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App-Like Mobile Optimization and User Experience

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Information access via smartphones provides new business opportunities for companies allowing them to reach their consumer base at a much broader level. However, such a broad access presents companies with new challenges; companies need to develop websites that can be accessed effectively via mobile phones. Usability research shows that staying competitive in the market place requires companies to provide superior user experience for their websites (e.g., Djamasbi et al. 2011). While developing websites for various screen sizes has been one of the major topics in web development circles (Northington 2011), user experience design for mobile websites is still in its infancy. Designing for smaller screens is often accomplished by creating mobile applications and/or more recently by designing optimized mobile websites. Mobile applications typically fit a mobile screen and thus often eliminate the need for scrolling, they do however require users to download an application before visiting a mobile website. Mobile optimized websites do not require users to down load an application, however, they often require users to scroll. This may have an impact on user experience because research shows that users often pay more attention to information that does not require scrolling (Djamasbi et al. 2011).

This study proposes two designs for an e-commerce website that take the best of the two above approaches, that is, our designs use a mobile optimization approach (eliminate the need for downloading apps) with an app-like visual design (eliminate the need for scrolling). Both designs (breadcrumb and collapsible menu) have a clear visual hierarchy that implies a process flow and therefore these designs are particularly suitable for e-commerce (checkout) websites. To test the user experience of the proposed designs 27 students at a major university were randomly assigned to each of the two designs. Of the 27 participants, 15 completed the study on a Samsung Galaxy SIII smartphone running Android 4.0.4, and 12 on an Apple iPhone 4S running iOS 5.1.1. The task required participants to complete the checkout process for a specific product on an e-commerce website. We measured user experience via the System Usability Scale (SUS) (Brooke 1996), which measures web experience with a10-item questionnaire that are converted into a single score ranging between 0 to 100, with 0 being the least and 100 the best attainable score. A web page with a SUS score of 68 or better is considered to have an above average user experience (Sauro 2011). We also observed how users completed the tasks and interviewed each participant after they completed the task.

Breadcrumb design   collapsible menu design

SUS scores showed that both mobile optimized designs facilitated above average user experiences. However, the collapsible design was rated higher than the breadcrumb design on iPhones. The breadcrumb design implies a horizontal flow while the collapsible design suggests a vertical flow. The analysis of open-ended interview questions and recorded observations suggests that the screen width may have been the reason for users favoring the vertical flow (collapsible menu design) over the horizontal flow (breadcrumb design) on iPhone 4S, which has a narrower screen than Galaxy SIII.

While the results are limited to the task and the setting of the experiment, they have important implications. They show that the collapsible menu design can facilitate positive mobile experiences on both Android and iPhone devices, however, the breadcrumb design maybe more suitable for wider mobile screens.

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