

APPSTRAKT
CREATIVE WITH TECHNOLOGY

Appstrakt

What we're going to talk about

- ▶ Short **history** of Android
- ▶ Introduction to **Material Design**
- ▶ Example case: **Pukkelpop 2015**



Where is Android coming from?

<http://arstechnica.com/gadgets/2014/06/building-android-a-40000-word-history-of-googles-mobile-os/>



Android

History

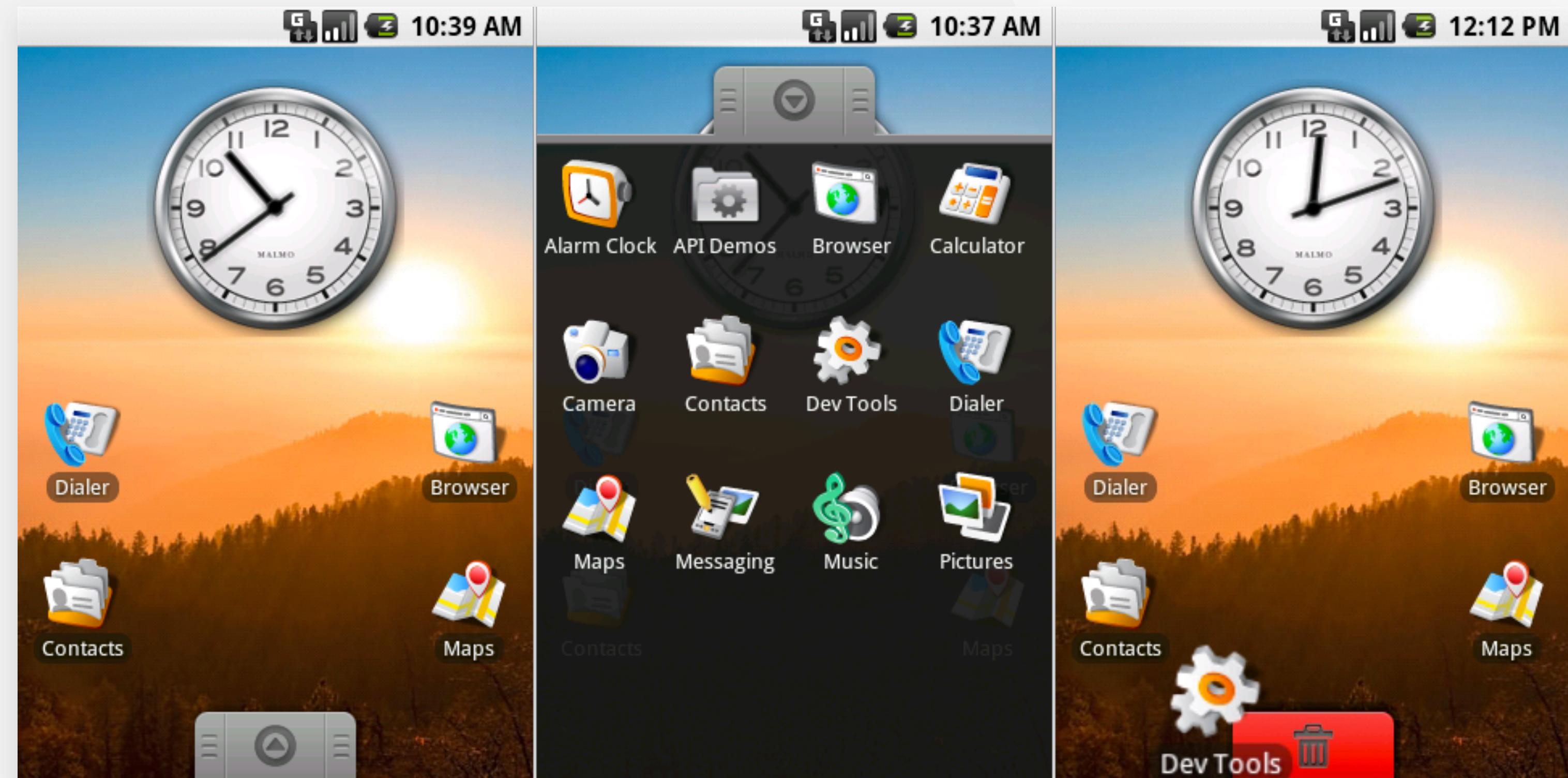
- ▶ Version 0.5 **Milestone 3**
- ▶ November 2007
- ▶ Looks like a BlackBerry



Android

History

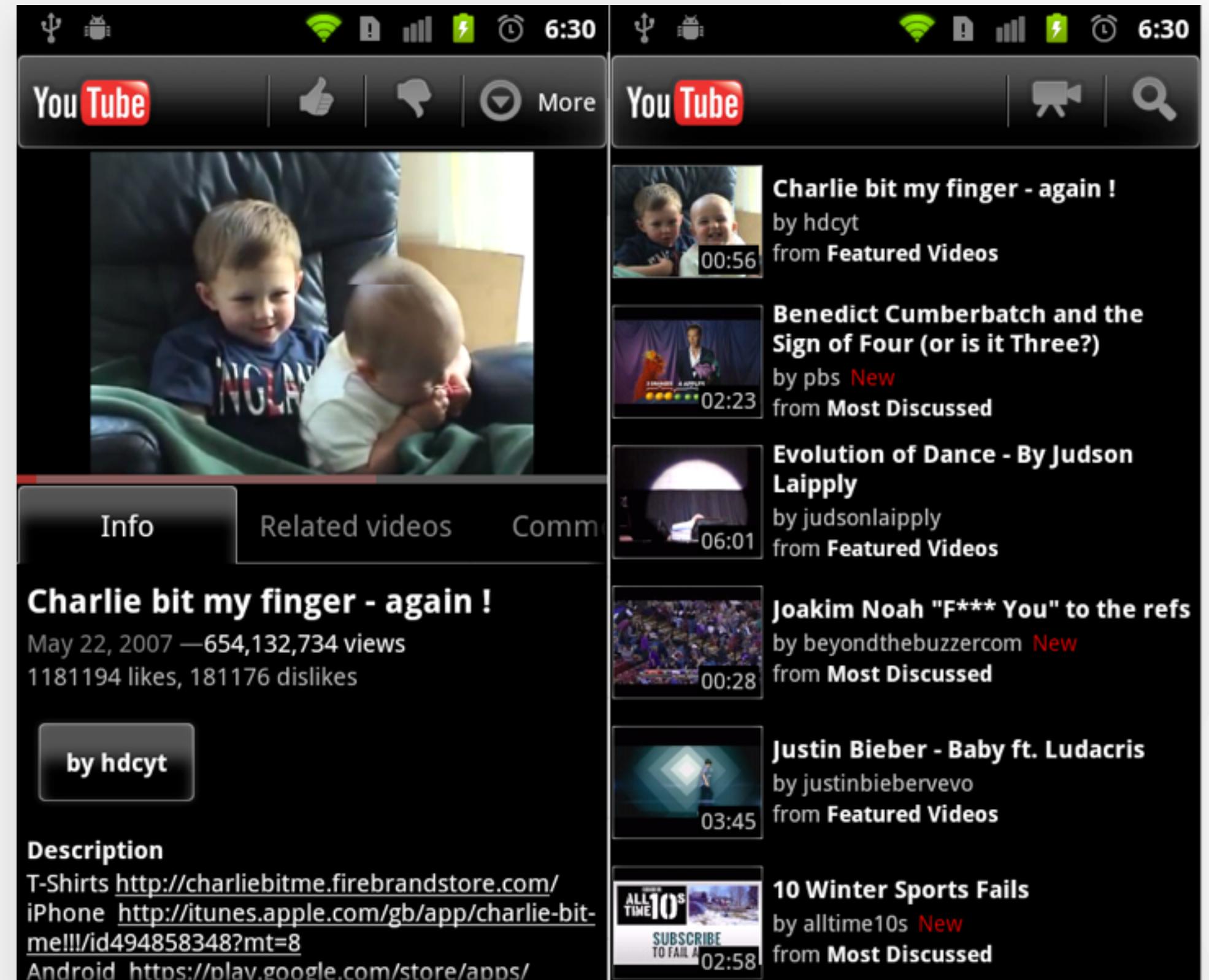
- ▶ Version 0.9 **Beta**
- ▶ August 2008
- ▶ A touch-friendly OS



Android

History

- ▶ Version 2.3 **Gingerbread**
- ▶ December 2010
- ▶ Fine tuning the UI
- ▶ First experiments with the ActionBar



Android

History

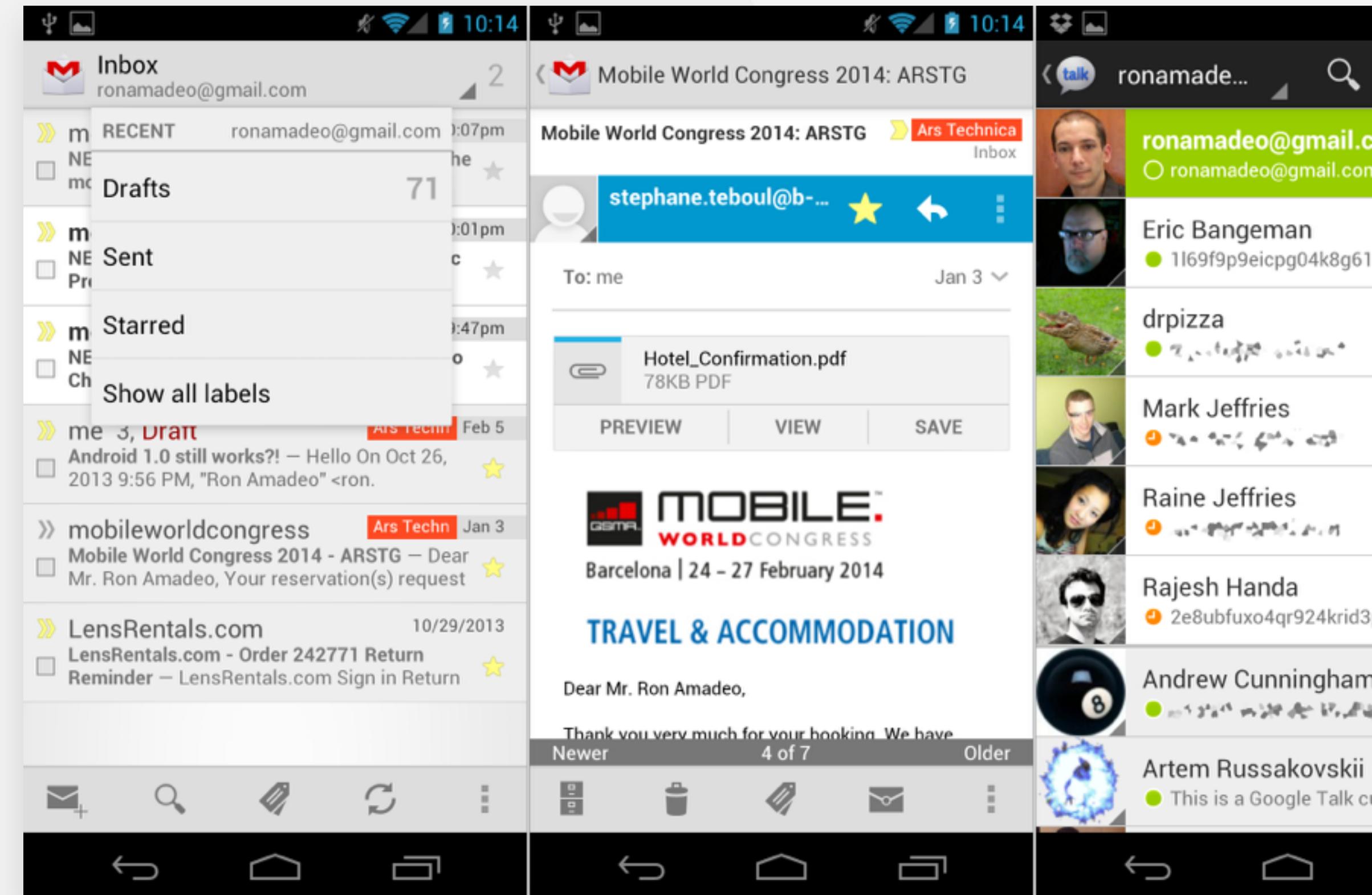
- ▶ Version 3.0 **Honeycomb**
- ▶ February 2011
- ▶ The Holo theme and tablets



Android

History

- ▶ Version 4.0 **Ice Cream Sandwich**
- ▶ October 2011
- ▶ Supports both phones and tablets



Android

History

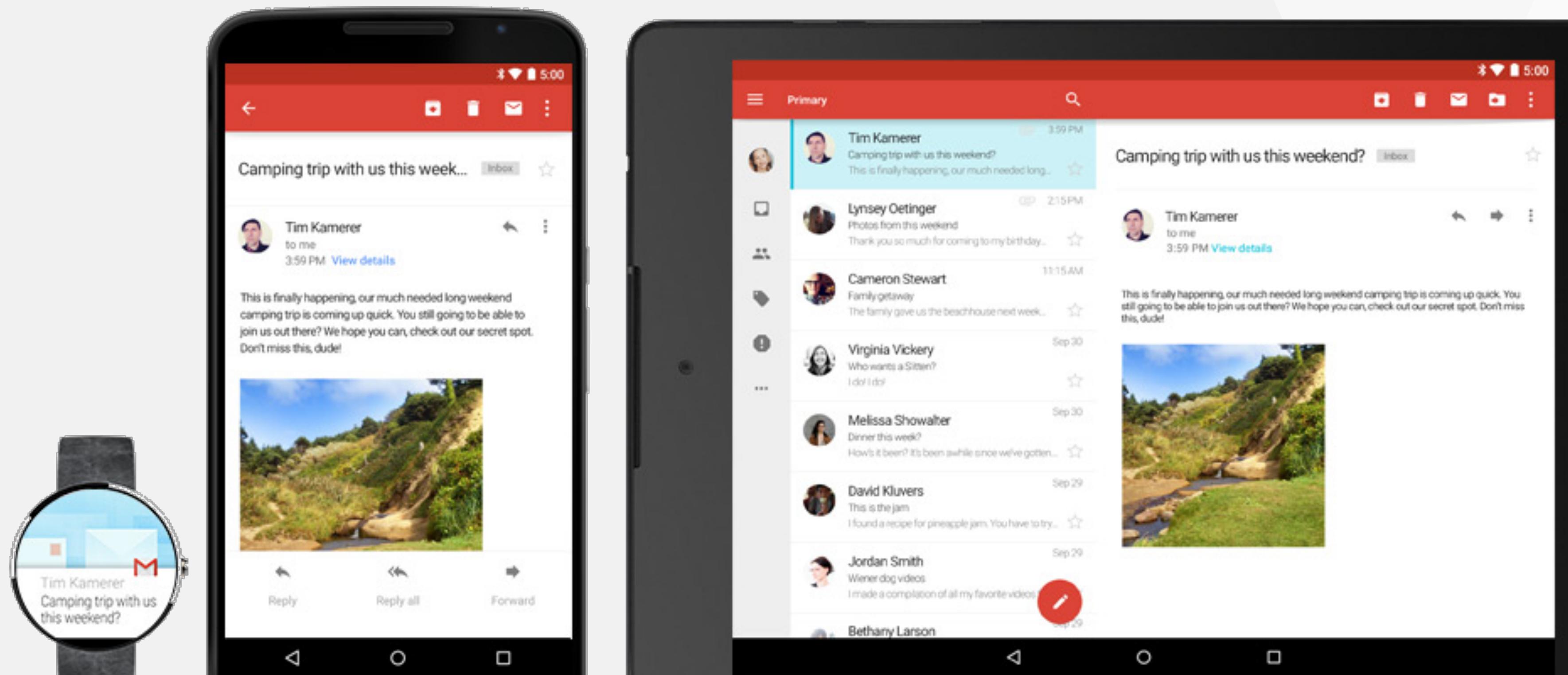
- ▶ Version 4.4 **KitKat**
- ▶ October 2013
- ▶ No more Holo blue



Android

History

- ▶ Version 5.0 **Lollipop**
- ▶ October 2014
- ▶ Material Design



A

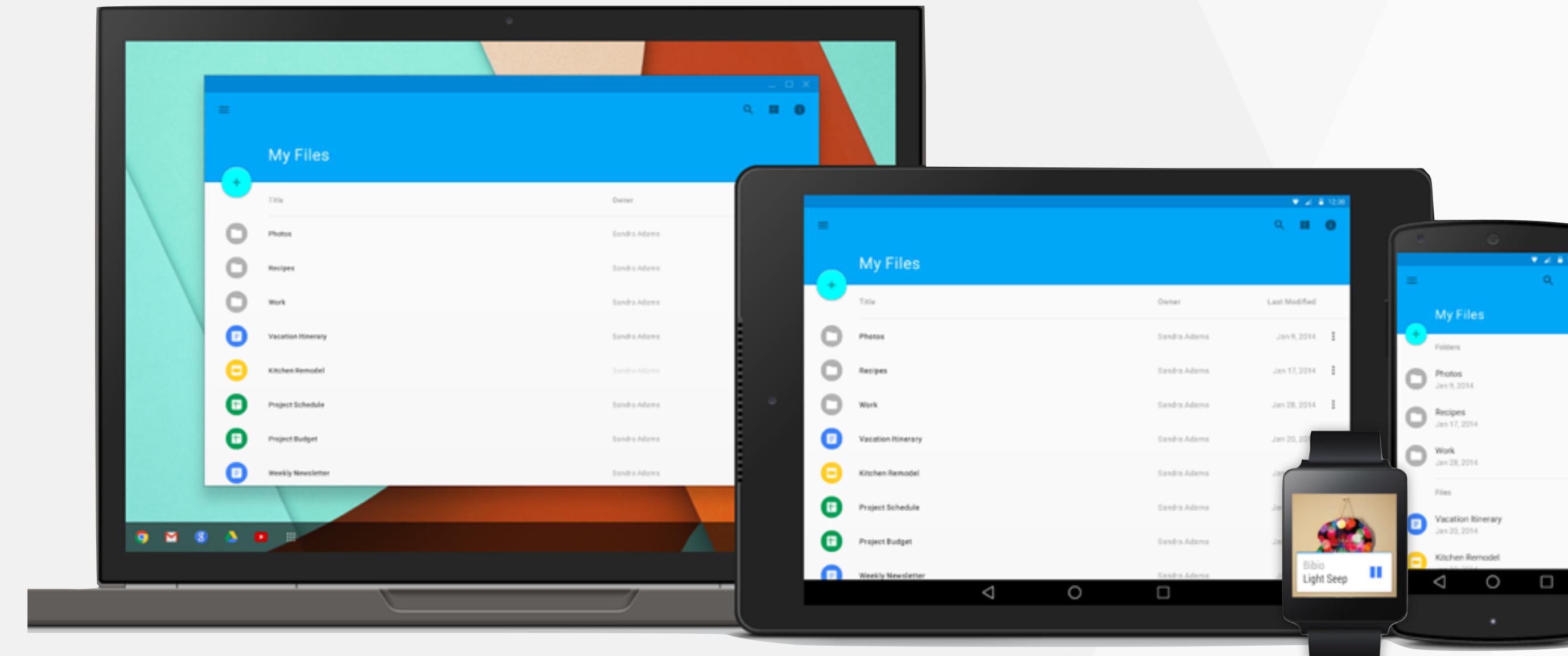
Material Design

A

Material Design

The main idea

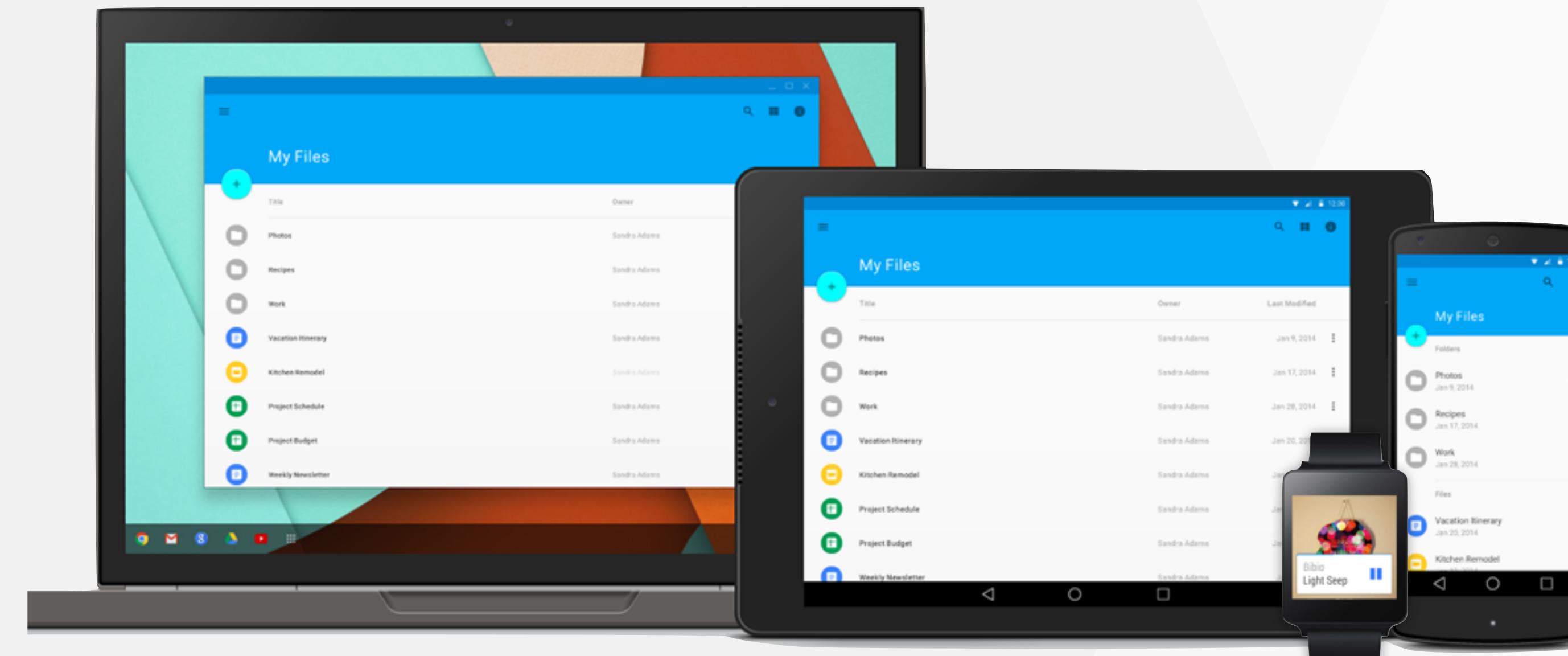
- ▶ **Bringing together** classic principles of good **design** and the possibilities of **technology** and **science**.
- ▶ **One single underlying system** that allows for a unified experience across platforms and device sizes.



Material Design

Main principles

- ▶ **Intuitive**
- ▶ Bold, graphic & **intentional**
(icon style, color use, typography, imagery, ...)
- ▶ **Motion** provides meaning
(animations, transitions, timing, ...)
- ▶ Material as a metaphor: **Paper**



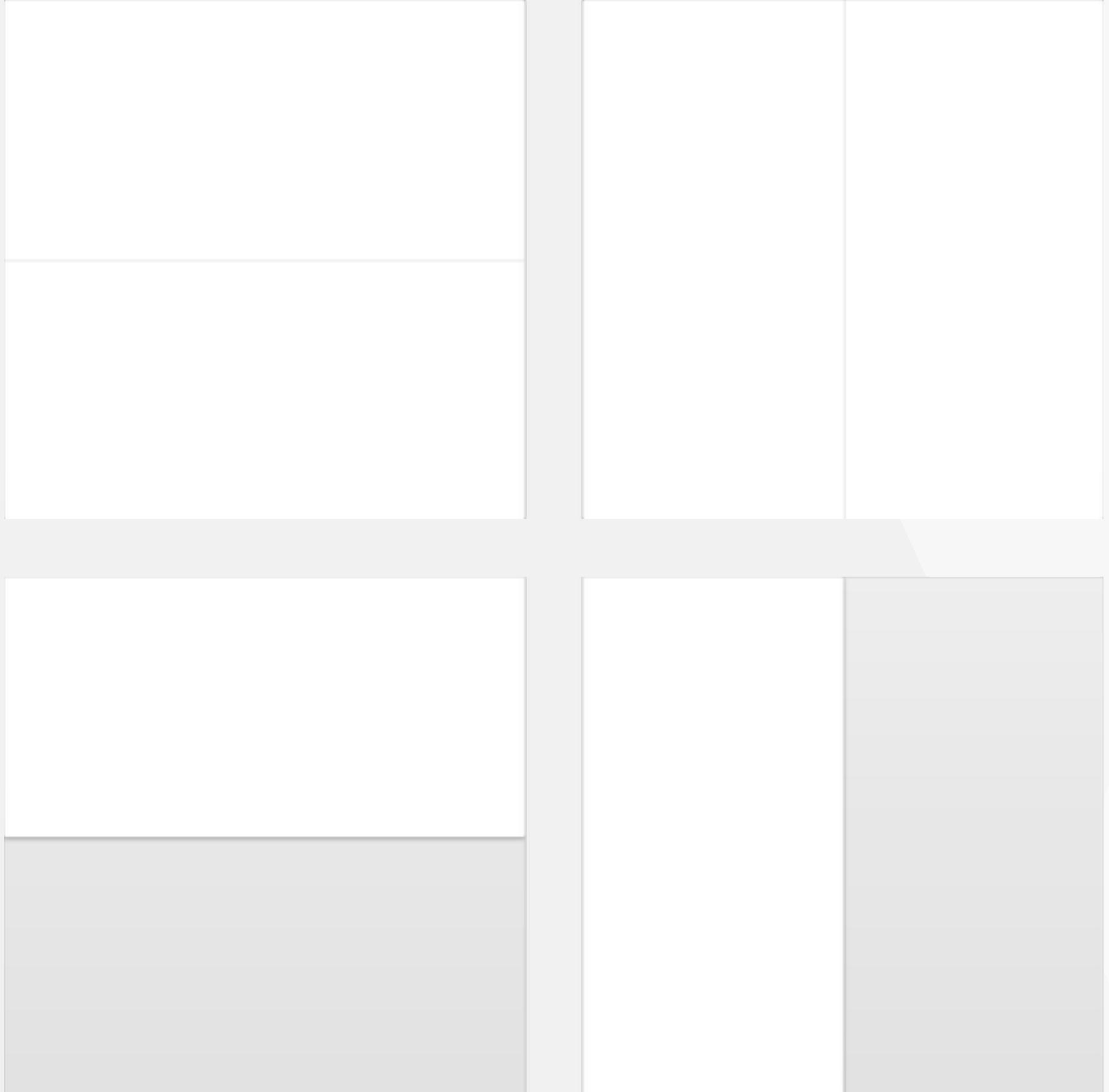
Material Design

Paper as material

- ▶ Very long time of experience in communicating with paper.

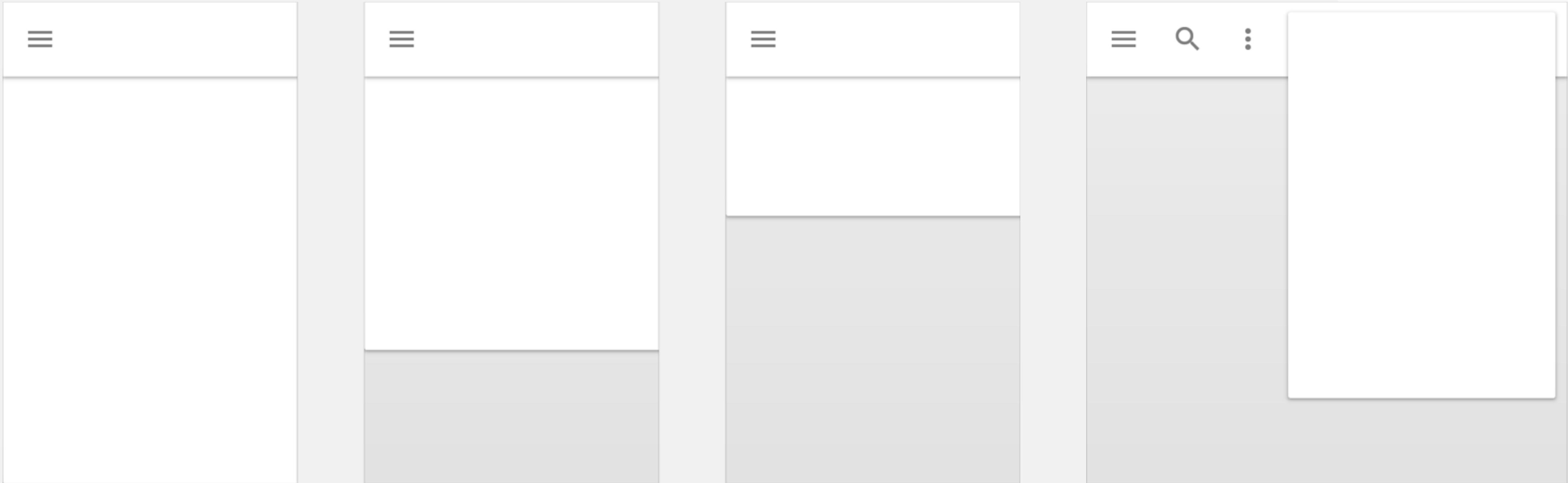
We know how to handle it.

- ▶ Main component of Material Design:
every pixel resides on a sheet of paper.



