



Google  
**Developers**



# Intro to Google TV

Targeting the Big Screen

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Developer Advocate



# What is Google TV?

# The Open Platform





It's Android



# Development Options



Sony's Internet streaming set-top box is already available in the US, UK, Germany, Netherlands, France and Brazil with plans to launch in Canada and Mexico later this year.



# New Google TV Devices

- ARM processors
- More on the way...



Sony

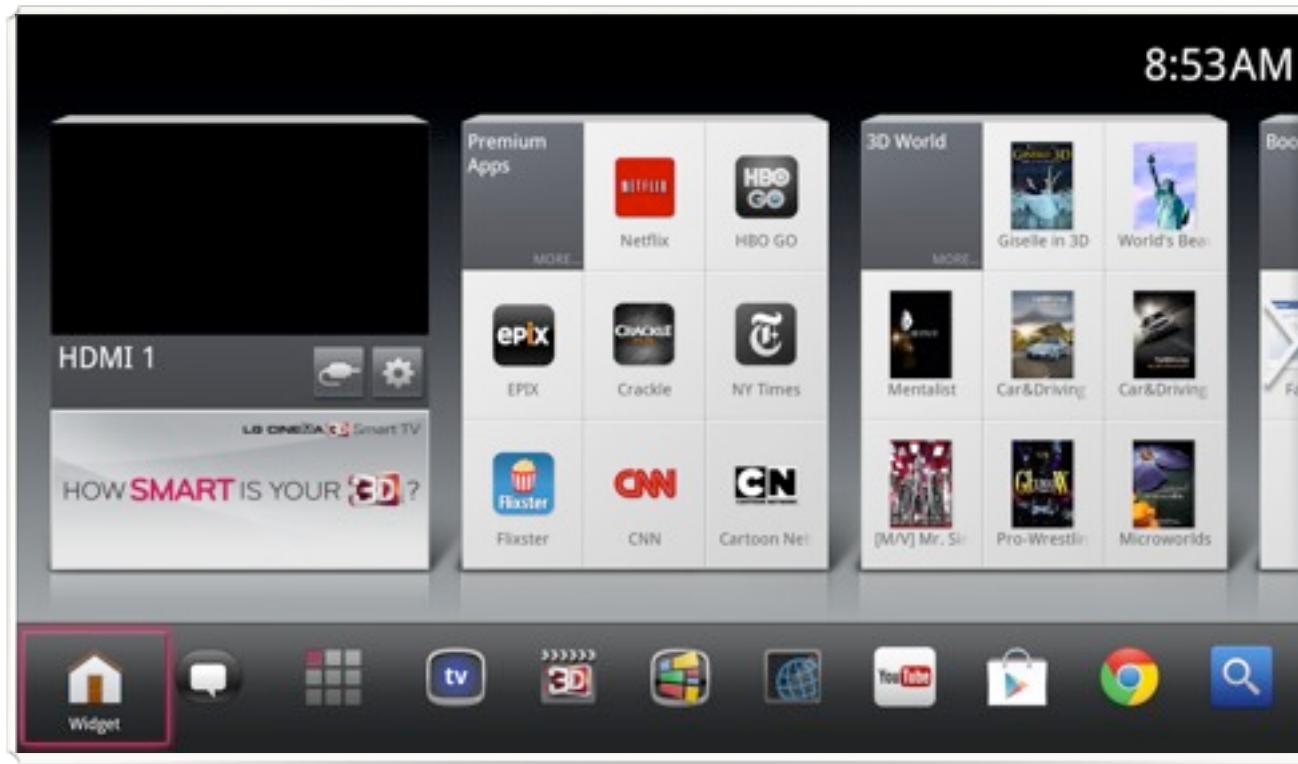
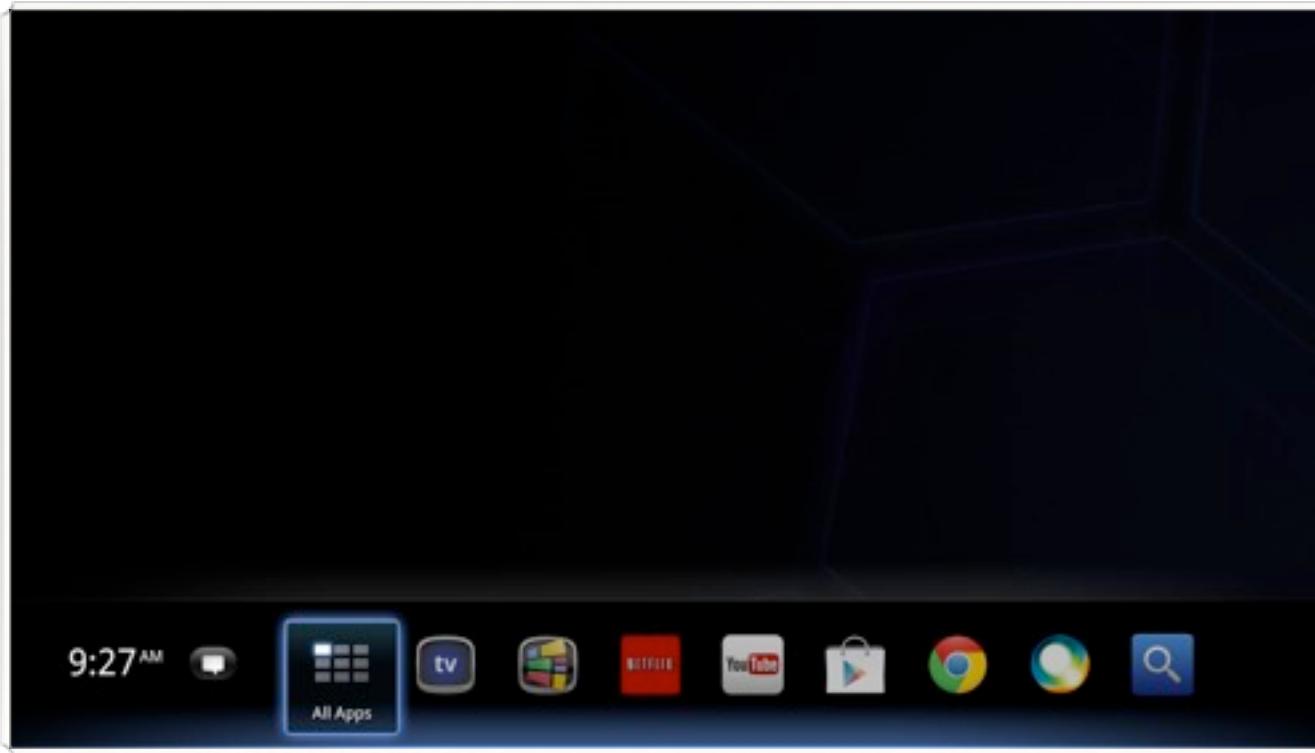


