Mobile:
New Testing Techniques for Our One Hand, One Eye Users

Test Istanbul 2013

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"You have part of my attention, you have the minimum amount."

From the movie, The Social Network

Multiple devices

It is not uncommon to see people using multiple devices at one time or to be using both a mobile phone and a laptop computer at the same time.

Each device serves a purpose. And each purpose may be better served by one device than another.

We have to consider usage from the user perspective. Users are not always on the move but may still only have one hand and one eye on the application they are using.

Our users are becoming increasingly distracted.

My testing background with mobile.

How mobile is

DIFFERENT FROM THE DESKTOP

Language

- Shake
- Bump
- Text
- Jailbroken
- Gesture
- Media queries
- Responsive web design
- Near Field Communication
- Triangulation
- Hybrid apps
- Viewport
- BYOD

Location

- Location awareness
- Connectivity: with, without and intermittent
- Wi-Fi connectivity
- 3G, 4G
- Moving and traveling around

Interruptions

- Incoming calls
- Voicemail
- Incoming text messages
- App notifications

"Look under that UI, and under that client, there's a whole software stack running. While your application runs, the phone is still talking to the network, working out where you are, maybe receiving calls, texts, Facebook and Twitter updates. There are a lot of interactions going on that you don't see."
Mobile Testing – That's Just A Smaller Screen, Right? Stephen Janaway in The Testing Planet

Physical

- Mobile phones get dropped in water.
- Display screens get cracked.
- Batteries run low and die.
- Devices get frozen and exposed to high heat, sun and other elements outdoors.
- SD cards get filled. SIM cards get removed.

When we use devices inside a test lab are we simulating realistic conditions?

Social

- Mobile devices introduce an aspect of social connection in ways that the desktop did not.

- Mobile devices are more personal than our desktops and laptops.

- Mobile devices both bring us closer and at time set us apart.

Financial

- Mobile devices introduce financial aspects, peer pressure of owning upscale devices.

- There is a social aspect to owning highly-powered devices and to keeping up with the latest and greatest of what is available.

Situational

- Users may be facing challenging conditions when using their mobile devices.

- Depending on what you are testing, the user's physical and situational challenges may be a factor.

- If your application is forcing an update during a time a user Is using their device for an urgent need, your app may cause disruption and frustration.

How mobile requires

NEW WAYS OF THINKING

Think User Navigation

- Mobile users are unlikely to use similar patterns of behavior as on their desktop computers..

- We need to understand how users are using their devices and how they are using the mobile apps and mobile websites we are testing.

Think Globally

Needing to test an application or mobile website with global usage introduces challenges that are unique and not easily solved. For example, gaining access to devices, carriers may not be possible.

For example how would you test multi-lingual input with different character sets?

Think Accessibility

With an array of screen resolutions, can our users access what is needed on mobile devices?

Has our design taken a mix of screen resolutions into consideration?

Think New User Experience

- Mobile apps often implement different user controls and use access than we've experienced before.

- We may need to test with gestures and touch.

- We may need to test custom controls.

Think Company Reputation

"Consumers now have a quality bar, and that bar is going up rapidly. Two years ago, Apple's Maps app on iOS 6 would've been a fine product."

From Engadget, Bardin

Think Trends

For planning purposes, we need to look at trends and statistics in mobile such as device usage, operating system usage as well as other app or website specific statistics including language and location.

Think Competition

User comments and rankings are worth watching. A scathing review in the app store can make a large impact on your application.

Also your app's competitors may not be so obvious.

How mobile introduces

NEW WAYS OF WORKING

New tools

From screen capture to app version capturing, we need new tools on mobile than the tools we have had available on the desktop.

Your team may build it's own tools.

Automation

"Automation in the mobile world is not as easy as it is in the desktop world. Your device is, after all, not able to run a large automation tool on its own. There's not the memory to install it. The UI of typical mobile devices is highly dynamic; the user can use swipes and other gestures on the screen to interact with the device."

"Mobile Testing – That's Just A Smaller Screen, Right?" Stephen Janaway in The Testing Planet

New skills

According to the World Quality Report, 2012-2013, a study conducted by Capgemini, Sogeti and HP, the top priority when testing mobile apps is efficiency/ performance, which was cited by 64% of respondents. That was followed by functionality (48%), portability (46%), UI/ease of use (36%),compatibility/regression testing (31%), security (18%) and certification of application (14%).

UX + Testing

- New bugs
- New issues to discover
- Screen resolution
- Responsive design

Test lab

- For both testers and test managers, we have built test labs before and now with mobile devices, we will need to build new labs.

- We may also investigate and use both Crowd sourcing and BYOD as solutions.

Mobile personas

An approach to design, development and to testing is building mobile personas. Seeing our users as real people and not faceless users.

Context matters

- What is context?

- Why does it matter?

- How does context influences testing?

"Context is worth 80 IQ points." Alan Kay

In more detail

MOBILE PERSONAS

Mobile Personas

- User models, or personas, are detailed, composite user archetypes that represent distinct groupings of behaviors, attitudes, aptitudes, goals, and motivations observed and identified during the Research phase. From About Face, Alan Cooper

- The invention and development of personas, the refinement of written behavioral blueprints…" Quote from About Face, Alan Cooper

Creating Mobile Personas

The benefit of (digital-blueprint technology) has been so apparent," said Rebecca Ayala, a Rudolph + Sletten senior engineer, because the easily update software means they don't have to worry about workers consulting an out-of-date blueprint, amount other things.