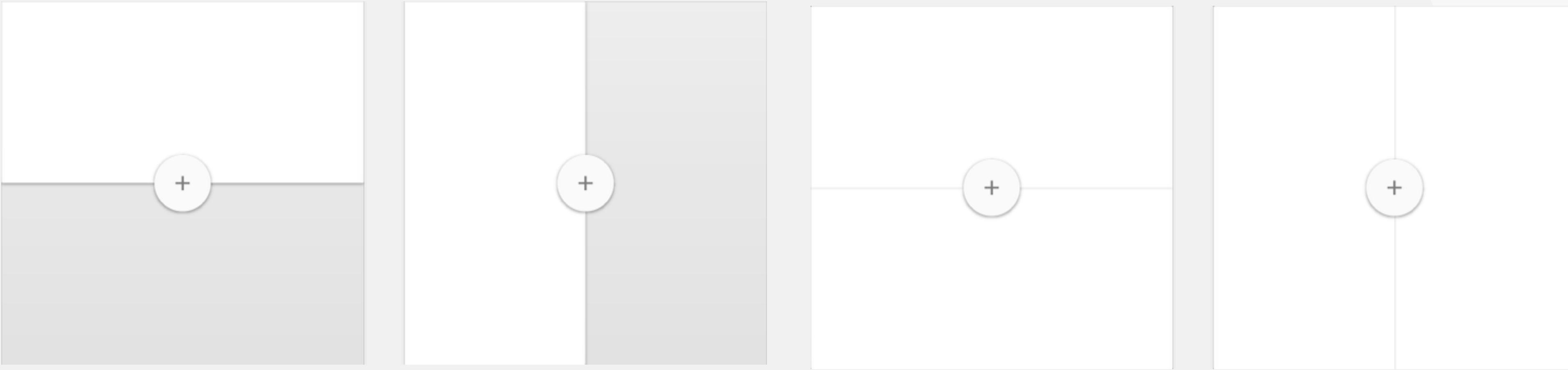
Material Design

Paper as material



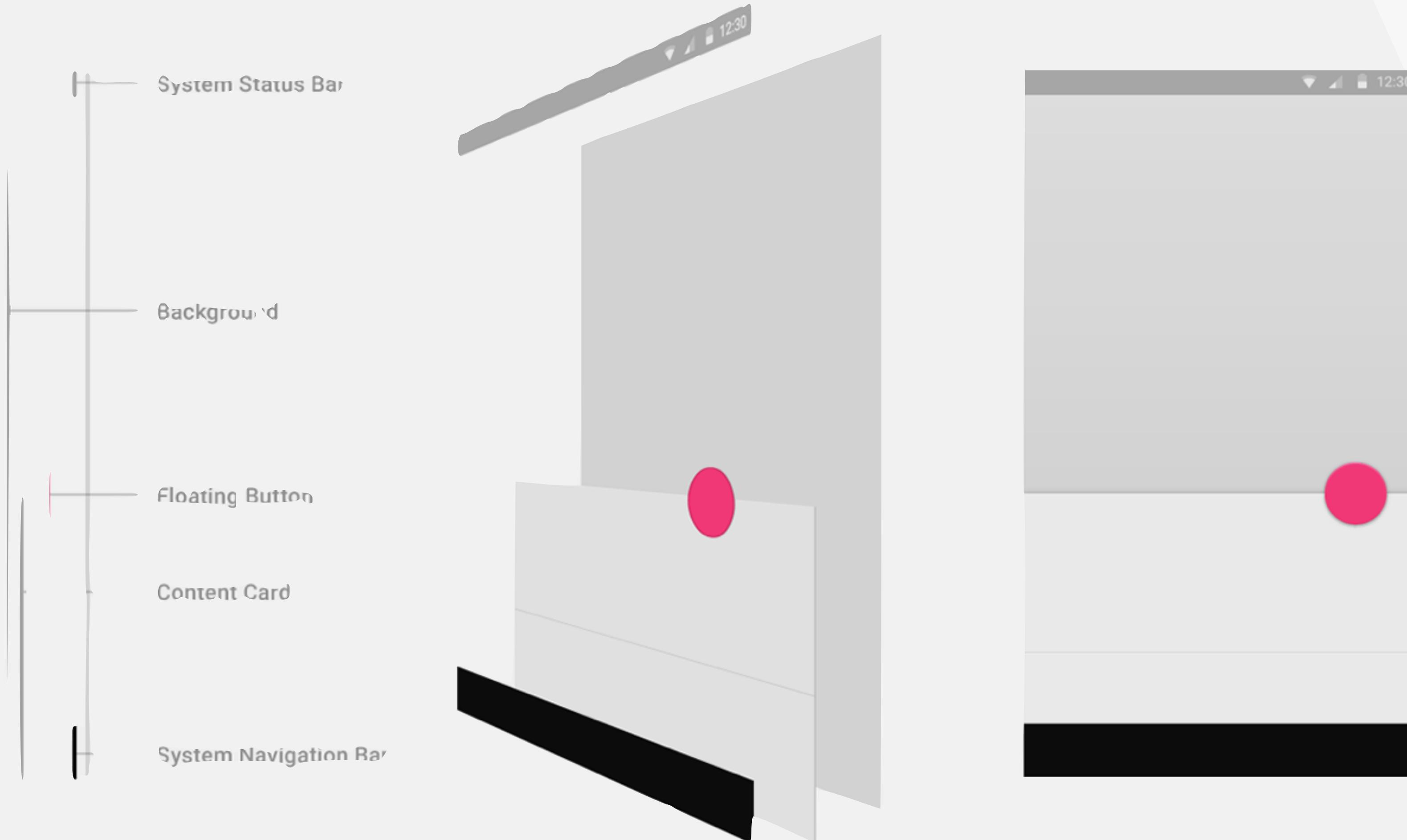
Material Design

Floating action button



Material Design

Dimensionality



Material Design

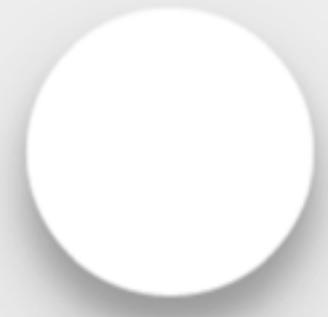
Dimensionality



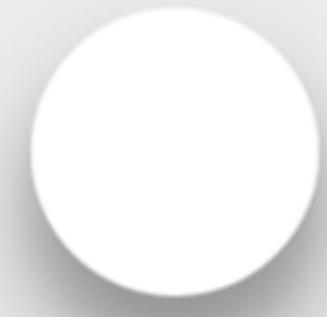
z-depth = 1



z-depth = 2



z-depth = 3



z-depth = 4

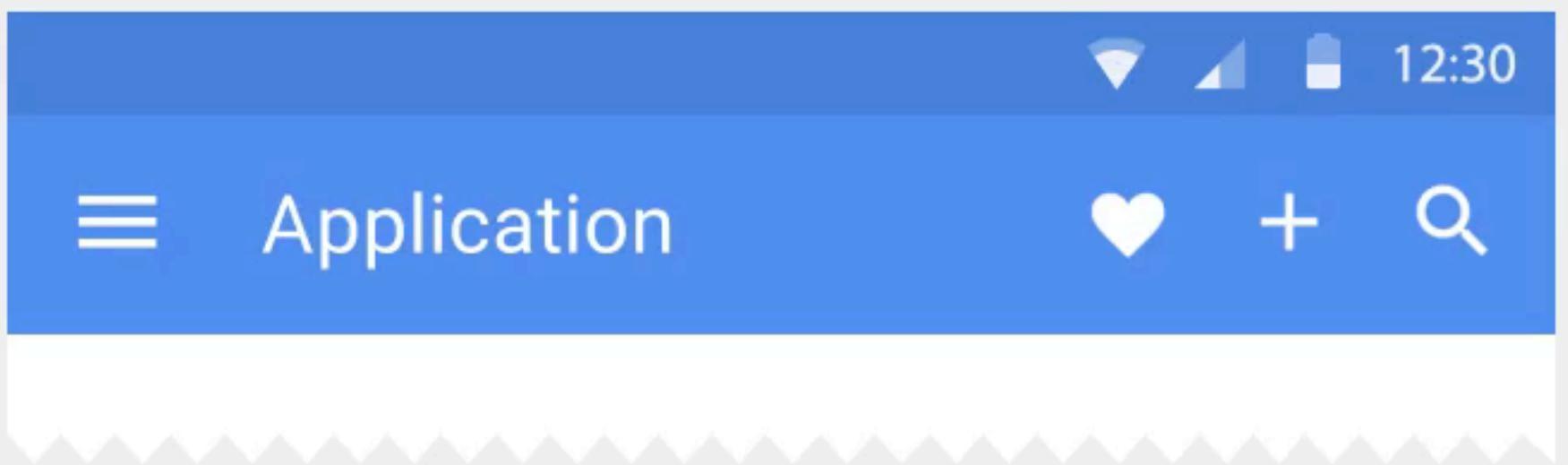


z-depth = 5

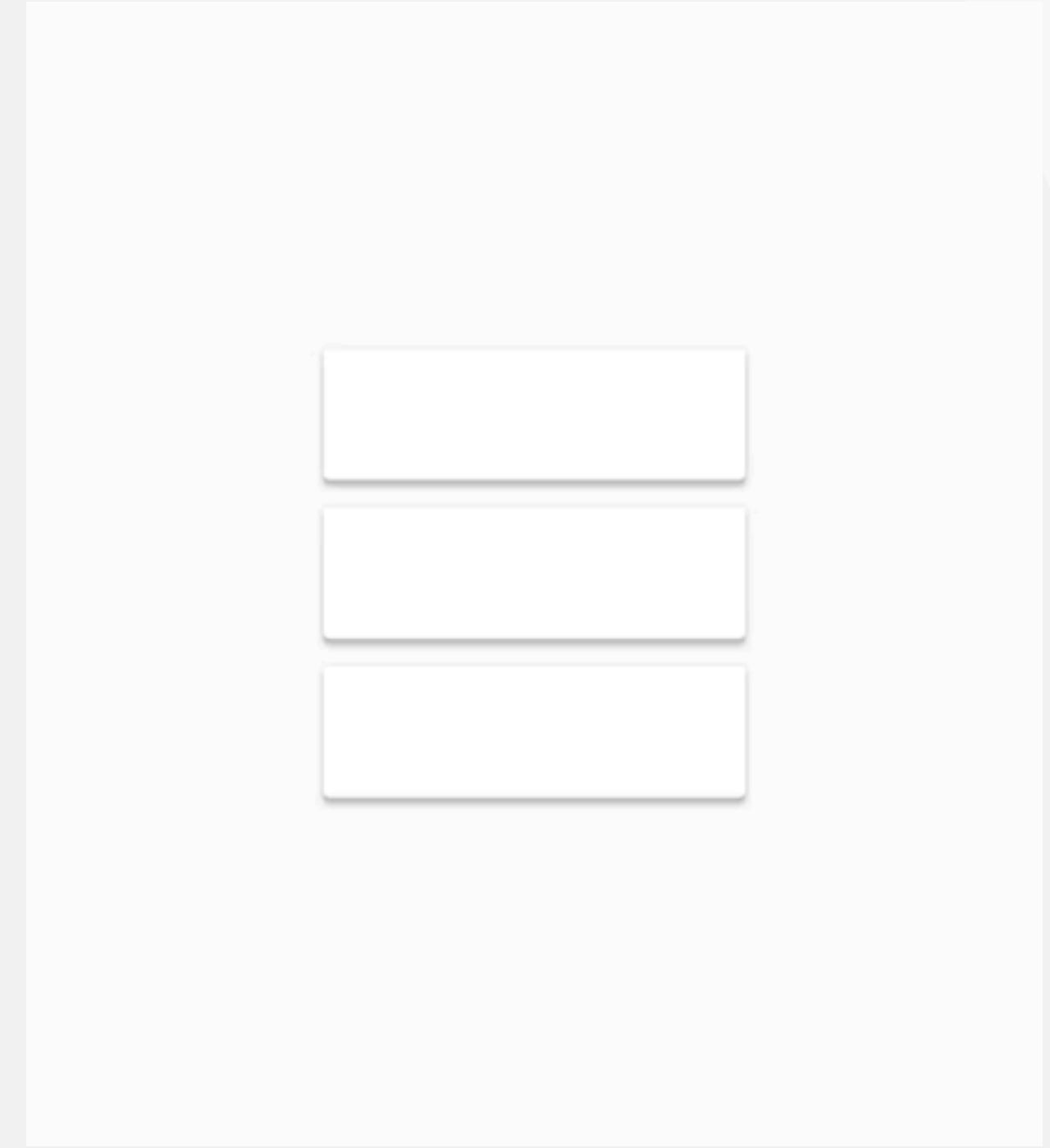
Material Design

Animation

Responsive Interaction



Material response



Radial action

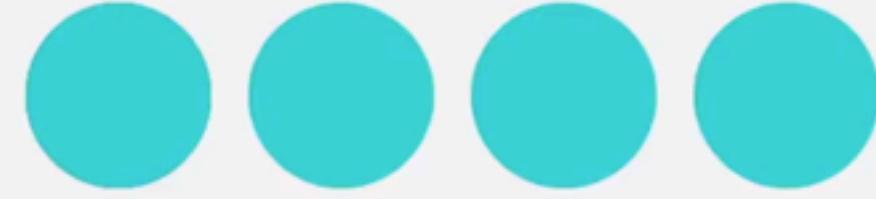
Material Design

Animation

Meaningful Transitions



Hierarchical Timing

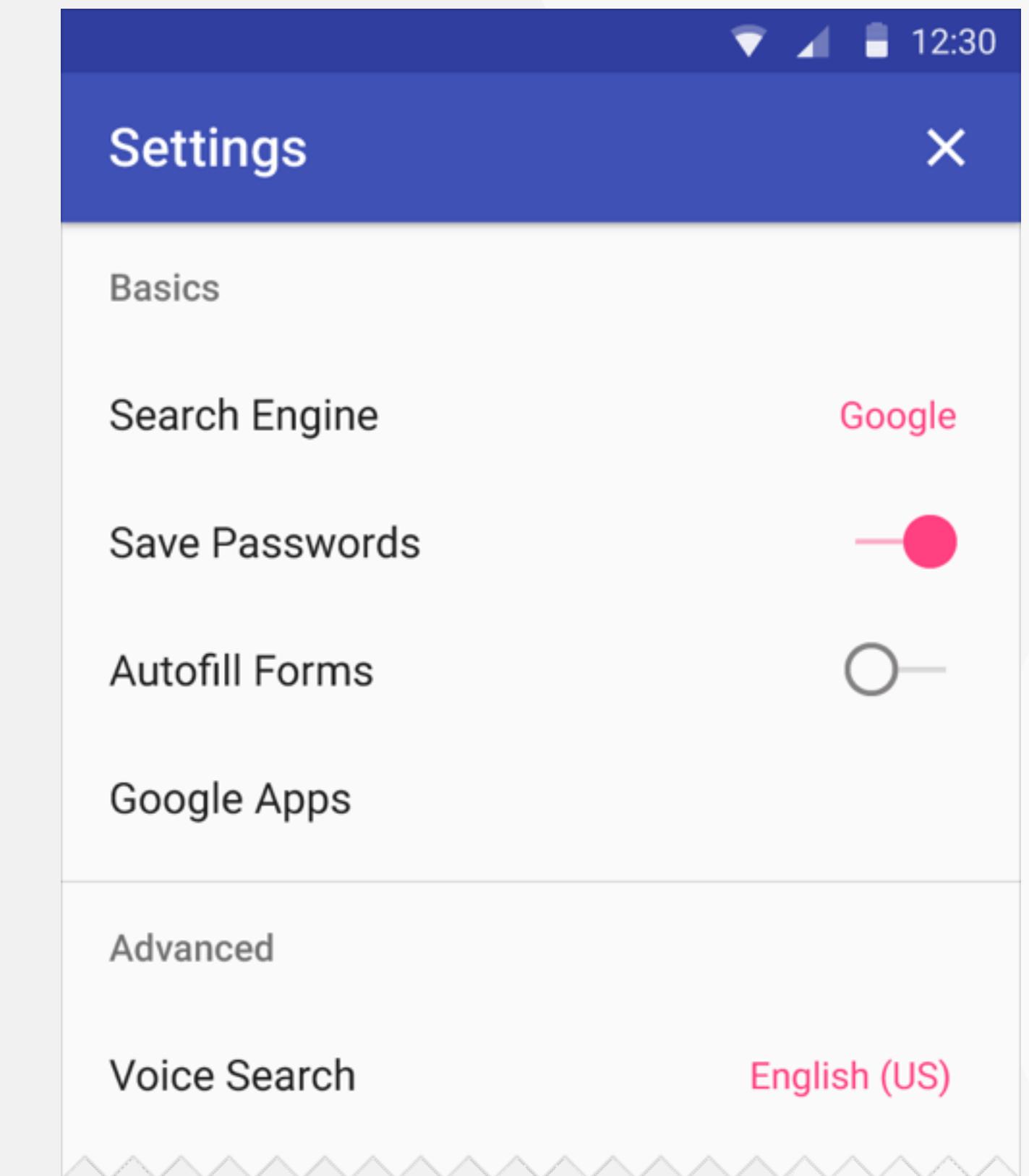
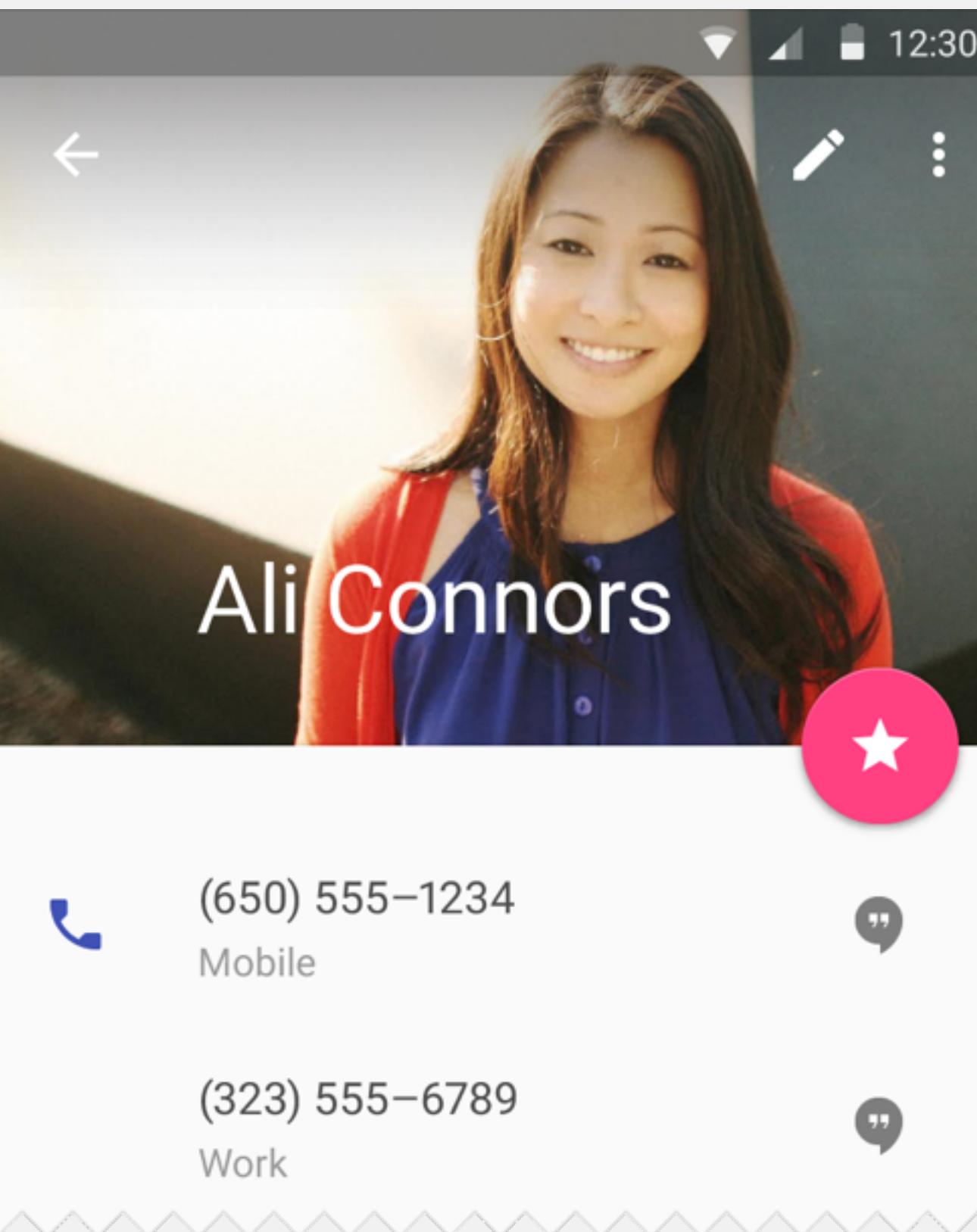


Consistent Choreography

Material Design

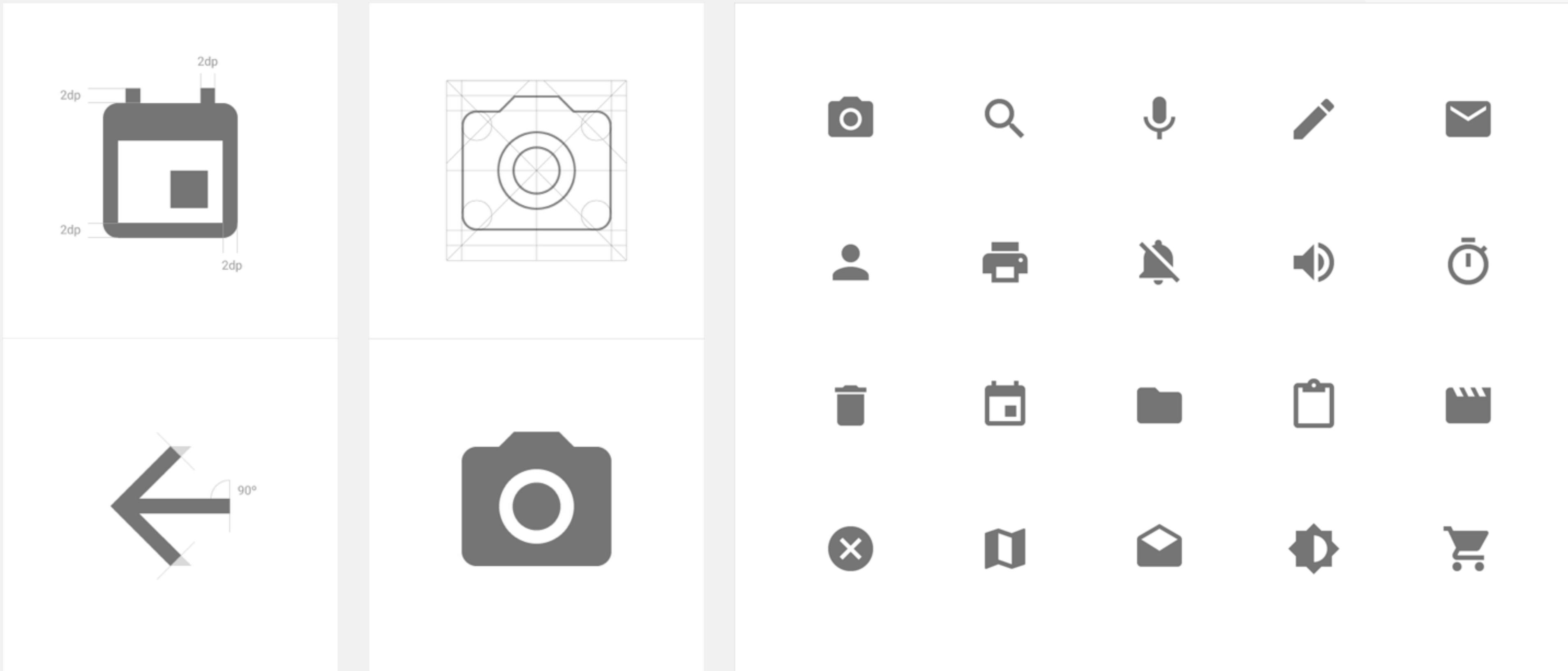
Color use

Primary – Indigo	
500	#3F51B5
100	#C5CAE9
500	#3F51B5
700	#303F9F
Accent – Pink	
A200	#FF4081
Fallback	
A100	#FF80AB
A400	#F50057



Material Design

Icons



A

Material Design

Typography

Display 4

Light 112sp

Display 3

Regular 56sp

Display 2

Regular 45sp

Display 1

Regular 34sp

Headline

Regular 24sp

Title

Medium 20sp

Subhead

Regular 16sp (Device), Regular 15sp (Desktop)

Body 2

Medium 14sp (Device), Medium 13sp (Desktop)

Body 1

Regular 14sp (Device), Regular 13sp (Desktop)

Caption

Regular 12sp

Menu

Medium 14sp (Device), Medium 13sp (Desktop)

Button

MEDIUM (ALL CAPS) 14sp

A

Quantum Mechanics

6.626069 $\times 10^{-34}$

One hundred percent cotton bond

Quasiparticles

It became the non-relativistic limit of quantum field theory

PAPERCRAFT

Probabilistic wave - particle wavefunction orbital path

ENTANGLED

Cardstock 80lb ultra-bright orange

STATIONARY

POSITION, MOMENTUM & SPIN

REGULAR

THIN

BOLD ITALIC

BOLD

CONDENSED

LIGHT ITALIC

MEDIUM ITALIC

BLACK

MEDIUM

THIN

CONDENSED LIGHT

Example case

Appmiral

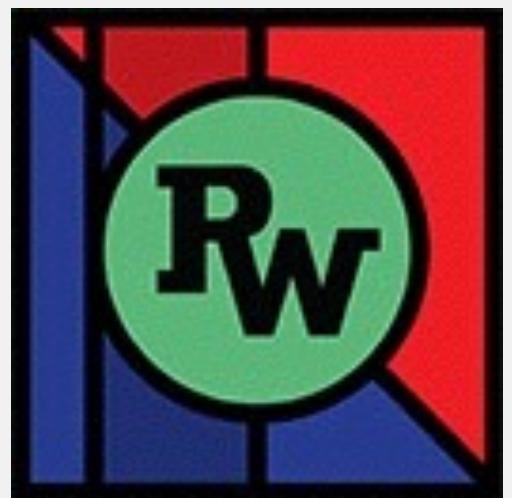


Appmiral

Who's Appmiral?



- ▶ Started as one of the first lab projects at Appstrakt, somewhere early 2010
- ▶ Festival framework



Three years of development

JUNE 2011
IOS5

OCTOBER 2011
ANDROID 4.0

END 2011
INITIAL DEVELOPMENT
FRAMEWORK

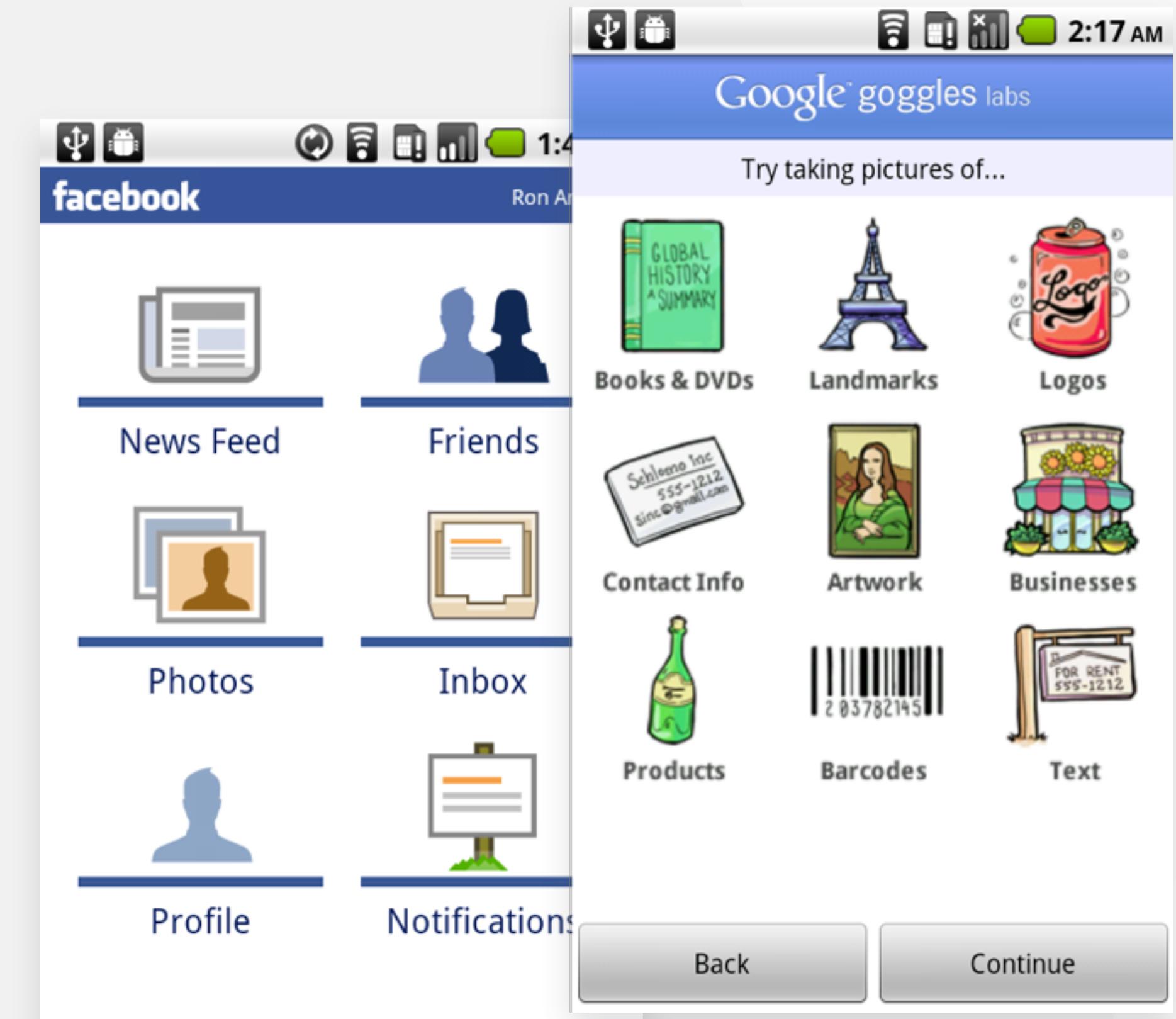
BEGIN 2012
ANDROID DESIGN
GUIDELINES

SUMMER 2012
1ST TIME IN USE



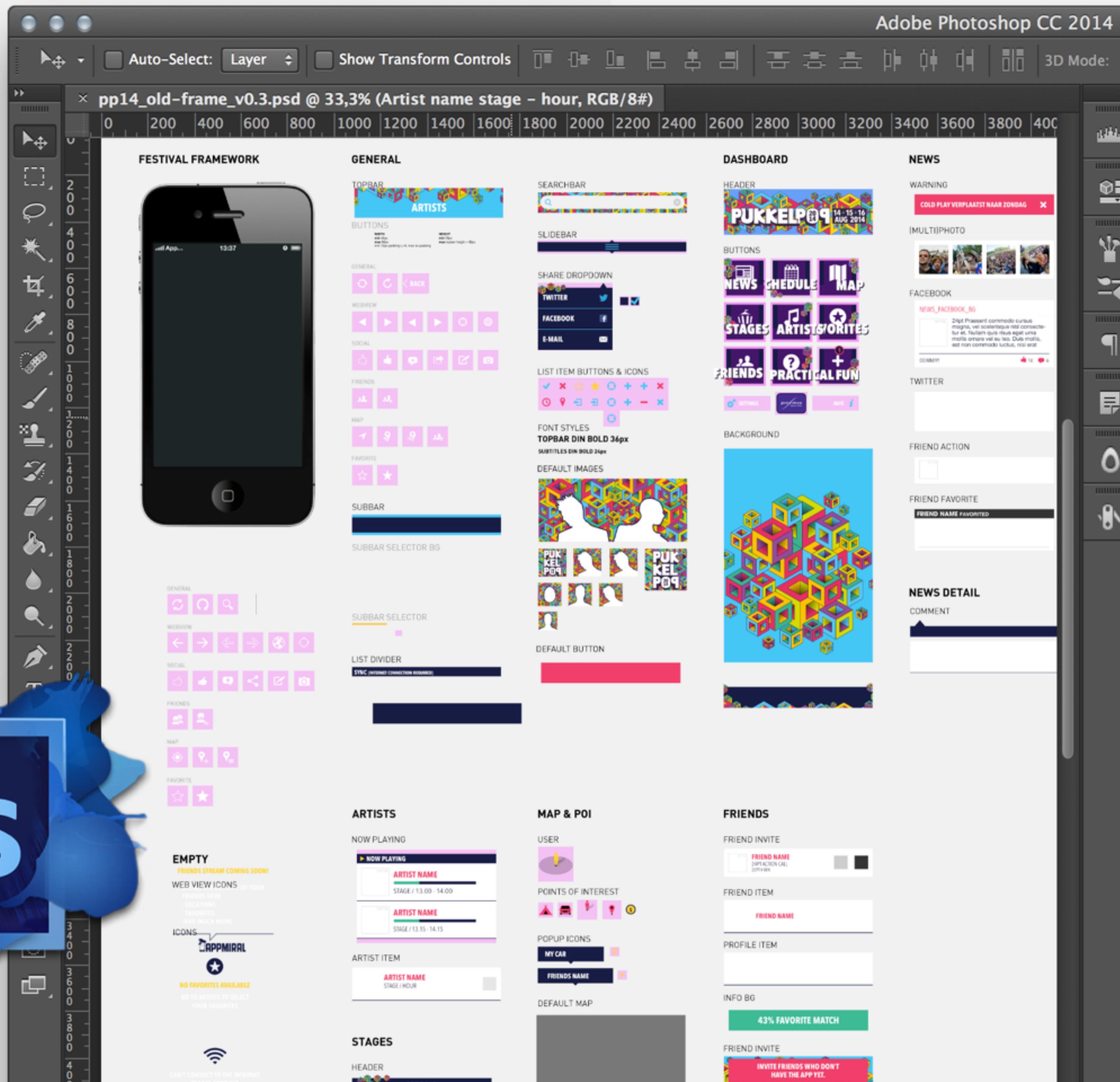
Old conventions

- ▶ Using a grid to start
- ▶ iOS & Android conventions
- ▶ Less animations



Design old framework

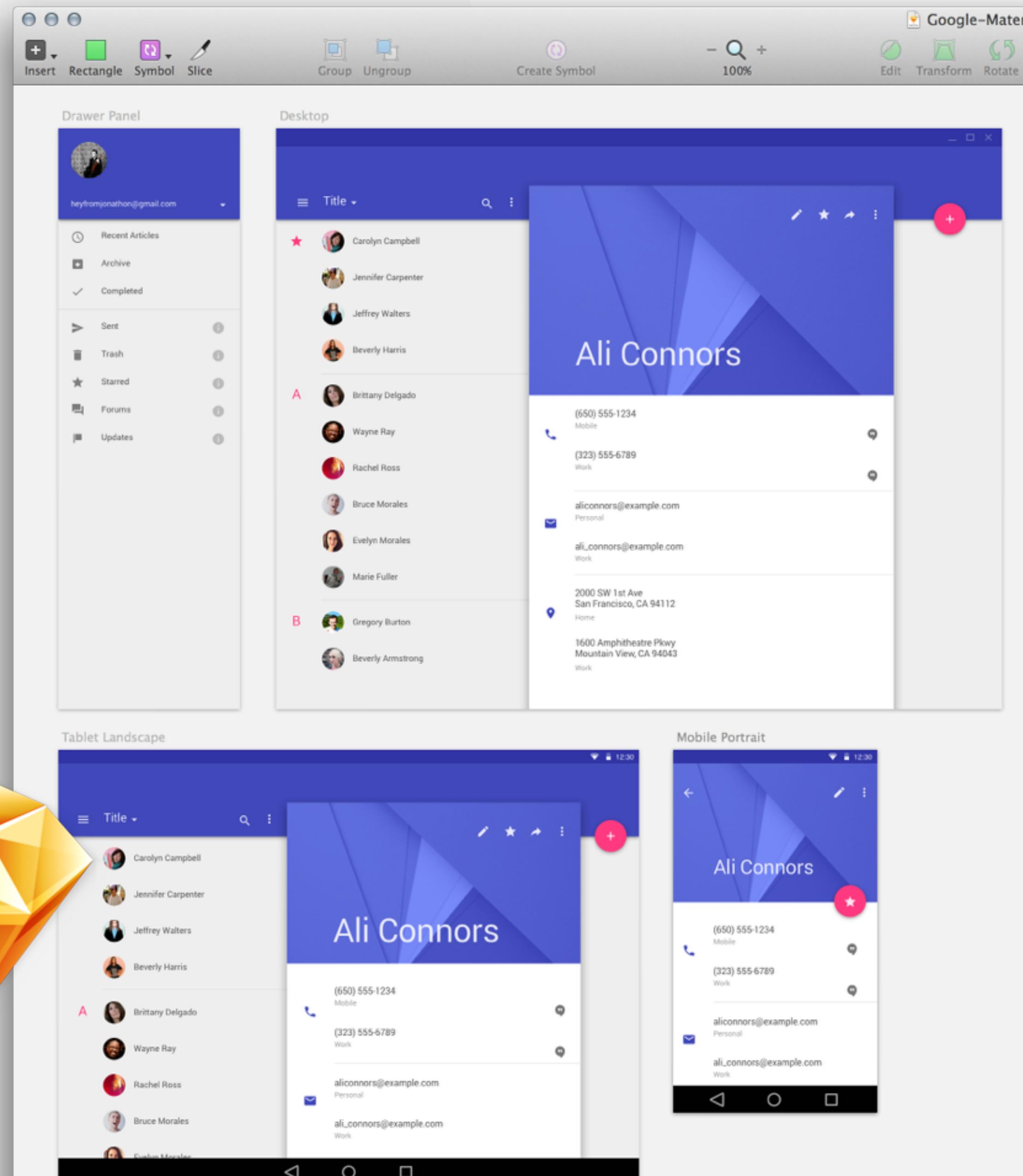
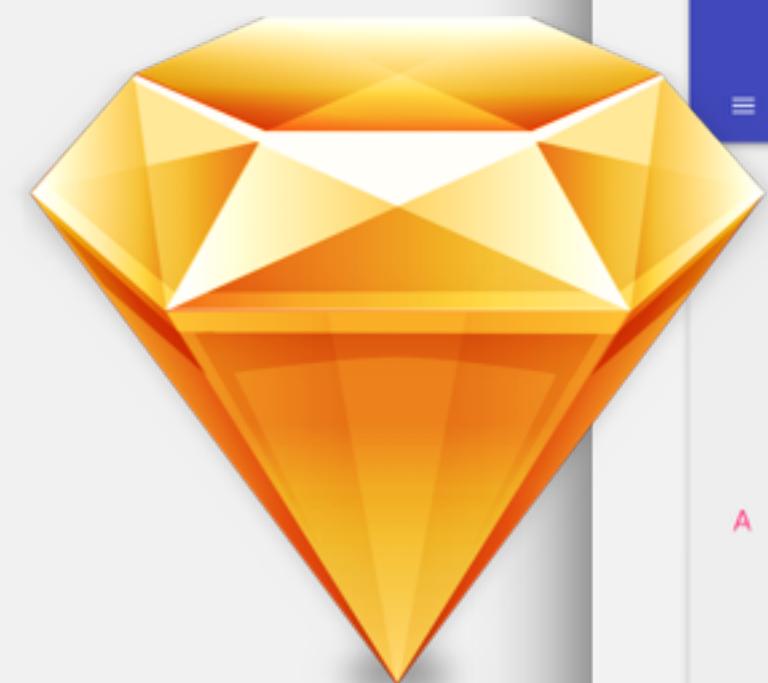
- ▶ Android & iOS were the same
- ▶ Only screens for iOS version
- ▶ Photoshop



