Responsive mobile design

Kirill Grouchnikov
Android, Google Inc.
background

- Android 3.0 - 02/2011
- Android 3.2 - 07/2011
- Android 4.0 - 11/2011
- Market 3.0 - 07/2011
- Google Play 3.5 - 03/2012
this talk is **not** about

**Layouts 101**

- `FrameLayout`
- `LinearLayout`
- `RelativeLayout`
- ...

![Hello LinearLayout](image1.png)

![Hello RelativeLayout](image2.png)
and not even about

Layouts 202

• `android:layout_alignBaseline`
• `android:layout_alignWithParentIfMissing`
• `android:fillViewport`
• ...
this talk is about

effective use of screen estate for displaying your content
examples
**app details page**

![App Details Page](image)

**The Lost City**

**$0.99**

10,000+ downloads

44.73MB

1.4K people +1'd this.

**DESCRIPTION**

4.6 stars

Average

5 stars: 654
4 stars: 137
3 stars: 27
2 stars: 13
1 star: 20

**REVIEW**

Happy with the amazing response that the game is getting that we wanted to celebrate! Thank you! If you get a chance, please sign up for our newsletter over at www.firemaplegames.com to learn more.

Amazing!

4/11/12

So great. Would definitely like to see more games like this. I had a lot of
app details page
app details page
app details page
my apps + app details

two screens
my apps + app details

combined view
my apps + app details

master details
same content,
same hierarchy

adapting to context
responsive mobile design
http://cognition.happycog.com/
Jared Spool: The Cognition Interview

Jared Spool is one of the most influential design researchers and practitioners. He is a leading expert in the field of user experience design. In this interview, we discuss his insights, experiences, and the future of design.

Knowledge is Power

Follow That Requirement

Escape the Fear Factory
Hi, I'm Meagan Fisher, a designer living in Brooklyn. I make websites, eat food & love owls.

Owl-tastic around the web

This is a quick update to let everyone know I've absolutely been getting off writing this post because self promotion makes me ugly. But I've had lots of off-axis things happening so I'm going to knock it out.

The Flyover Effect

When the survey team of shirt makers at United Phosphor asked me to create a design for them, I was thrilled. I've long thought there were few official symbols for right owls, and now we've got one. Over years, because of October, they've won some.

The Flyover Effect Podcast

The kids at UnitedPhosphor interviewed me for their sixty-second podcast, The Flyover Effect. It was a lot of fun, even though how many菲尔and serious and super natural, which became the heart of the show. Having said that, you should give it a listen, I hope you do.

One connection from the podcast. I will be giving a workshop in design to the Phosphate crew. For this reason, I合成 give the talk in 2007. Please forgive me, I was supposed to be talking off thinking at the same time.

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http://colly.com
http://stephencaver.com
same content*,
same hierarchy

adapting to context

* the first two sites above omit some content under small widths
what about mobile*?

* given the context of the talk, “mobile” means “native Android”
device variety

Archos 2.8"

Experia Pro 3.7"

Galaxy Note 5.2"

Flyer 7"

Galaxy Tab 8.9"

Sony Tablet S 9.4"
device orientation

1024*600

600*1024
canvas-based apps

“show more” of the infinite canvas
text-based hierarchies

reflow or combine
Android resource system

http://developer.android.com/guide/topics/resources/providing-resources.html

physical size of the device
display density
CSS3 media queries

http://www.w3.org/TR/css3-mediaqueries/

- width, height, device-width, device-height
- orientation, aspect-ratio
- resolution
main difference

width, height, device-width, device-height

CSS pixels ~ dip
ems ~ sp
new resource selectors in Android 3.2

http://developer.android.com/guide/practices/screens_support.html

- *width dp*. For example, -w600p
- *height dp*. For example, -h600dp
- *smallest width dp*. For example, -sw600dp

*“survives” device orientation*
granularity of control
start from content
no more “tablet-optimized” layouts
what separates a tablet from a phone*

*“I know it when i see it” is not an answer supported by aapt
same content, 
same hierarchy 

adapting to context
switching point

"desktop" version

```
@media screen and (max-width: 480px)
```

"mobile" version
switching point

“phone” version

“tablet” version
switching point

how much space do i need for a two-column layout?
switching point

layout/myapps.xml
layout-w800dp/myapps.xml
multiple switching points

http://hicksdesign.co.uk
multiple switching points

layout/myapps.xml
layout-w600dp/myapps.xml
layout-w1000dp*/myapps.xml

* onwards to -w10000dp on the Android JumboTron closest to you
different switching points

layout-w 800dp/myapps.xml

layout-w 1000dp/details.xml

* From older releases of Android Market
unified switching points

* Unified in Google Play 3.5
switching point

how to preserve content hierarchy?
where do content blocks go?
what is locked and what scrolls?
switching point

why show permissions?
margin point
what is the optimal “consuming” experience?
what is the optimal “consuming” experience?
margin point

Xoom: 1280*800dp
switch point = 800dp
margin point = 1000dp
does everything go into -wNNNdp?
purchase dialog

sparse content - use DialogWhenLarge
purchase dialog

theme defined in values-sw600dp
font sizes

same sp values look too small
we use larger values on bigger screens
font sizes

sizes defined in values-sw600dp
<table>
<thead>
<tr>
<th>Device</th>
<th>Screen Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experia Pro 3.7”</td>
<td></td>
</tr>
<tr>
<td>Flyer 7”</td>
<td></td>
</tr>
<tr>
<td>Sony Tablet S 9.4”</td>
<td></td>
</tr>
<tr>
<td>Archos 2.8”</td>
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<td></td>
</tr>
<tr>
<td>Galaxy Tab 8.9”</td>
<td></td>
</tr>
</tbody>
</table>
recap

1. switch point 600dp
2. switch point 800dp
3. margin point 1000dp

- expand
- fixed
synchronized scrolling
synchronized scrolling*

* follow the light blue button
synchronized scrolling
synchronized scrolling
responsive mobile design
effective use of screen estate for displaying your content
same content,
same hierarchy
adapting to context
Q&A

- gplus.to/kirillcool
- pushing-pixels.org
- kirillcool@yahoo.com
- android-developers.blogspot.com