

# Android Ice Cream Sandwich / Jelly Bean / 4.x: **Ökosystem** **auf vielen Geräten**



Java Forum Stuttgart, 2012

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inovex GmbH

Chief Technology Officer



- Hintergrund
- Geräte
- Plattform
- Umfeld
- Anregungen



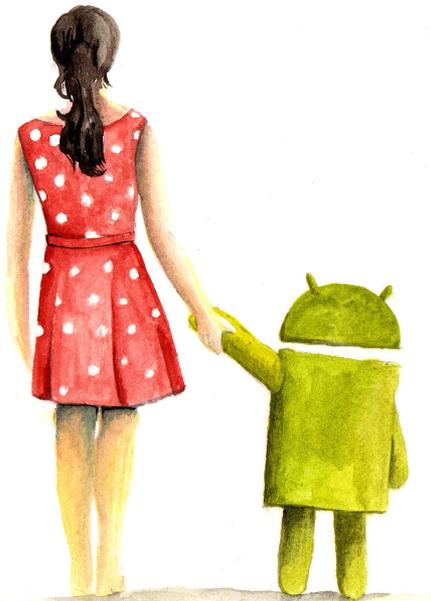
Christian Meder

## Schwerpunkte

- open source (free software)
- Linux
- Web
- Java
- Android
- [CTO@inovex](mailto:CTO@inovex)



[Christian Meder](#)



- Marie Schweiz, [marie-schweiz.de](http://marie-schweiz.de), „Little Android“
- [developer.android.com](http://developer.android.com)



# Hintergrund

# It's magic

„Google’s Android operating system has undergone a pretty incredible metamorphosis in the three short years since it debuted on the T-Mobile G1. Think about it: **three years, eight major releases. Eight.**“

**Quelle: The Verge, „Android, a visual history“ by Chris Ziegler**



# It's magic

„You could make a pretty convincing argument that **no consumer technology** in history has **evolved as quickly** as the **smartphone**, and **Android** has been at the very **center** of that **evolution**.“

**Quelle: The Verge, „Android, a visual history“ by Chris Ziegler**





**Top Six Smartphone Operating Systems, Shipments, and Market Share, 2012 Q1 (Units in Millions)**

Mobile Operating System	1Q12 Unit Shipments	1Q12 Market Share	1Q11 Unit Shipments	1Q11 Market Share	Year-over-Year Change
Android	89.9	59.0%	36.7	36.1%	145.0%
iOS	35.1	23.0%	18.6	18.3%	88.7%
Symbian	10.4	6.8%	26.4	26.0%	-60.6%
BlackBerry OS	9.7	6.4%	13.8	13.6%	-29.7%
Linux	3.5	2.3%	3.2	3.1%	9.4%
Windows Phone 7/Windows Mobile	3.3	2.2%	2.6	2.6%	26.9%
Other	0.4	0.3%	0.3	0.3%	33.3%
Total	152.3	100.0%	101.6	100.0%	49.9%

**Source:** IDC Worldwide Mobile Phone Tracker, May 24, 2012

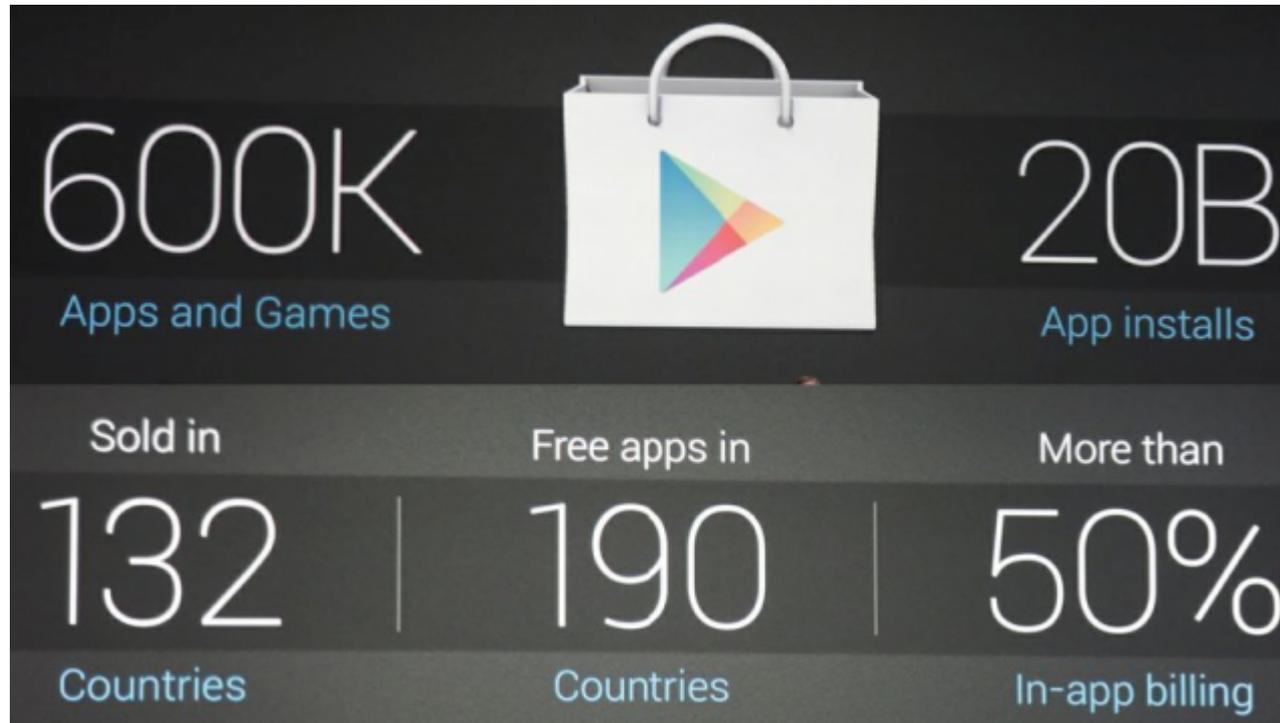
## How long we spend using our smartphones (by activity) each day

