and the tap surface would be dedicated to only one action.

In figure 3 we can see how the orientation of the interaction areas has been interpreted to my final design. The red area in figure 3 is the intended surface for dragging and sweeping while yellow area is the tap surface for performing an action.
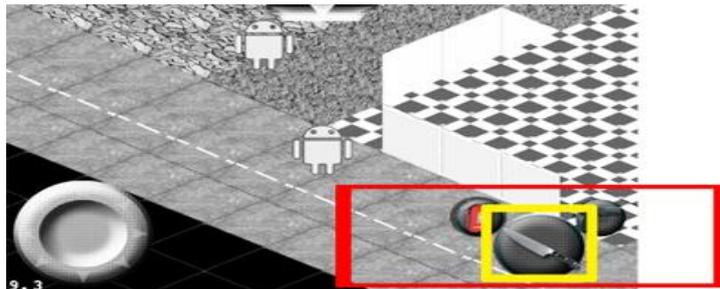

Figure 3: Design for touch solution of virtual "action" buttons.

Testing proved the design to be useful and even though it took some users some time to understand the controls they didn't find it too hard to learn. To truly test the interaction we would have needed to implement more of the underlying game and see how well it performed in its intended context. For the future it would interesting to further test the concept by including more possible interaction utilizing the precision of finger gestures. Possibly it will quickly become too complicated for a typical user to conveniently users. I however believe that solutions like this could eventually be part of a future framework for touch controls based around traditional game interaction.

Task 2 – Design of an App for Clas Ohlsson

Main Interface Components

Tab bar

For this app I wanted to provide three distinct main features. These features are a catalogue browser, a "closest store" finder and finally a list of favorite items so that the user can conveniently prepare her shopping trip. For this reason the app uses a tab bar as its main navigation interface. As stated in the iOS guidelines regarding UI element usage this is a good way to organize the app along functional lines.

Navigation Bar

As the Clas Ohlsson catalogue offers a wide range of products and they have already sorted all of their products into sub-categories I've decided to make use of a navigation bar. This allows for the features in the app to have its data presented gradually and avoid the user from being overwhelmed with information. Following the iOS guidelines, the standard back button is used and the appearance is customized to fit Clas Ohlsson's color coding.

Search bar

For both the browsing of Clas Ohlsson items and its store locations search bars are used. In the browsing feature it is provided as an option to scrolling a category list as these might be long and the user may be well aware of what she is looking for or what sub-category she is looking for. In the "closest store" feature it is provided in the scenario of that the user is not looking for the currently closest store but a store in an area where she might for instance be going.

The Catalogue

Figure 4: The various views when the catalogue tab is selected in the tab bar.

In figure 4 the various states of the catalogue feature can be seen. To the far left is the start view, showing the categories and color codes that Clas Ohlsson's customers are likely to recall from the paper and online catalogues. Picking a main category the user would enter the state seen in the center of figure 4. Here the content is a standard list view with a standard search feature. Each level

of categories (there are three layers in Clas Ohlsson's catalogue) a back button to the previous level is provided in the navigation bar which is also displaying the current categories name and color code. At the lowest level lies the items and to the right in figure 4 the detailed item view can be seen. At this level a favorite button appears in the navigation bar, allowing the user to save and easily access it via the favorite feature.

Find Stores

Figure 5: The various views when the "find your way there" tab is selected in the tab bar.

Figure 5 shows the states of the "closest store" feature. Once this tab is selected a map view with a search bar will appear. The navigation bar is hidden to make the interface less crowded. The closes store will be located automatically and markers with store names (not visible in figure 5) appear. These can be tapped to enter the state seen to the right in figure 5. Here information about the store and a miniature map of its location are displayed.
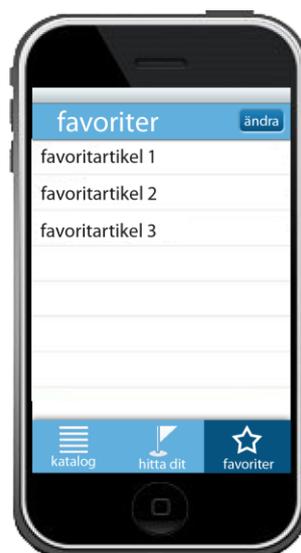
Favourites

Figure 6: A view when the favorites tab is selected in the tab bar.

In figure 6 we see the view of the favorite view. This is simply a customizable list view from which the user can remove favorite items as she have bought them or otherwise don't find them interesting anymore.