Vizio



LG







# Opportunity

Why should I care?

“ In the US, homes have an average of  
2.5 people and 2.93 TV sets  
(and rising!) ”

Television Audience Report, 2009: The Nielsen Company



“ In the US, people “watch” and average  
of ~5 hours of TV per day ”

Three Screen Report, Q1'10: The Nielsen Company



# Why Develop for TV?

- 22% of US broadband households already own an HDTV with integrated TV apps

Source: In-Stat, "Q2'11 US Digital Entertainment Database," July 26, 2011

- 60% of connected-TV households will use a TV app at least once per week

Source: In-Stat, "Q2'11 US Digital Entertainment Database," July 26, 2011

- By 2015, 500 million web enabled TV's

Source: Crave Asia, July 8, 2011





# UI for the Big Screen

# Big, but small



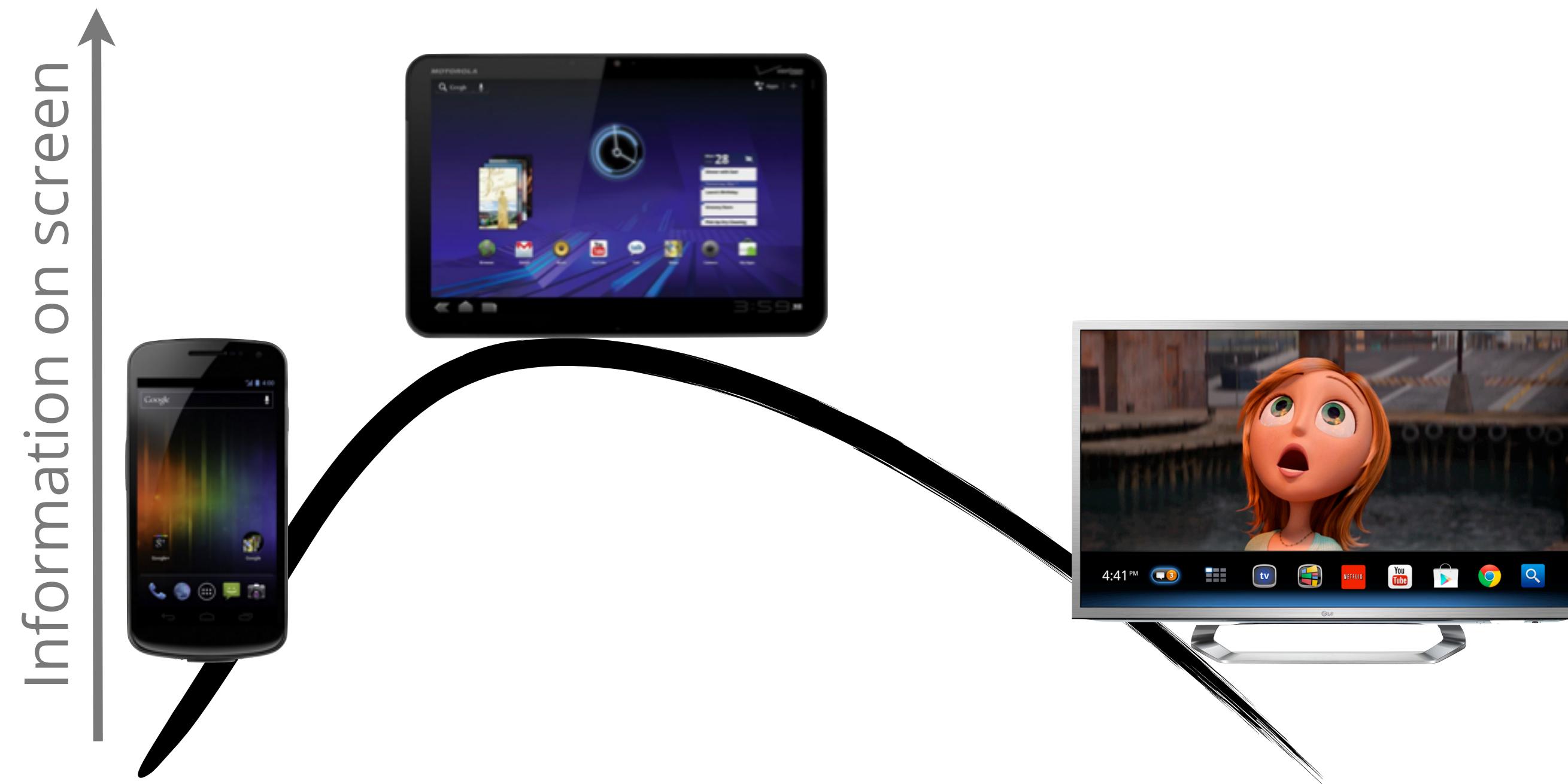
## Big, but small

- Traditionally designed consumption not interaction
- Far away = lower information density
- Ironically, not so good for reading a lot of text
- Big Sound: Great for video, and listening to music
- Different than phones: personal, location, size, touch
- *Not just a big Tablet => more like a PHONE*

## Big, but small

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# Information Density



# Social



## Shared Experience

- Entertainment > Work
- Games, learning, exploring, music, shared experiences
- Privacy considerations
- How can you take advantage of this social setting?