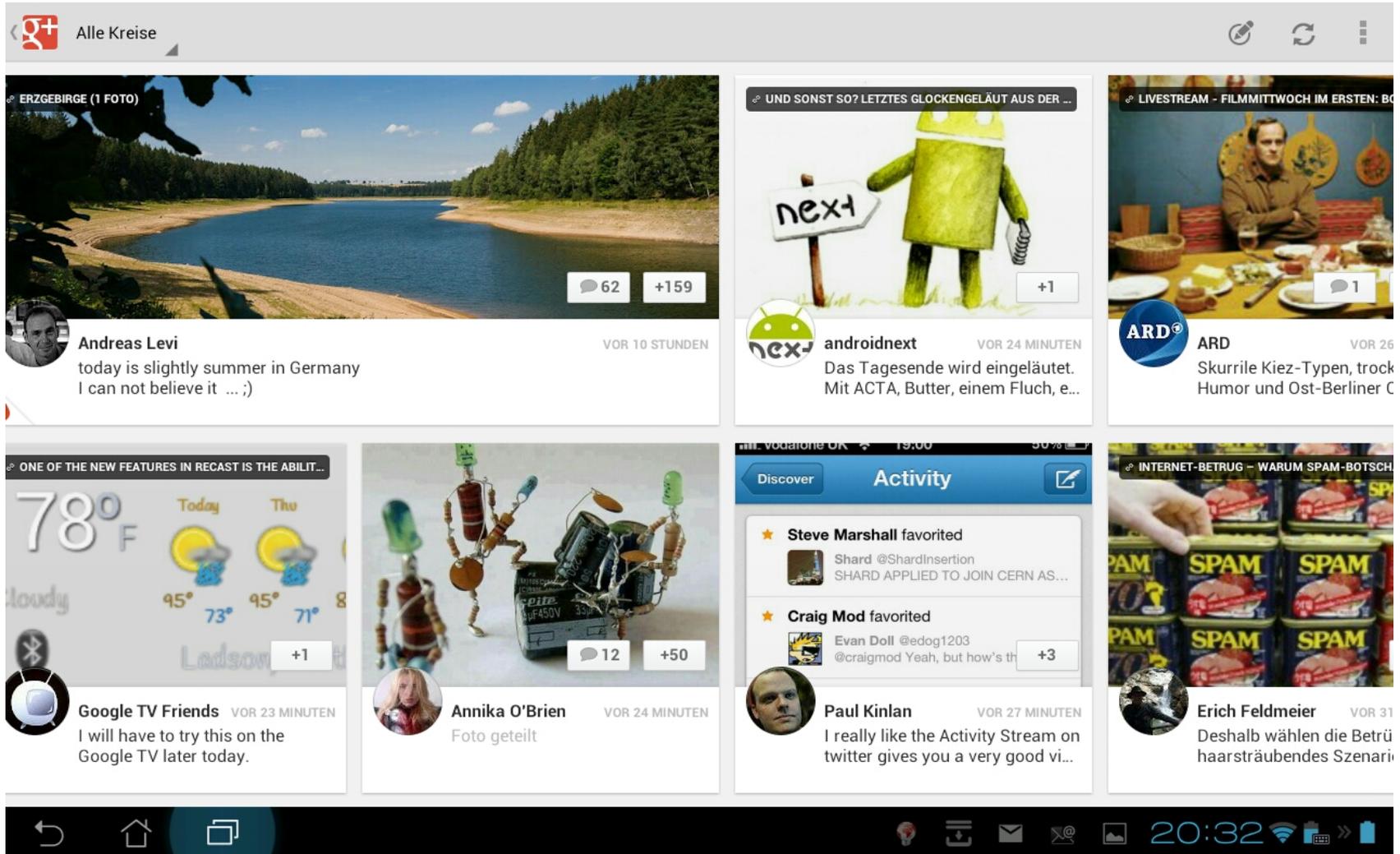
Activity	Time/day
Browsing the internet	24.81
Checking social networks	17.49
Playing games	14.44
Listening to music	15.64
Making calls	12.13
Checking/writing emails	11.1
Text messaging	10.2
Watching TV/films	9.39
Reading books	9.3
Taking photographs	3.42
Total	128

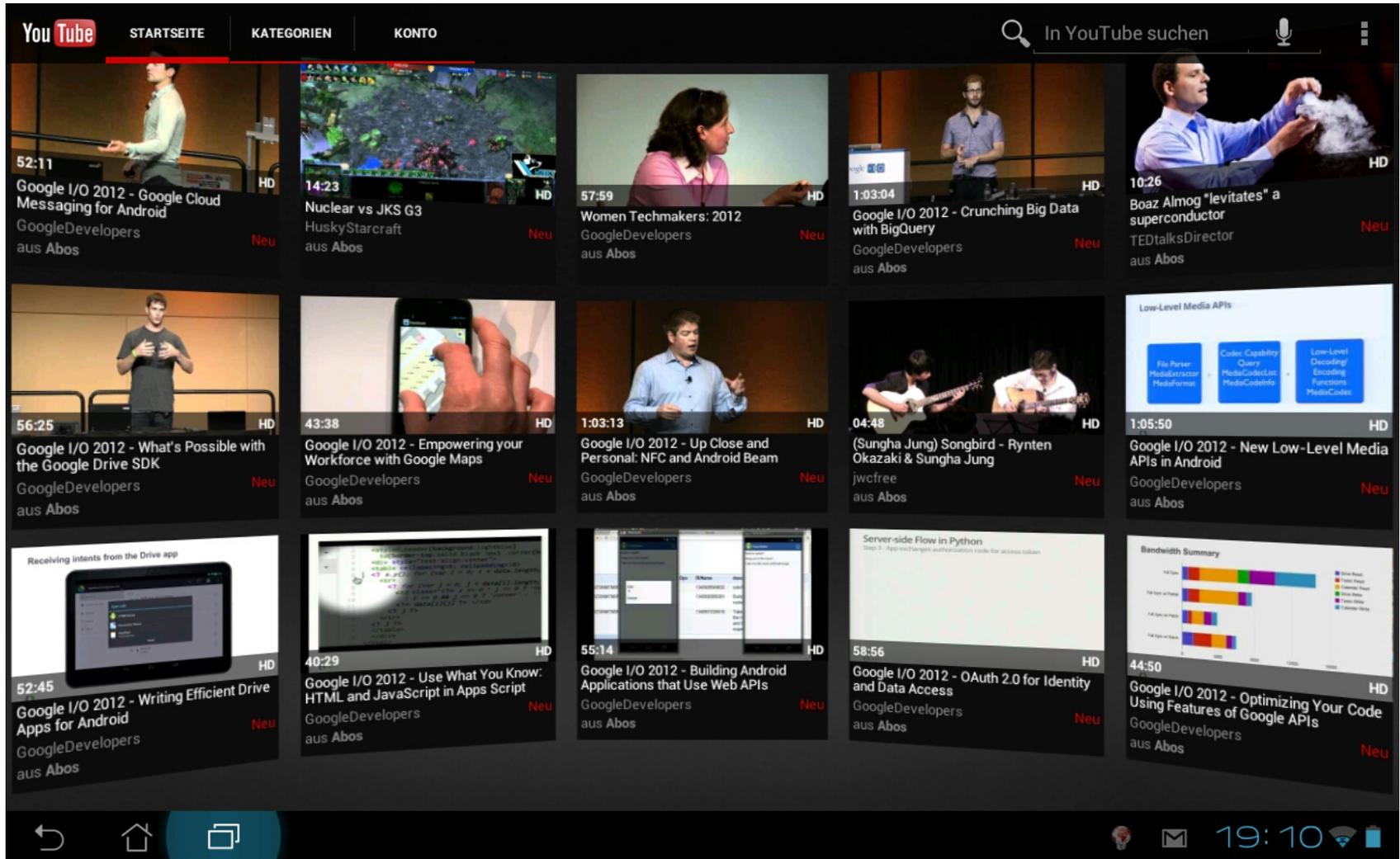
Quelle: O2 Study, UK



# Apps







The screenshot shows the YouTube mobile app interface with a grid of 20 video thumbnails. The interface includes a top navigation bar with 'You Tube', 'STARTSEITE', 'KATEGORIEN', and 'KONTO'. A search bar at the top right contains the text 'In YouTube suchen'. The video thumbnails are arranged in a 4x5 grid and include the following titles and durations:

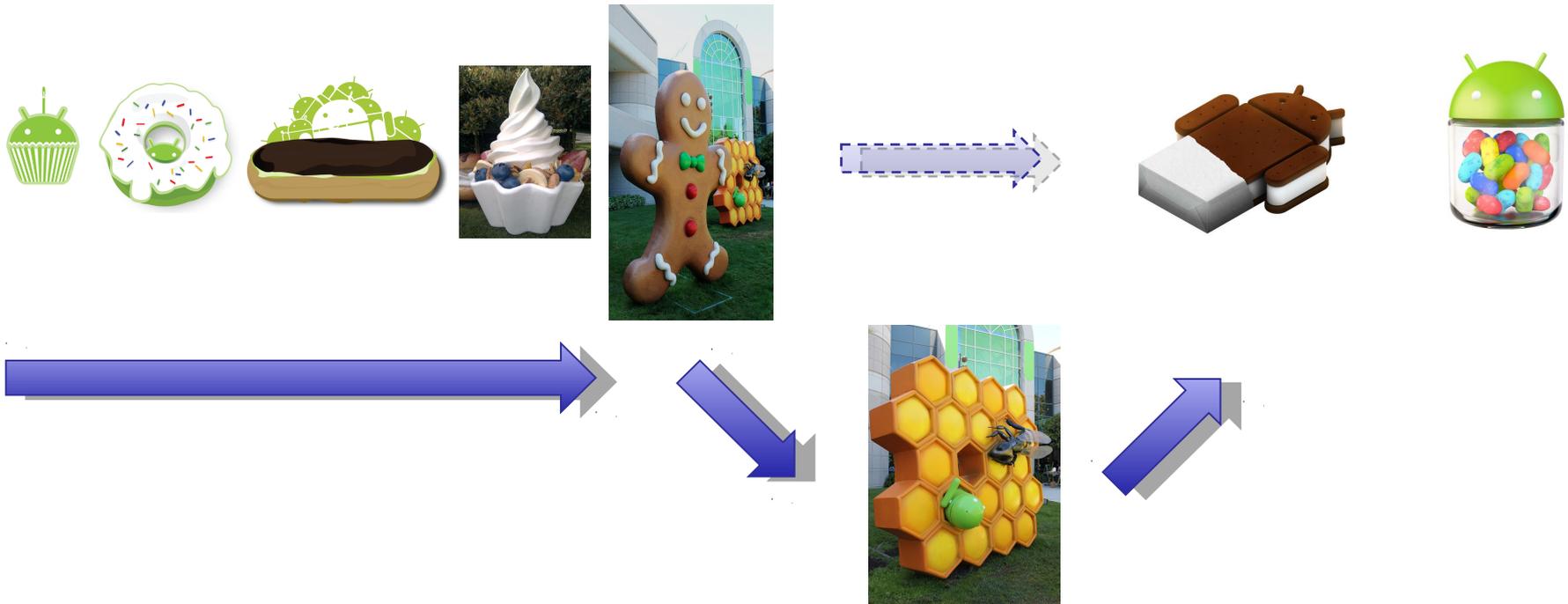
- 52:11 Google I/O 2012 - Google Cloud Messaging for Android
- 14:23 Nuclear vs JKS G3
- 57:59 Women Techmakers: 2012
- 1:03:04 Google I/O 2012 - Crunching Big Data with BigQuery
- 10:26 Boaz Almog "levitates" a superconductor
- 56:25 Google I/O 2012 - What's Possible with the Google Drive SDK
- 43:38 Google I/O 2012 - Empowering your Workforce with Google Maps
- 1:03:13 Google I/O 2012 - Up Close and Personal: NFC and Android Beam
- 04:48 (Sungha Jung) Songbird - Rynnten Okazaki & Sungha Jung
- 1:05:50 Google I/O 2012 - New Low-Level Media APIs in Android
- 52:45 Google I/O 2012 - Writing Efficient Drive Apps for Android
- 40:29 Google I/O 2012 - Use What You Know: HTML and JavaScript in Apps Script
- 55:14 Google I/O 2012 - Building Android Applications that Use Web APIs
- 58:56 Google I/O 2012 - OAuth 2.0 for Identity and Data Access
- 44:50 Google I/O 2012 - Optimizing Your Code Using Features of Google APIs

At the bottom of the screen, there is a navigation bar with icons for back, home, and a floating action button, along with a status bar showing the time 19:10 and various system icons.

# 17 Prozessoren und mehr



# Historie





*Devices*

# Smartphone vs Tablet



# Smartphone ?!



# Tablet ?!



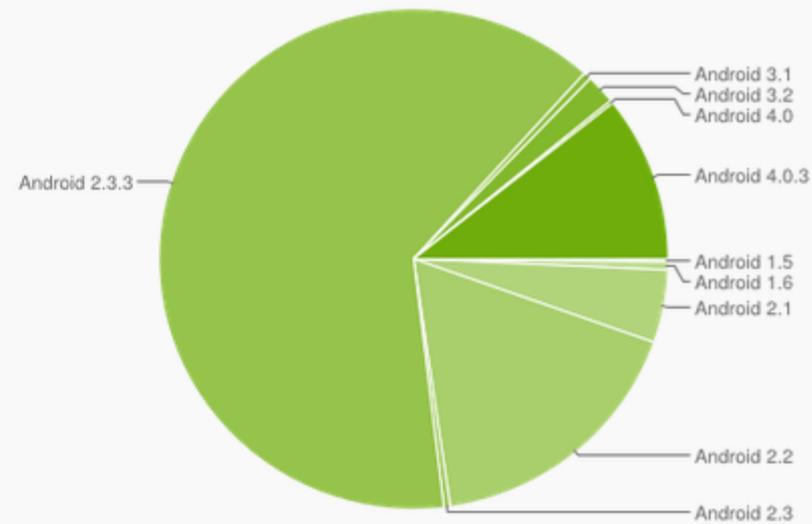
# Exoten





# Versionen

Version	Codename	API Level	Distribution
1.5	Cupcake	3	0.2%
1.6	Donut	4	0.5%
2.1	Eclair	7	4.7%
2.2	Froyo	8	17.3%
2.3 - 2.3.2	Gingerbread	9	0.4%
2.3.3 - 2.3.7		10	63.6%
3.1	Honeycomb	12	0.5%
3.2		13	1.9%
4.0 - 4.0.2	Ice Cream Sandwich	14	0.2%
4.0.3 - 4.0.4		15	10.7%

