



by Василий Кандинский

# BlendUI

让轻应用如Native般流畅

berg

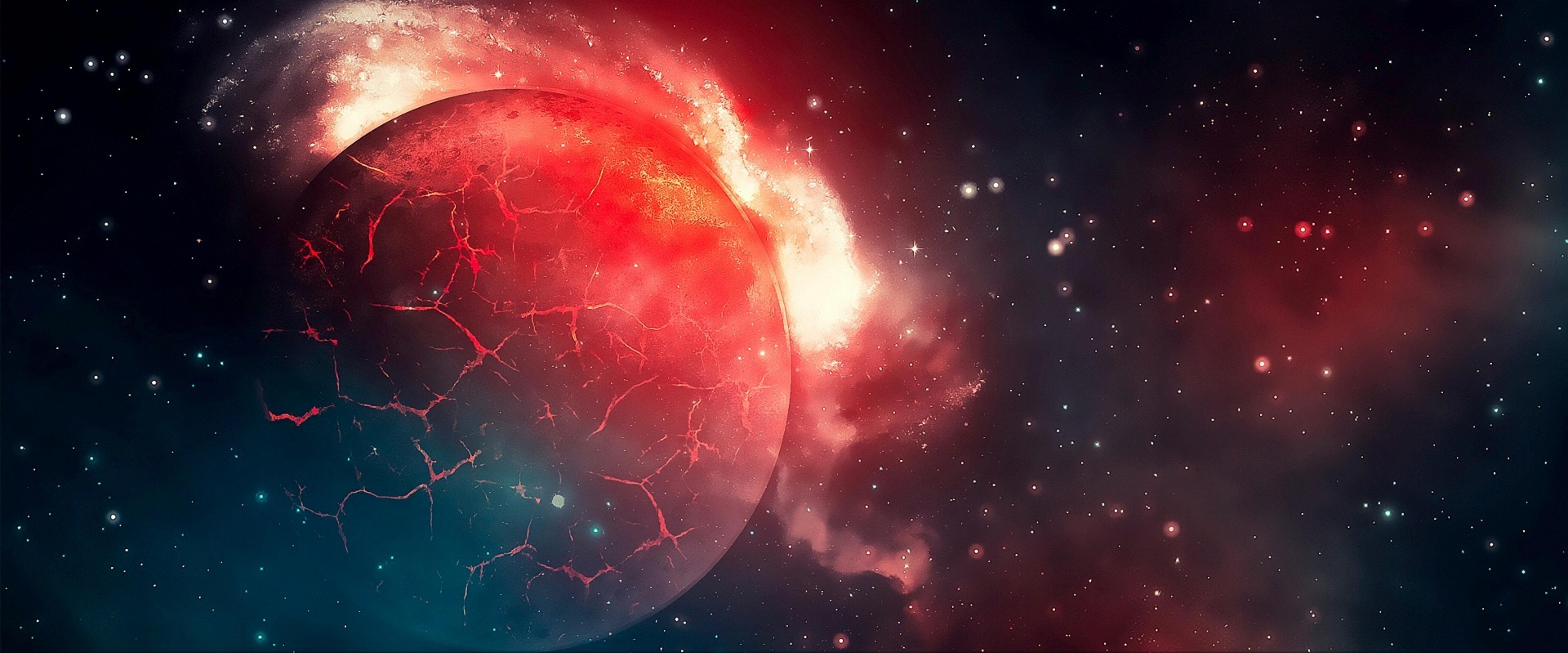
# Outline

---

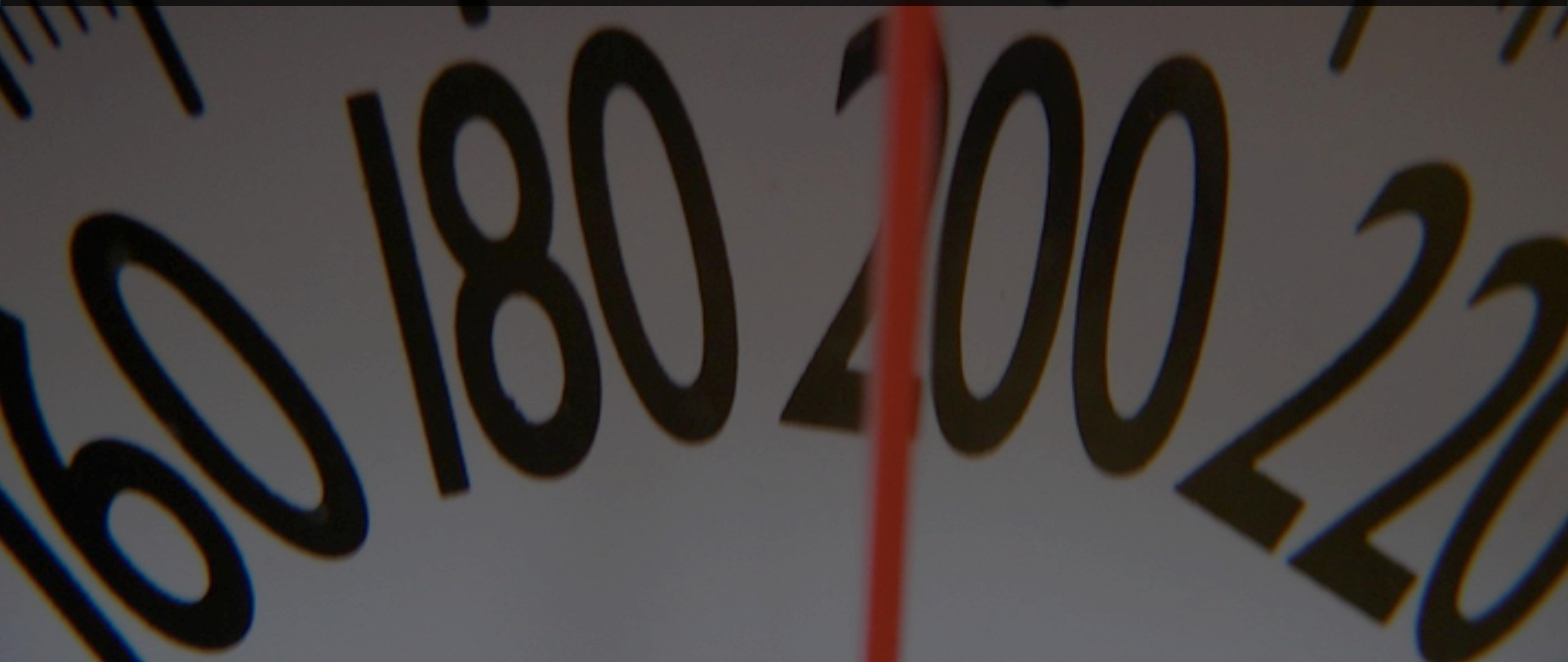
- 背景与挑战
- 设计思路
- 核心实现
- Showcase
- 微博: [@berg](#)
- 微信订阅号: [DevLife \(行云出岫\)](#)