# D-Pad



## D-Pad Tips

- "Lean back"
- No-look navigation
- Highlight and Select

# Cursor



## Cursor Tips

- Cursor != Touch
- Accelerate nav
- Low-twitch
- BIG hit targets

# Selection & Focus



Trending This Week



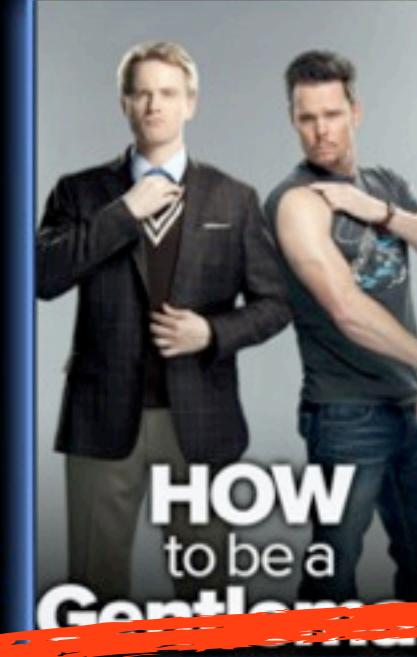
Real  
Housewives  
OF NEW YORK CITY



CALL OF THE WILDMAN



Royal Pains  
Some doctors still make house calls



HOW  
to be a  
Gentleman



Necessary  
Roughness

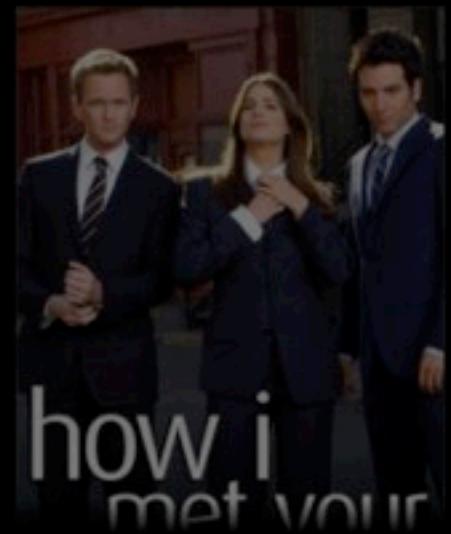


SECRET  
MILLIONAIRE



R...  
MON

Comedy



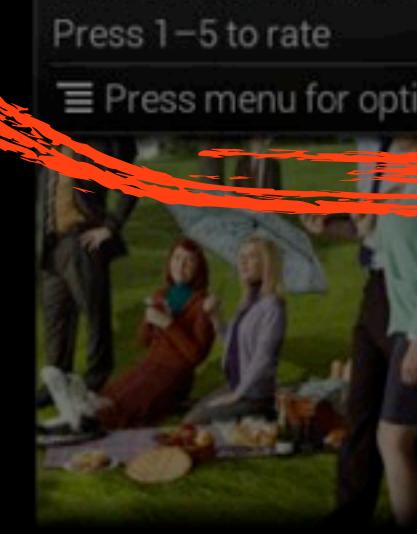
how i  
met your mother