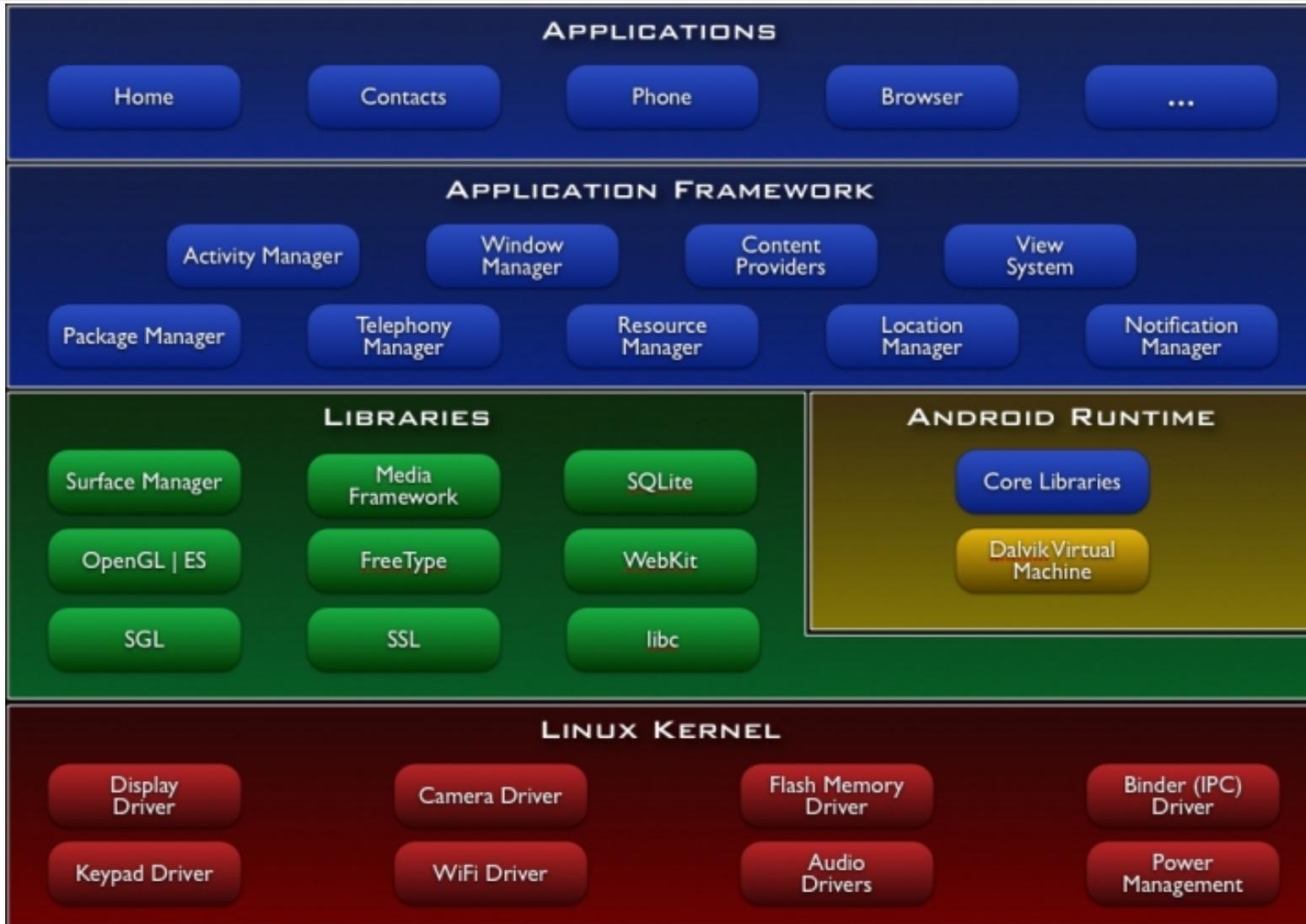


Data collected during a 14-day period ending on July 2, 2012



Plattform

# Architektur



- Activities
- Services
- Content Provider
- Broadcast Receiver
- Intent / Intent Filter

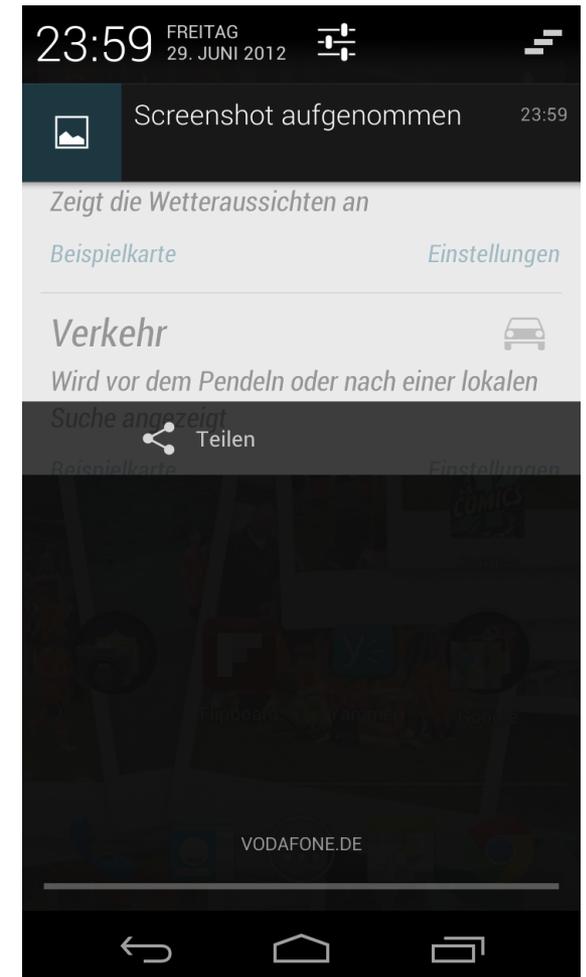
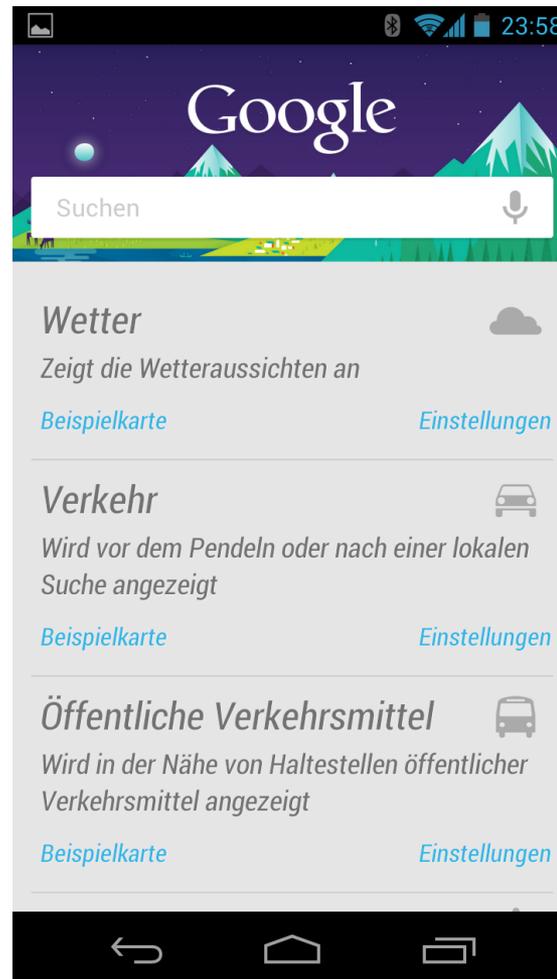


# Ice Cream Sandwich

- einheitliche Plattform für Phone und Tablet
- 3.x Features auch für Phones (fragments, ActionBar)
- hardwarebeschleunigtes 2D
- Social API
- Calendar API
- VPN client API
- Media effects
- Android Beam (NFC)
- WiFi direct



# Jelly Bean



# Jelly Bean

- Project Butter (vsync, triple buffer, ...)
- expandable notifications
- Input devices (query, events)
- Network bandwidth management
- Low level audio
- Browser
  - CSS3
  - video
  - capture



# Google Services

- In-App billing
- Licensing service
- Play services (Google+, Auth)
- Google Cloud Messaging





*Umfeld*

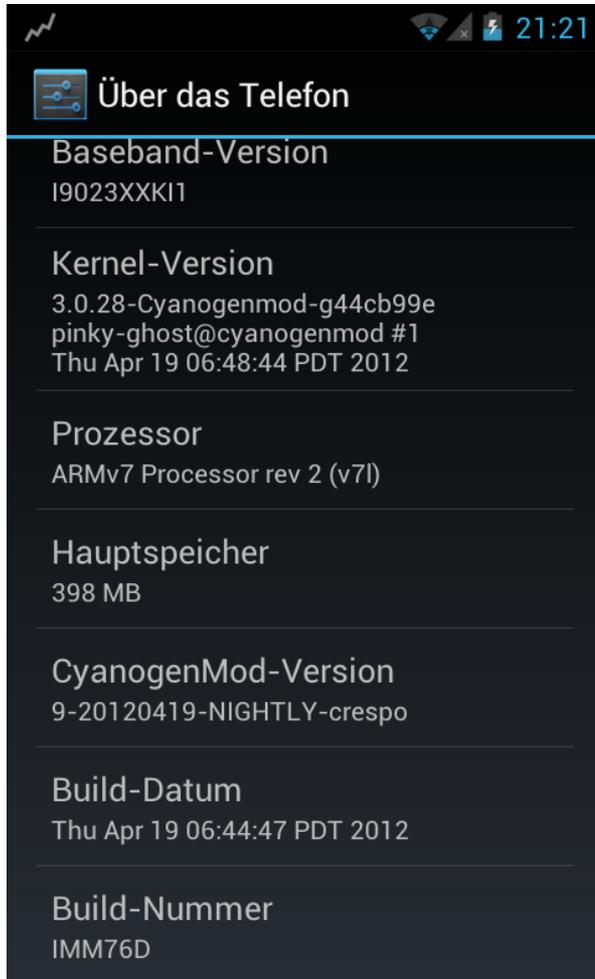
# Skins



# More skins



# Cyanogenmod



- 7.2 (Android 2.3)
- >70 Geräte
- 9 (Android 4) als RC
- auch ältere Geräte
- konfigurierbarer