# 背景与挑战

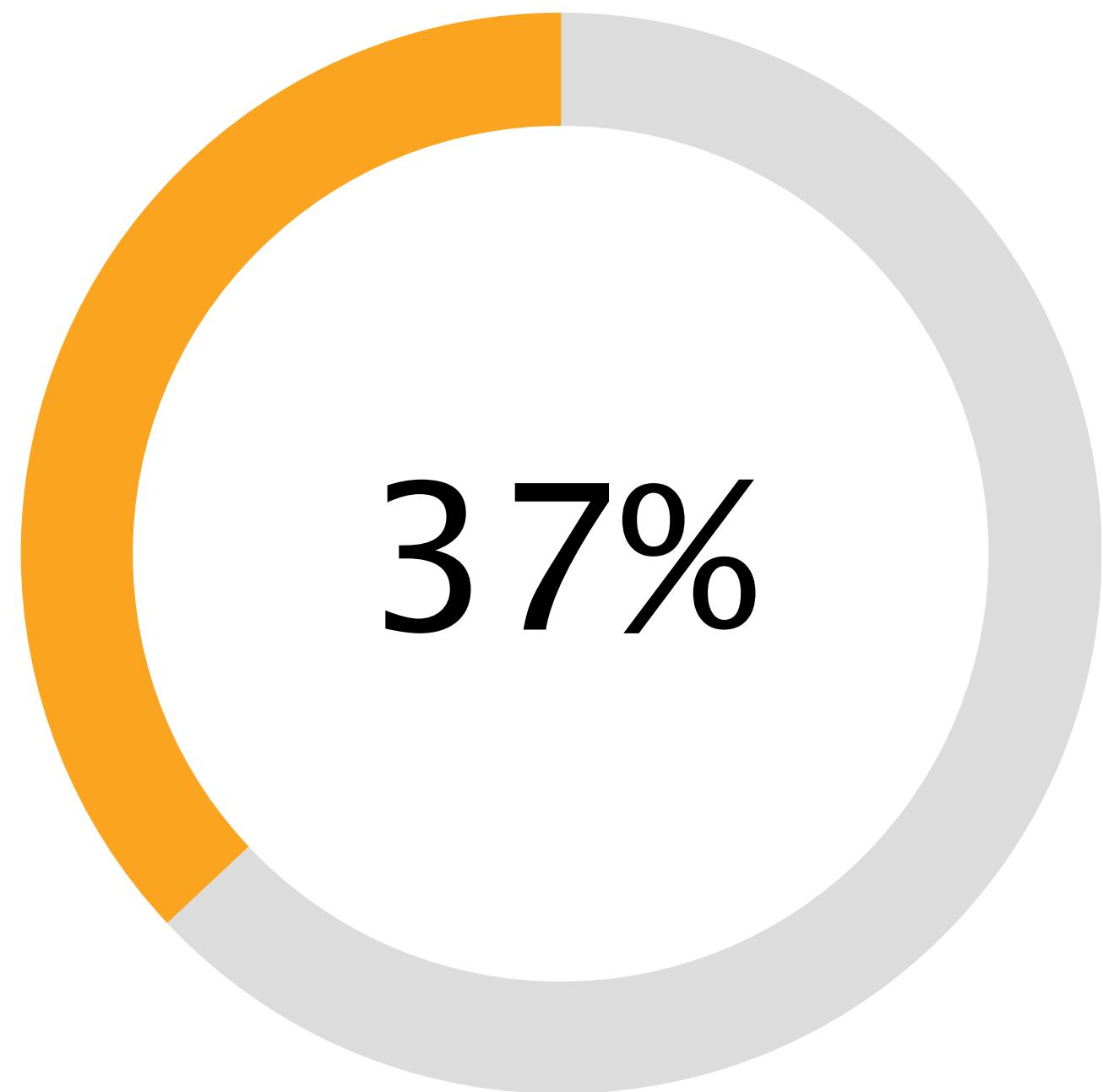


从数据开始

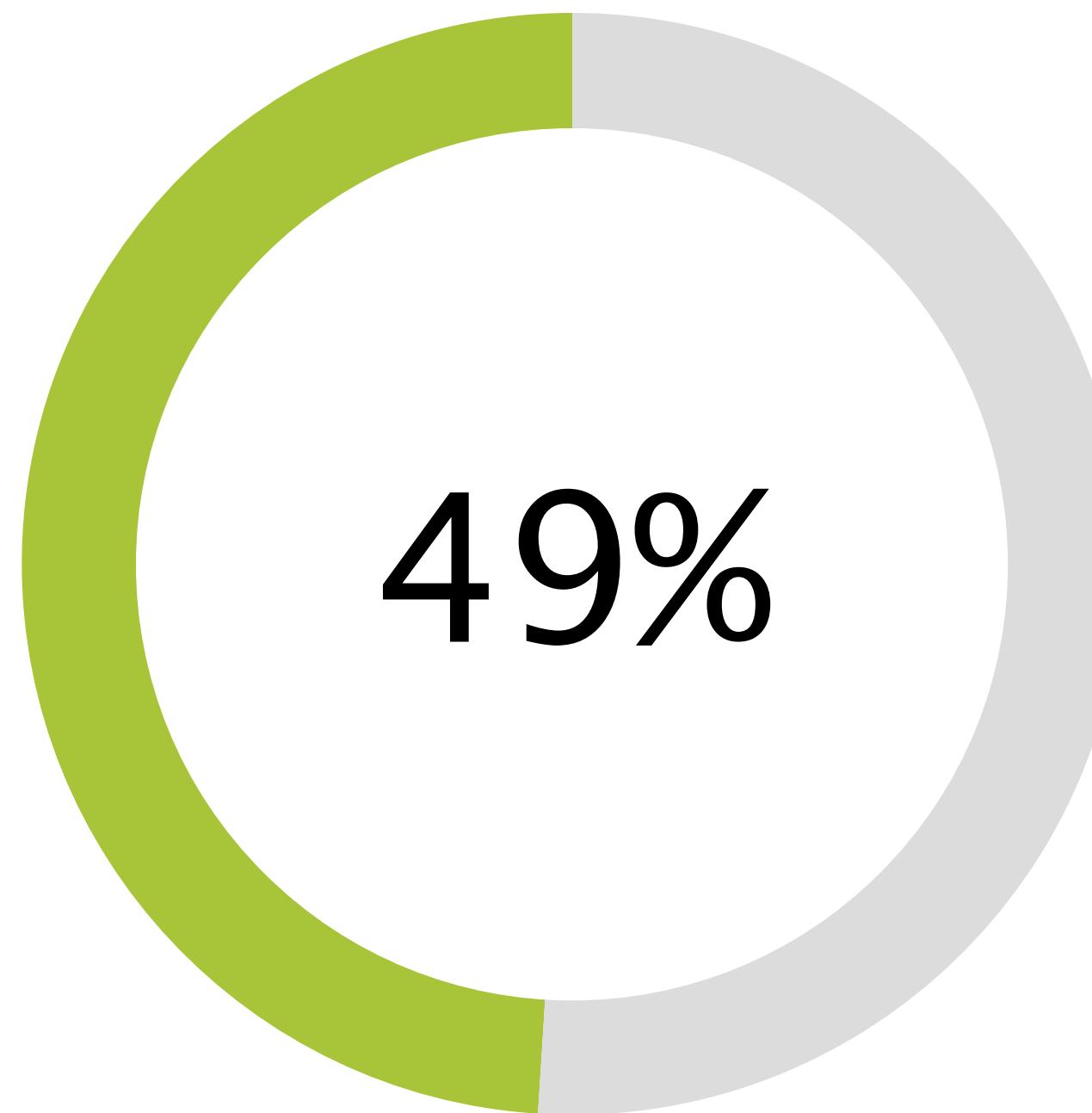


多少Native app可以用web技术实现

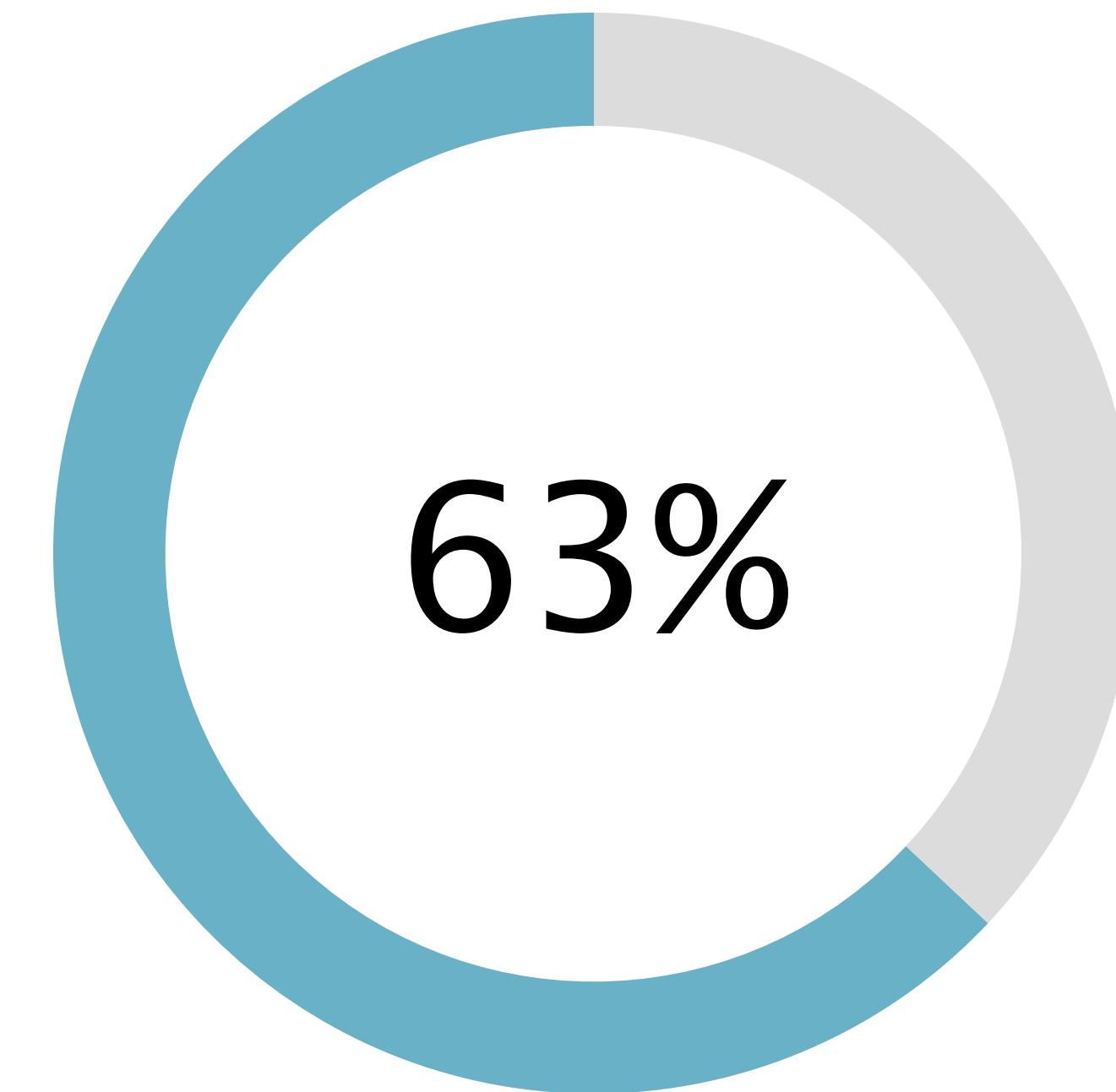
# 多少Native app可以用web技术实现



HTML5



Phonegap

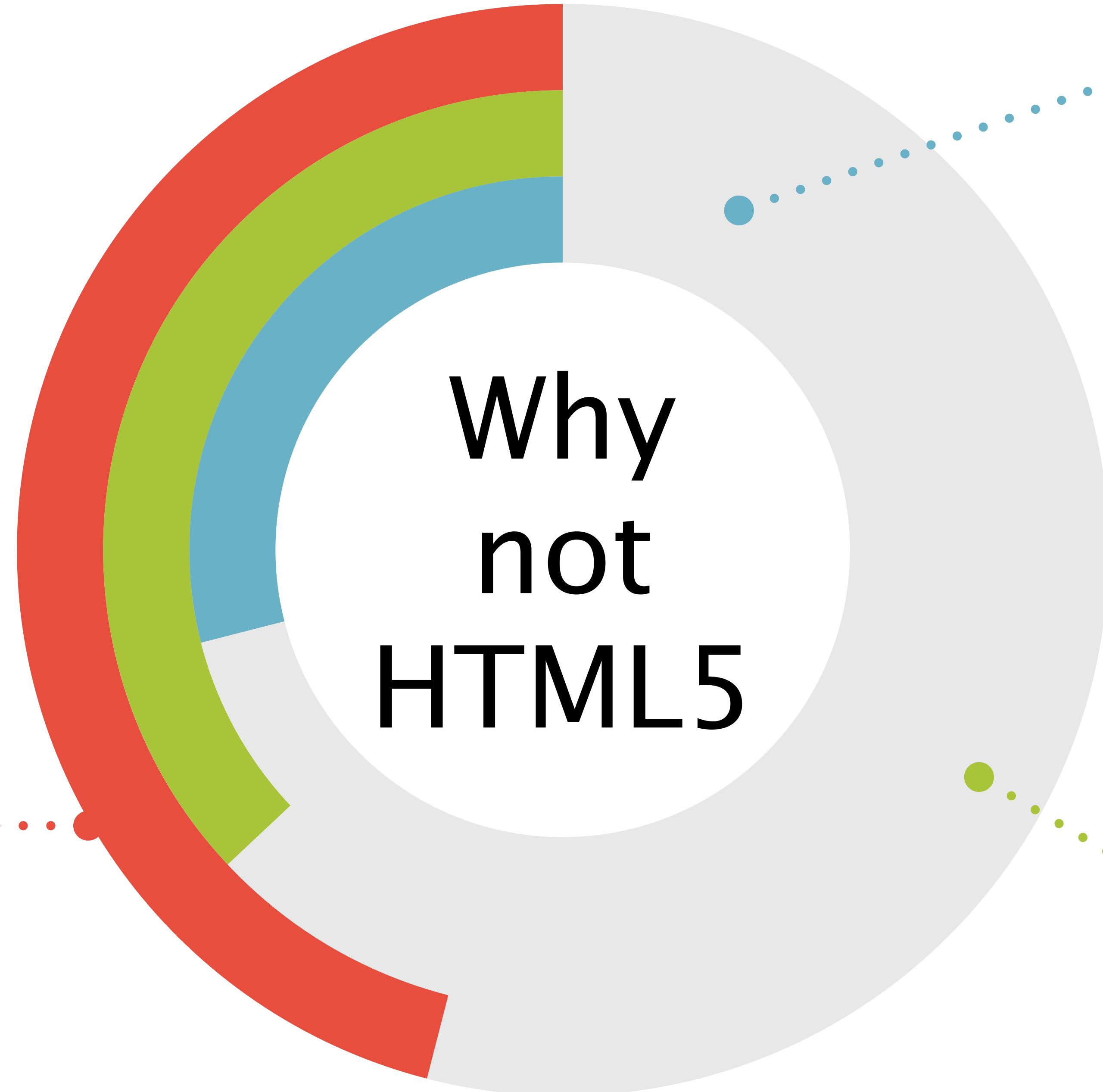


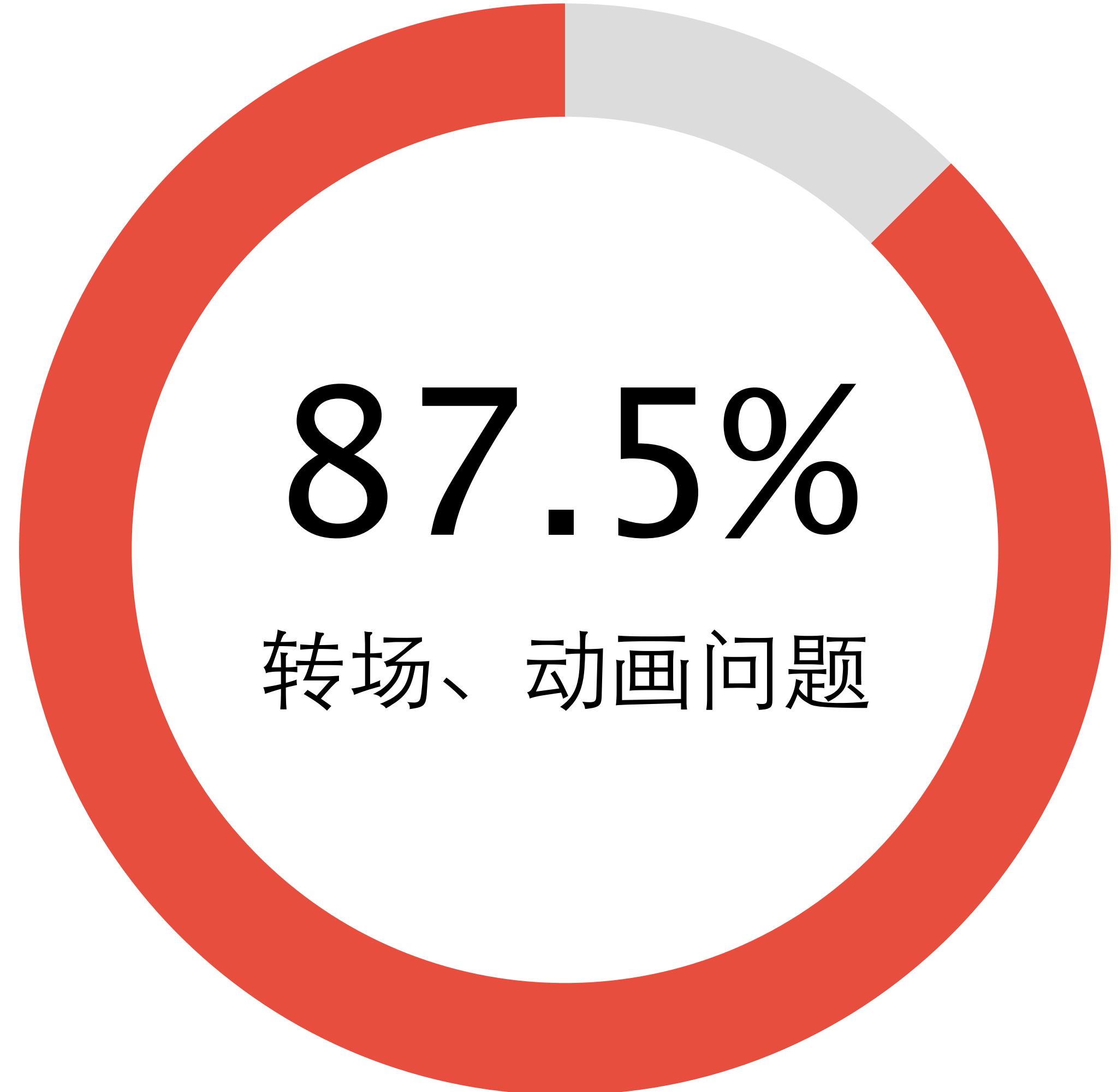
Appcelerator

与Native交互  
29%