Appmiral

New Android Lollipop Framework

- ▶ Android now has its own good documented **design guidelines**
- ▶ Will be designed in **Sketch**



A



PUKKELOP⁹₁₅

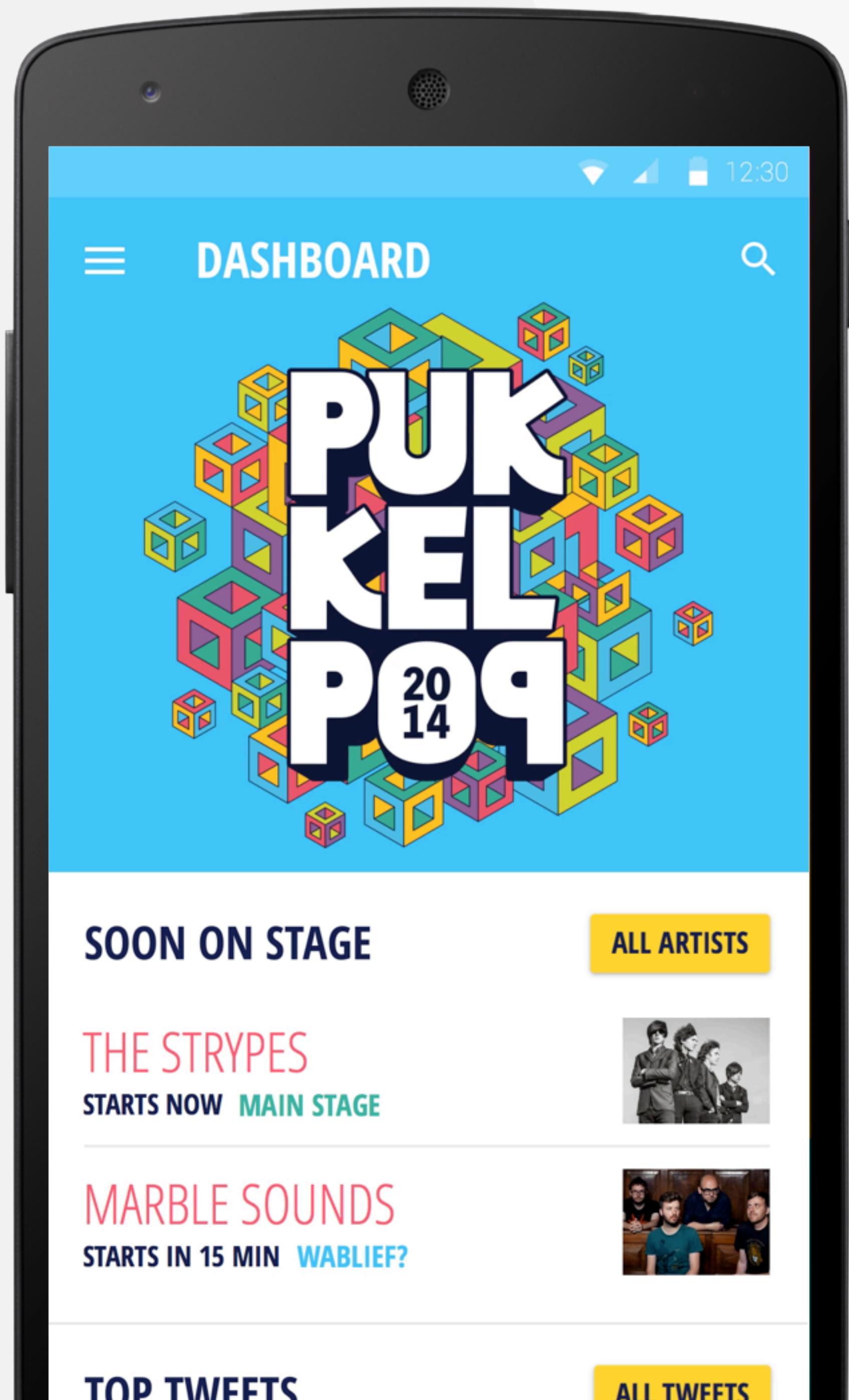
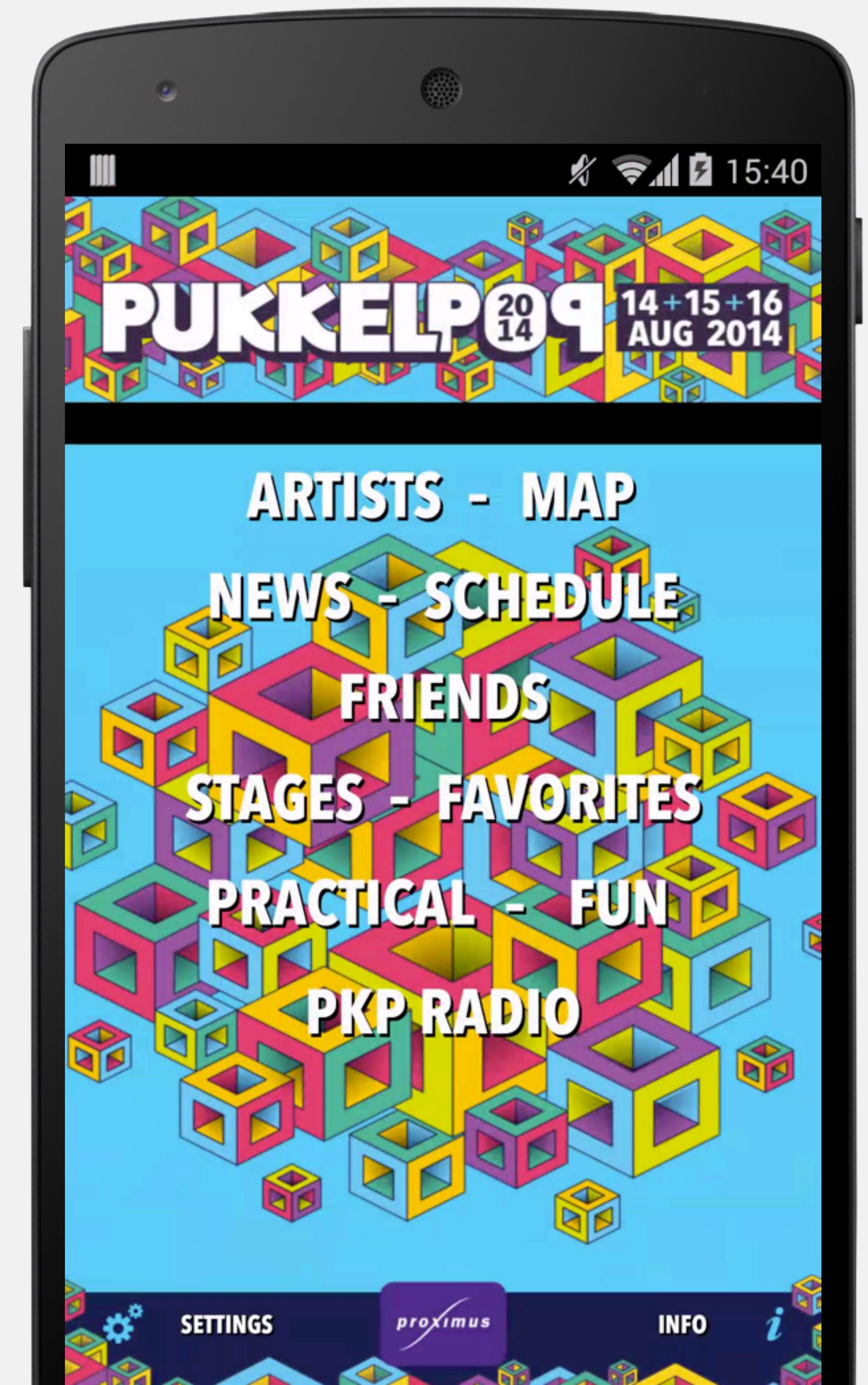
20+21+22
AUG 2015

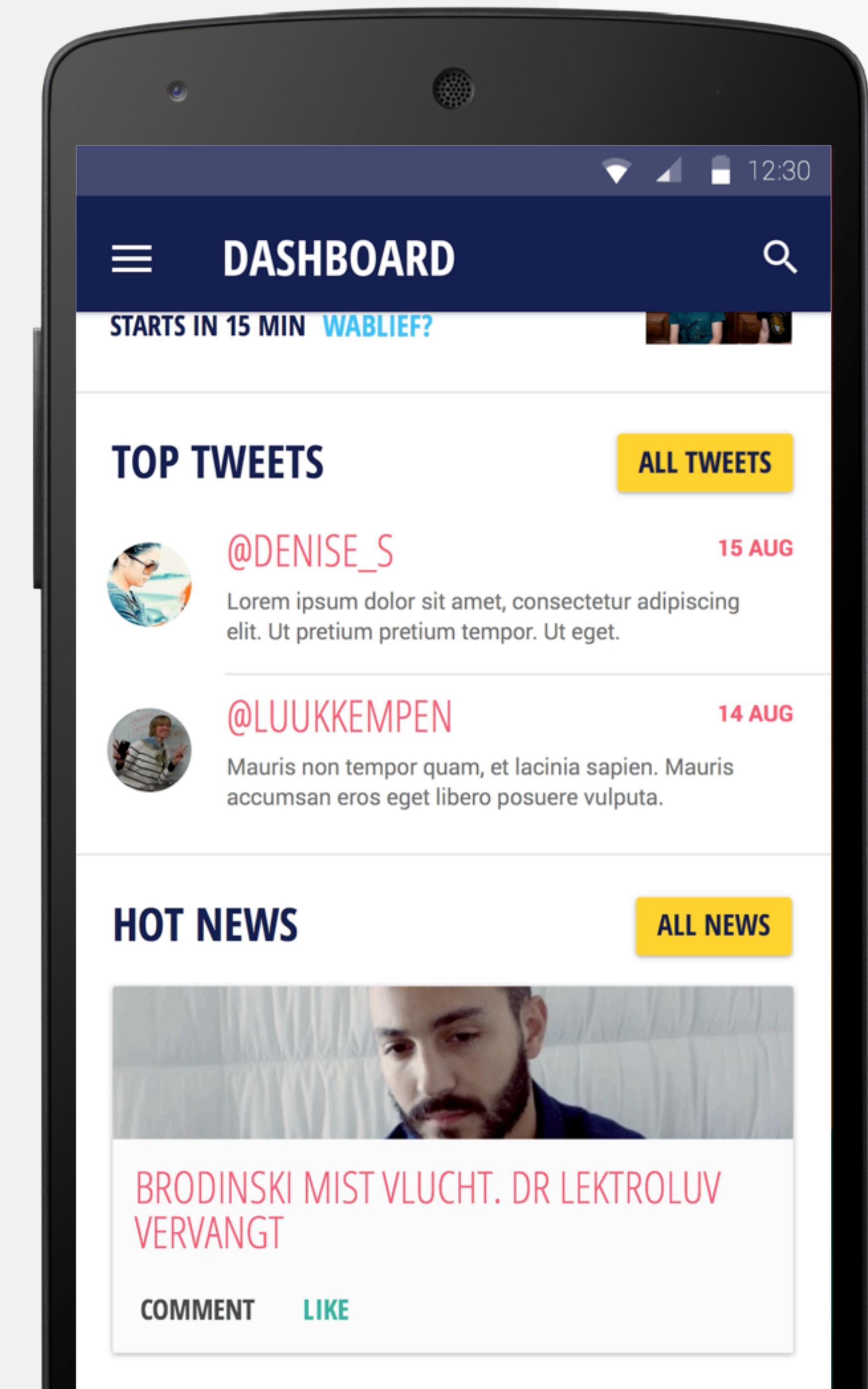
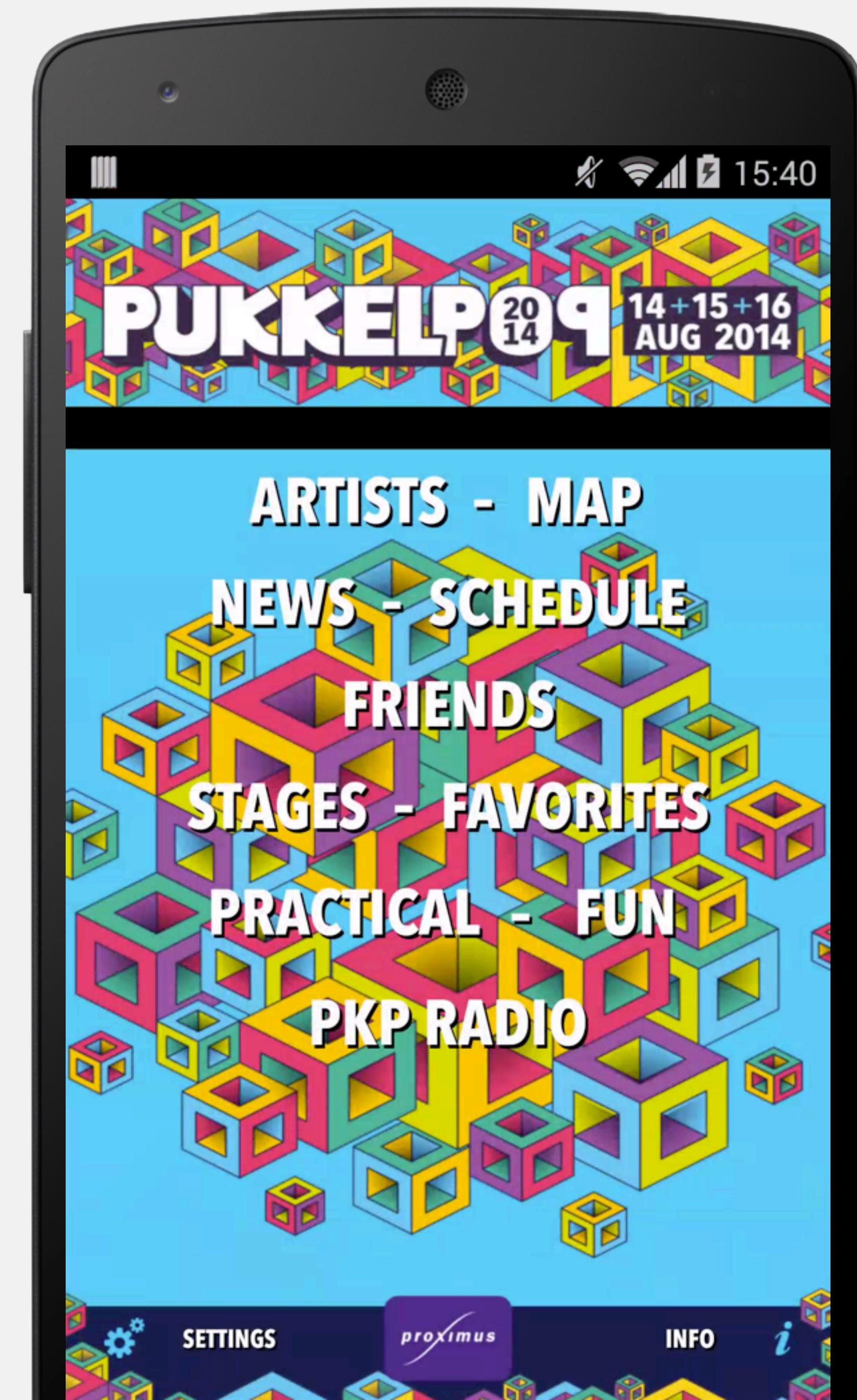
Example case

Pukkelpop 2015

Dashboard

A



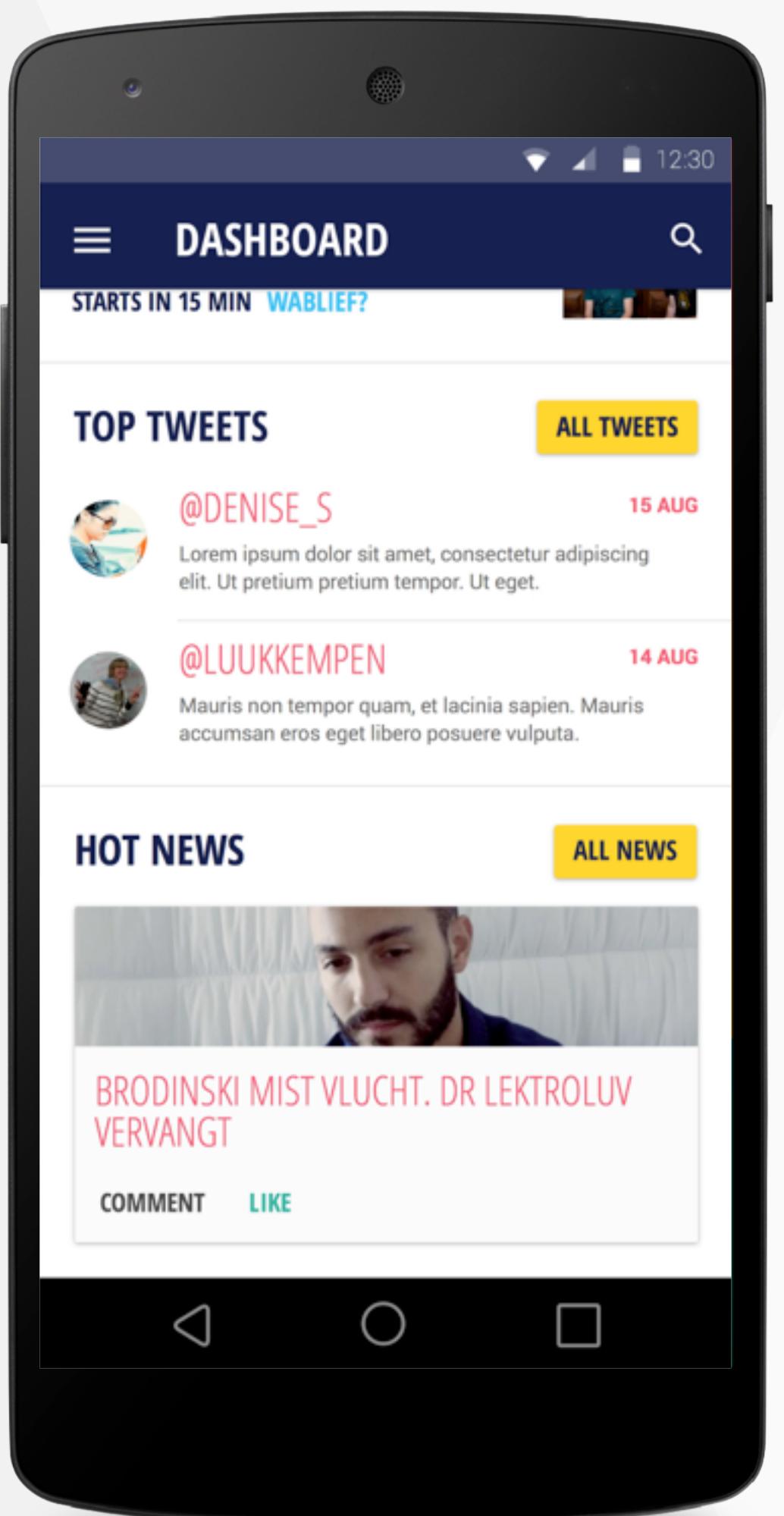


Dashboard

System bar tinting

Android Lollipop

- ▶ Set colorPrimaryDark in your app theme
- ▶ Done!

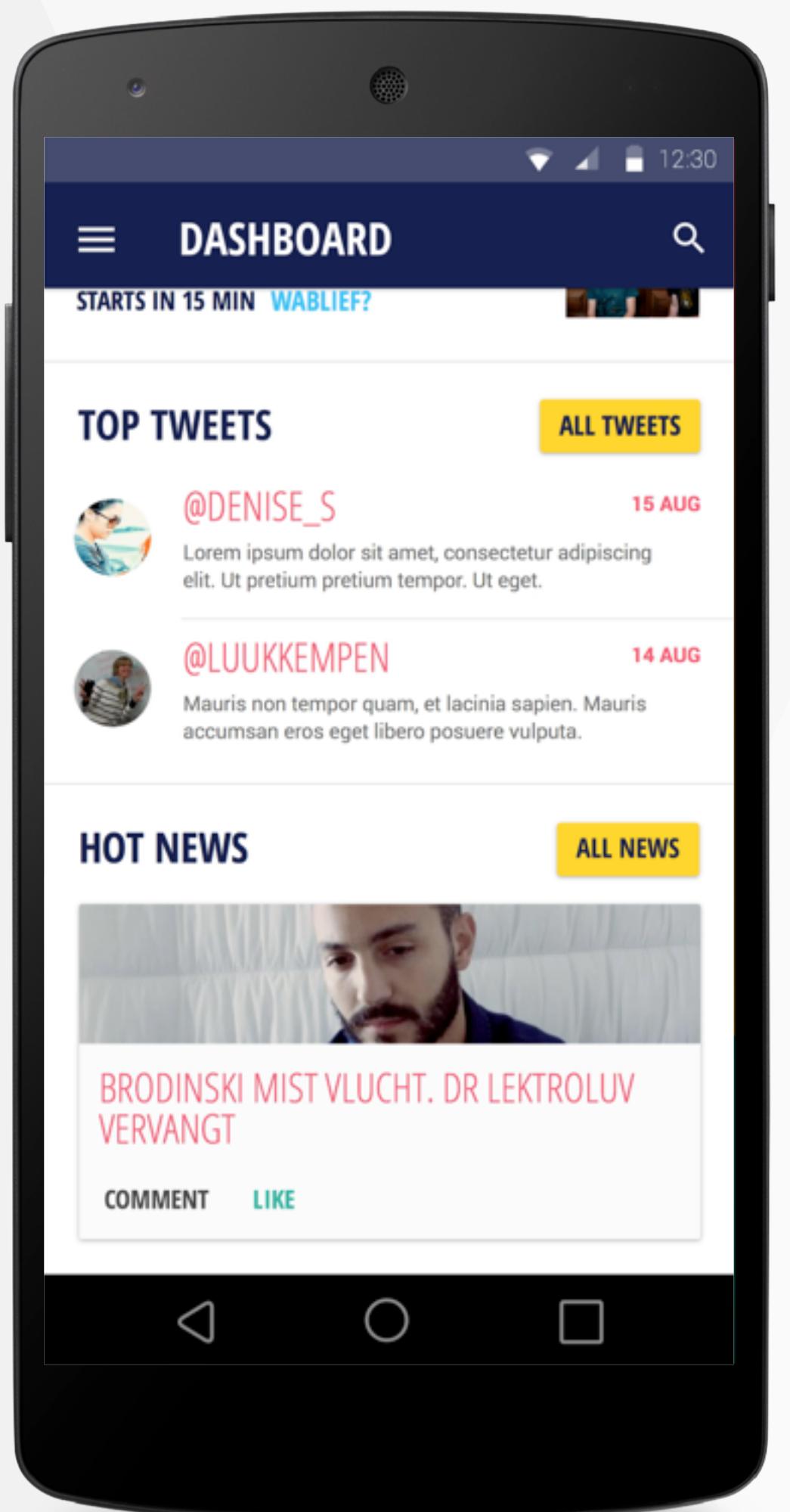


Dashboard

System bar tinting

Earlier version

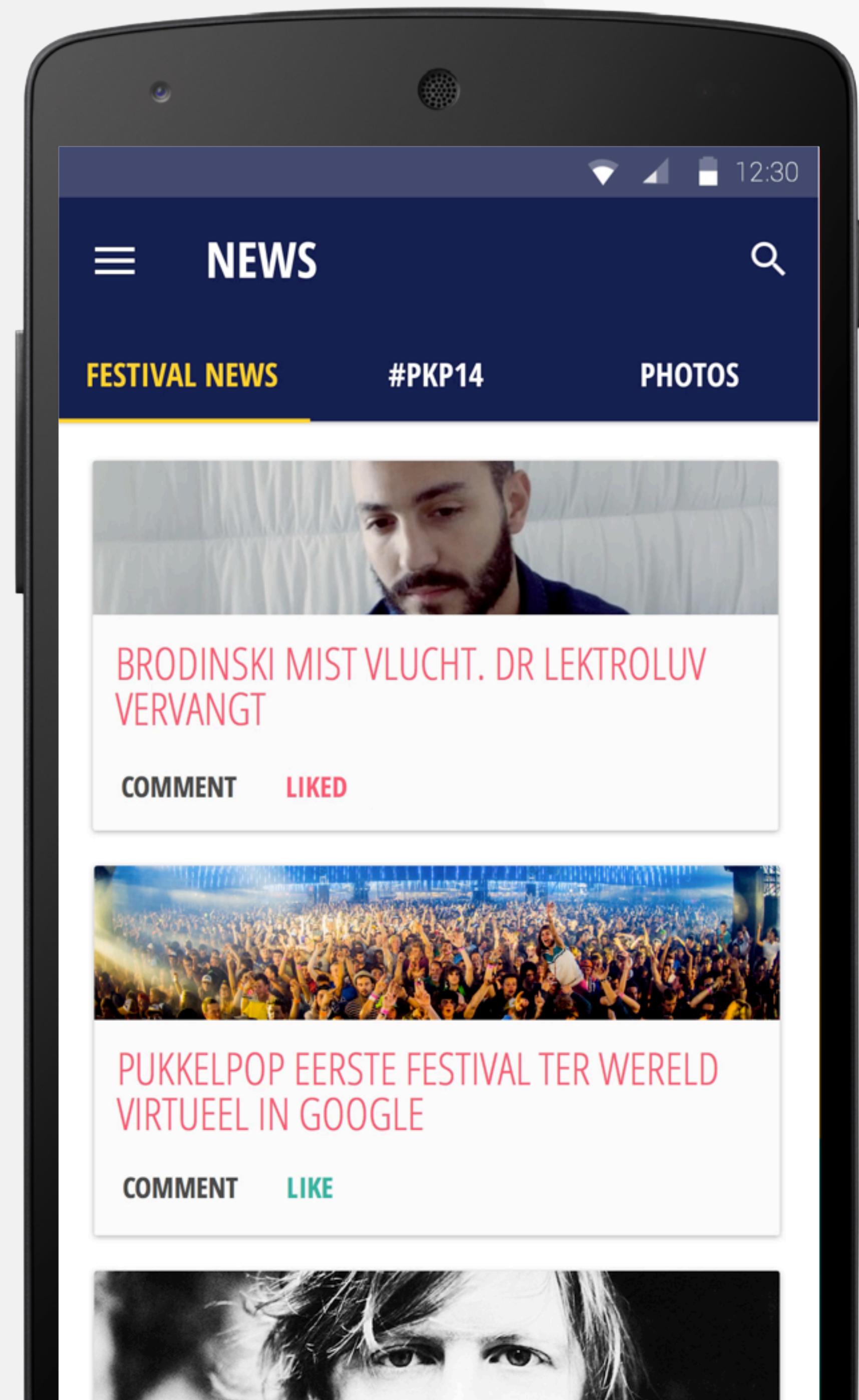
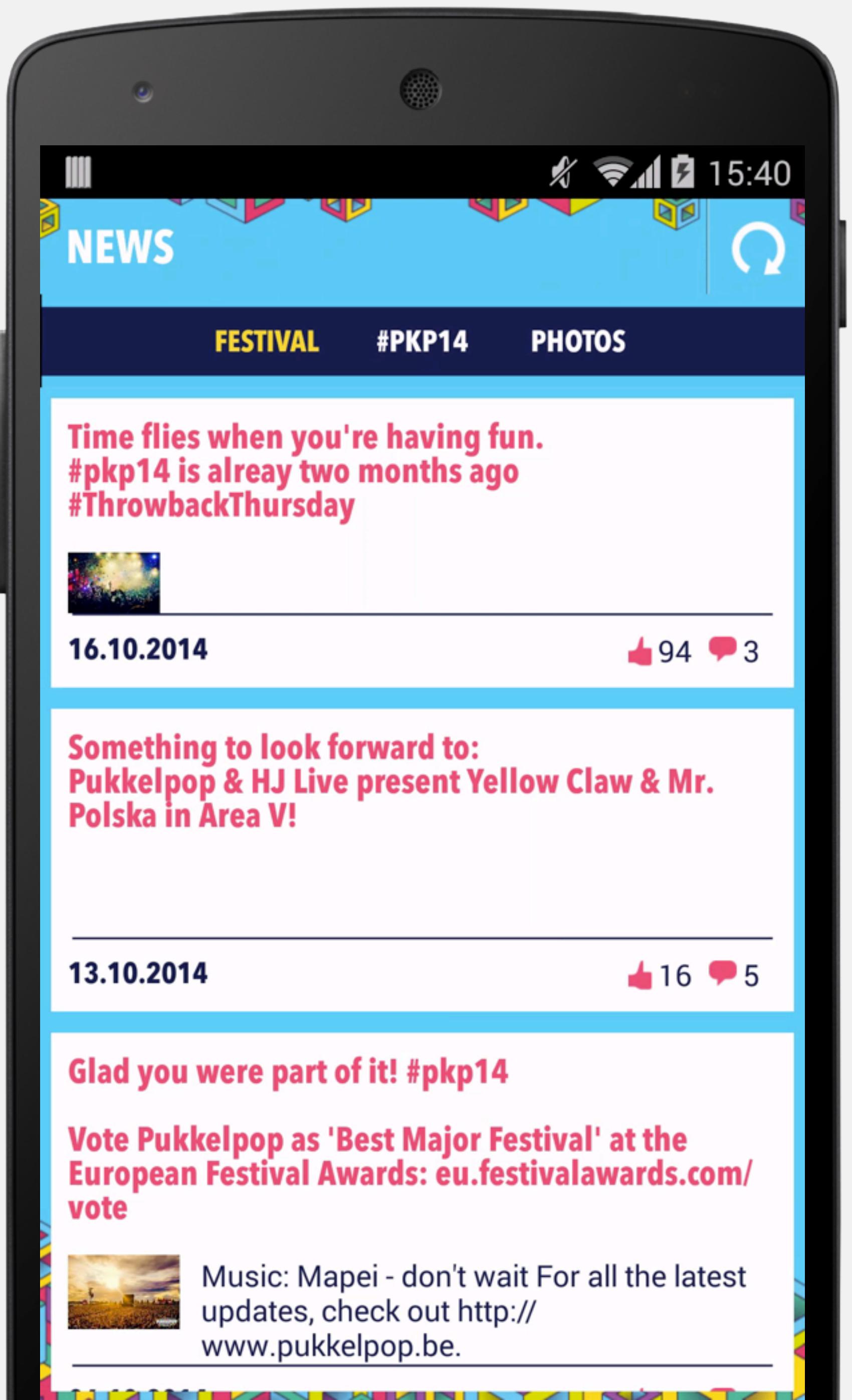
- ▶ Only on 4.4 KitKat
- ▶ Used in eg. PushBullet and Textra SMS
- ▶ An extra gradient is added
- ▶ Easy to use library
<https://github.com/jgilfelt/SystemBarTint>