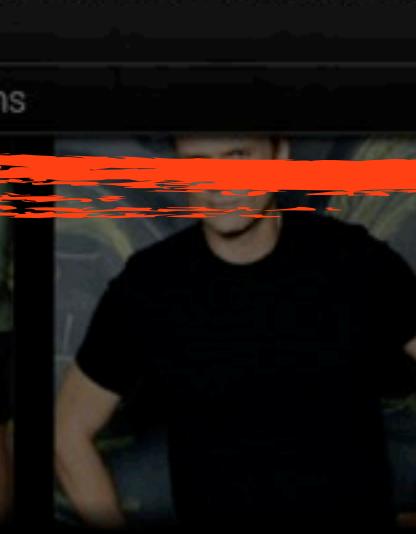
The Big Bang Theory



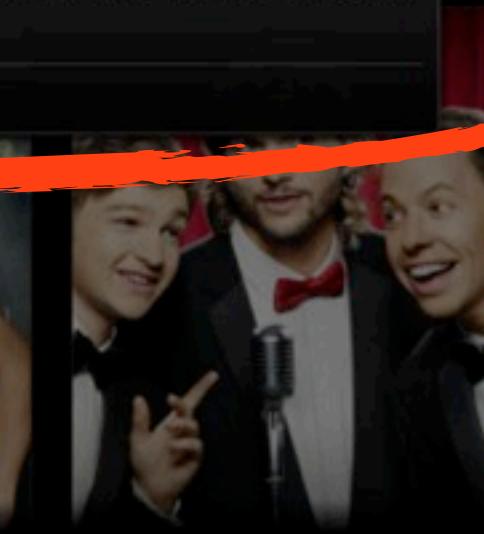
Modern Family



Parks and Recreation



Glee



New Girl



R...  
MON

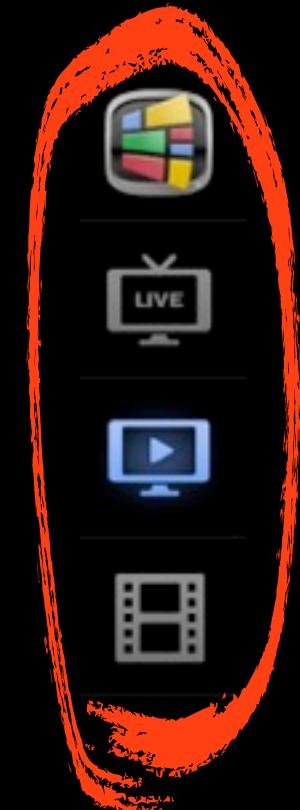
How to be a Gentleman (2011-Present)

Andrew Carlson (David Hornsby) has so immersed himself in his weekly etiquette column that he seems to have lost touch with modern society....

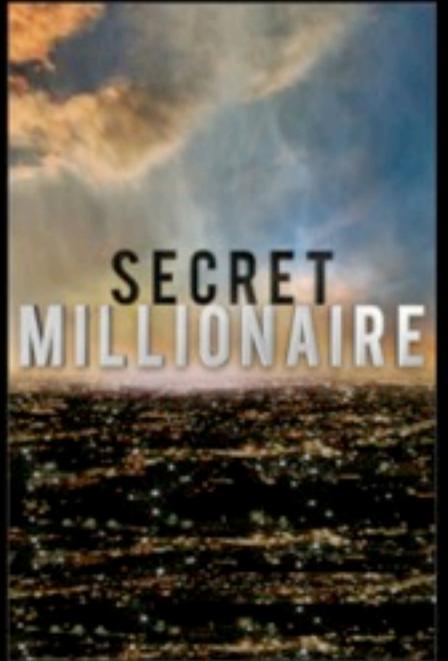
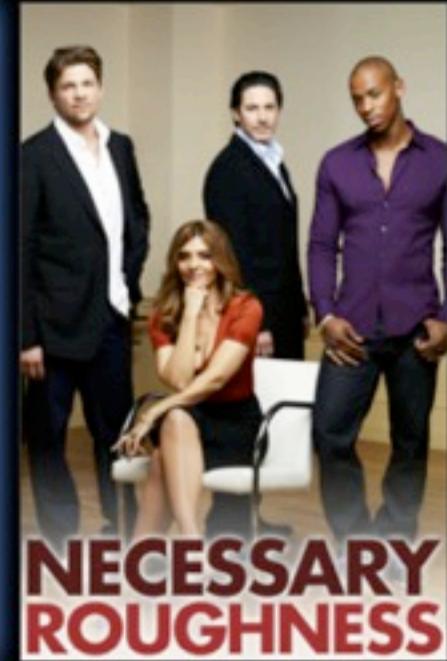
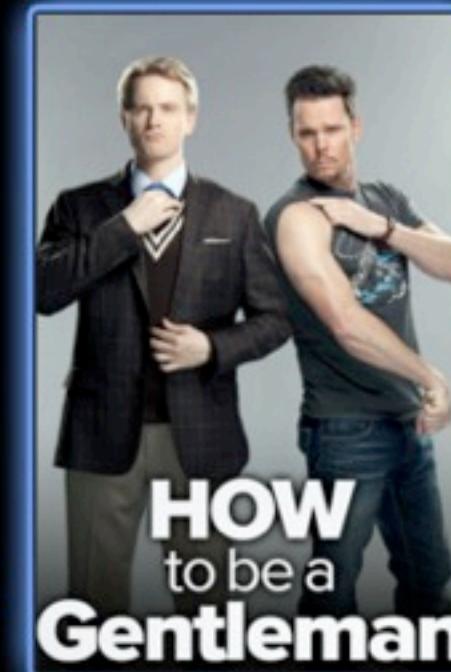
Press 1-5 to rate

Press menu for options

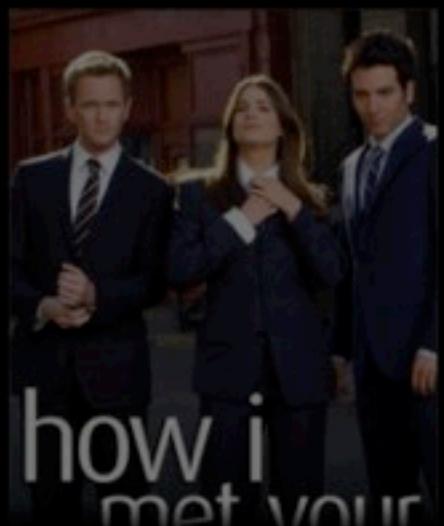
# Action Bar ...?