性能  
46%

APIs  
37%





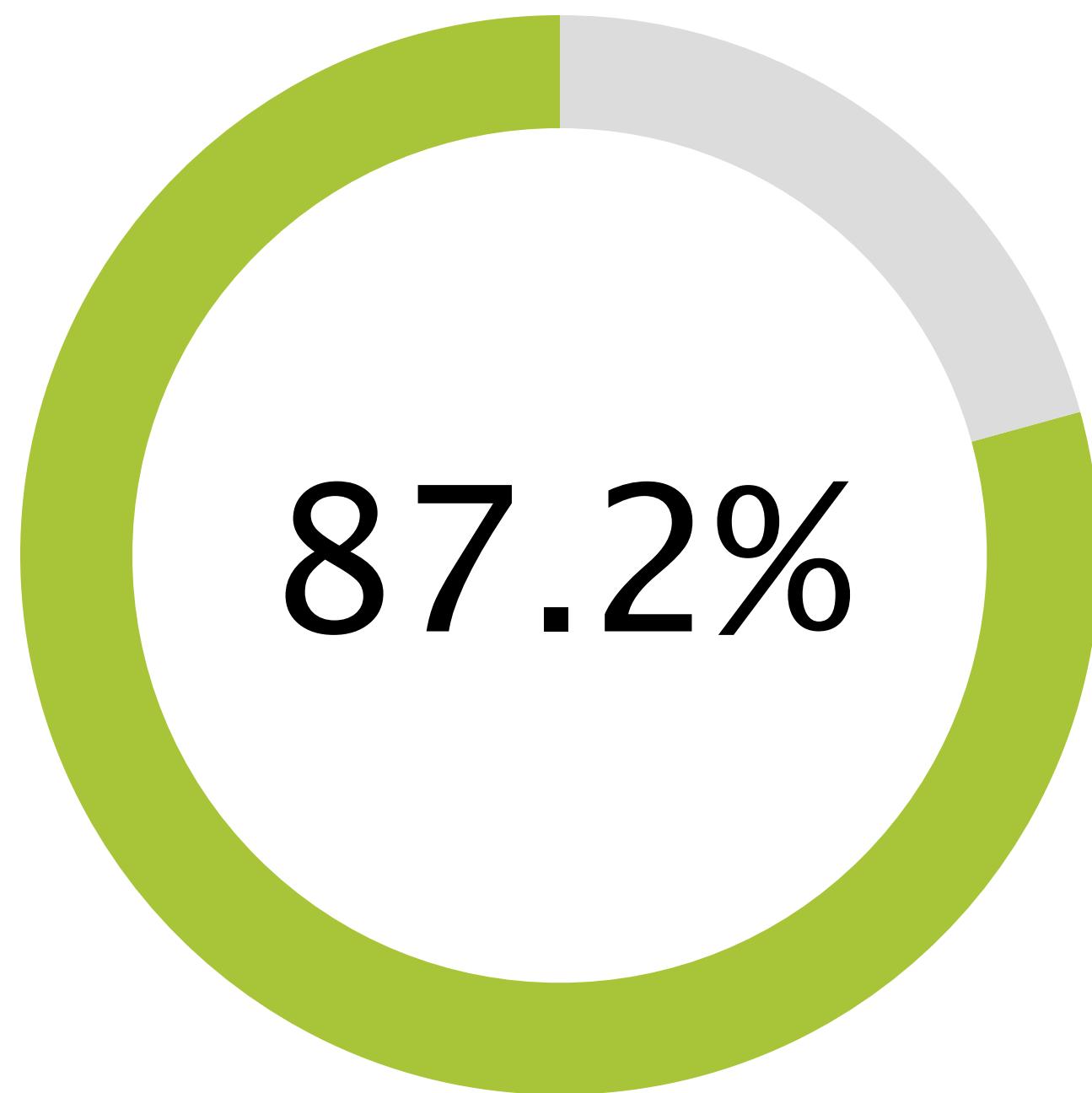
87.5%

转场、动画问题

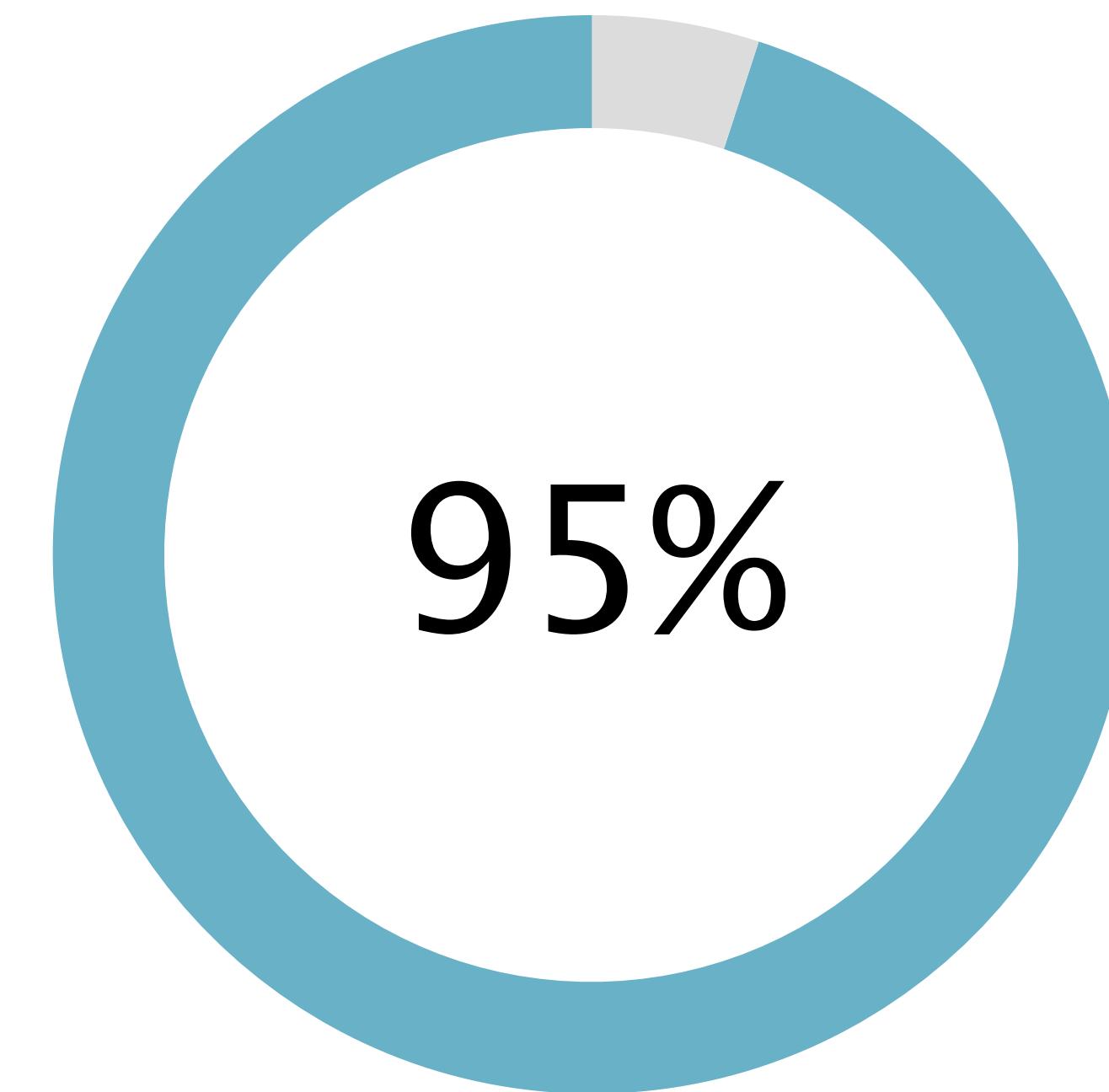
16个百度移动站点

# 轻应用开发者的看法

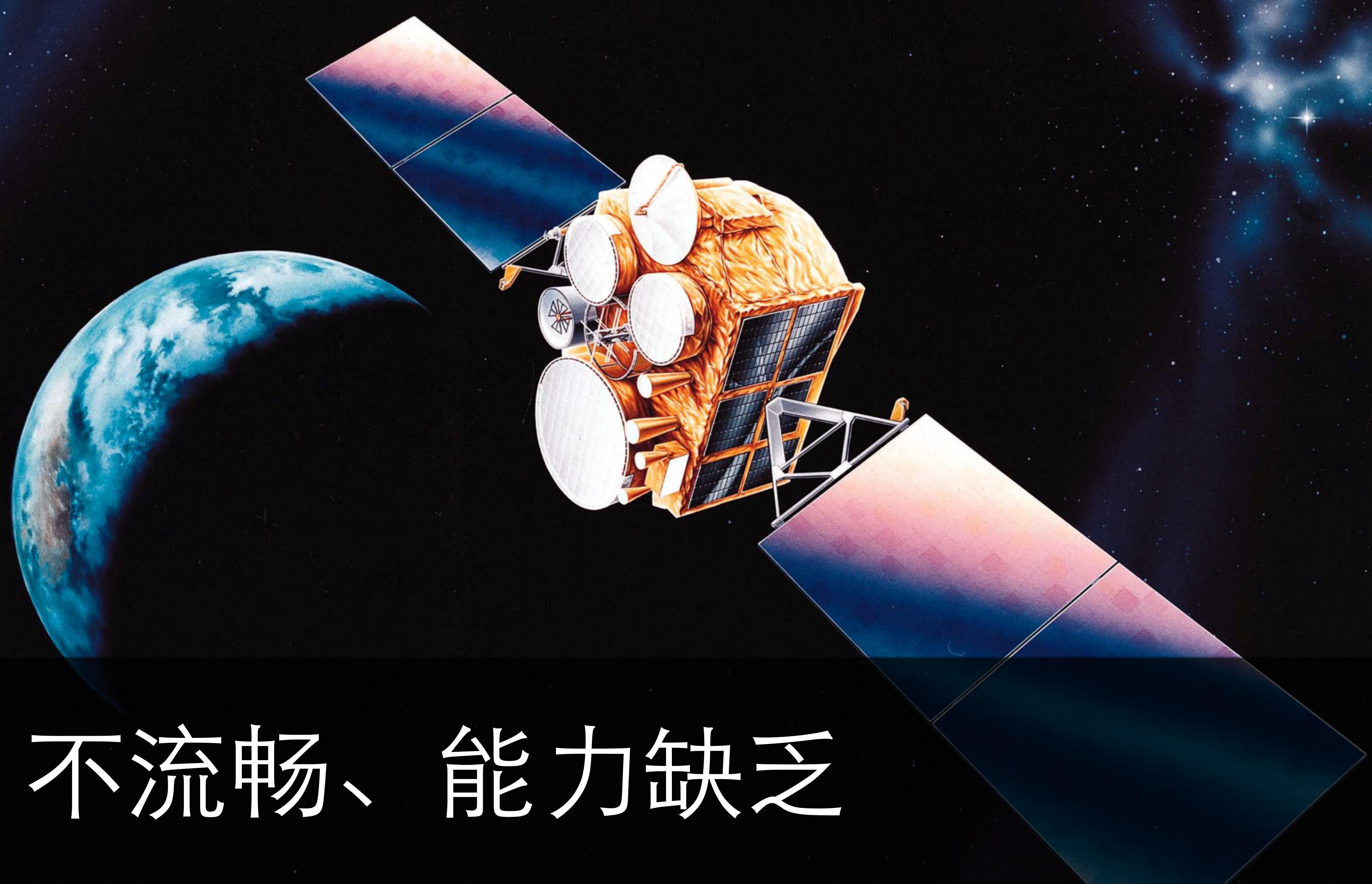
# 轻应用开发者的看法



愿意在Native app基础上  
开发webapp



希望使用百度的分发渠道



不流畅、能力缺乏

# BlendUI



# BlendUI

灵活、低耦的组件库及运行环境

使轻应用能力和体验媲美Native app



# Basecamp®

“Decisions based on computing speeds quickly decay”

“Native shell + native navigation”

– David

Creator of Ruby on Rails, partner at 37signals

The screenshot displays the BCX: Support mobile application interface. At the top, there's a header with the app name and navigation tabs for 'LATEST UPDATES', 'COMPLETED TO-DOS', 'DISCUSSIONS', and 'TO DO'. A red box highlights the 'Post a message' button in the top right corner, with the word 'Native' written in red next to it. Below this, a timeline shows several comments from users like 'Webview', 'Mig R.', and 'Ann G.' about support dates. A green box highlights the first comment from 'Webview'. Further down, a 'Project calendar' section shows a weekly agenda with various events. A large green box highlights this calendar area. A 'New event' modal is open, titled 'Blame Trevor' with a 'any time' dropdown. It includes fields for 'Add an optional note', 'When: February 11, 2014', 'Lasts multiple days or repeats...', 'Email to: Ann Rocketslide', 'Type a name or email address...', 'Reminder: The day of the event at... 7am', and checkboxes for 'Don't show this event to the client' and 'Add this event' (which is highlighted with a green box). A small green box highlights the 'Add this event' button. At the bottom, there are three navigation icons.