Nearly half of the respondents in a recent Forrester Research Inc. survey said they use a smartphone at least once a week for work, and 21% said the use a tablet for work at least weekly.

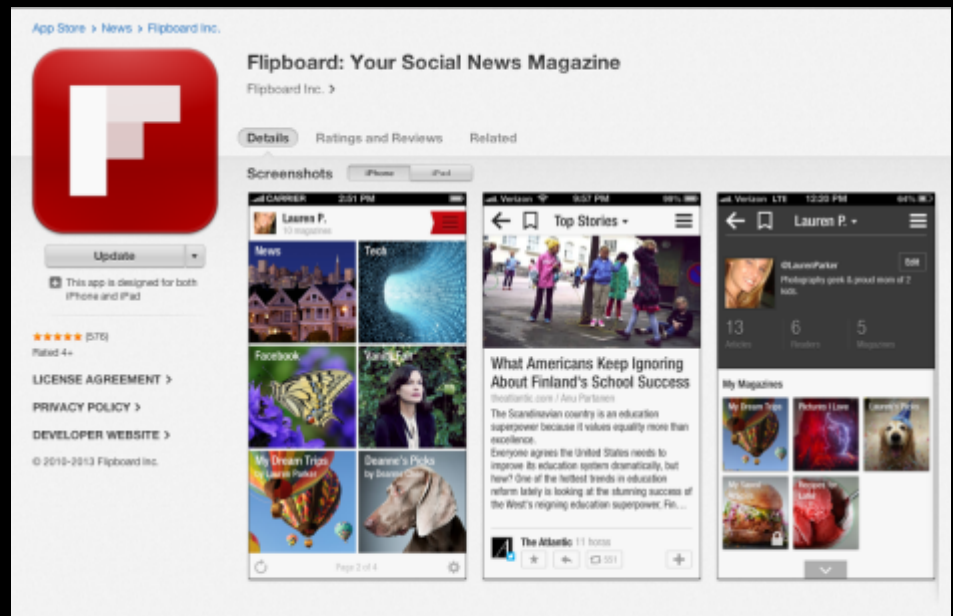Quotes from The Wall Street Journal article: Meet the New Mobile Workers

Context Matters

What you are testing changes how you look at testing.

Context Influences

What you are testing changes how you plan testing.

BYOD

How to get access to devices?

- Crowdsourcing
- Keynote Device Anywhere and Perfecto Mobile
- Users in other countries
- eBay
- BYOD

Summary

- Review how mobile is different from the desktop to find new ways to test.

- Recognize the need to learn new terms and technology to work with mobile.

- Consider creating mobile personas to design, develop and test.

- Investigate ways to build a test lab.

- Learn more about user interface design.

- Remember our users are no longer tethered to the desktop.
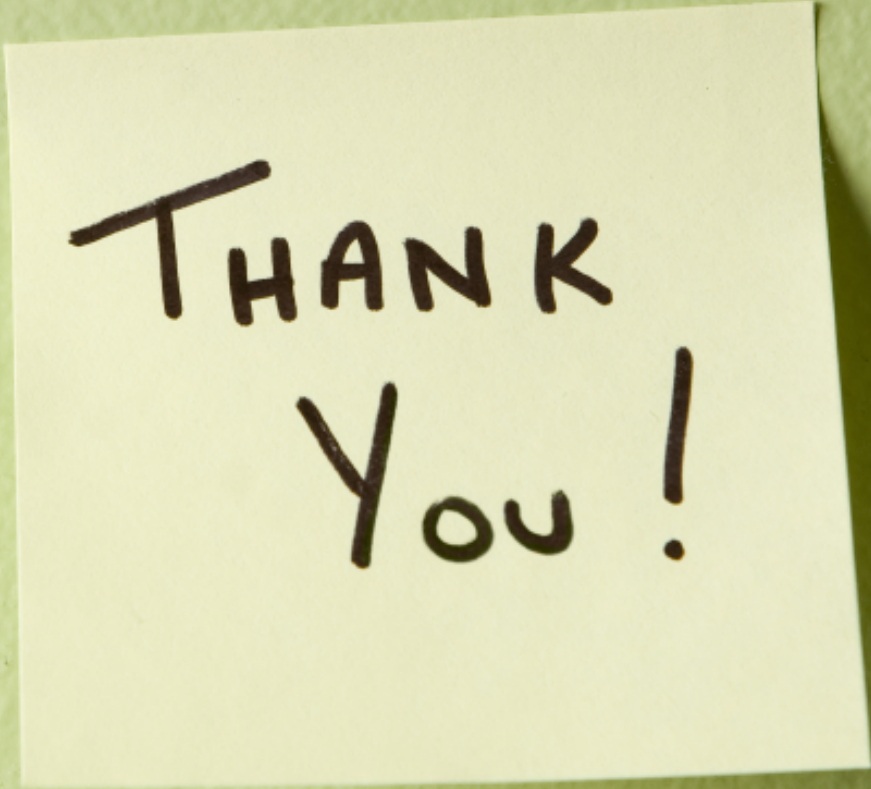
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