## Trending This Week



## Comedy



### How to Be a Gentleman (2011-Present)

Andrew Carlson (David Hornsby) has so immersed himself in his weekly etiquette column that he seems to have lost touch with modern society....

Press 1–5 to rate

≡ Press menu for options



# Beware: D-Pad Interaction Traps



# Horizontal Zone Pattern

The Godfather-in-Law

2h 53m

Crime Drama | 1972

Director: I. M. Director

Starring: J. Actor, C.O. Star



Search Google

IMDB

Wikipedia

Quisque tellus dui, pharetra vitae consequat in, hendrerit at odio. Vestibulum id vehicula enim. Integer et mi ante, et accumsan sem. Nulla viverra ipsum in purus dictum luctus. Cras id nisl vel justo bibendum pretium id lacinia erat. In hendrerit tempor augue. Praesent egestas nisl a magna viverra rhoncus eget non felis. Praesent consequat tortor ut orci feugiat vitae fermentum quam.

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Related

1  
2

Watch In HD

Overview

Watch Trailer

Cast & Crew

Reviews

Save

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3



# Android Tips

# Left Nav Bar



<http://code.google.com/p/googletv-android-samples/>

# Left Nav Bar



<http://code.google.com/p/googletv-android-samples/>

# Selection and Focus

- Show selection & focus (state list)

```
<selector>
    <item
        android:drawable="..."
        android:state_focused="false"
        android:state_selected="true" />
    <item
        android:drawable="..."
        android:state_focused="true"
        android:state_selected="false" />
    <item
        android:drawable="..."
        android:state_focused="true"
        android:state_selected="true" />
</selector>
```

XML



# Focus (cont.)

- Finer control of focus

```
android:nextFocusDown  
android:nextFocusLeft  
android:nextFocusRight  
android:nextFocusUp  
android:nextFocusForward
```

XML



# Size, Resolutions & Densities

	<b>LDPI</b> (Low Density) ~120 DPI	<b>MDPI</b> (Medium) ~160 DPI	<b>HDPI</b> (High Density) ~240 DPI	<b>XHDPI</b> (Extra High) ~320 DPI
Small Screen	QVGA (240x320)			
Normal Screen	WQVGA400 (240x400)  WQVGA432 (240x432)	HVGA (320x480) <b>HTC-G1</b>	WVGA800 (480x800)  WVGA854 (480x854)	
Large Screen		WVGA800* (480x800)  WVGA854* (480x854)	<b>TV 720p (1280x720) 213 DPI (TVDPI)</b>	<b>TV 1080p (1920x1080) 320 DPI</b>
Extra Large Screen		WXGA (1280x800) <b>Xoom Tablet</b>		



# Am I on TV?

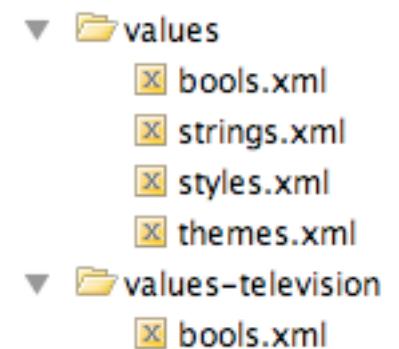
Don't forget the **-television** specifier

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <bool name="is_television">false</bool>
</resources>
```

XML: values/bools.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <bool name="is_television">true</bool>
</resources>
```