# Cyanogenmod



**Seiten**

**ALLGEMEIN**

**Seitenzahl**  
Anzahl der verwendbaren und wechselbaren Seiten für Icons und Widgets

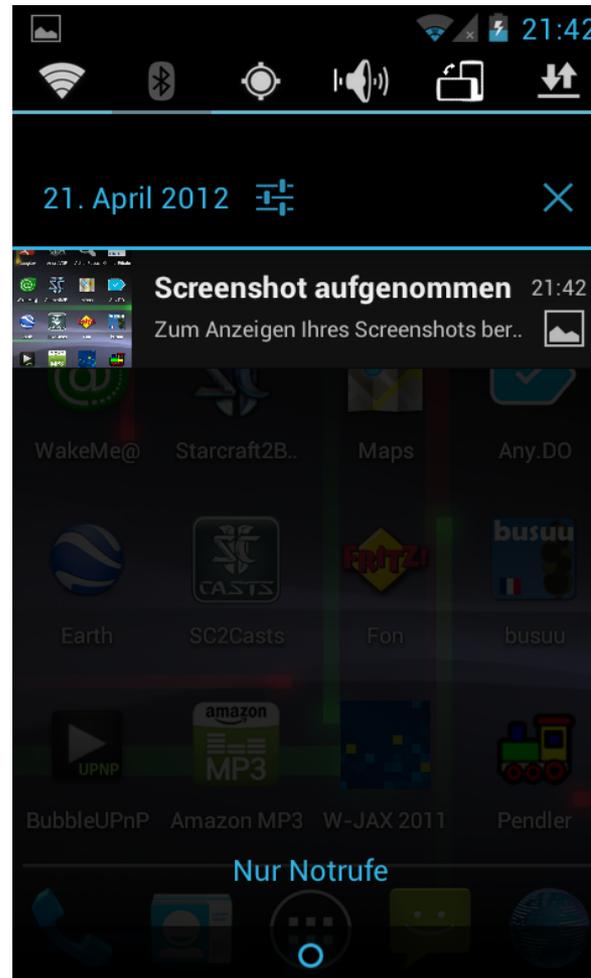
**Standardseite**  
Aktive Seite nach Neustart des Geräts

**Rastergröße**  
Anzahl der für Icons verfügbaren Reihen / Spalten

**Vertikaler Seitenrand**  
Einige Pixel Rand oben und unten auf jeder Seite

**Horizontaler Seitenrand**  
Einige Pixel Rand rechts und links auf jeder Seite

**Suchleiste**   
Dauerhafte Anzeige der Suchleiste

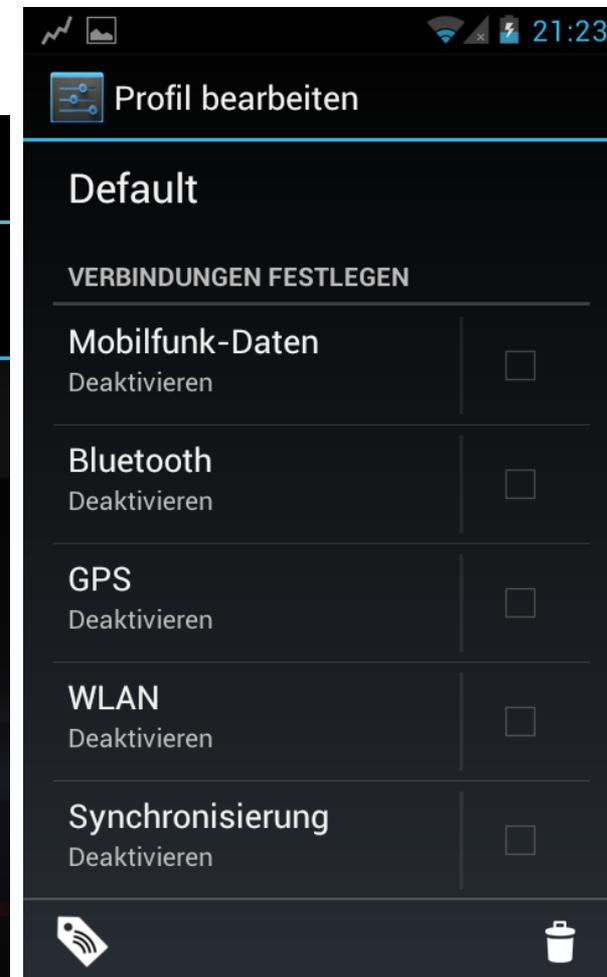


21. April 2012

**Screenshot aufgenommen** 21:42  
Zum Anzeigen Ihres Screenshots ber..

WakeMe@ Starcraft2B.. Maps Any.DO  
Earth SC2Casts Fon busuu  
BubbleUPnP Amazon MP3 W-JAX 2011 Pendler