News

Facebook stream

A

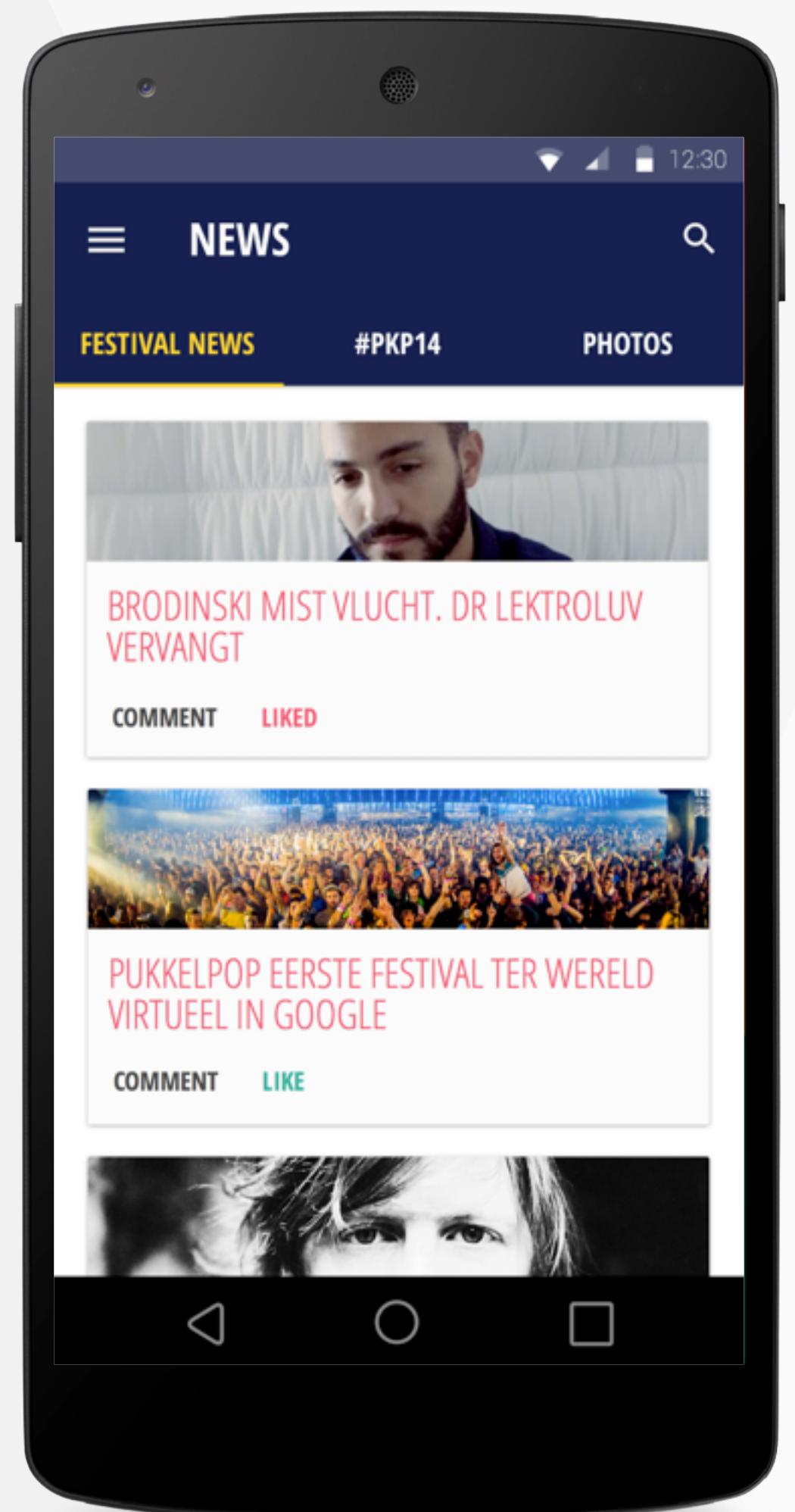


News

Slide up animations

- ▶ Used by eg. Google Now
- ▶ Easy implementation as of 4.0 ICS
- ▶ ViewProperty animations
- ▶ Options available for older versions (NineOldAndroids)

```
view.setTranslationY(3000);
view.animate()
    .translationY(0)
    .setDuration(500)
    .setStartDelay(50 * position);
```

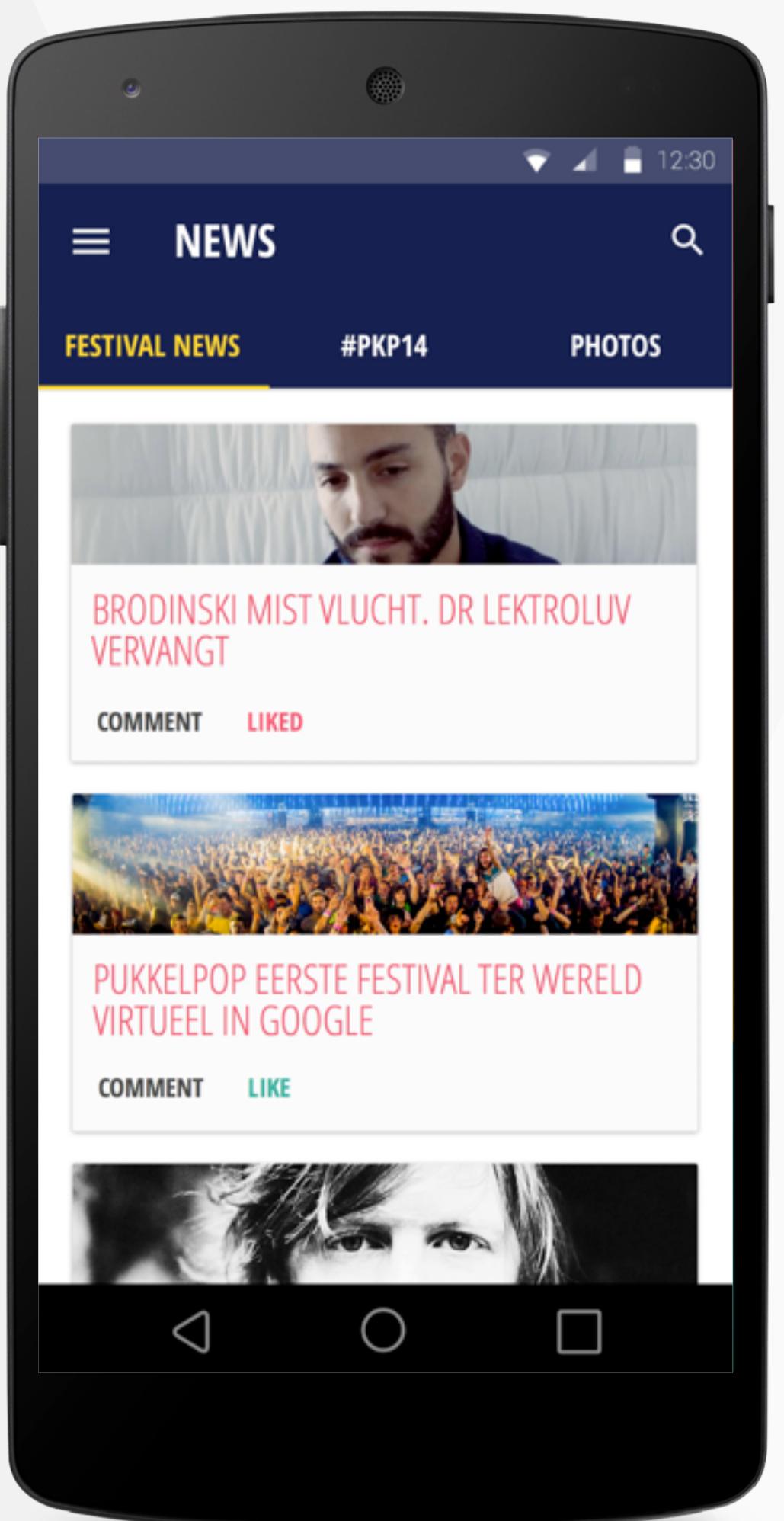


News

ActionBar – ToolBar

Using a ToolBar

- ▶ Completely new API
- ▶ <https://chris.banes.me/2014/10/17/appcompat-v21/>
- ▶ Use a ToolBar as ActionBar

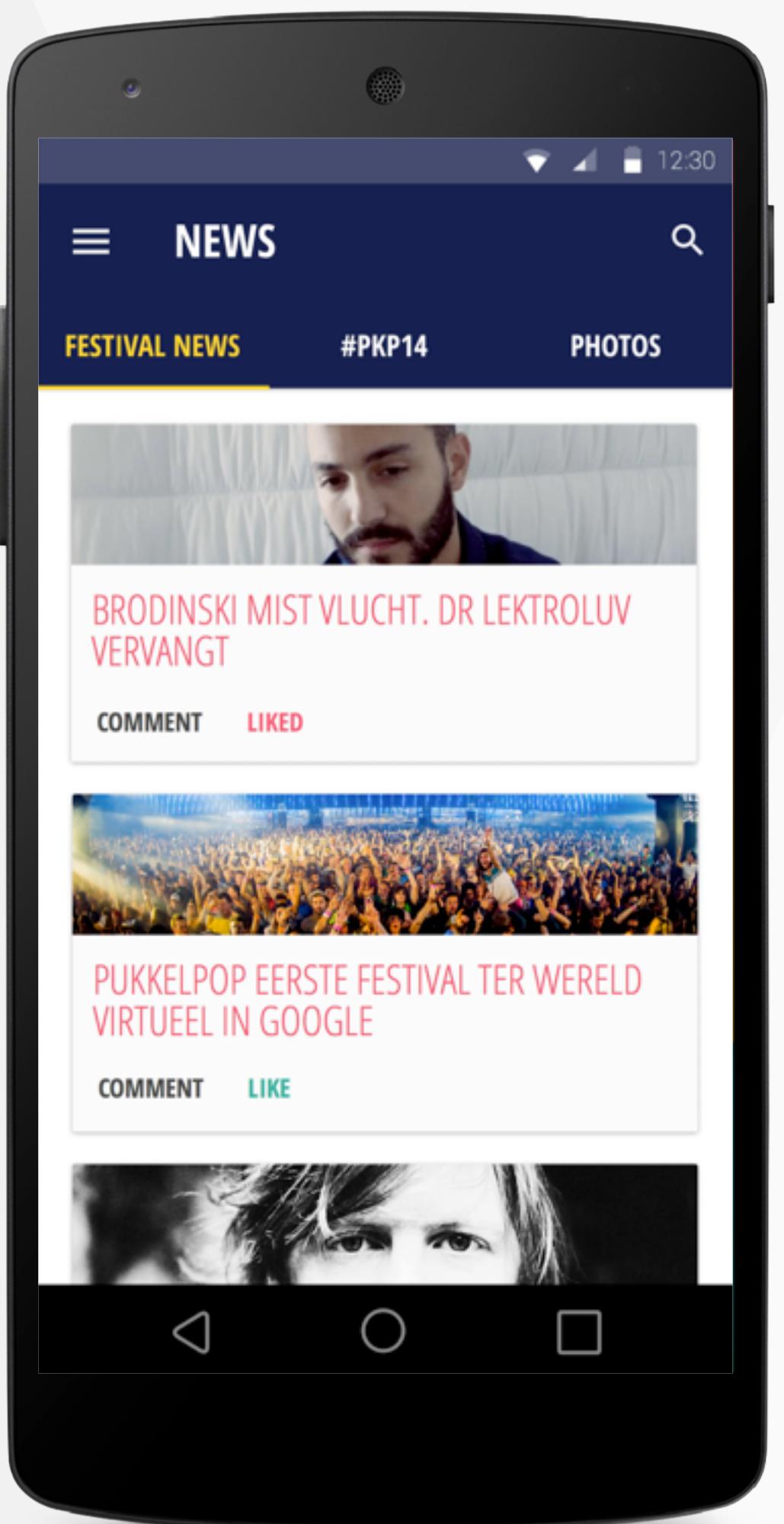


News

ActionBar – ToolBar

Using an ActionBar

- ▶ Different height
- ▶ No more app icon
- ▶ Back arrow instead of up icon
- ▶ Dots as overflow menu instead of squares



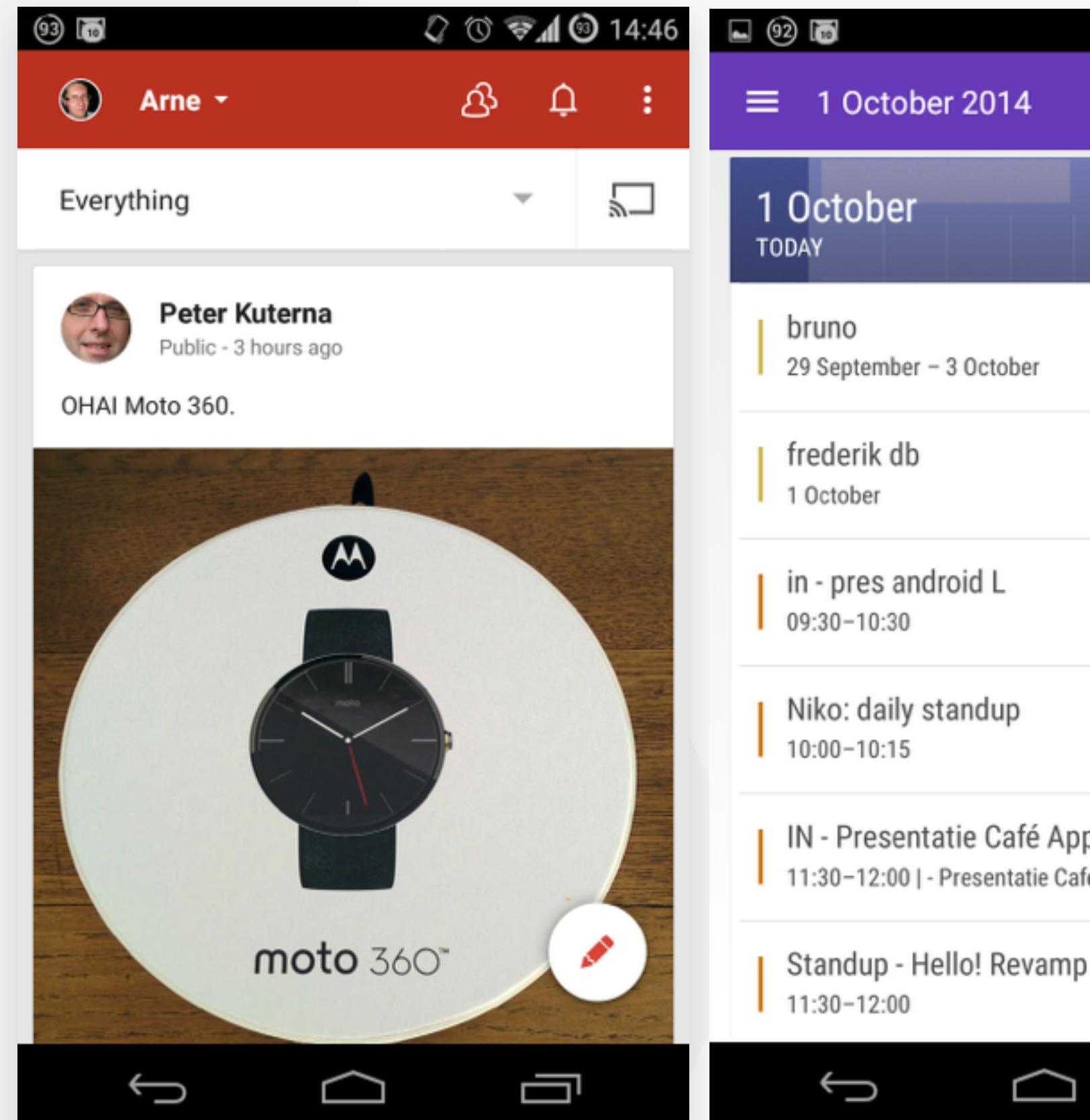
News

ActionBar – ToolBar

Different height and no more app icon

```
<style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar">
    <item name="android: actionBarStyle">@style/ActionBarTheme</item>
</style>

<style name="ActionBarTheme" parent="@style/Widget.AppCompat.ActionBar.Solid">
    <item name="android: icon">@android: color/ transparent</item>
    <item name="android: height">@dimen/ toolbar_ height</item>
</style>
```



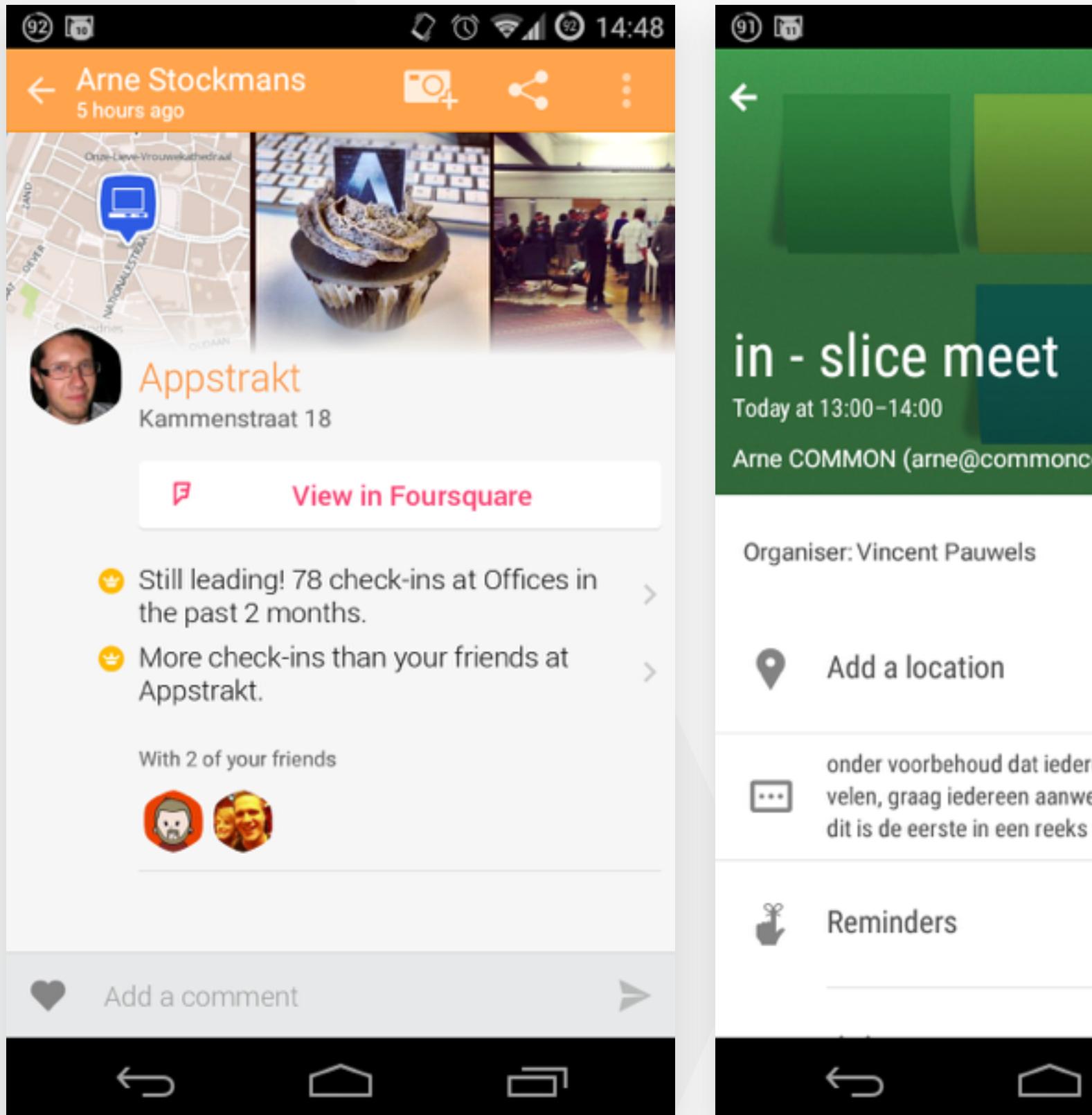
A

News

ActionBar – ToolBar

Back arrow instead of up icon

```
<style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar">
    <item name="android:homeAsUpIndicator">@drawable/ic_navigation_back</item>
</style>
```



News

ActionBar – ToolBar

Dots for the overflow menu icon instead of squares

```
<style name="AppTheme" parent="@style/Theme.Sherlock.Light.DarkActionBar">
    <item name="android:actionOverflowButtonStyle">@style/OverflowStyle</item>
</style>
```

```
<style name="OverflowStyle" parent="@style/Widget.Sherlock.ActionButton.Overflow">
    <item name="android:src">@drawable/ic_ab_overflow</item>
</style>
```

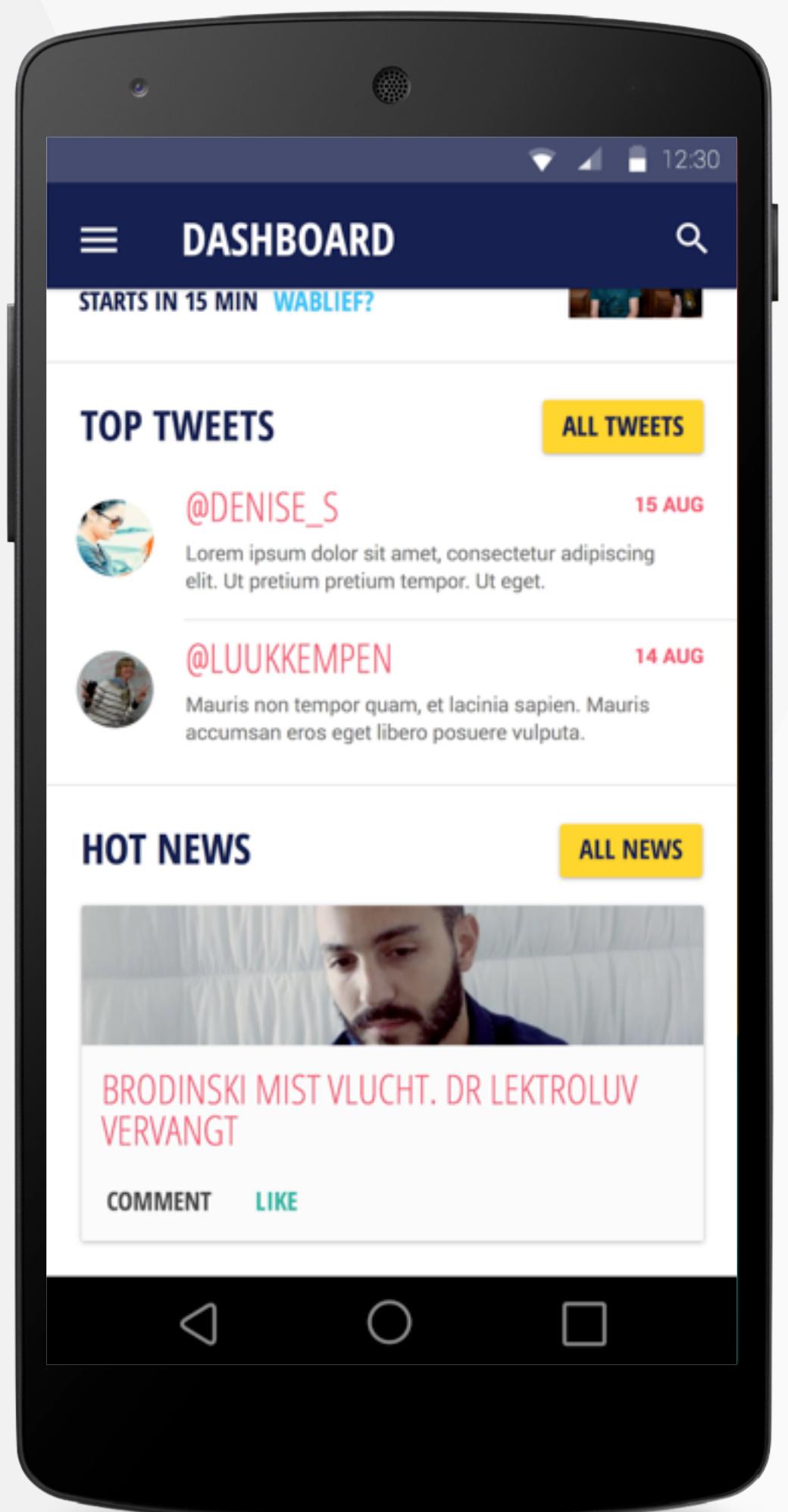


News

Ripple

Android Lollipop

```
<?xml version='1.0' encoding='utf-8'?>
<ripple xmlns:android="http://schemas.android.com/apk/res/android" android:color="?
    android:colorControlHighlight" />
```



A

News

Ripple

Earlier versions

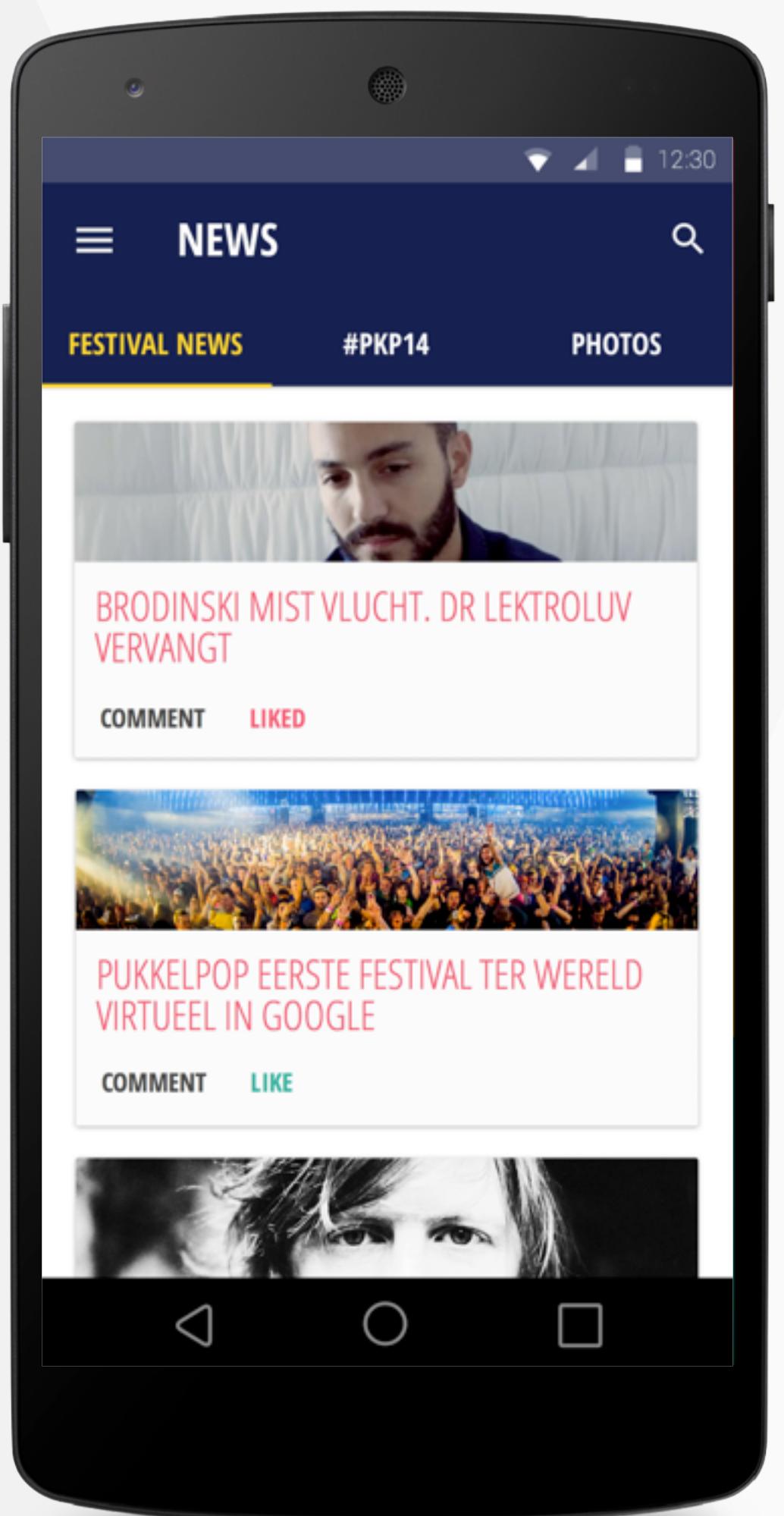
FreshPaper app

Easy to use libraries available

<https://github.com/MostafaGazar/Widgets>

<https://github.com/03uk/RippleDrawable>

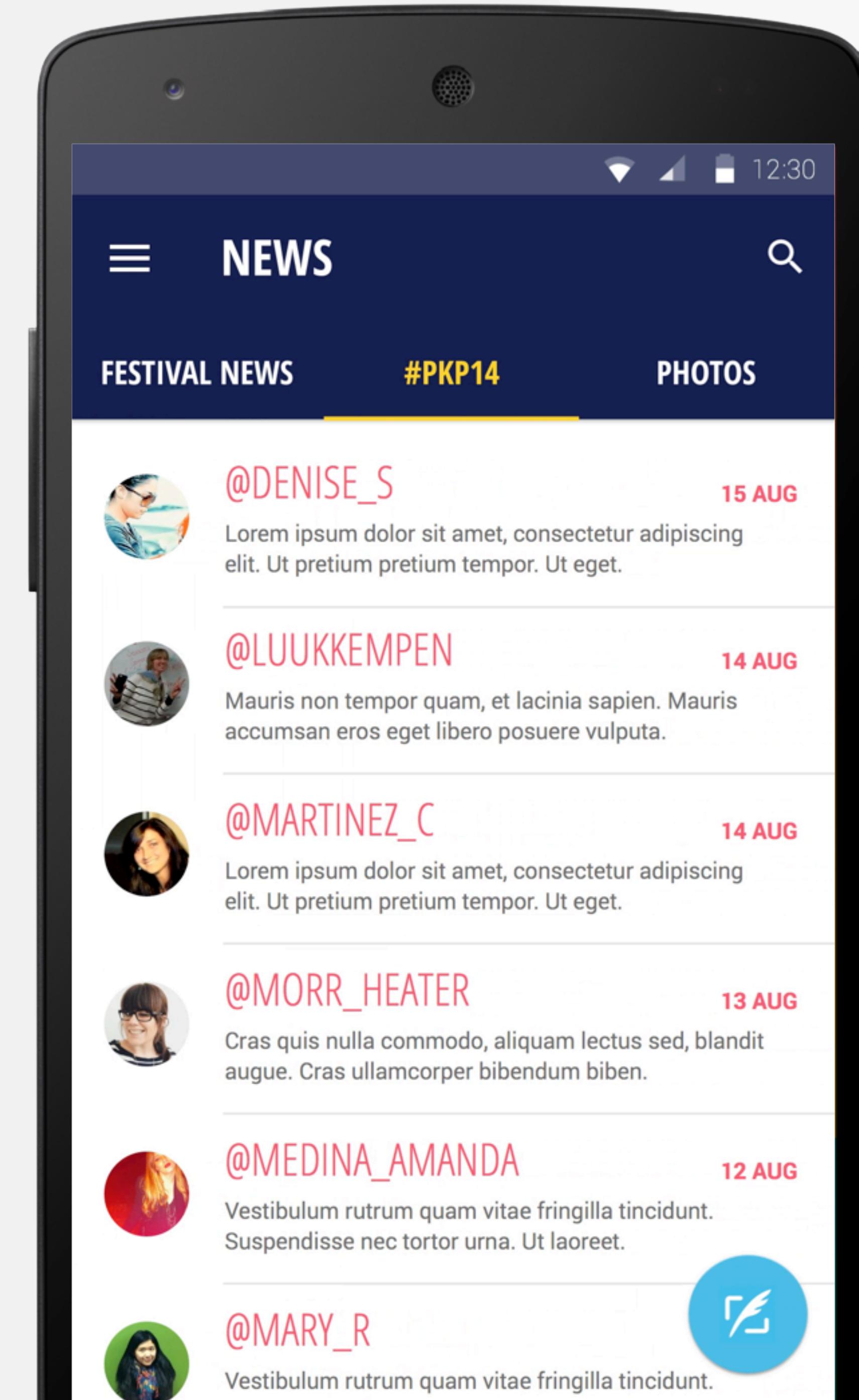
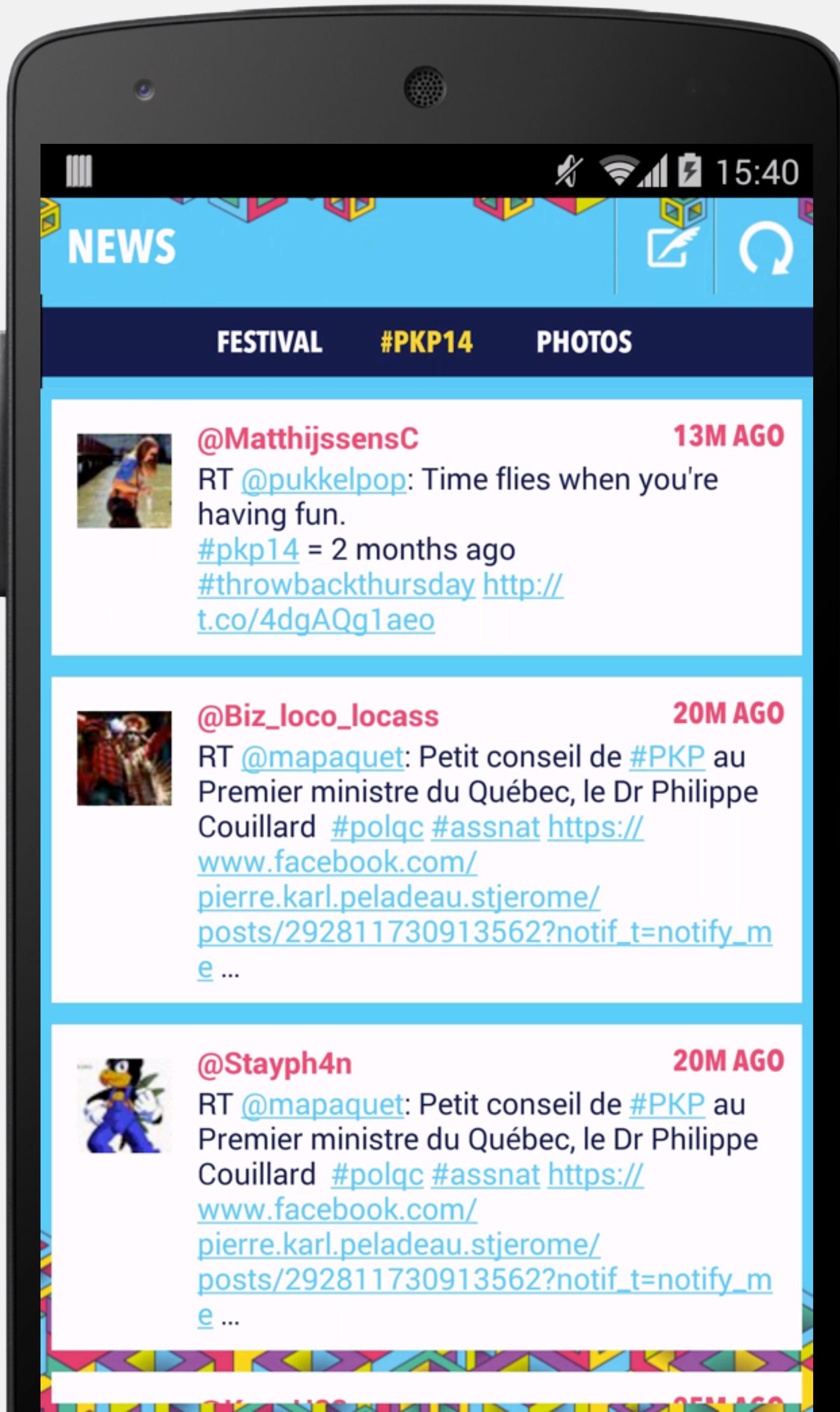
Not as good as on Android Lollipop



