The Art of Infinity Blade

Basically, we sold our souls.

Donald Mustard | Creative Director
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WHY MAKE PHONE GAMES?

- Huge install base
- 2.2 billion dollar, rapidly growing market
## Global Mobile App Store Rankings

(Ranking by revenue in millions of dollars)

<table>
<thead>
<tr>
<th>2010 Rank</th>
<th>Store</th>
<th>2009 Revenue</th>
<th>2010 Revenue</th>
<th>Annual Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Apple App Store</td>
<td>$769</td>
<td>$1,782</td>
<td>131.9%</td>
</tr>
<tr>
<td>2</td>
<td>BlackBerry App World</td>
<td>$36</td>
<td>$165</td>
<td>360.3%</td>
</tr>
<tr>
<td>3</td>
<td>Nokia Ovi Store</td>
<td>$13</td>
<td>$105</td>
<td>719.4%</td>
</tr>
<tr>
<td>4</td>
<td>Google Android Market</td>
<td>$11</td>
<td>$102</td>
<td>861.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$829</strong></td>
<td><strong>$2,154</strong></td>
<td><strong>160.2%</strong></td>
</tr>
</tbody>
</table>

*Source: IHS Screen Digest February 2011*
WHY MAKE PHONE GAMES?

• Huge install base
• 2.2 billion dollar, rapidly growing market
• Over 50% of that revenue comes from games
• The hardware is ready for games we like to make
THE HARDWARE

- Comparable to last gen consoles
- Will surpass current gen consoles within 3 years
- Tons of memory
- Touch screens
MAKE IT PRETTY!

- Emphasis on close-up characters
- Cinematic presentation
- Uncluttered screen
- The world was our story
MAKE IT FUN!

• Can play whole game with One Finger
  – Find ways to get input, then get that finger out of the way
• Super short session core gameplay
  – Meaningful, fun, and progressive every 2 minutes
• Original, Unique, Device Specific design
  – If your game would be great with a controller, you are making the wrong game
• Easy to grasp, difficult to master
  – Truly skill based
CHARACTERS

- Shaders
  - Per-vertex specular looks bad on characters
  - Per-pixel specular from sum of diffuse RGB to save memory
- Low verts, HUGE texture maps
  - 3000 verts, 2048 textures
- Low bone count
- 2 weights per vert
- One draw call
  - Merged meshes and texture atlases for hero character
ENVIRONMENT

- Keep draw calls down
  - Combine meshes that use the same texture and shader
  - Aggressive culling
- Custom painted cards for distance
  - Lower draw calls
  - Simulate depth of field
- Colored lightmaps for distant meshes to simulate fog
- Delete unseen polygons
  - Fixed cameras allowed us to be super aggressive
Baked lighting

- Global illumination
- Ambient occlusion
- Baked-in normal maps
- Custom painted details
Other Optimizations

• Getting around lack of precompiled shaders
• Next gen particle systems are not cheap
  – Automated flipbook texture creation from expensive animated materials
• Precomputed visibility sets
• Considerations for different devices
  – Screen resolution vs memory
  – Per-pixel rendering performance