**Nur Notrufe**



**Profil bearbeiten**

**Default**

**VERBINDUNGEN FESTLEGEN**

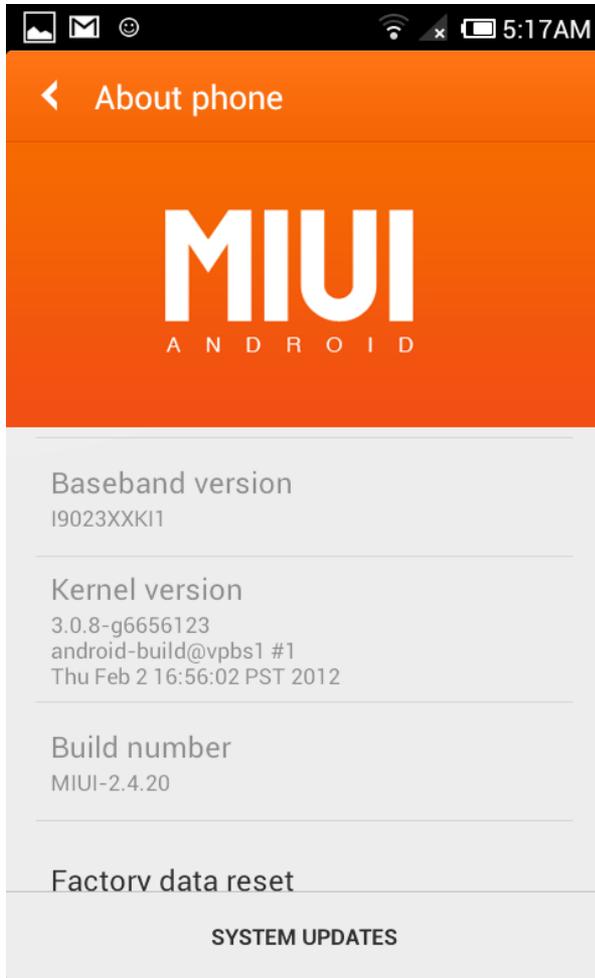
**Mobilfunk-Daten**   
Deaktivieren

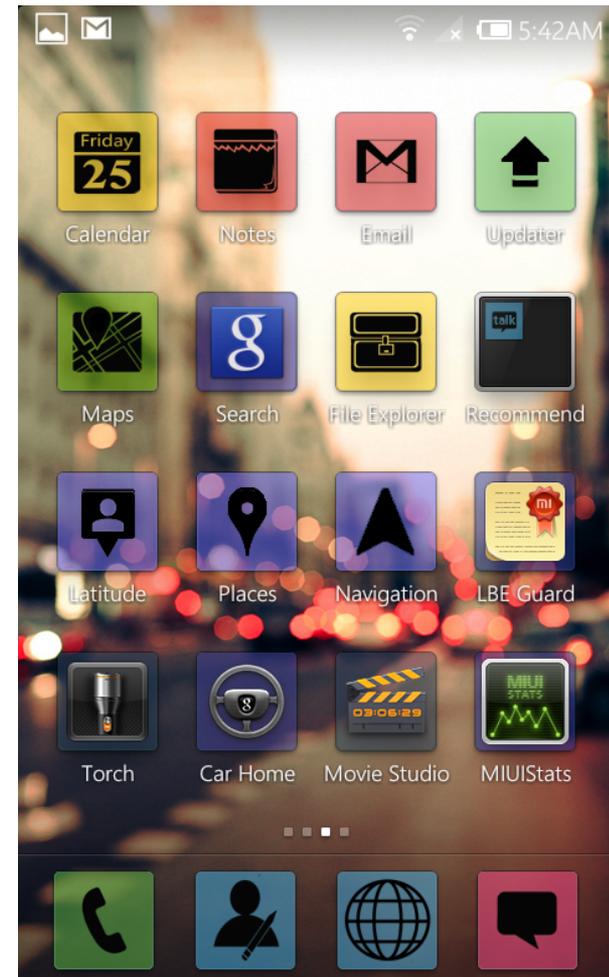
**Bluetooth**   
Deaktivieren

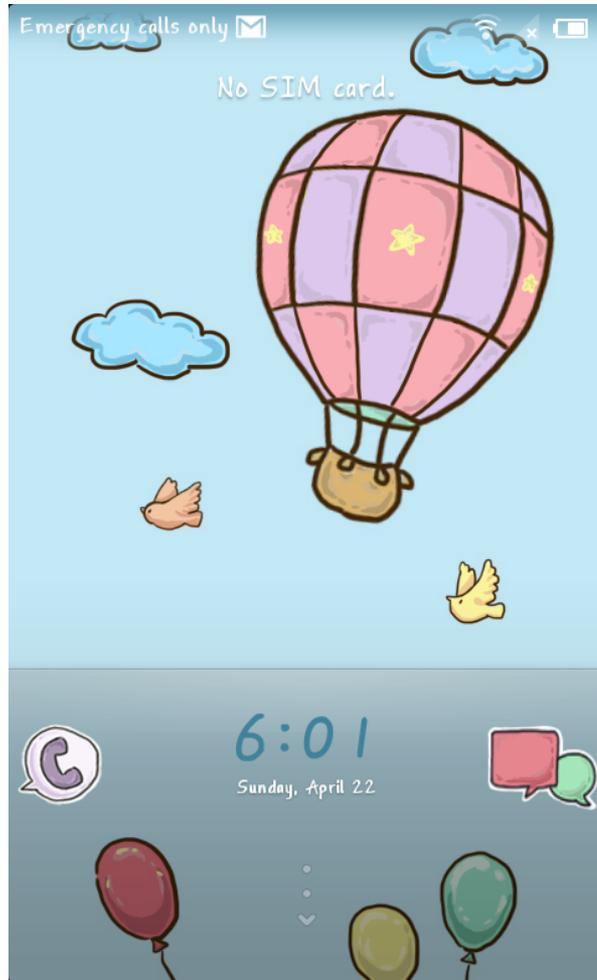
**GPS**   
Deaktivieren

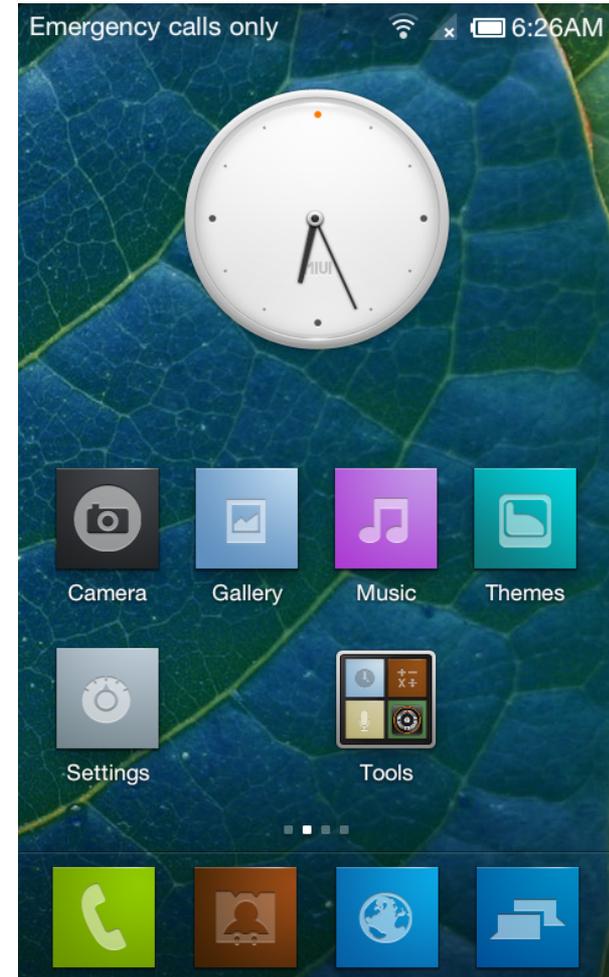
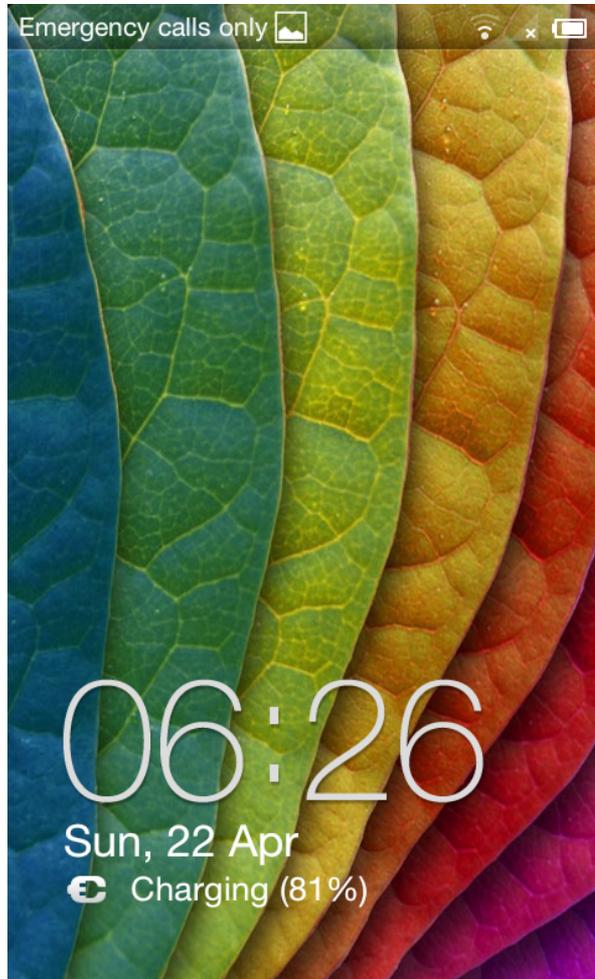
**WLAN**   
Deaktivieren

