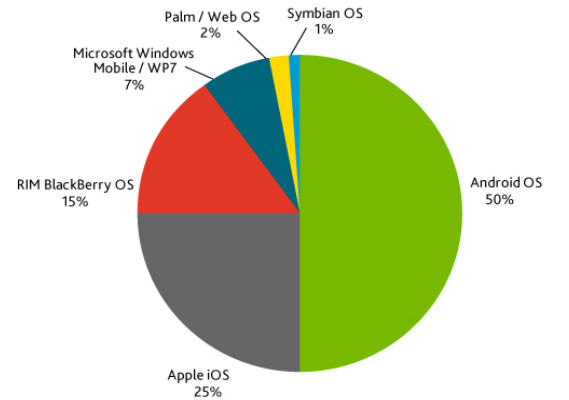


## SmartPhone Market Share

Smartphone market share - recent acquirers

March '11, Nielsen Mobile Insights, National



Source: The Nielsen Company.

nielsen

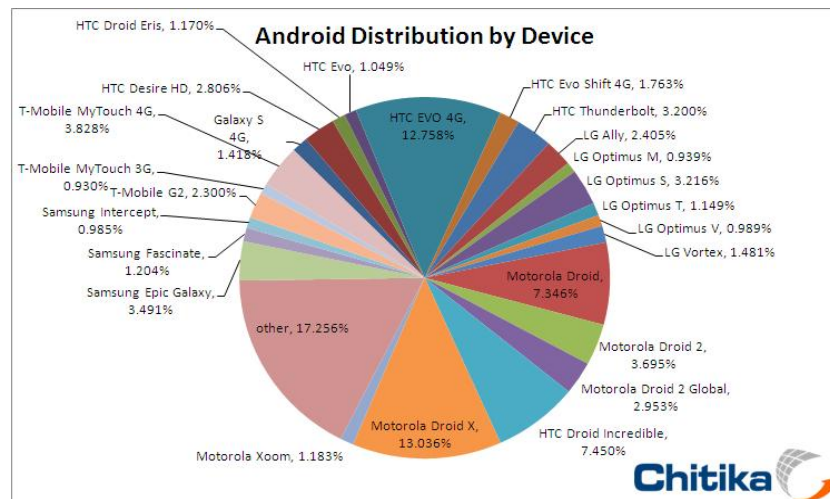
20110101

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## A Multitude of Devices

Android Distribution by Device



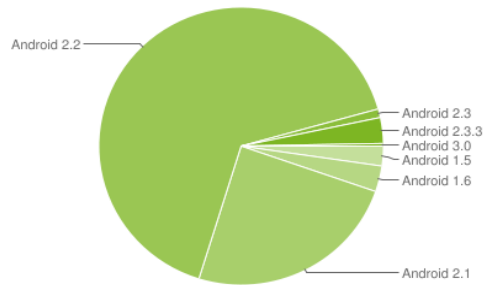
Chitika

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## Multiple Versions



Platform	API Level	Distribution
Android 1.5	3	2.3%
Android 1.6	4	3.0%
Android 2.1	7	24.5%
Android 2.2	8	65.9%
Android 2.3	9	1.0%
Android 2.3.3	10	3.0%
Android 3.0	11	0.3%

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## What is Android

- Mobile phone operating system?
- What about
  - Google TV
  - Tablet computers
  - Android at Home (appliances)
  - And who knows what's next?
    - Laptops
    - Cars

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## What is Android?

“Android is not a specification, or a distribution in the traditional Linux sense. It’s not a collection of replaceable components. Android is a chunk of software that you port to a device.”

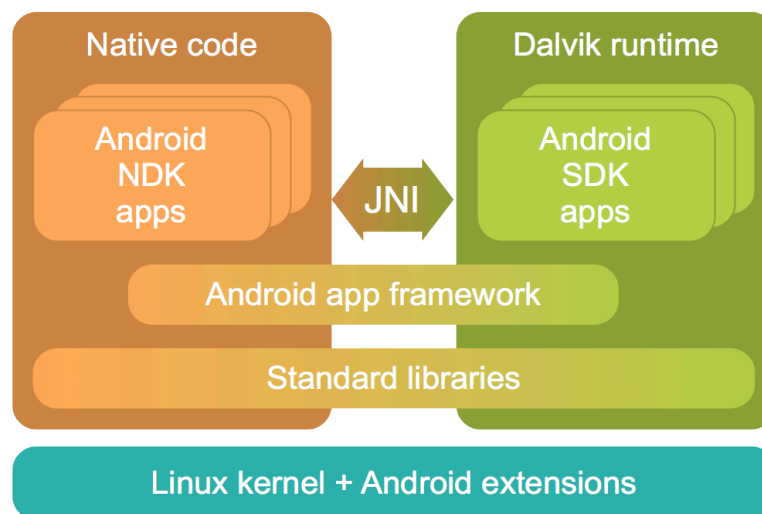
- Dan Morrill

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## What is Android – Again with Feeling!



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## Anatomy of an Android App

- Activities
- Services
- Content Providers
- Broadcast Receivers
- Intents
- Application Manifest

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## Activities

- Single screen with a user interface
- Independent but work together
- Can be invoked from other applications
- Extends the Activity class

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## Service

- Perform long-running operations in the background
- No User Interface
- Can bind to other services or activities
- Extends the Service class

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## Content Provider

- Manages shared application data
- Provides consistent interfaces to data
  - Restful
  - CRUD operations
- Data Store backing options
  - SQLite DB
  - File System
  - Web
- Can consume data from other Content Providers
- Extends the `ContentProvider` class

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## Broadcast Receiver

- Respond to system wide messages
- Messages can be initiated by system or another app
- 2 kinds
  - Delivered asynchronously to all receivers
  - Delivered in priority order Should be light weight, work should be passed to services
- Extends the BroadcastReceiver class

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## Intents

- Messages that link app components together
  - Explicit – launch a specific component
  - Implicit – launch any component which is registered to handle intent
- Describes an operation to be performed
  - Requested action
  - Data used by the action
  - Extra metadata

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## Android Manifest

```
<?xml version="1.0" encoding="utf-8"?>

<manifest>
    <uses-permission />

    <application>
        <activity> ... </activity>
        <service> ... </service>
        <provider> ... </provider>
        <receiver> ... </receiver>
    </application>

</manifest>
```

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## Writing an Android App

- Use Eclipse
- Use the Android Development Toolkit plugin for Eclipse
  - Create an Android Project
- Write Java Code
- Write XML
- Run the Android project
  - Emulator
  - Device

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