News

Twitter feed

A



News

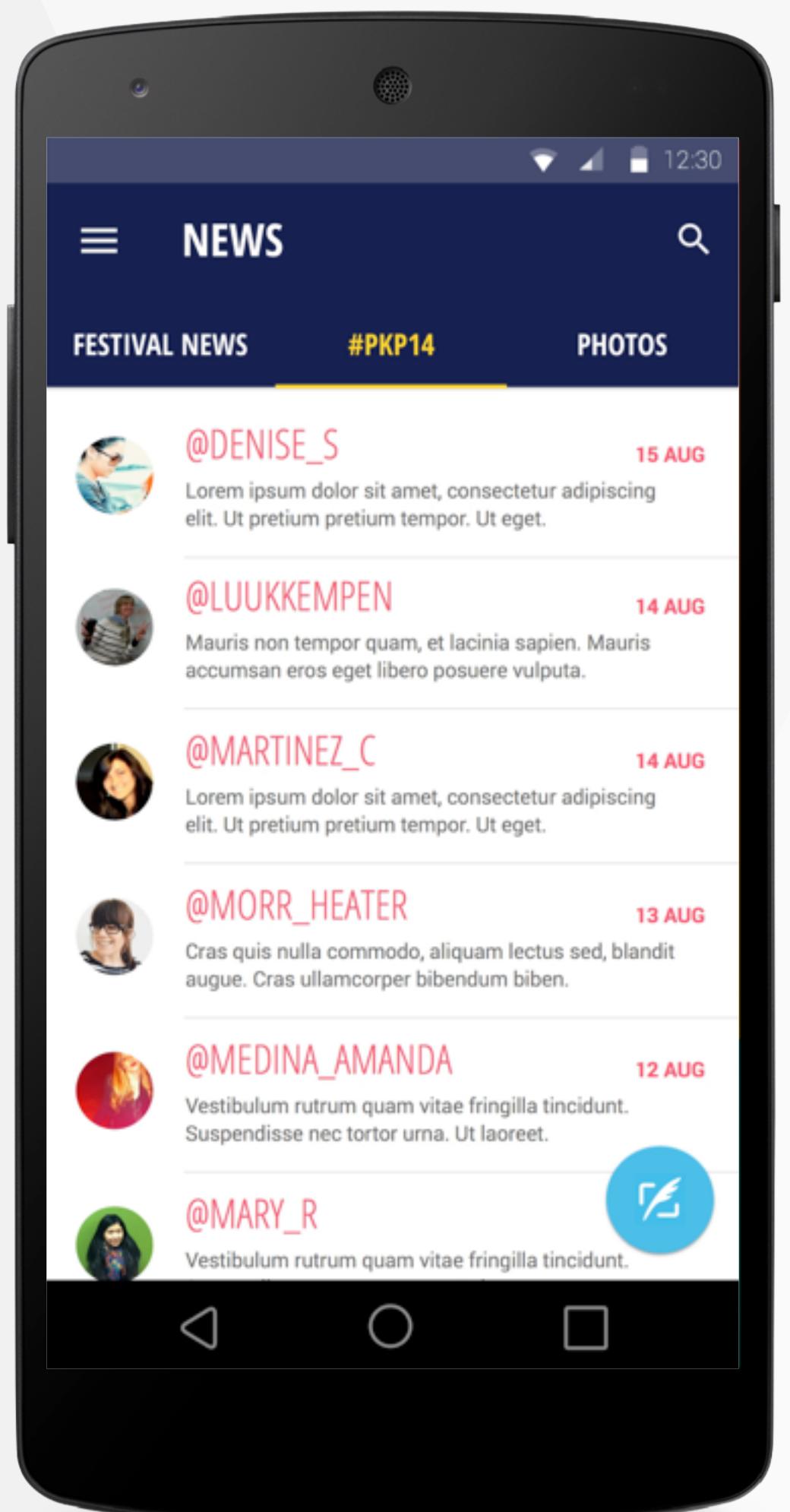
Tabs

Styling

- ▶ PagerSlidingTabStrip library
- ▶ Use the same background as your ActionBar
- ▶ Set windowContentOverlay to @null to remove shadow

Animations

- ▶ Line movement not implemented
- ▶ Ripple not implemented
- ▶ Easy to modify ourselves

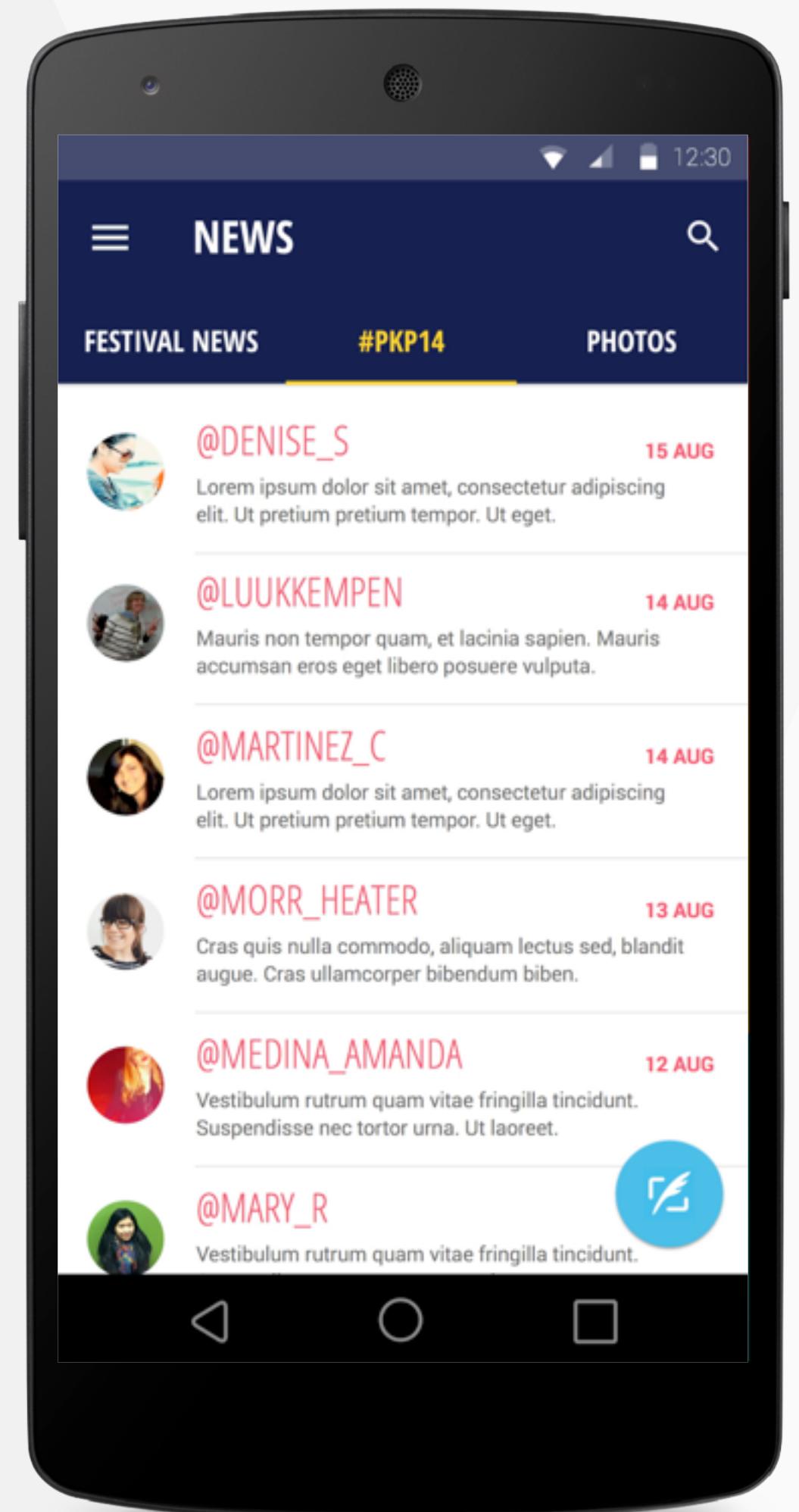


News

Floating Action Button

Android Lollipop

- ▶ ImageButton
- ▶ Modify outline to a circle
- ▶ Requires some Java work
- ▶ <http://www.bignerdranch.com/blog/floating-action-buttons-in-android-l/>

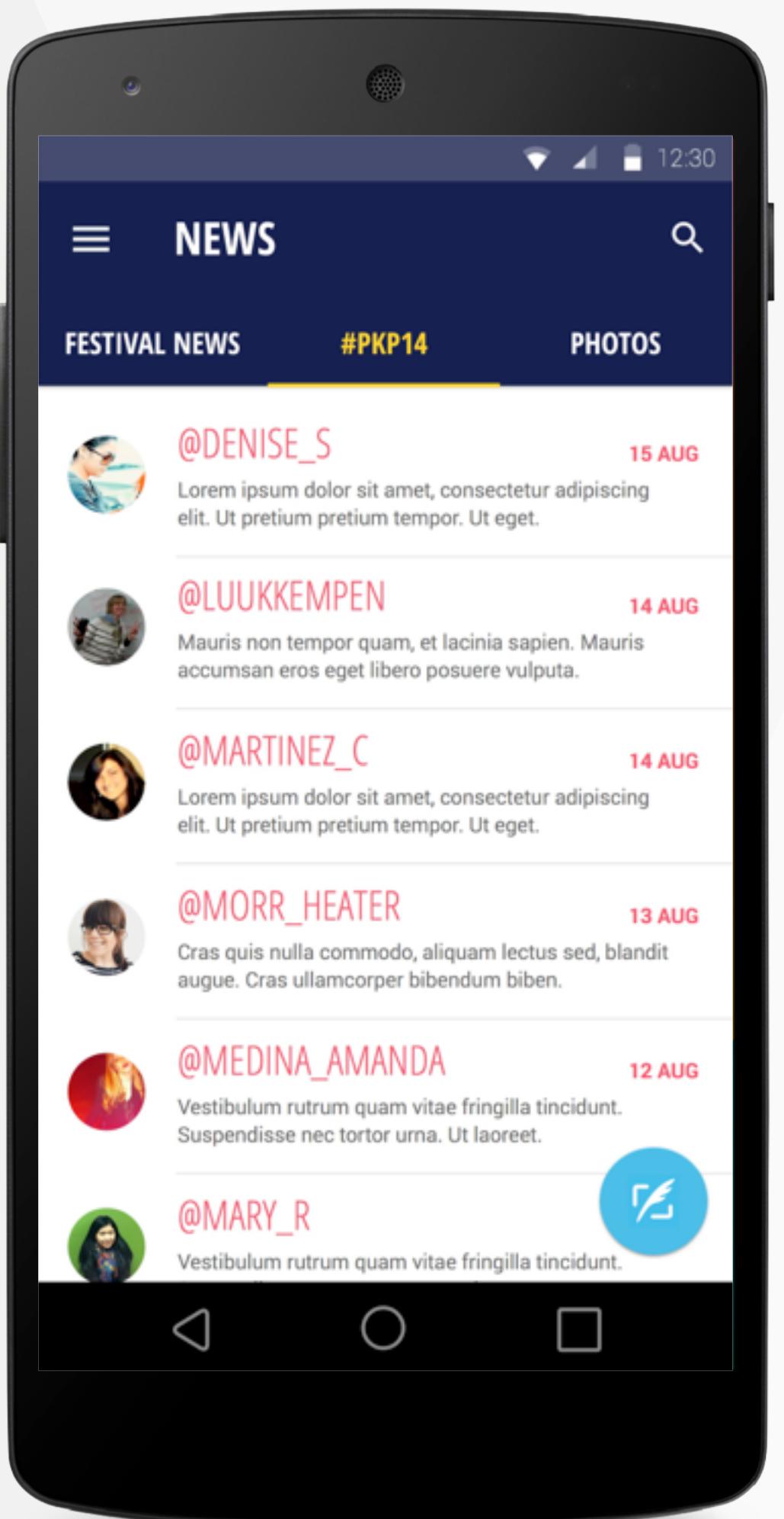


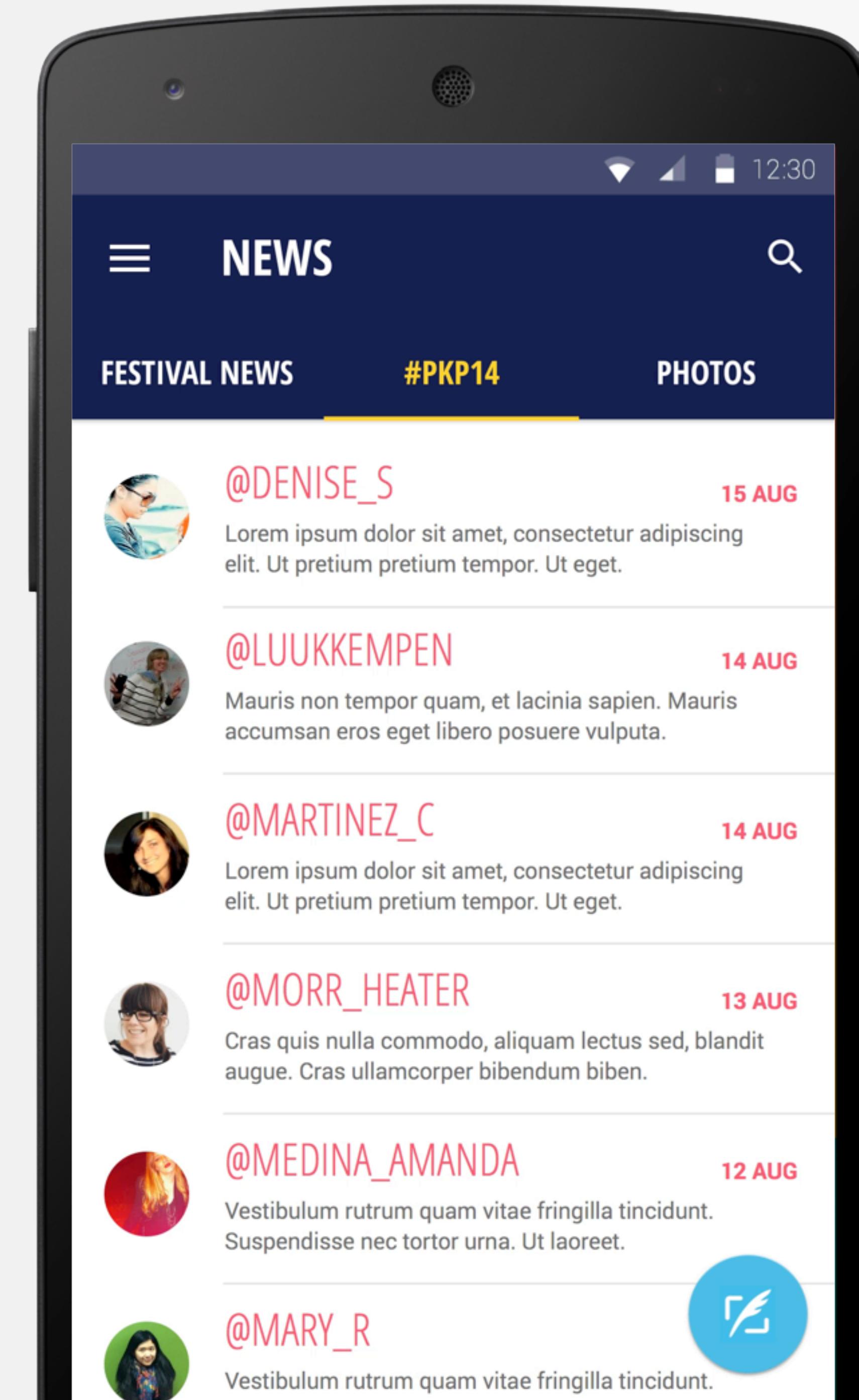
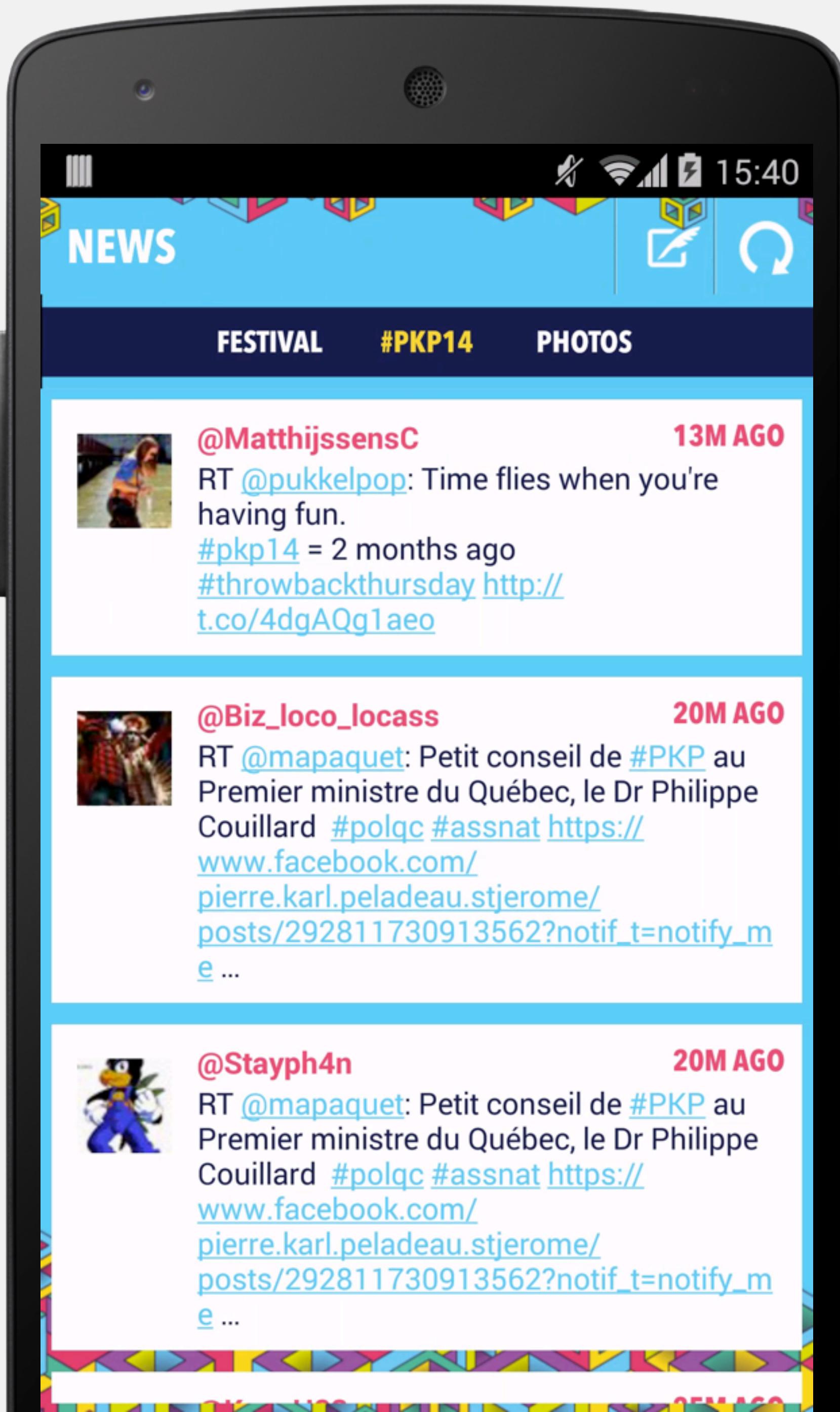
News

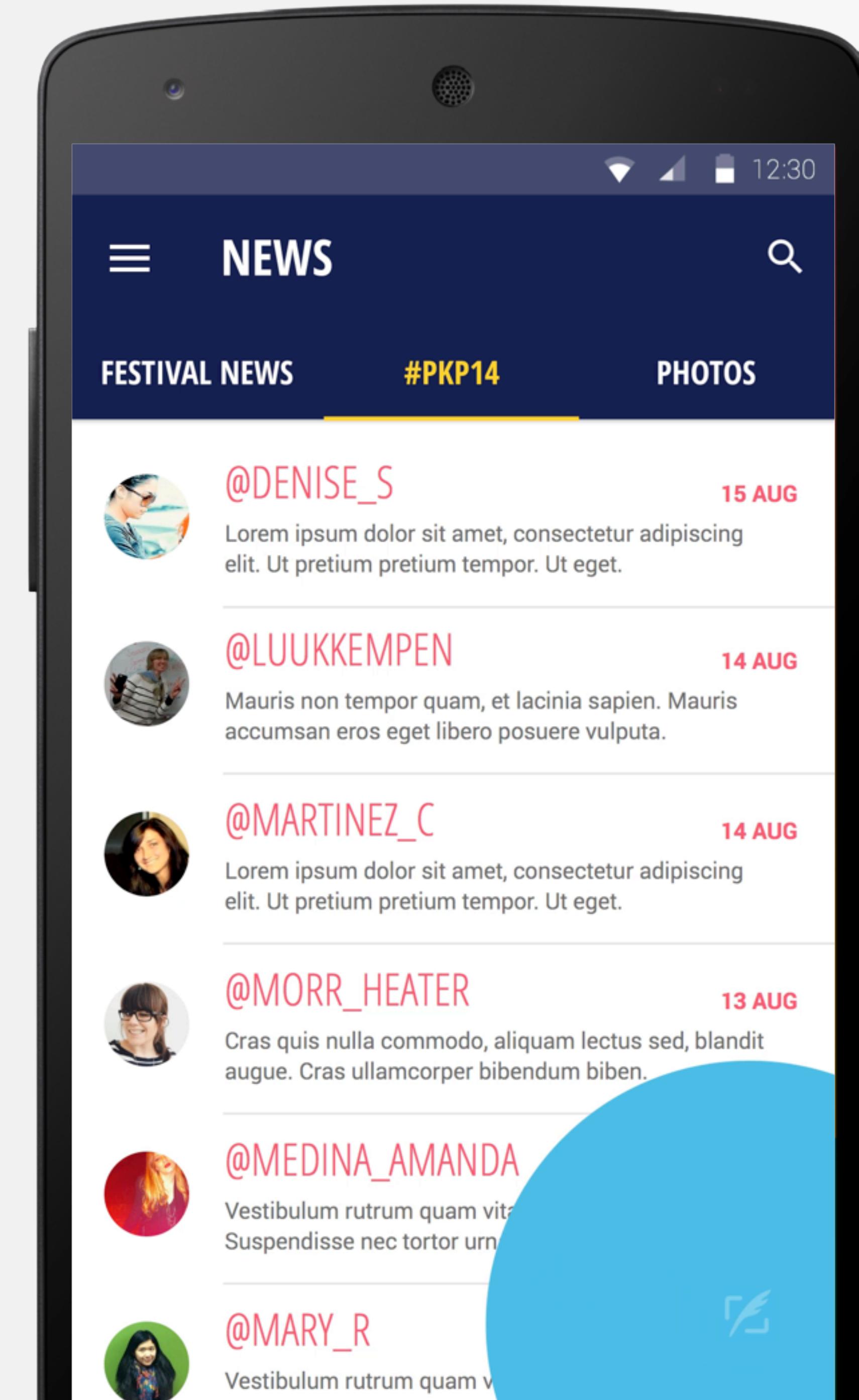
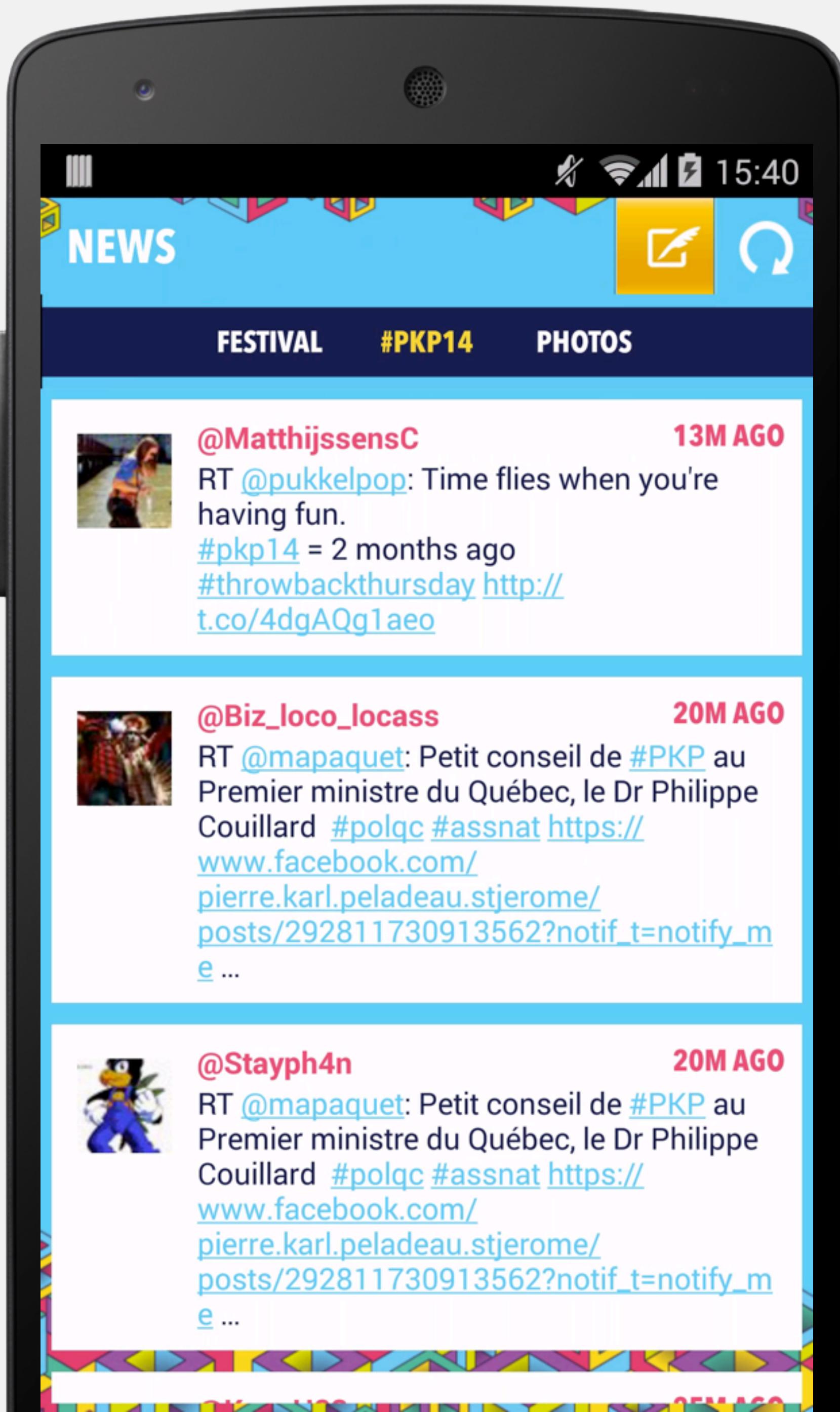
Floating Action Button