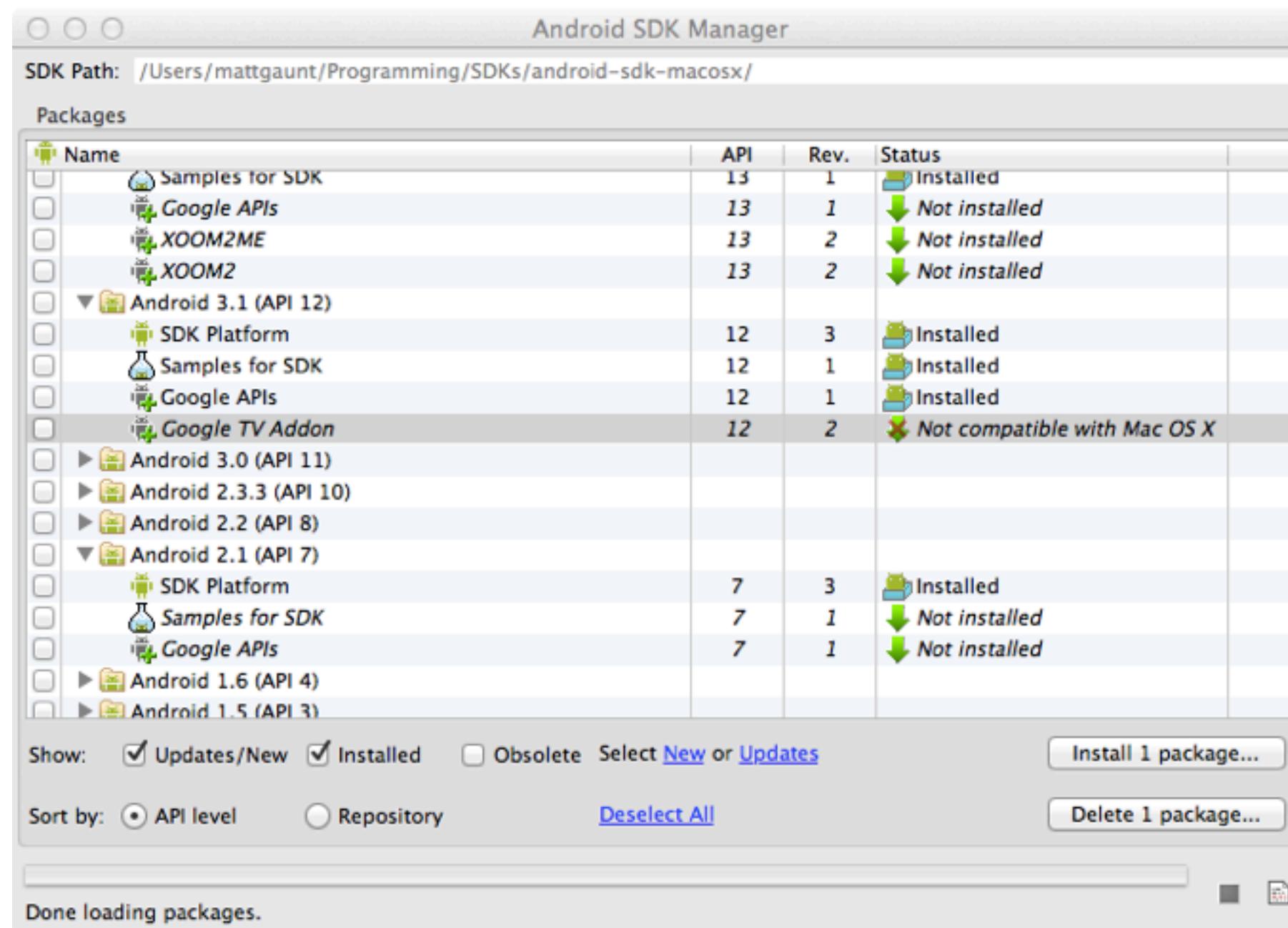
XML: values-television/bools.xml





# Brief note on the SDK