**Synchronisierung**   
Deaktivieren

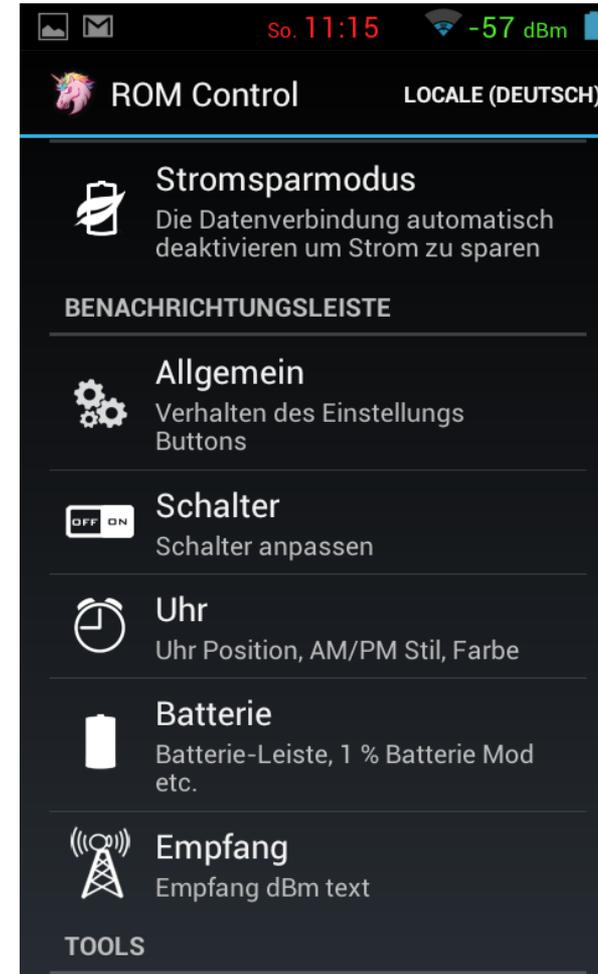








# Android Open Kang Project



# Nexus Q



# Different



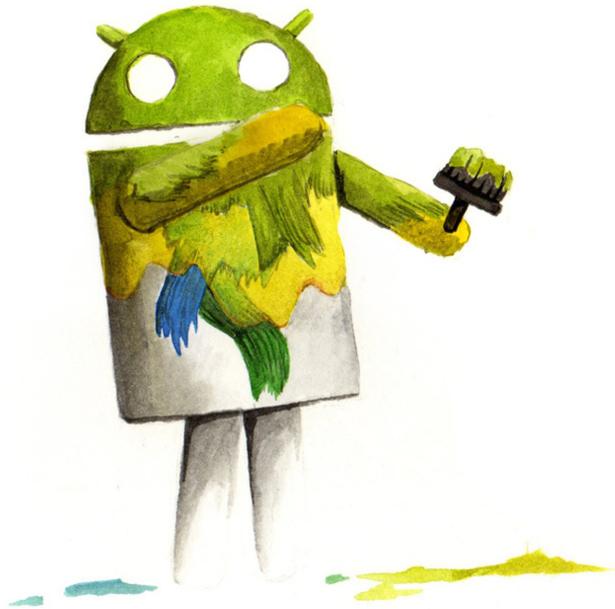
# Different



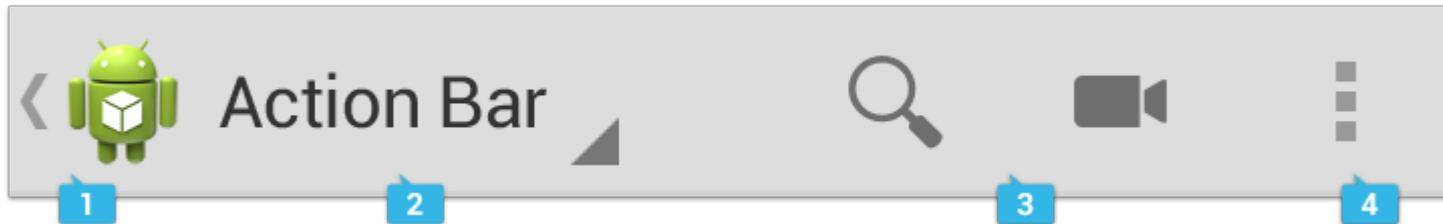


*Anregungen*

# Design guidelines



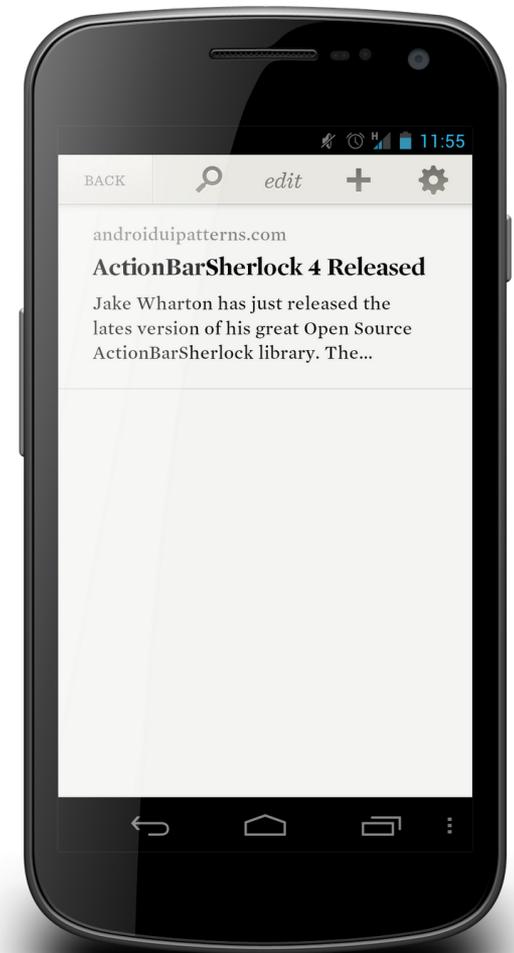
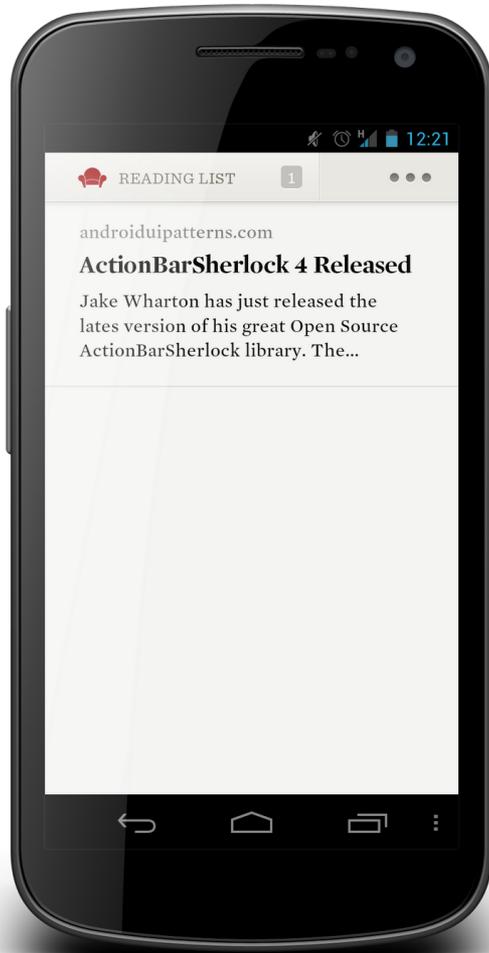
- ActionBar
- Navigation
- Selection
- Multi-pane layouts
- style
- icons



- App icon
- View control
- Action Buttons
- Action overflow
- ActionBarSherlok für Kompatibilität