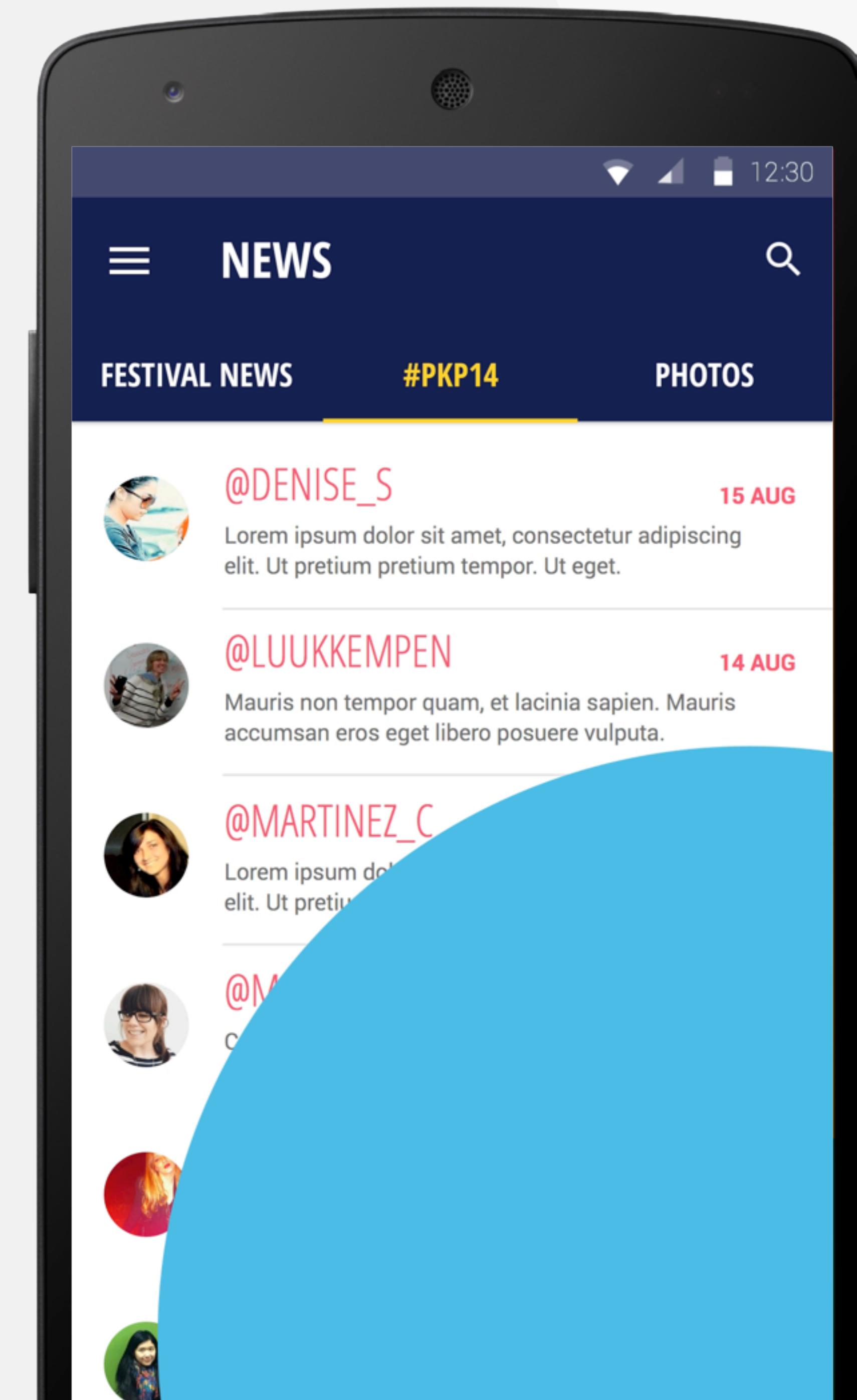
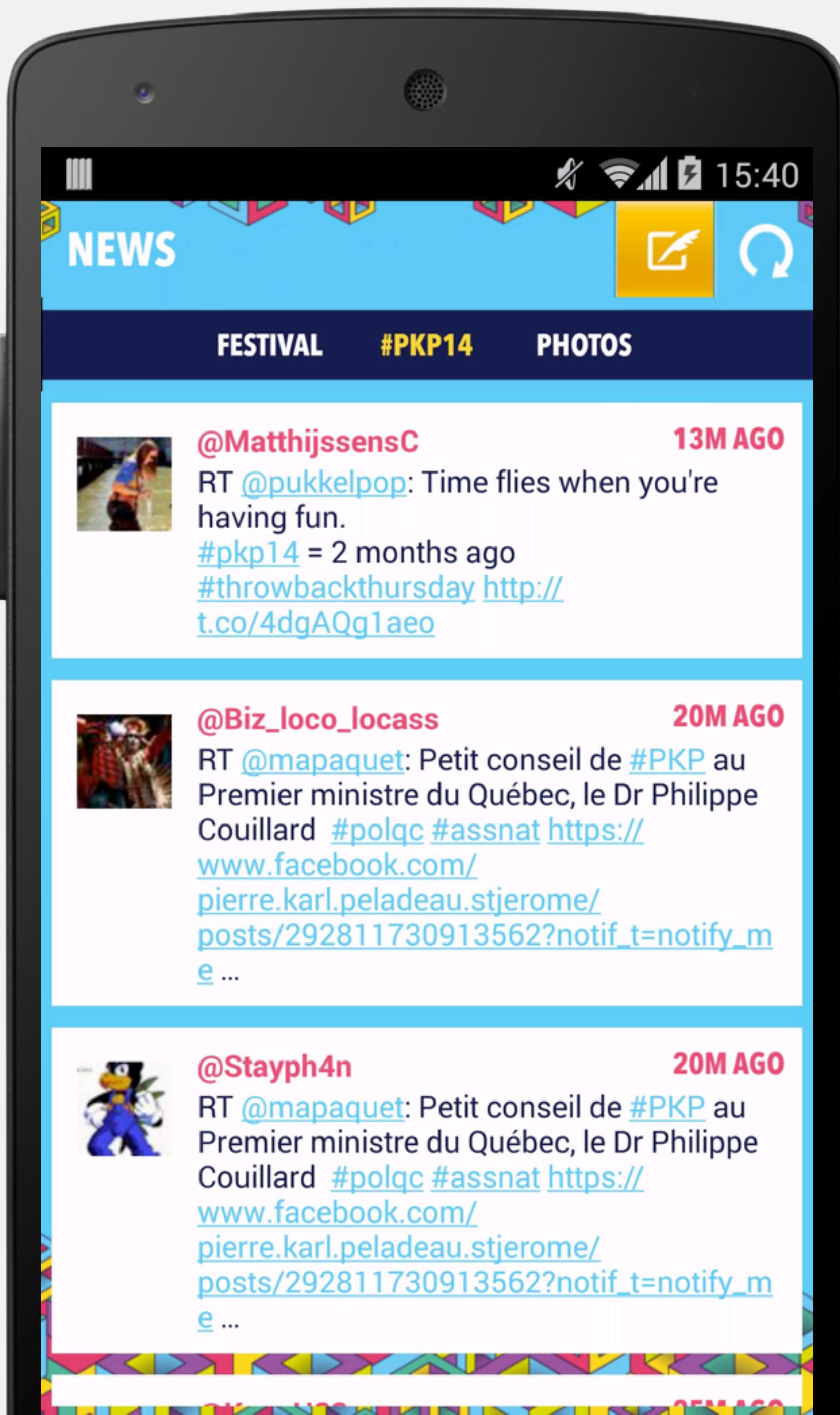
Earlier versions

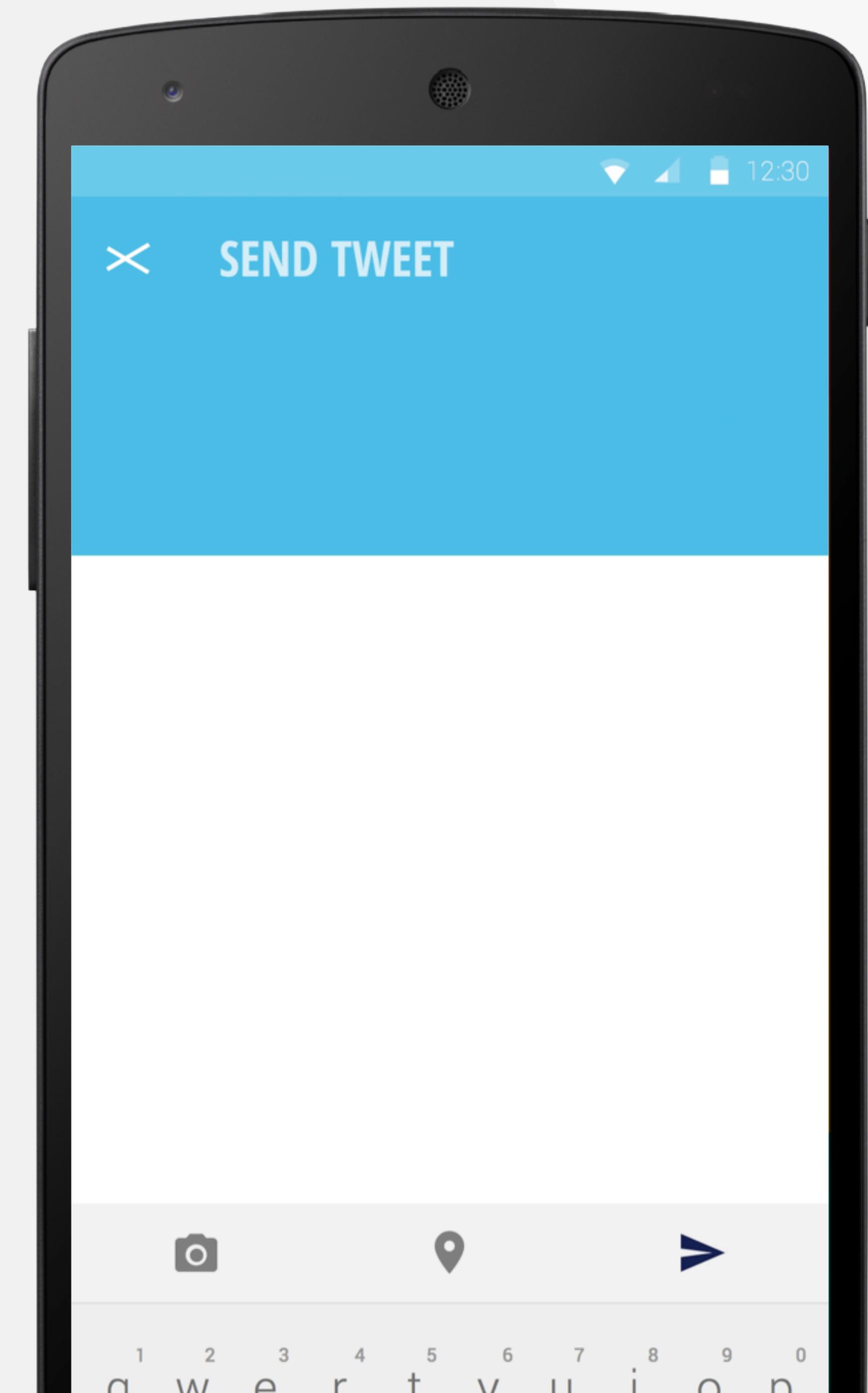
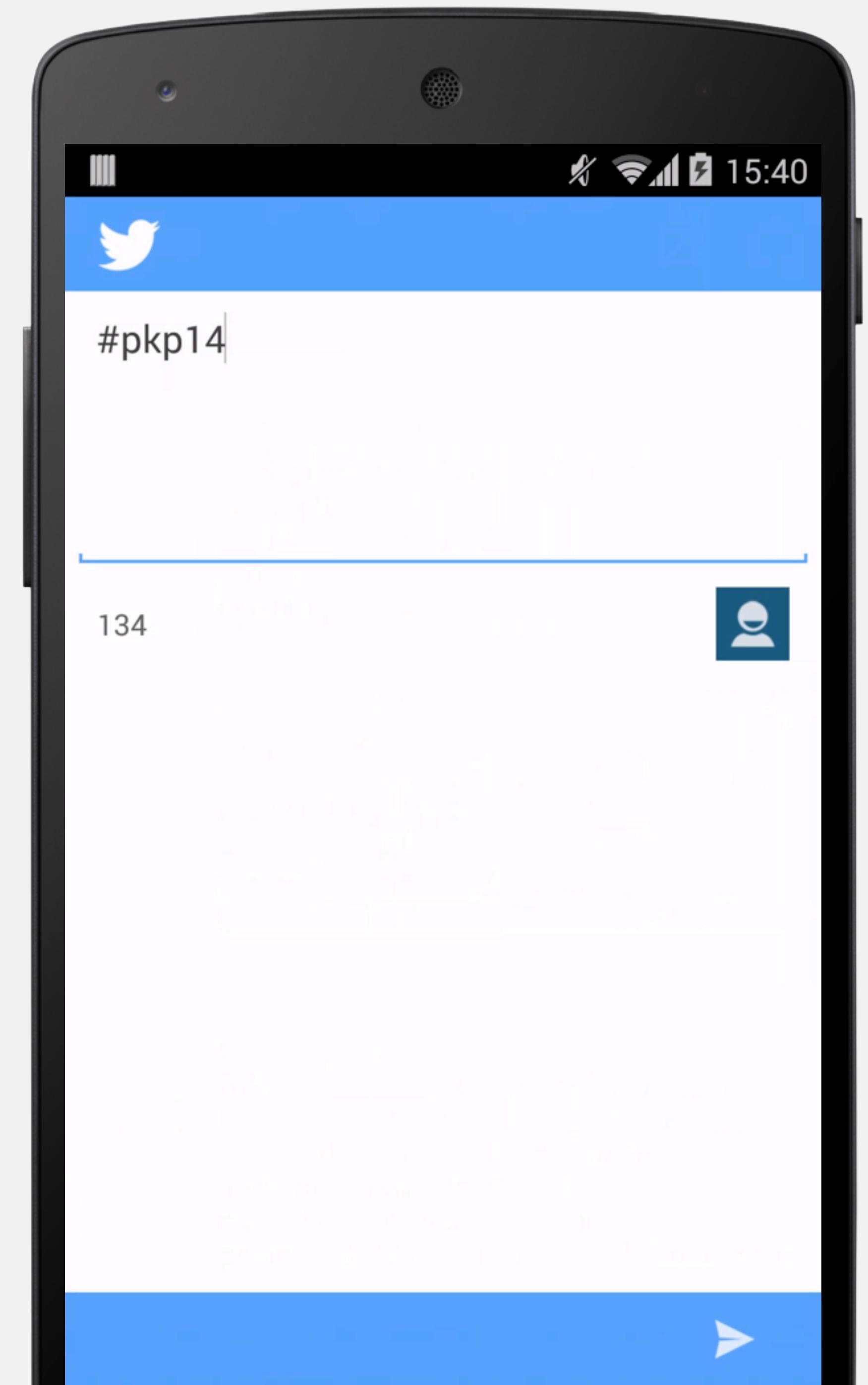
- ▶ Libraries like:
<https://github.com/makovkastar/FloatingActionButton>
- ▶ Behaves more or less the same
- ▶ Remember the ViewPropertyAnimation API's

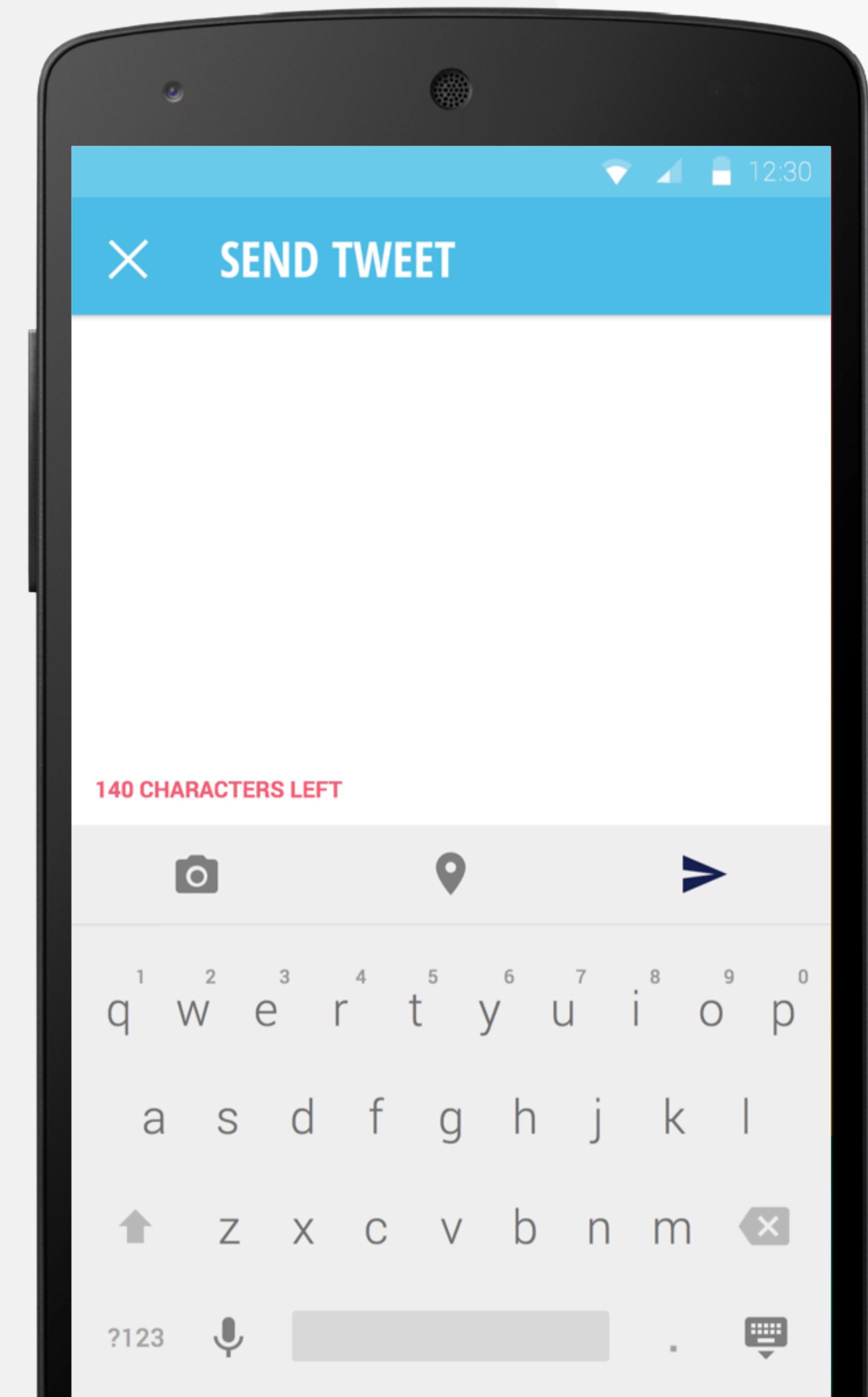
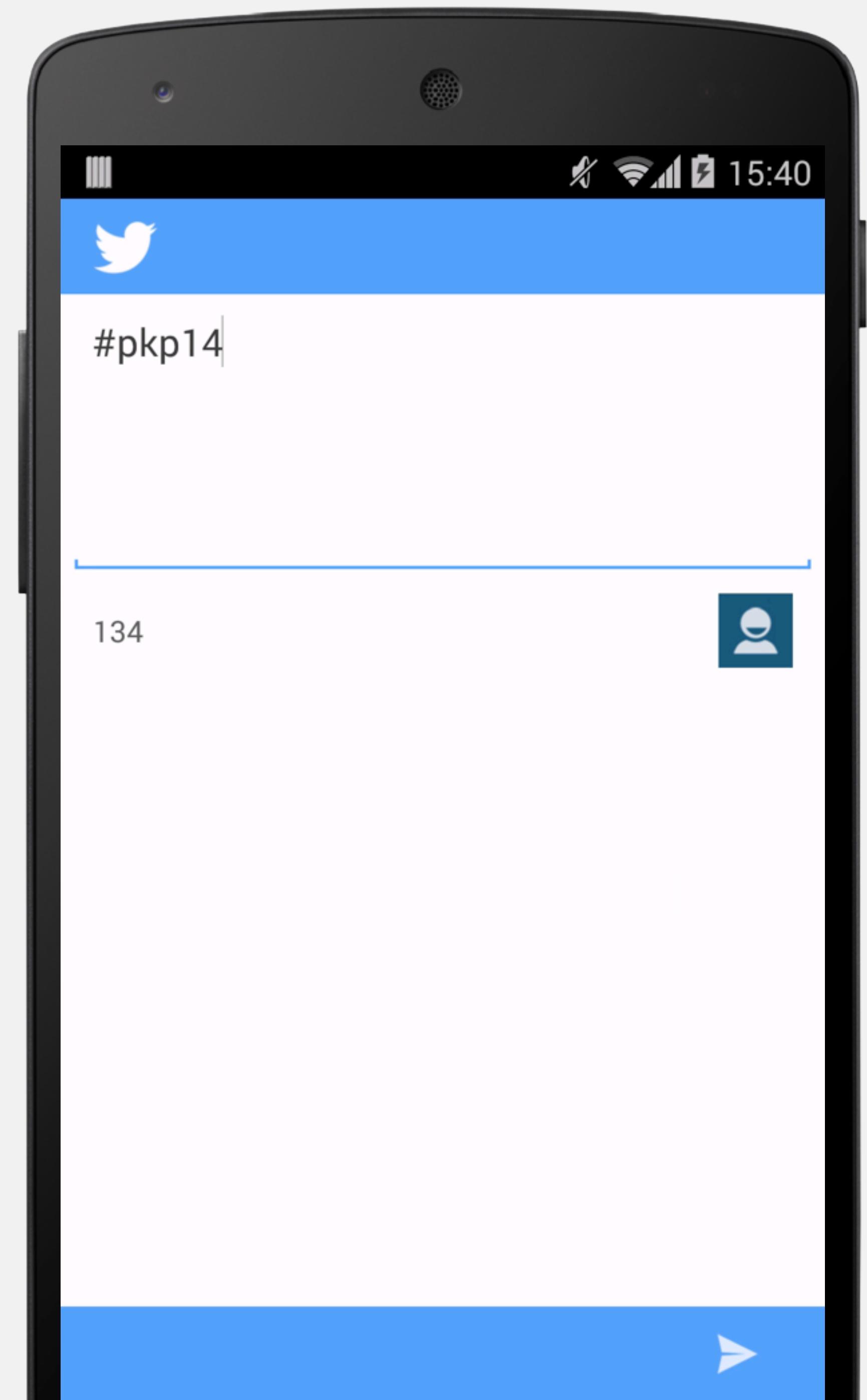








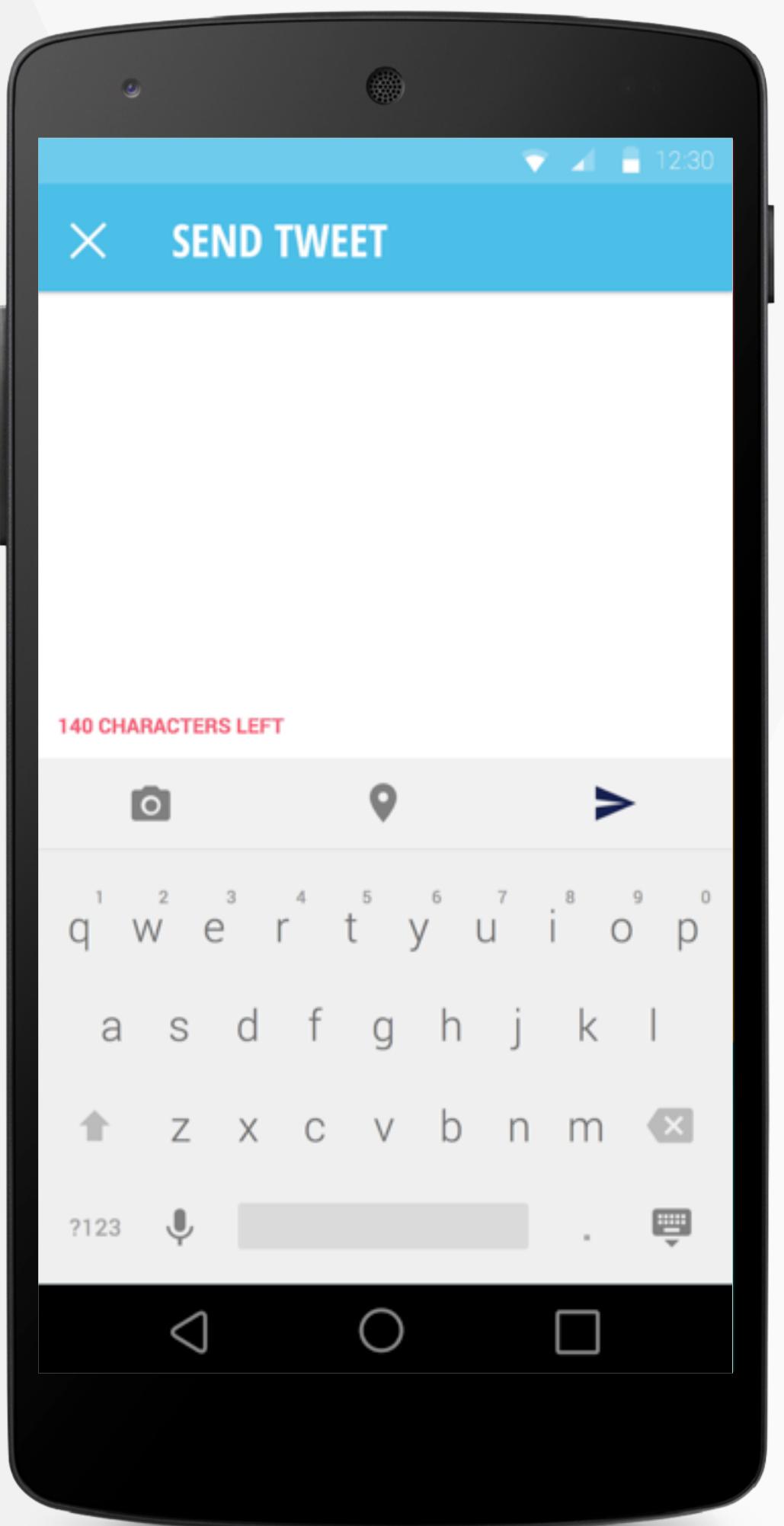




News

Animation

- ▶ Create new transparent screen
- ▶ Draw the original button again
- ▶ Resize the button
- ▶ Fill background and hide button
- ▶ Slide in editable text



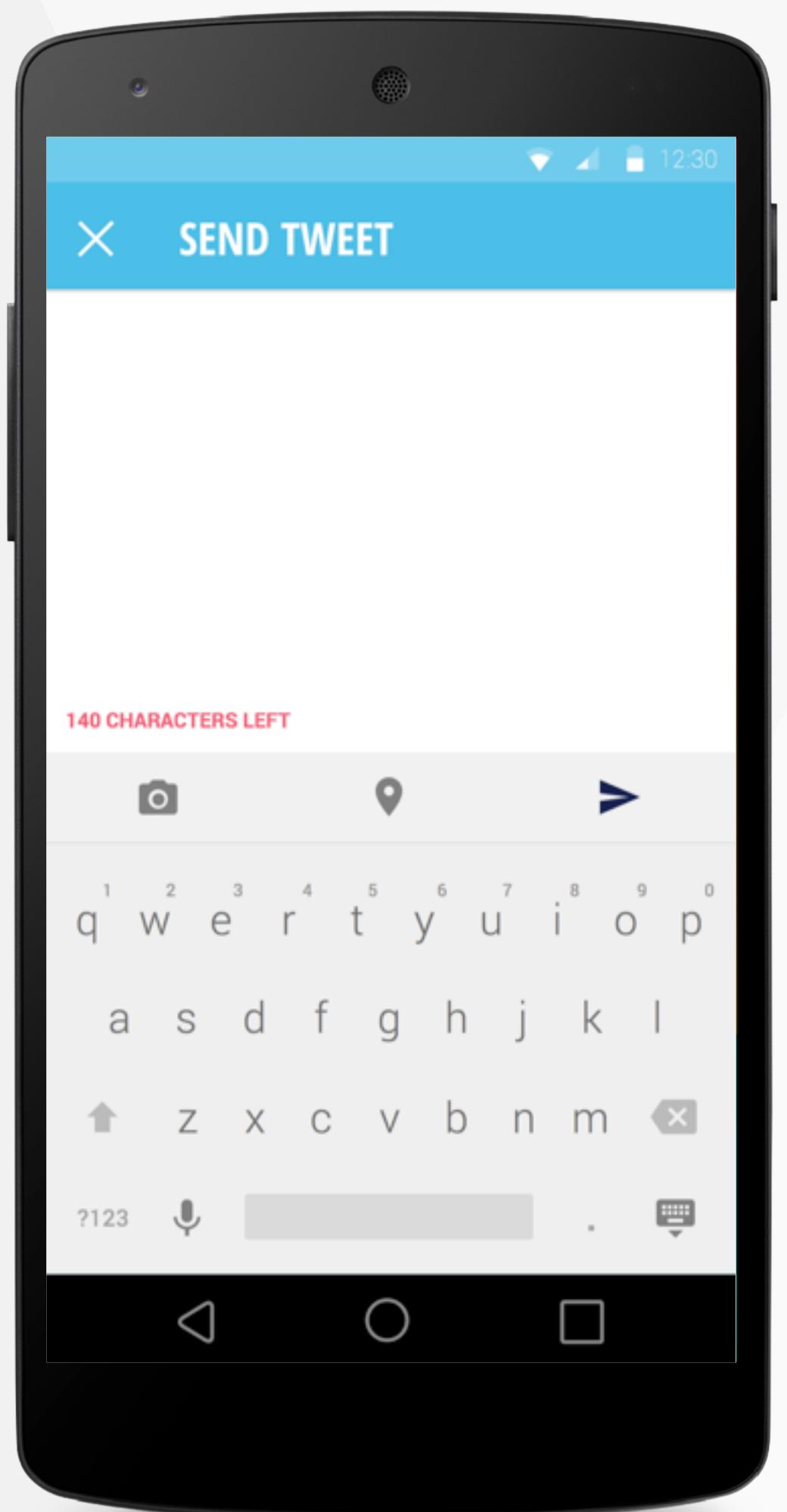
A

News

Animation

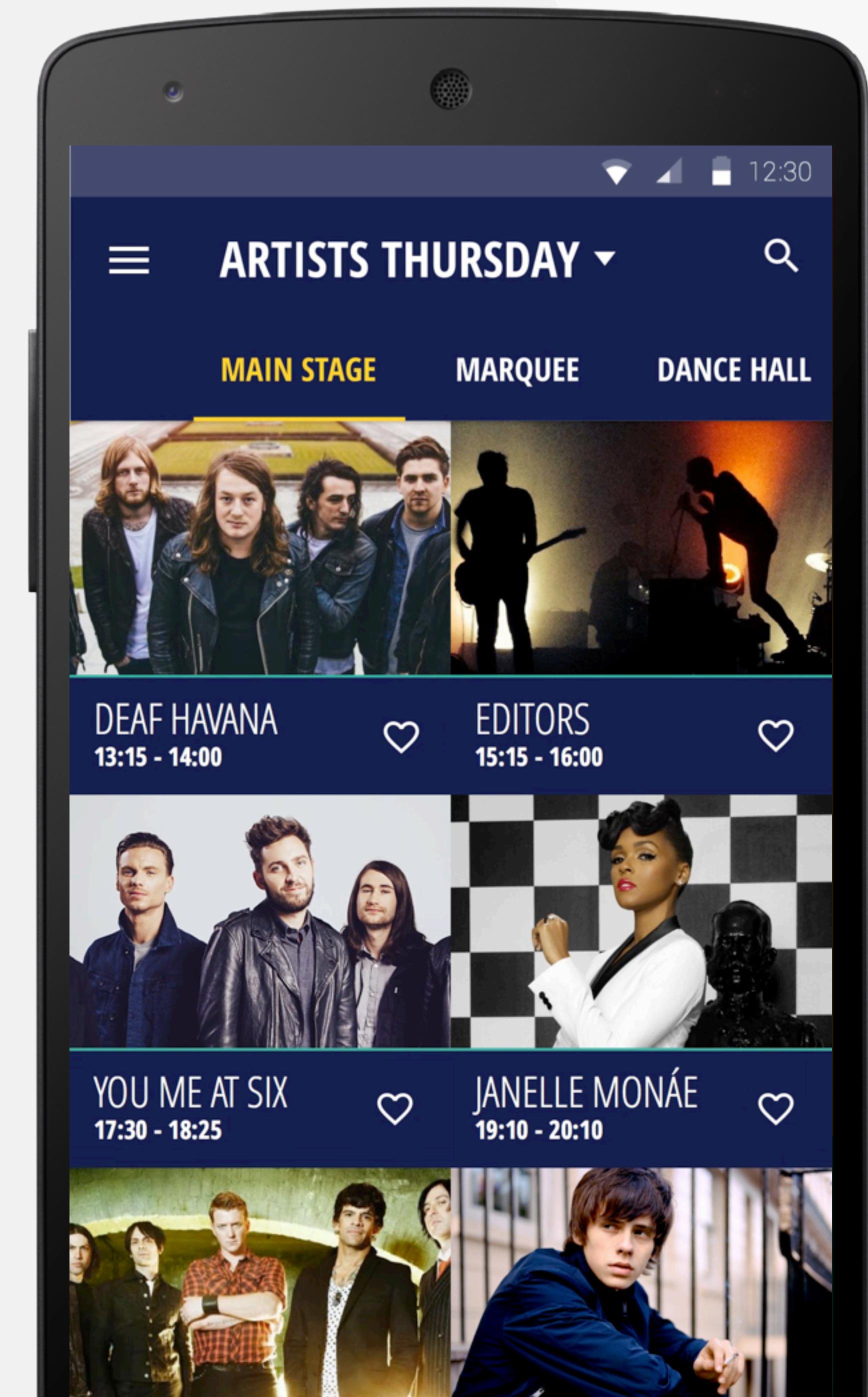
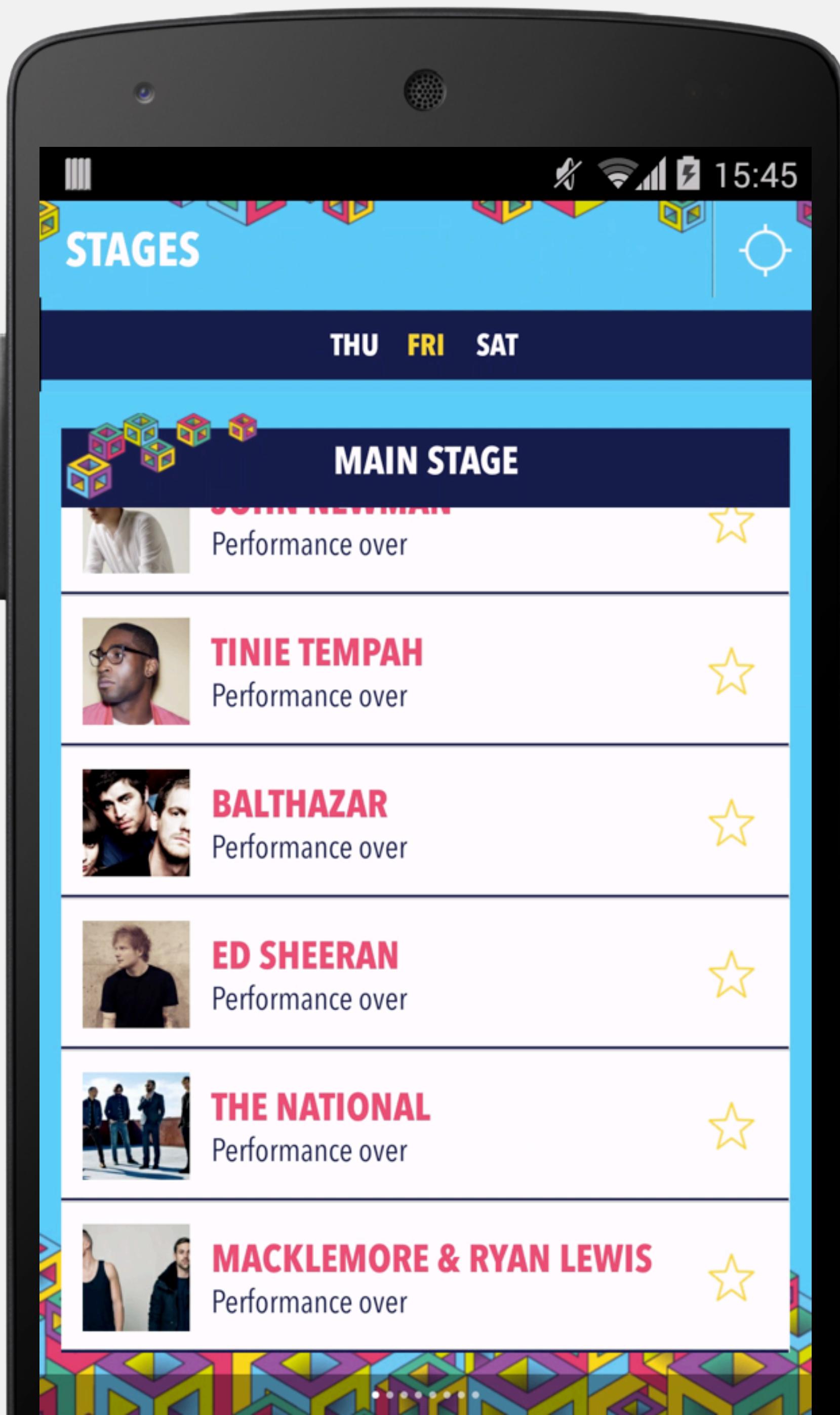
Radial action between navigation buttons