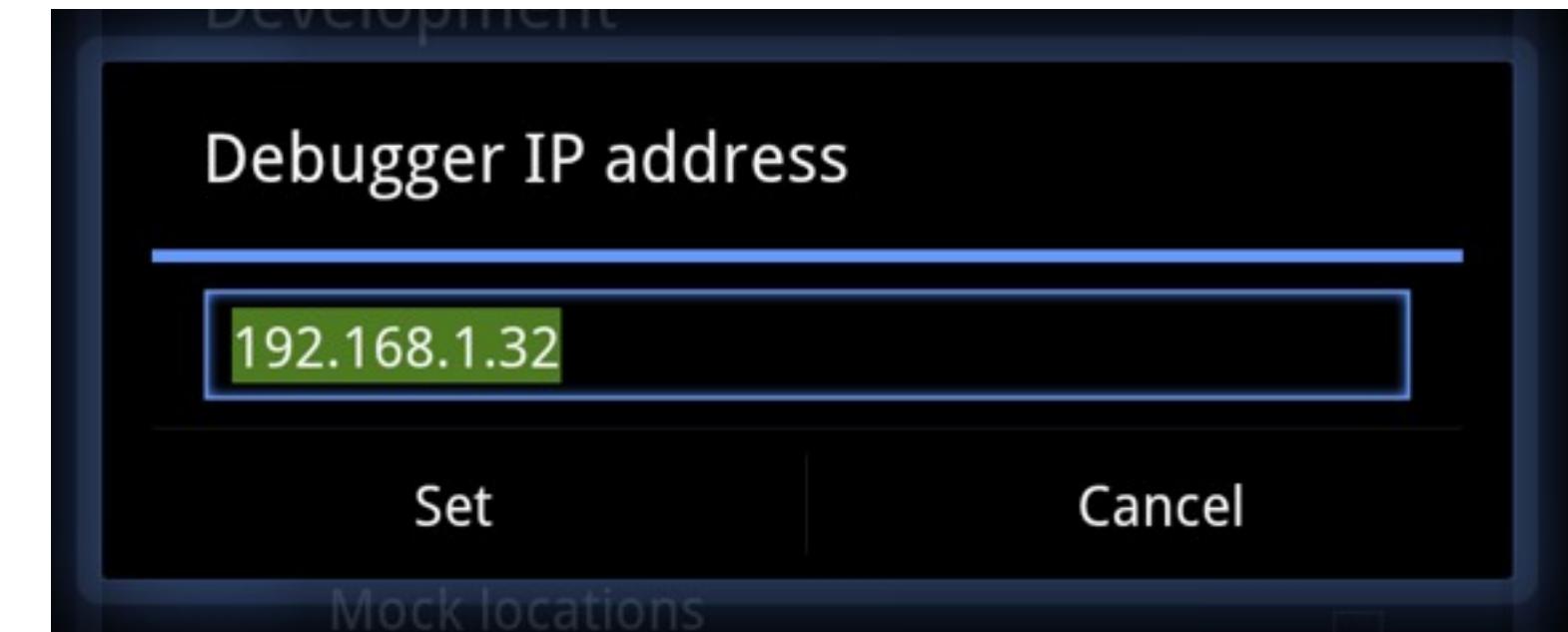
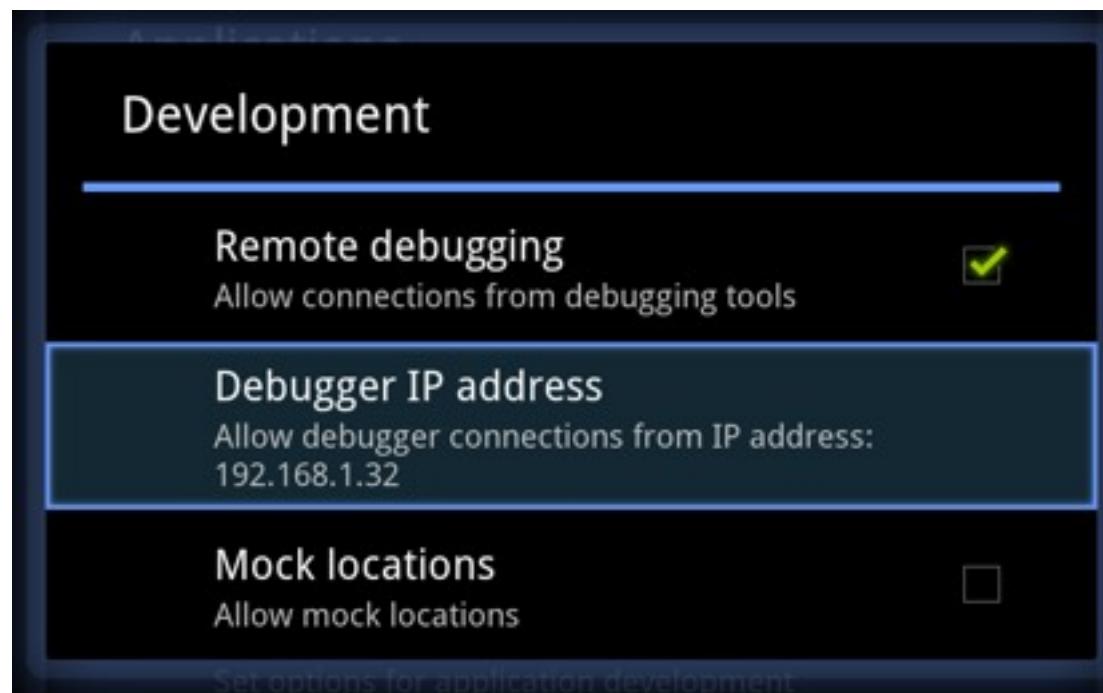
# The Add-On...