<http://developer.android.com/design/patterns/actionbar.html>

# Not a real ActionBar



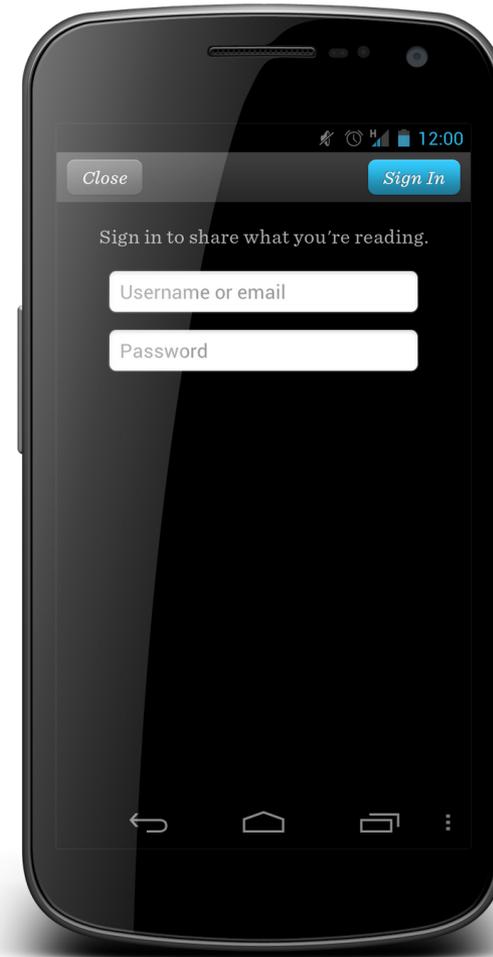
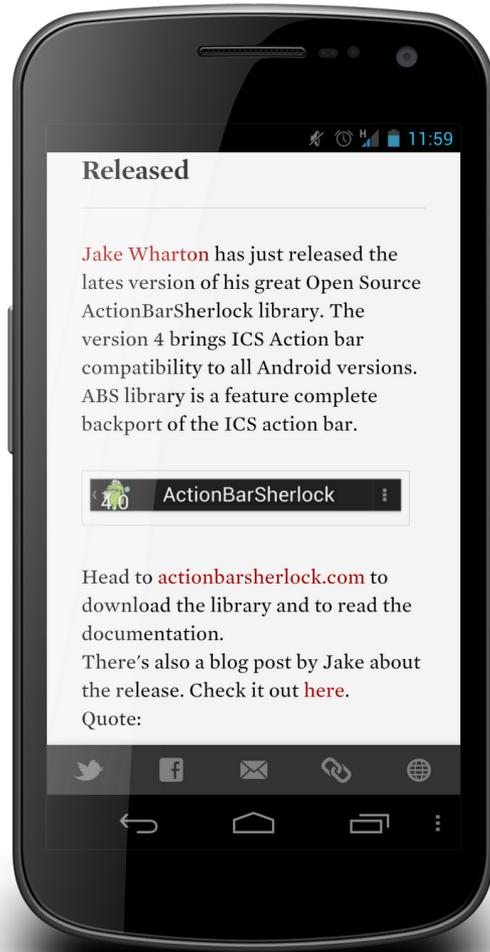
<http://www.androiduipatterns.com/2012/03/readability-yet-another-ios-app-on.html>

# Not a real contextual ActionBar



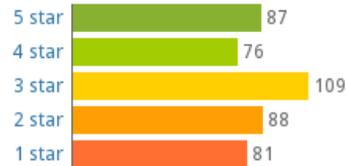
<http://www.androiduipatterns.com/2012/03/readability-yet-another-ios-app-on.html>

# Not a real Share Intent



<http://www.androiduipatterns.com/2012/03/readability-yet-another-ios-app-on.html>

## User Ratings



Average rating:

3.0

★★★★★  
441

## User Reviews

[Write a Review >](#)

[All Versions](#) ▾ [All Devices](#) ▾ [Sort by Helpfulness](#) ▾

**Manas** on March 21, 2012 (Samsung Galaxy Nexus with version 1.0.1) [🔗](#)

★★★★★ **Design is not just how it looks, but how it works.**

This one tries to be visually pretty, but follows iOS-like restrictions instead of being a good Android citizen (such as handling a Share intent). Background updates and the useless notification need to be configurable and turn-off-able. Android apps open a real browser — I use Chrome, not the stock browser — they don't embed WebViews like iOS.

[👍](#) [👎](#) [Spam](#)

**RandyN** on March 23, 2012 (Version 1.0.1) [🔗](#)

★★★★★ **Works well but needs tweaking**

It does a good job of presenting articles but it shouldn't be running as a service all the time. I should have the option to decide when it updates/downloads articles (e.g., manually, only on app start, etc.).

[👍](#) [👎](#) [Spam](#)

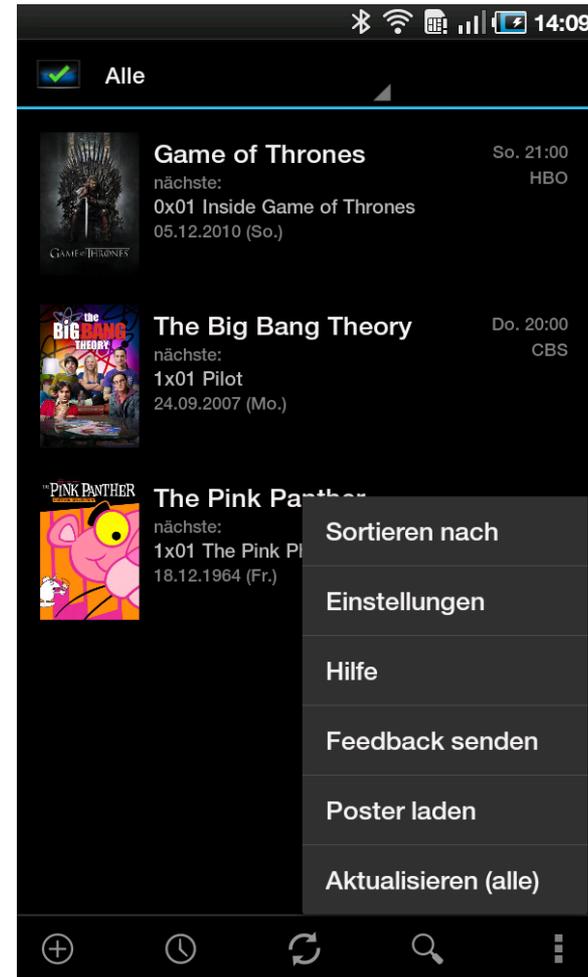
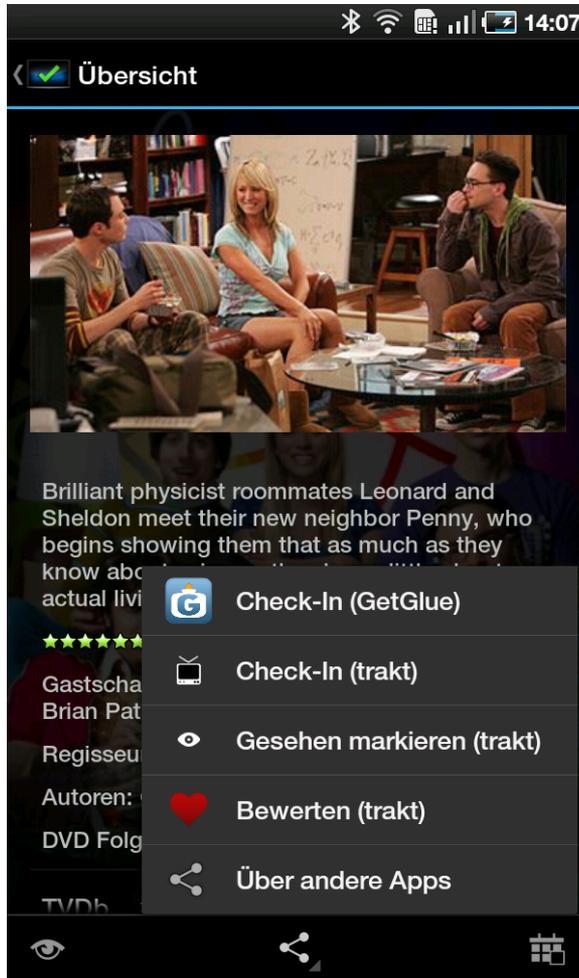
**Juhani** on March 21, 2012 (Version 1.0.1) [🔗](#)

★★★★★ **iOS UX**

I is nice to see you porting your app to Android but unfortunately it hasn't really been great success. It seems to download old versions of pages, use iOS UI patterns and functionality. It also spams notifications. You don't need to notify me when I'm doing something in the foreground. Good start and keep it up. I'll be updating my score :)

[👍](#) [👎](#) [Spam](#)

# Positivbeispiel





- Android 4.x ist ein riesiges und vielfältiges Ökosystem
- Design Guidelines anwenden
- Compat Bibliotheken verwenden
- größenangepasste UIs
- Vielfalt als Chance für individuelle Lösungen
- Design Guidelines lesen

**Vielen Dank für Ihre Aufmerksamkeit!**



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<http://www.inovex.de>