- ▶ Libraries available
<https://github.com/balysv/material-menu>
- ▶ Toggle between Close, Check, Back & Menu
- ▶ Custom drawn
- ▶ Difficult to modify



Artists overview

A

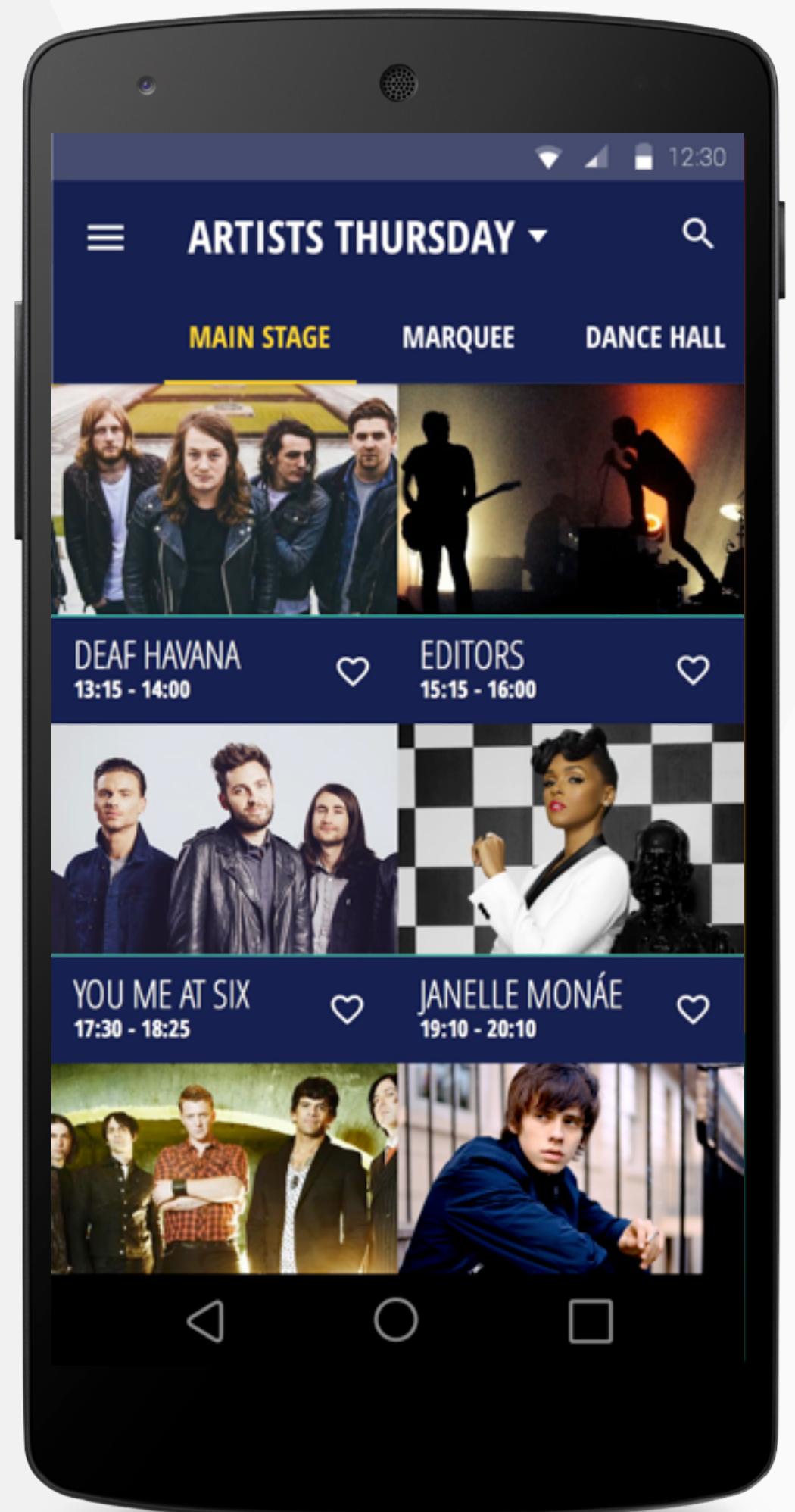
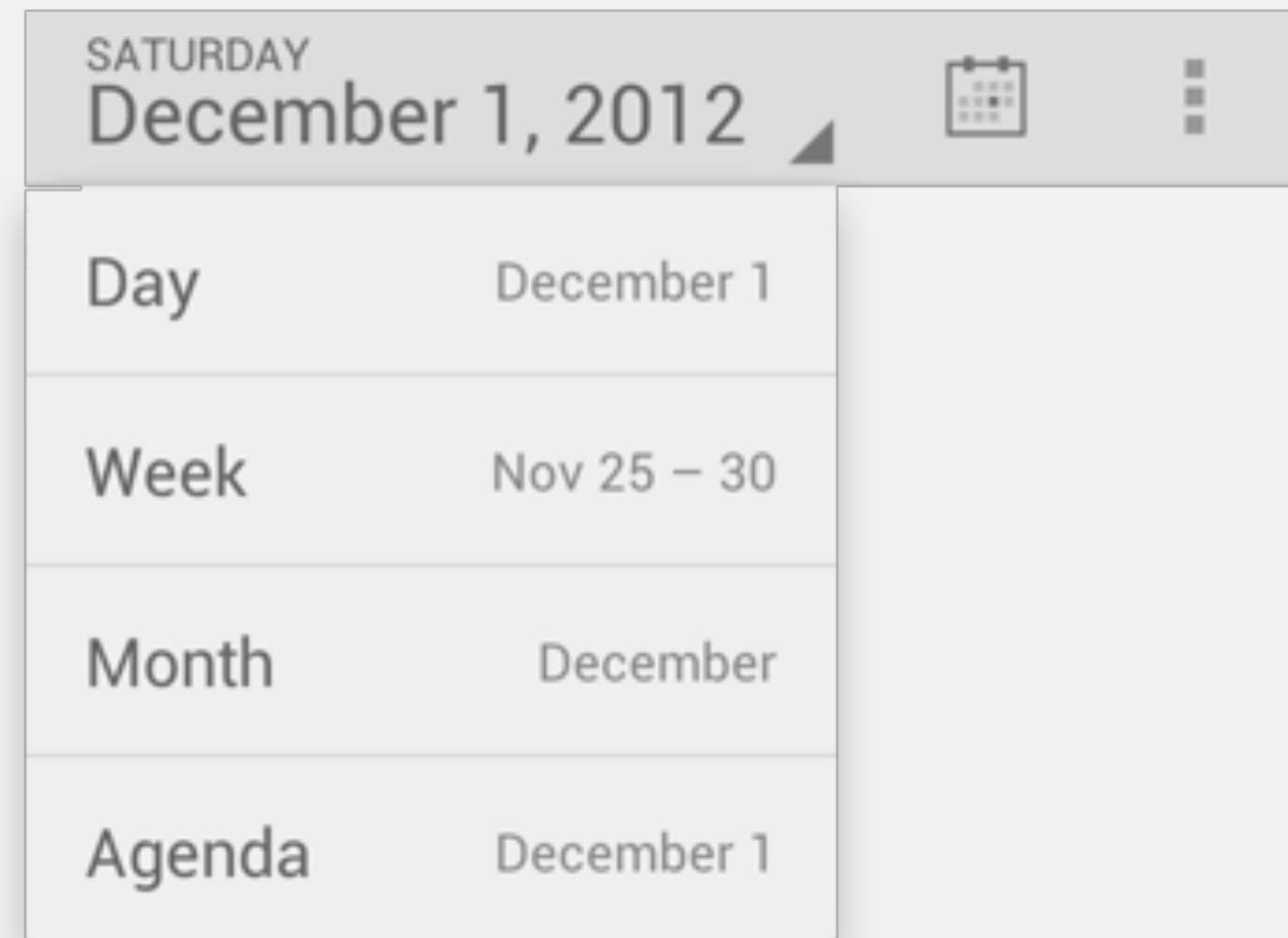


Artists overview

Drop down

Earlier versions

- ▶ Drop down box underneath the title
- ▶ Arrow pointing to bottom right

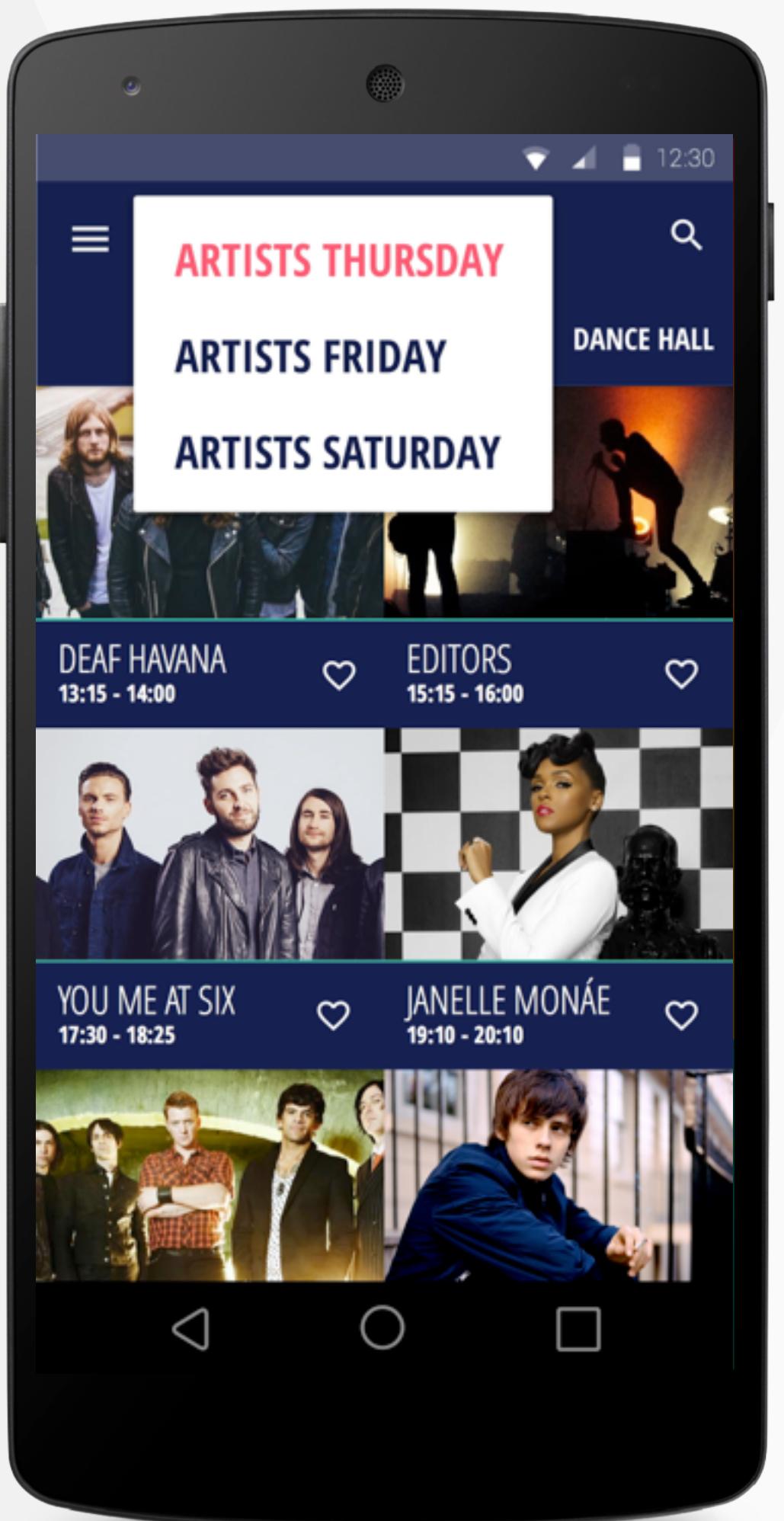


Artists overview

Drop down

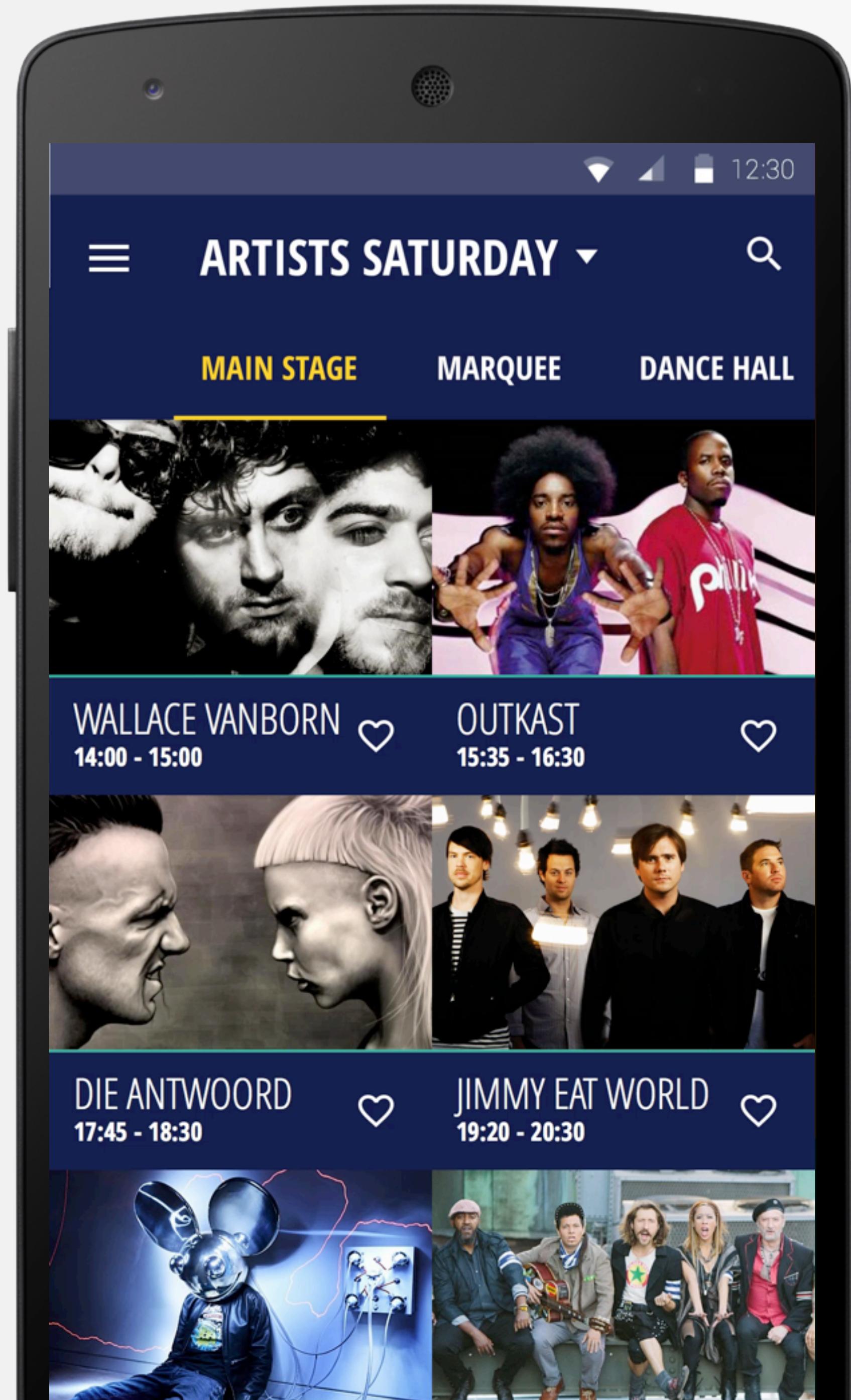
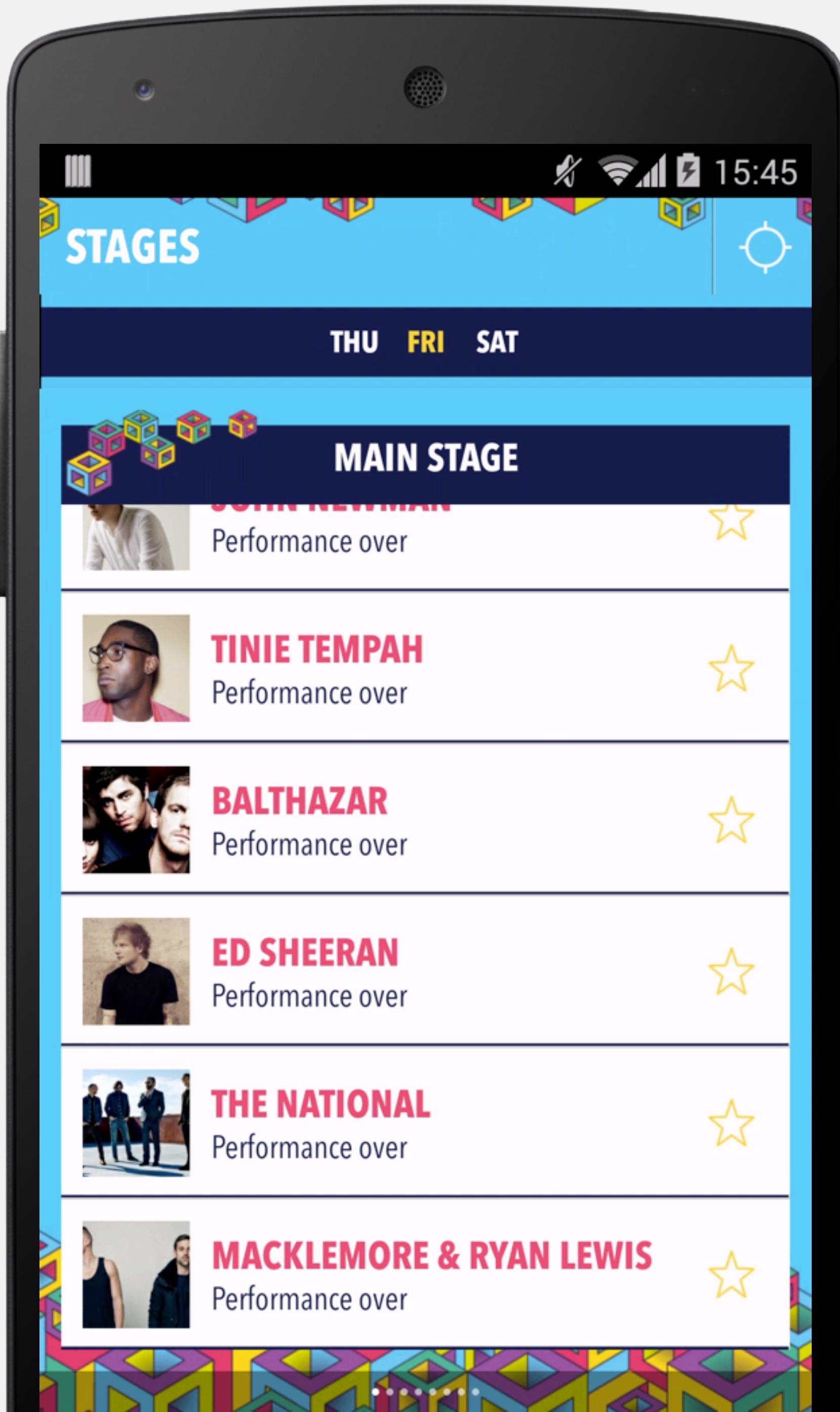
Android Lollipop

- ▶ Used in unofficial Devoxx app (overflow menu)
- ▶ Show the Popup Menu over the ActionBar
- ▶ <https://plus.google.com/+RubenGerits/posts/fcbS9pLR6oP>



Artist detail page

A



PROFILE

TINIE TEMPAH

FRI 17:25-18:15 MAIN STAGE

Since his worldwide hit 'Pass Out' in 2010, the Nigerian Briton Patrick Chukwuem Okogwu Jr. has received annual invitations to Kiewit. Today the dubstep/grime/hip-hop artist, who chalked up five international hits, is bringing us his 'Demonstration' album and tour. In Britain his name has already entered the musical Hall of Fame. And in Belgium he's quickly ascending to stardom thanks to all his Pukkelpop fans. Heidi and Audrina eat your heart out!

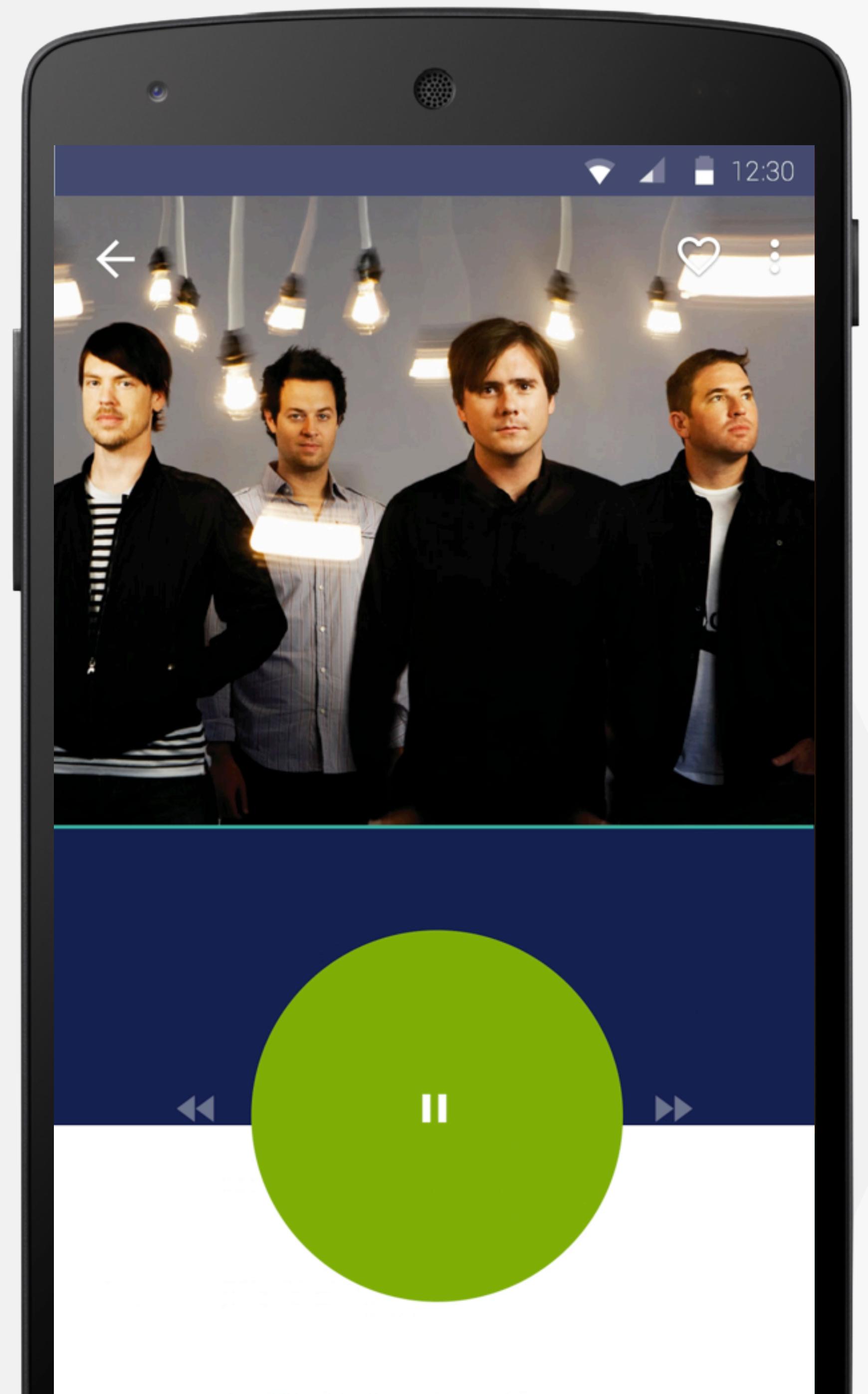
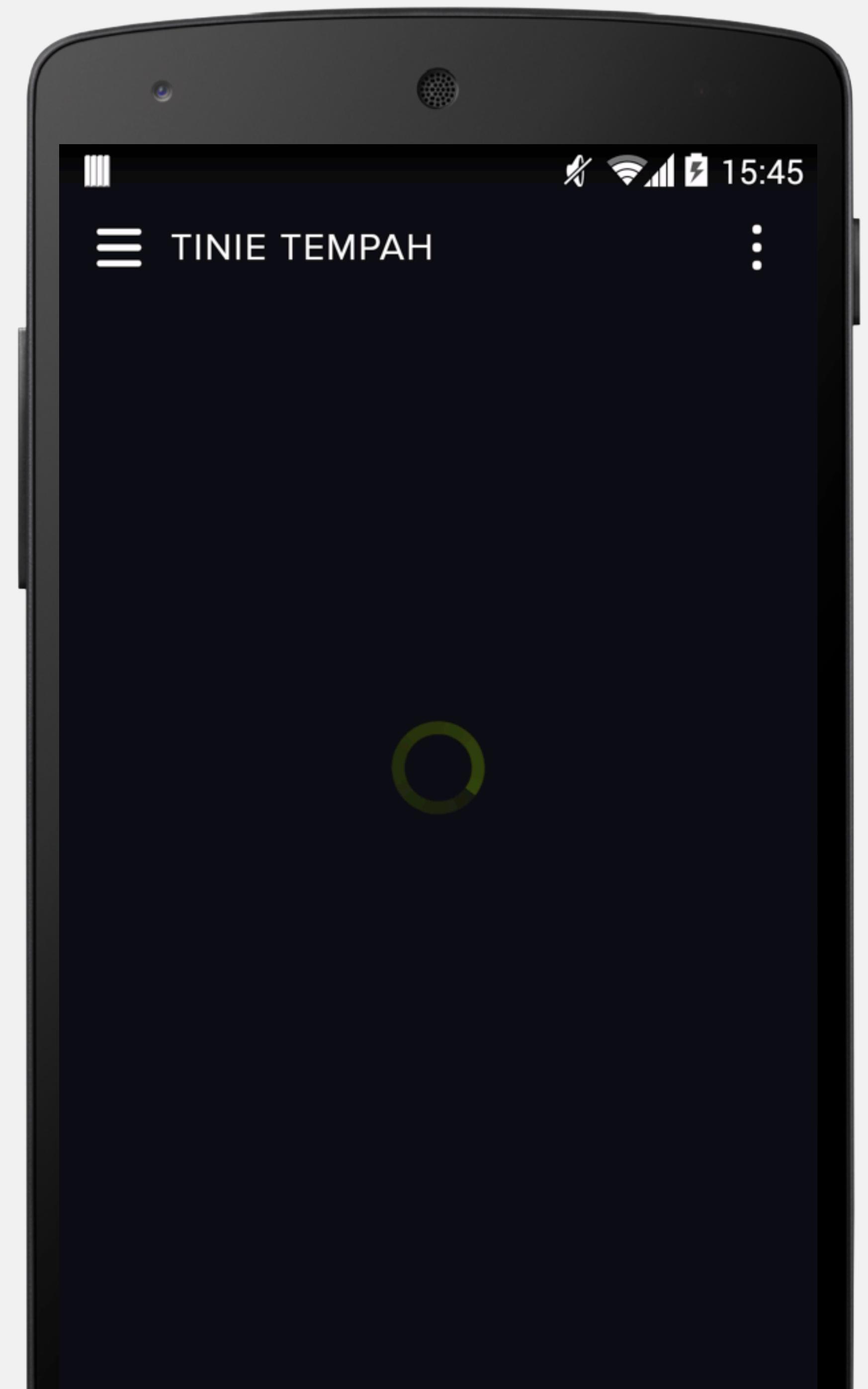
JIMMY EAT WORLD