# ADB + GTV

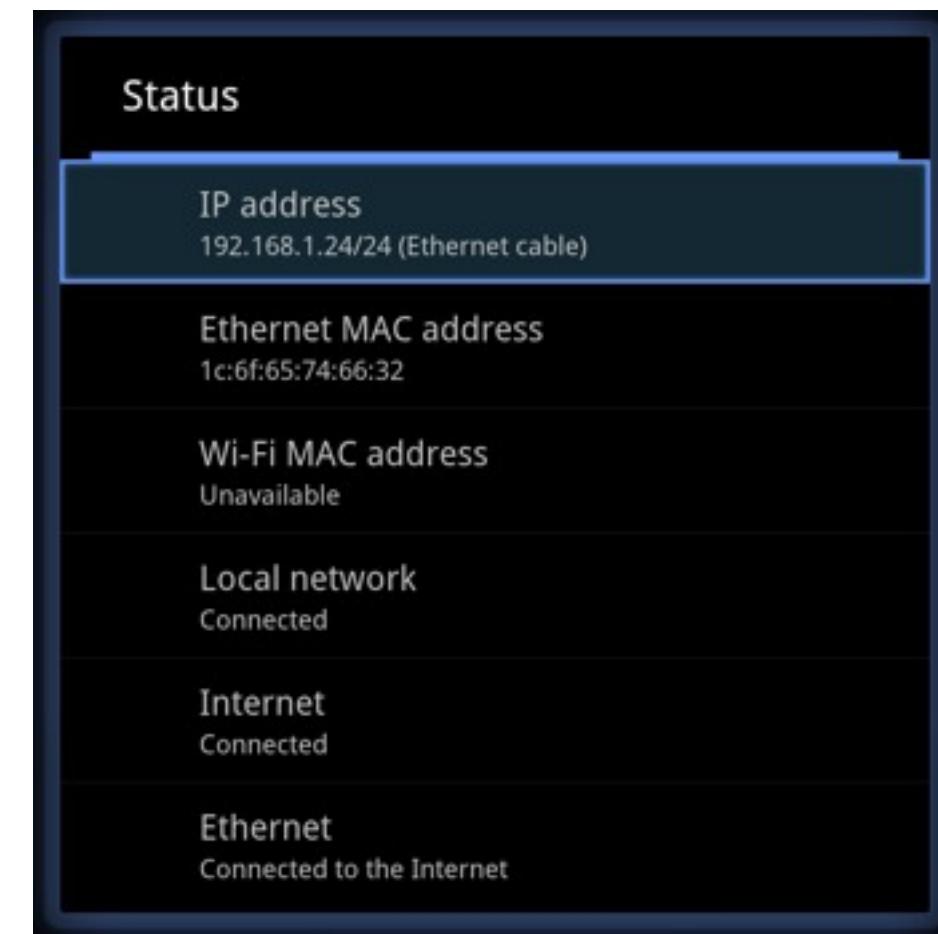


# ADB + GTV - Debugger IP Addr. = Your IP Addr.



Settings > Application > Development > Debugger IP Address

# ADB + GTV - Find GTV's IP Address



Settings > Network > Status > IP Address

# ADB + GTV - Connect the dots

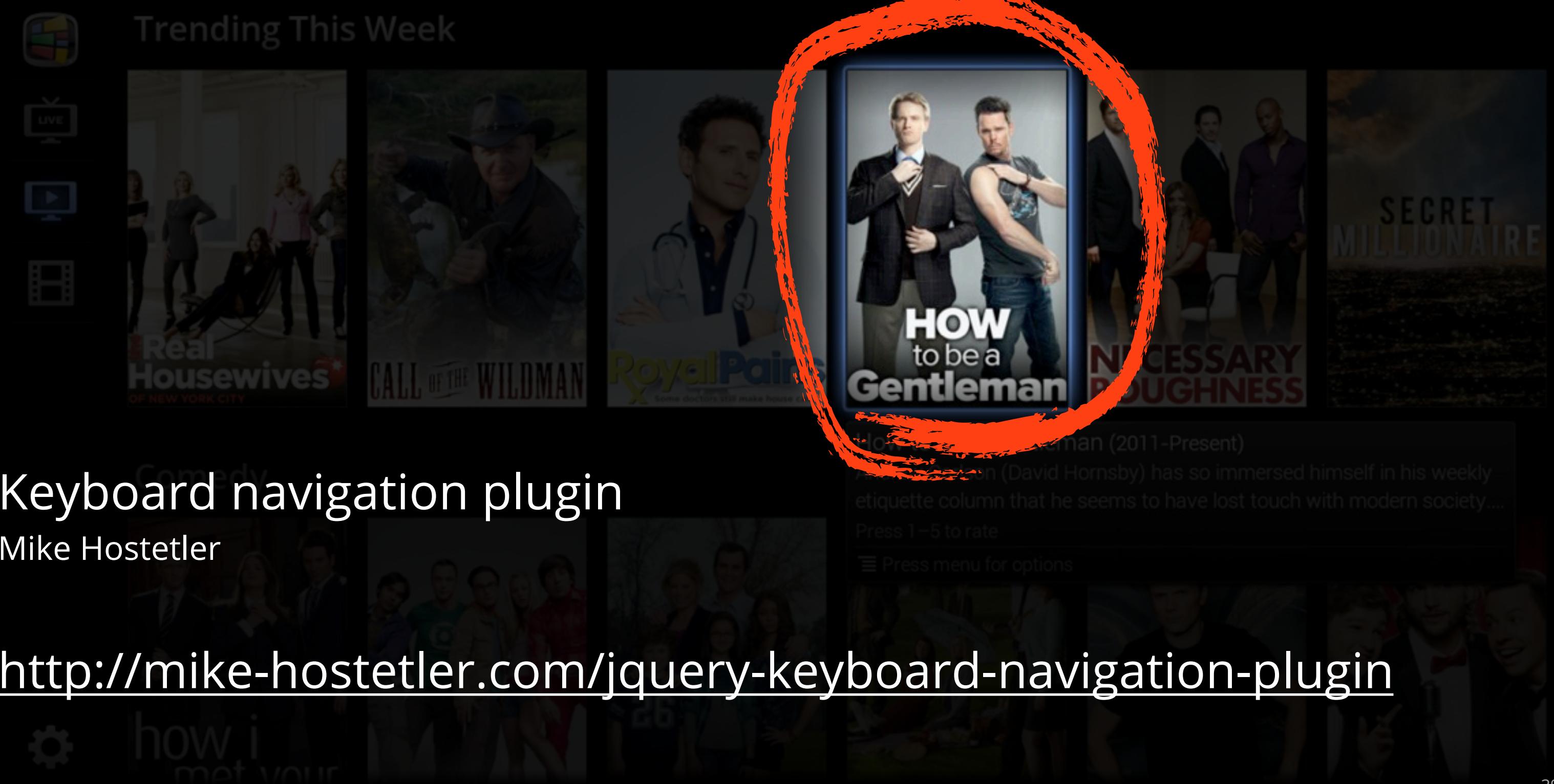


`adb connect <GTV IP Address>`



# Chrome UI Tips

# Embrace Focus



Keyboard navigation plugin  
Mike Hostetler

# Make the Focus

```
window.onload = function() {
  document.onkeydown = function(e) {
    if (!e) e=window.event;
    switch(e.keyCode) {
      case 37:
        alert("Left arrow");
        break;
      case 38:
        alert("Up arrow");
        break;
      case 39:
        alert("Right arrow");
        break;
      case 40:
        alert("Down arrow");
        break;
      case 13:
        alert("Enter/select");
        break;
    }
  }
}
```

JS



# Auto-Zoom

- Google TV has an auto-zoom algorithm to scale web pages so they display properly on TV (i.e. account for overscan)
- If you experience problems, you have two options:
  - Switch it off

```
<meta name="gtv-autozoom" content="off" />
```

HTML



# Auto-Zoom Cont.

- Adjust the zoom

```
$(document).ready(function() {  
    var w = screen.width;  
    var h = screen.height;  
    var bw = $(window).width();  
    var bh = $(window).height();  
  
    var wRatio = bw/w;  
    var hRatio = bh/h;  
    var ratio = (wRatio + hRatio) / 2;  
  
    $('body').css('zoom', ratio);  
})
```

JS

- Dare I say responsive design...





# Google Analytics

- Use it & learn what your users are doing
- Track usage of every section in your app
- Track settings

```
// Start tracking
tracker.start("UA-MY_CODE-XX", this);

// Register a page view
tracker.trackPageView("/map_view");

// Send views to server
tracker.dispatch();
```

Java



# <Thank You!>

<http://developers.google.com/tv/>

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@gauntface





Google  
**Developers**