Agenda

• Challenges
• Strategy
• Security
• Testing
Why Quality, Why Test?
Testing Challenges
Market Share a.k.a Fragmentation
What phone OS do you WISH your company supplied you with?

- Android 41%
- iPhone 29%
- Blackberry 13%
- Windows Mobile 9%
- I don’t want a phone! 8%
What is the Big Picture?

Constant Change
Key Differences Between Native & Mobile Apps

- Immediate
- Compatibility
- Upgradability
- Find-ability
- Share-ability
- Reach

- Lifecycle
- Crossover
- Time
- Cost
- Support
- Sustainability
Testing Differences

**Native Mobile**
- App Install
- Multiple Devices
  - OS
  - Size
  - Themes
  - Interruptions (Tombstone)
  - OS, Device APIs

**Mobile Web**
- No Install
- Browser Wars
  - iOS – Safari
  - Android – Variety
  - Windows Phone – IE
- Requires Connection
- Load Times
Mobile Quality Strategy
## Most Common Mobile Testing Challenges

<table>
<thead>
<tr>
<th>Factor</th>
<th>Traditional Test</th>
<th>Mobile Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform</td>
<td>Workstation</td>
<td>Mobile Device</td>
</tr>
<tr>
<td>User Input</td>
<td>Keyboard / Mouse</td>
<td>Touch</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Screen Share</td>
<td>?</td>
</tr>
<tr>
<td>Verification</td>
<td>Screen Capture / Video</td>
<td>?</td>
</tr>
<tr>
<td>Utilities</td>
<td>Yes</td>
<td>?</td>
</tr>
<tr>
<td>Automated</td>
<td>Yes</td>
<td>?</td>
</tr>
<tr>
<td>Performance</td>
<td>Yes</td>
<td>?</td>
</tr>
</tbody>
</table>
Increasingly Complex Testing Matrix
Mind Maps .... What is a Mind Map?

- Hardware
- Network
- Data
- Software
- Audio/Video
- Functionality
- User Interface / User Experience
Know Your Users!
STUFF USERS HATE
(BASED UPON USER COMMENTS)

- Install: 40%
- Pricing: 31%
- Performance: 16%
- Crash: 11%
- Hang: 3.5%
- UI Controls: 2%
- Security / Privacy: 1%

- Install: 14%
- Pricing: 59%
- Performance: 8%
- Crash: 7%
- Hang: 0.3%
- UI Controls: 7%
- Security / Privacy: 2%

*Based upon crawling 250,000 users reviews of the most downloaded apps.*
Mobile Security
Enterprise Mobile Apps

1. Should prompt a user for credentials in order to launch the app.
2. Must protect their local data-at-rest with encryption.
3. Must protect their data-in-transit with SSL.
4. Must present credentials to the web services they’re calling in order to send/receive data.
5. An Internet gateway at the edge of the network must be employed to securely publish web services.
Security

- **Confidentiality**: Does your app keep your private data private?
- **Integrity**: Can the data from your app be trusted and verified?
- **Authentication**: Does your app verify you are who you say you are?
- **Authorization**: Does your application properly limit user privileges?
- **Availability**: Can an attacker take the app offline?
- **Non-Repudiation**: Does your app keep records of events?
Mobile Testing
Testing Functional Aspects

– All Mobile Apps
  • Enterprise, LOB, Productivity
  • Games
  • Marketing
  • Learning
  • etc.
Functional Testing Types

Sign-up & Login
Menu Options
Keys
Data Handling

Connection Speed / Carrier
Operating System
Screen Size
Interruptions
Error Messages
Functional Testing Tips

- Screen Real Estate
- Finding Device Specific Bugs
- Normal Use Test
- Idle Run Test
Testing the Environment
“The biggest problem in our recent tablet studies has been TMN: too much navigation. Also, too many inconsistently scrolling fields. Some tablet apps cram in so many weird features that users get overwhelmed and flail around without gaining mastery of the content.”
Localization

- Direction
- Currency
- Tax

- Content
- Dates
- Characters
- Addresses
- Phones
Usability Testing

Get Someone Experienced

Look for NEW users

Test Often!
Emulators vs Devices
Exploratory Testing
Test Automation

- Platform Specific
- Using Vendors
- Roll Your Own
Mobile Testing Tools
iOS

- Ranorex
  - Multiple Platforms
- frogLogic
- Frank
  - Selenium-Like
  - Cucumber
- KIF
  - Objective C

- UIAutomation
  - From Apple

- Can create nightly builds of iOS apps using TFS
  - Infragistics has a great blog post on this
Android

- Robotium
- BitBar

- Telerik
- Mobile Labs
Windows Phone

- MSTest
- Silverlight Test Framework
- C#

- NUnit
- Telerik
Skyline Technologies, Inc.

SkylineTechnologies.com
Microsoft Premier Partner

Custom Software
Mobile, Web, Cloud, Desktop, Other
Business Intelligence
Portals
SharePoint
E-Marketing
Business Consulting

Milwaukee, Green Bay, Appleton
that M\textsuperscript{TM}

CONFERENCE
summer camp for geeks

August 12\textsuperscript{th} – 14\textsuperscript{th} 2013

Tickets on Sale May 15\textsuperscript{th}
Call for Speakers April 1\textsuperscript{st}
Thanks You!!! … Questions?

@GregLevenhagen

greg.Levenhagen@devTreats.com

linkedIn.com/in/gregLevenhagen
References

• iOS Mind Map

• Stuff Users Hate

• Enterprise Mobile Apps List
  – http://robtiffany.com/5-steps-to-containerize-your-apps/?goback=%2Egde_4500837_member_215244516