SAT I MAIN STAGE 15:15 - 20:30

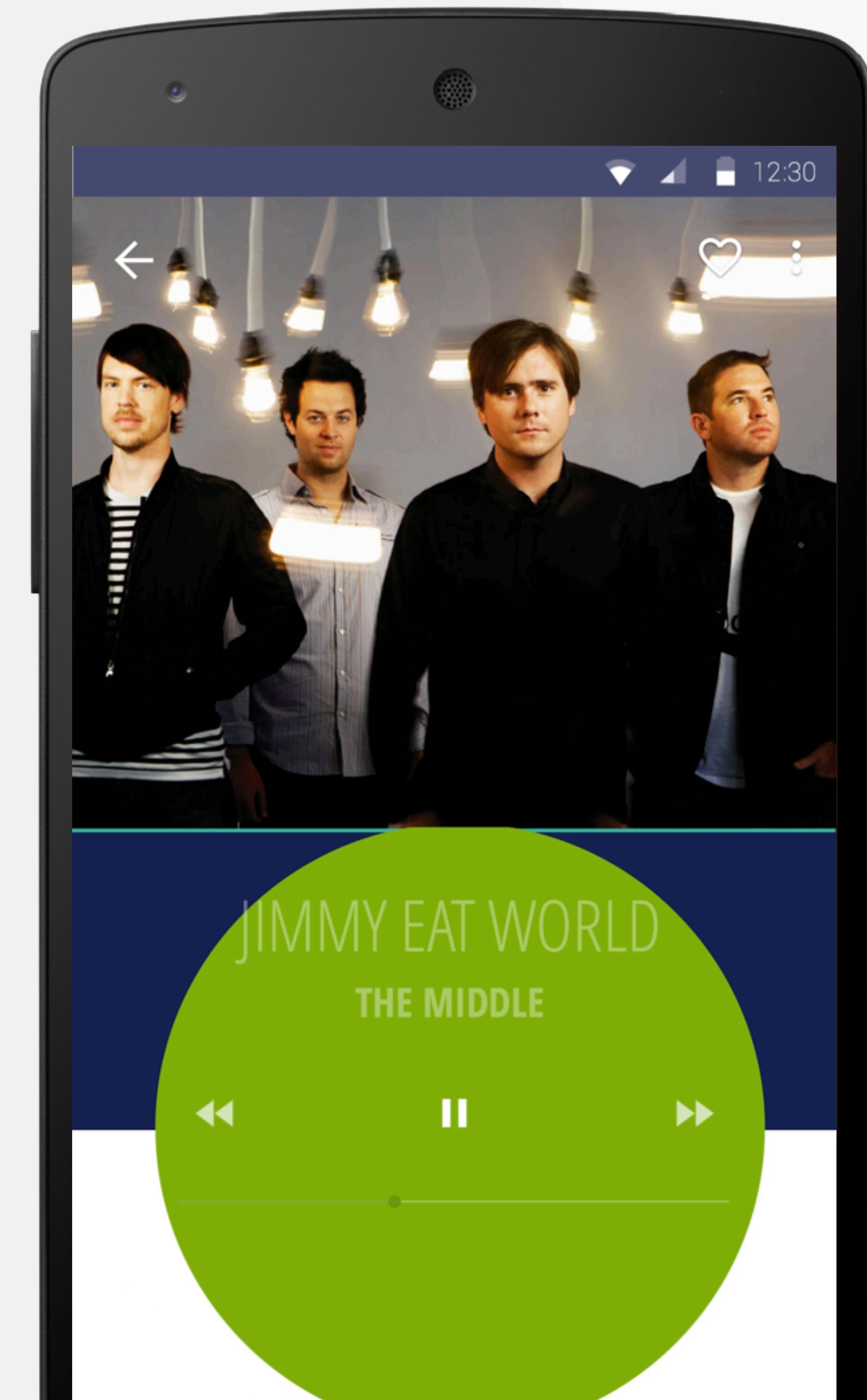
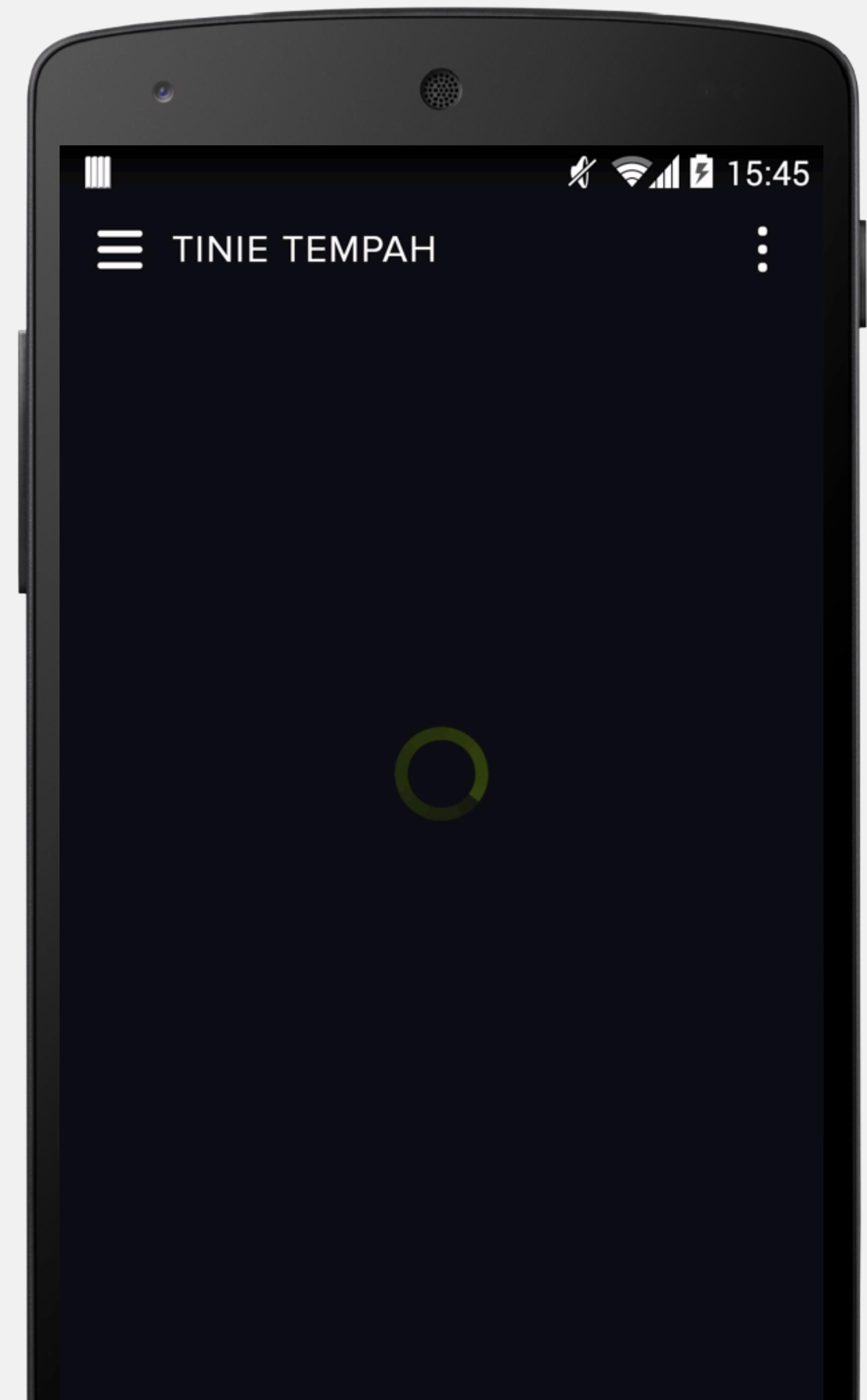
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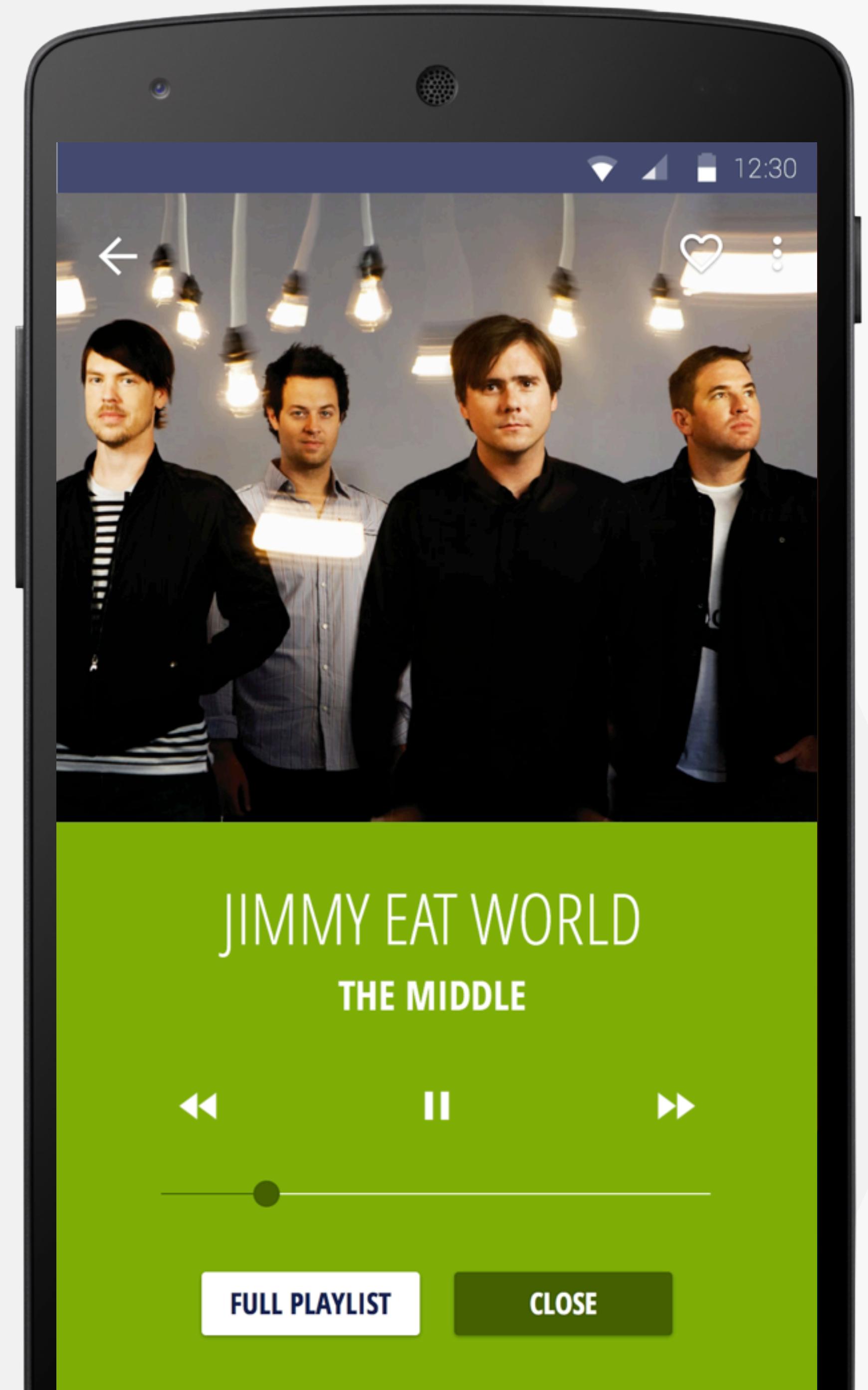
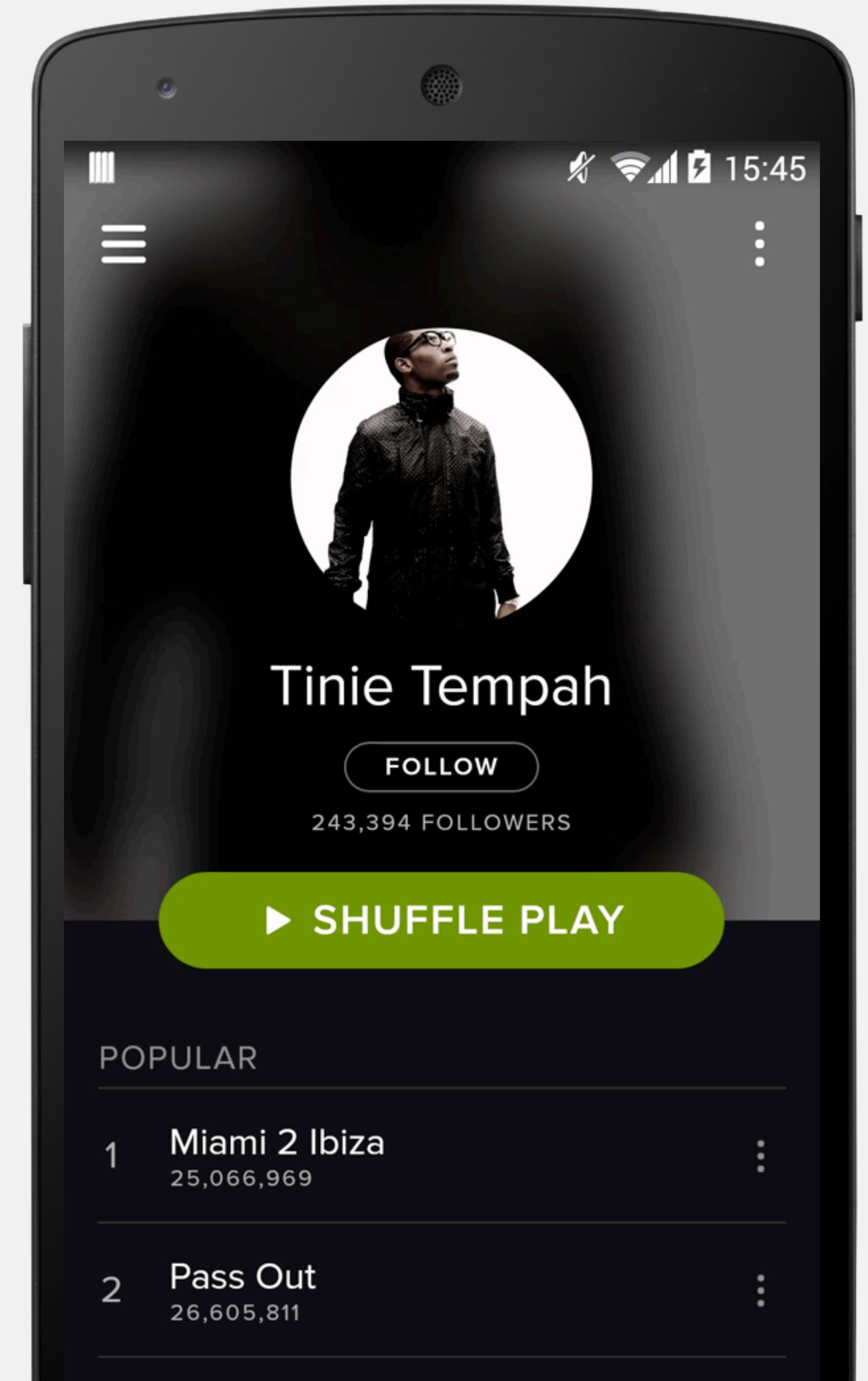
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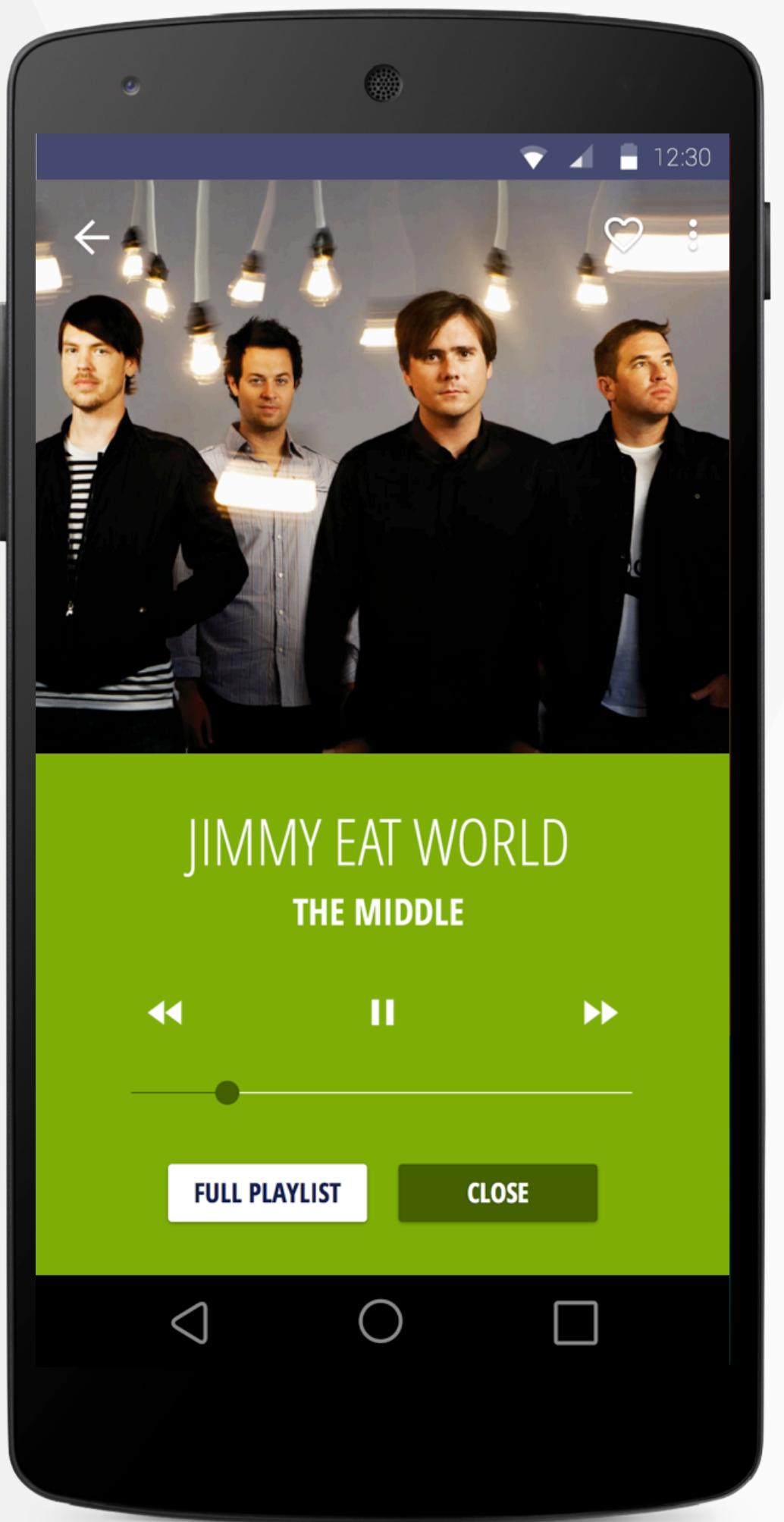


Artist detail page

Animation

Spotify integration

- ▶ Update the FAB icon
- ▶ Move the FAB
- ▶ Fade out previous content
- ▶ Fade in new content
- ▶ Fill the background

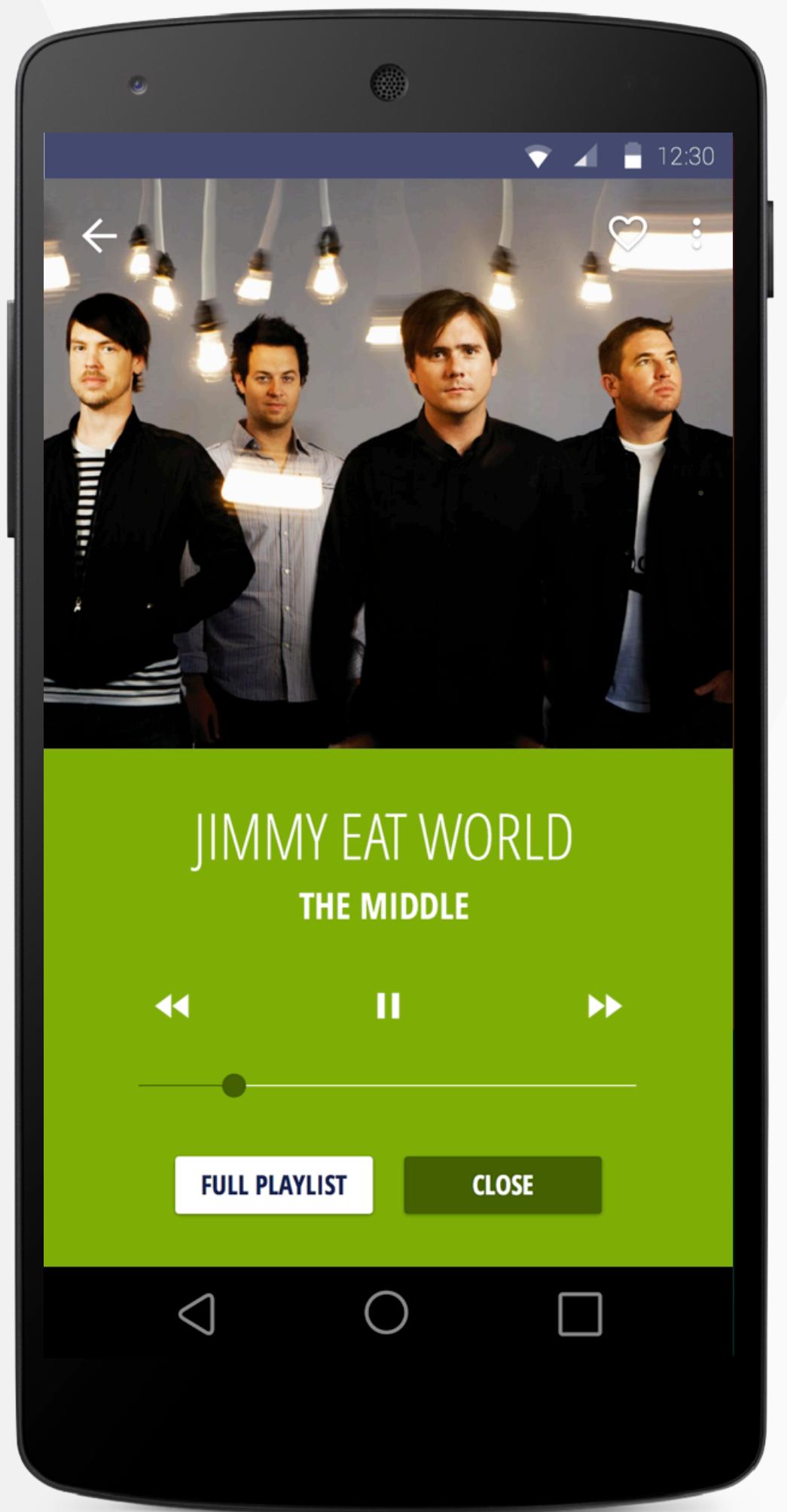


Artist detail page

Animation

Moving the FAB

- ▶ Use 2 ObjectAnimators for translationX and translationY
- ▶ X and Y animation have different Interpolators to create the path
- ▶ Combine them in a Set and play together
- ▶ Multiple ViewPropertyAnimations on a view share the interpolator

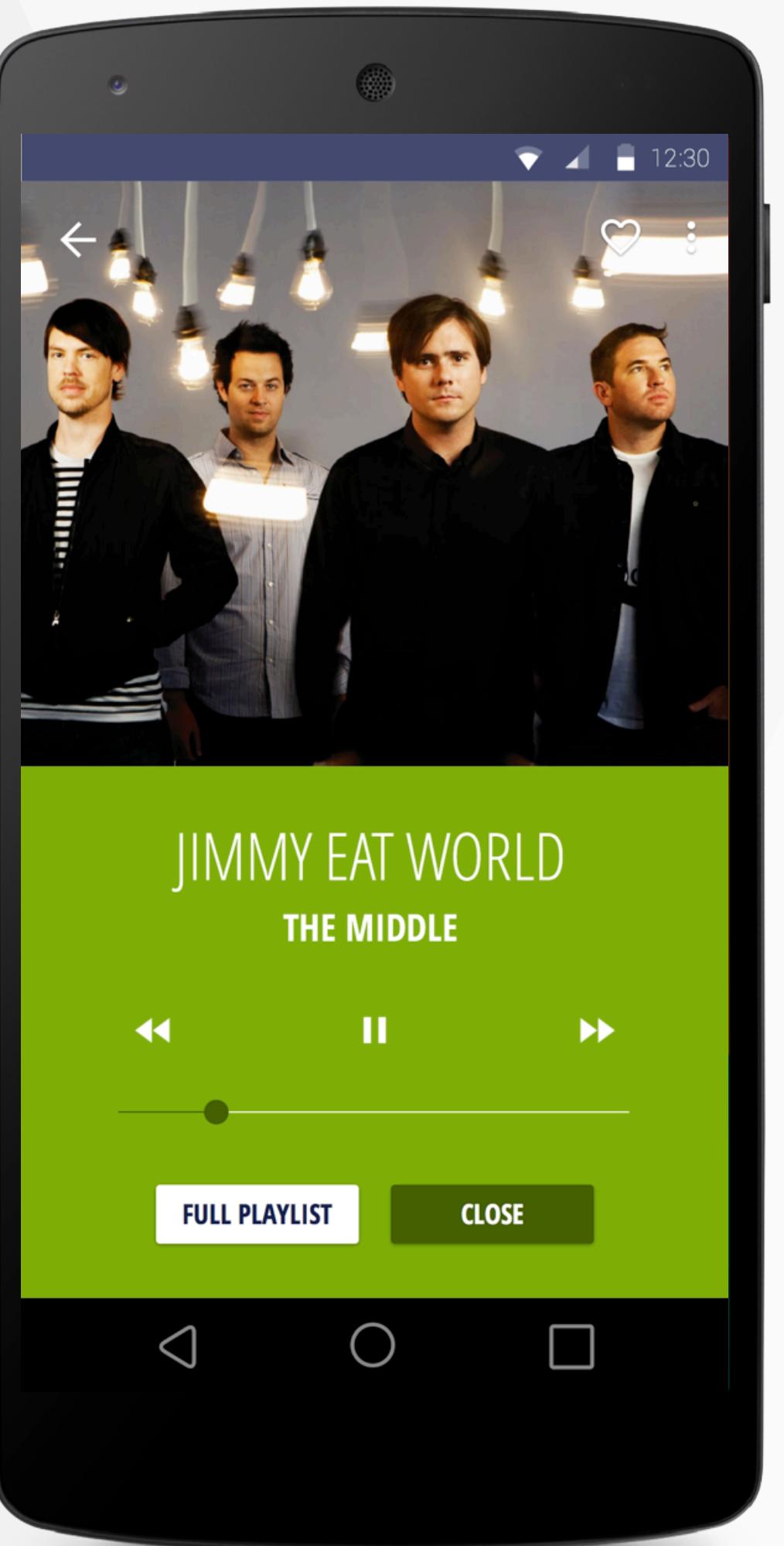


Artist detail page

Animation

Fill in the background

- ▶ RevealColorView from <https://github.com/markushi/android-ui>
- ▶ Add the view to your layout
- ▶ spotifyBackground.reveal(x, y, color, listener)

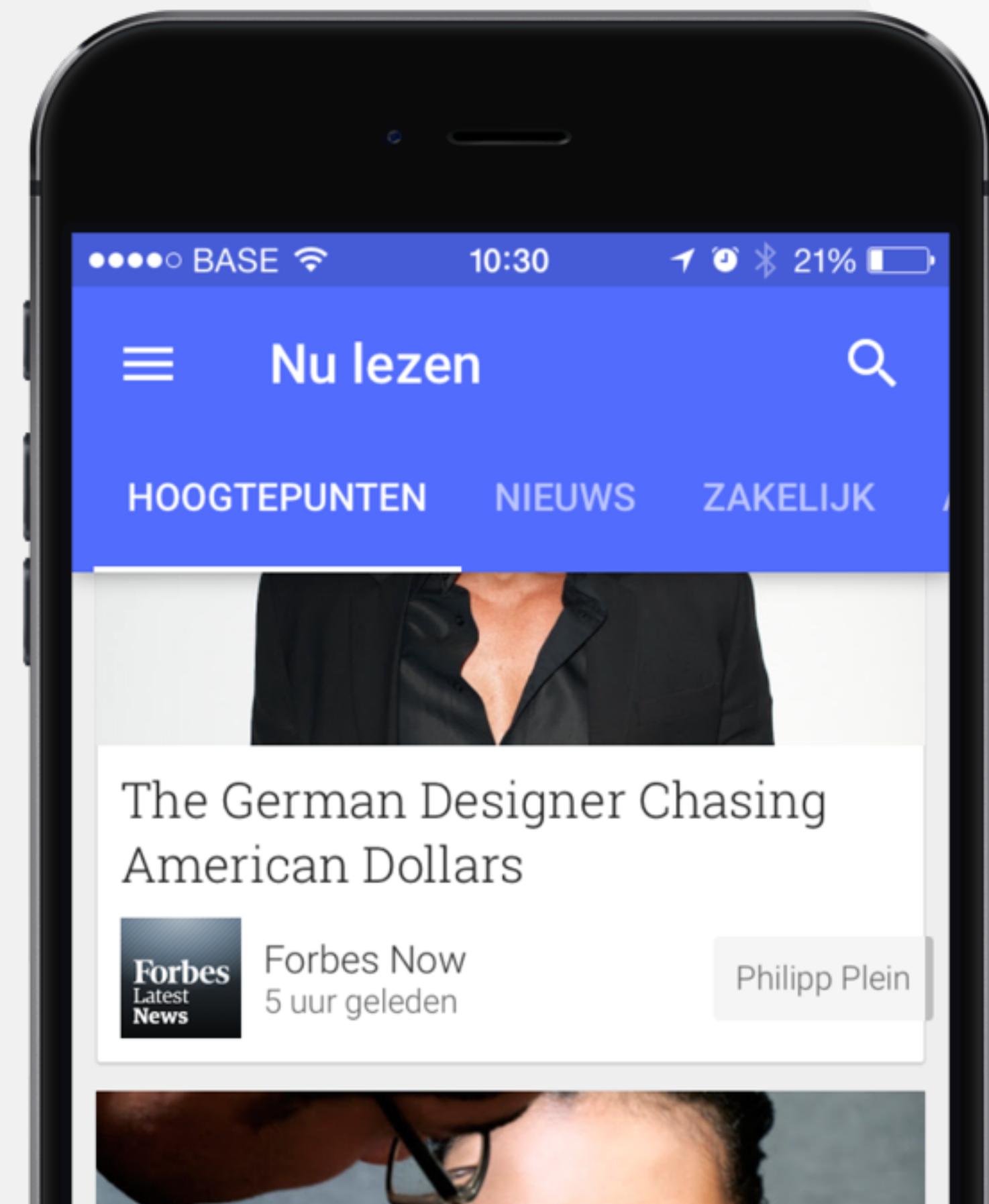
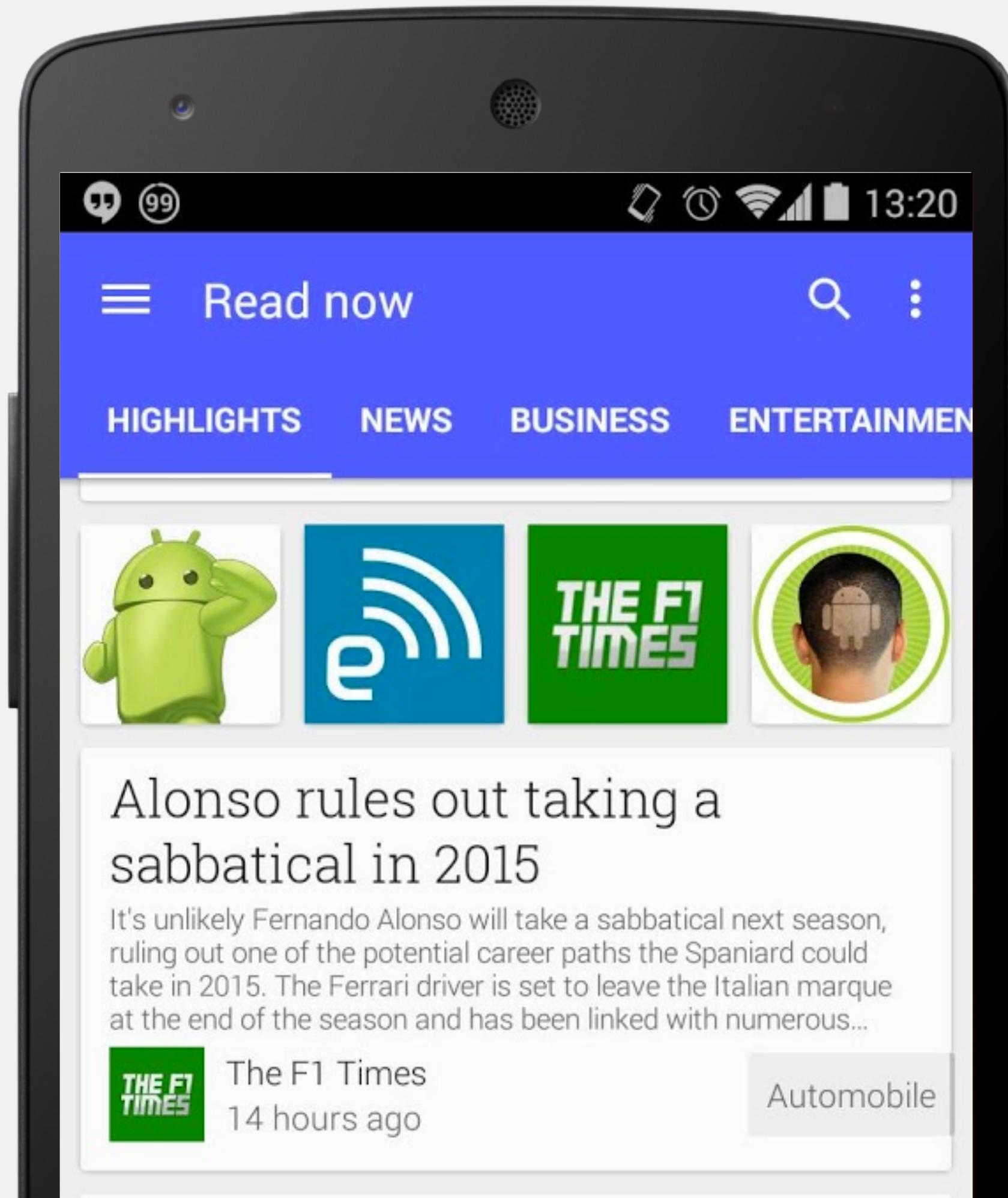


One more thing...

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Cross devices

Android & iOS



Thanks!

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