挑战

性能、灵活

能力

(Android、iOS、Web)

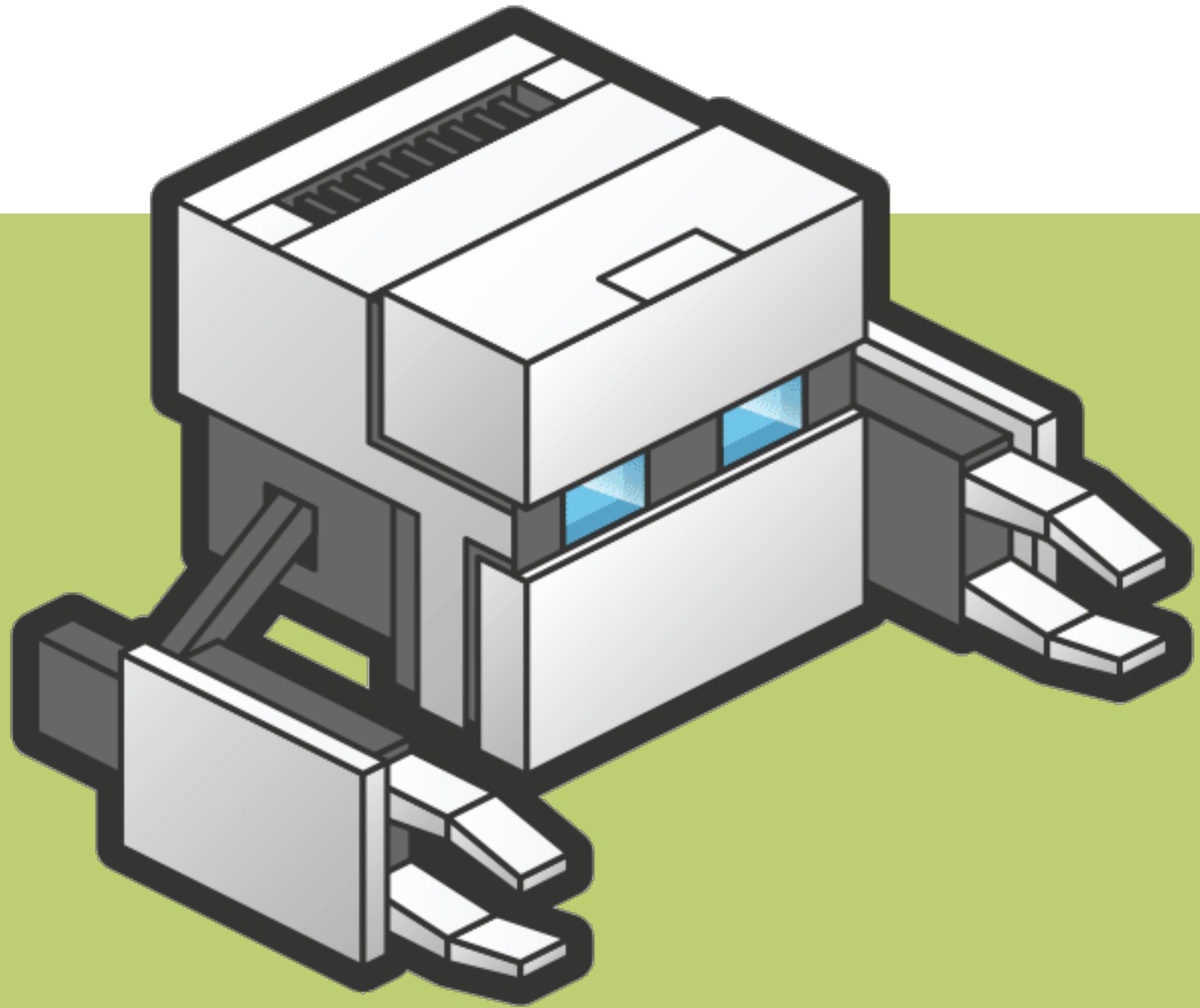
API

市场渠道

# Titanium Mobile

- 编译式，不灵活，复杂
- 用户量仅5%





# Phonegap

- 平台支持太多 —— API数量不足
- 对性能无帮助

# Appcan

- 求大而不精，API零散
- 性能堪忧



# 目标

性能

(首要目标)

原生动画  
T5内核  
缩减DOM

灵活性

(带来无限可能)

动态扩展  
低耦合  
无限定制

能力

设备能力  
webview控制力  
云能力  
(push、支付)

API

Web for all



设计思路



# 平衡Web与Native



# Native

- 性能高
- 动画流畅
- 系统开销可控

- 开发速度快
- 定制性极高
- 发版优势

# Web



Every element can be a webview







- 用极简的Native代码解决关键问题
- 无限的扩展能力
- 单个webview变小，局部性能可控
- Web API, Events...

核心实现

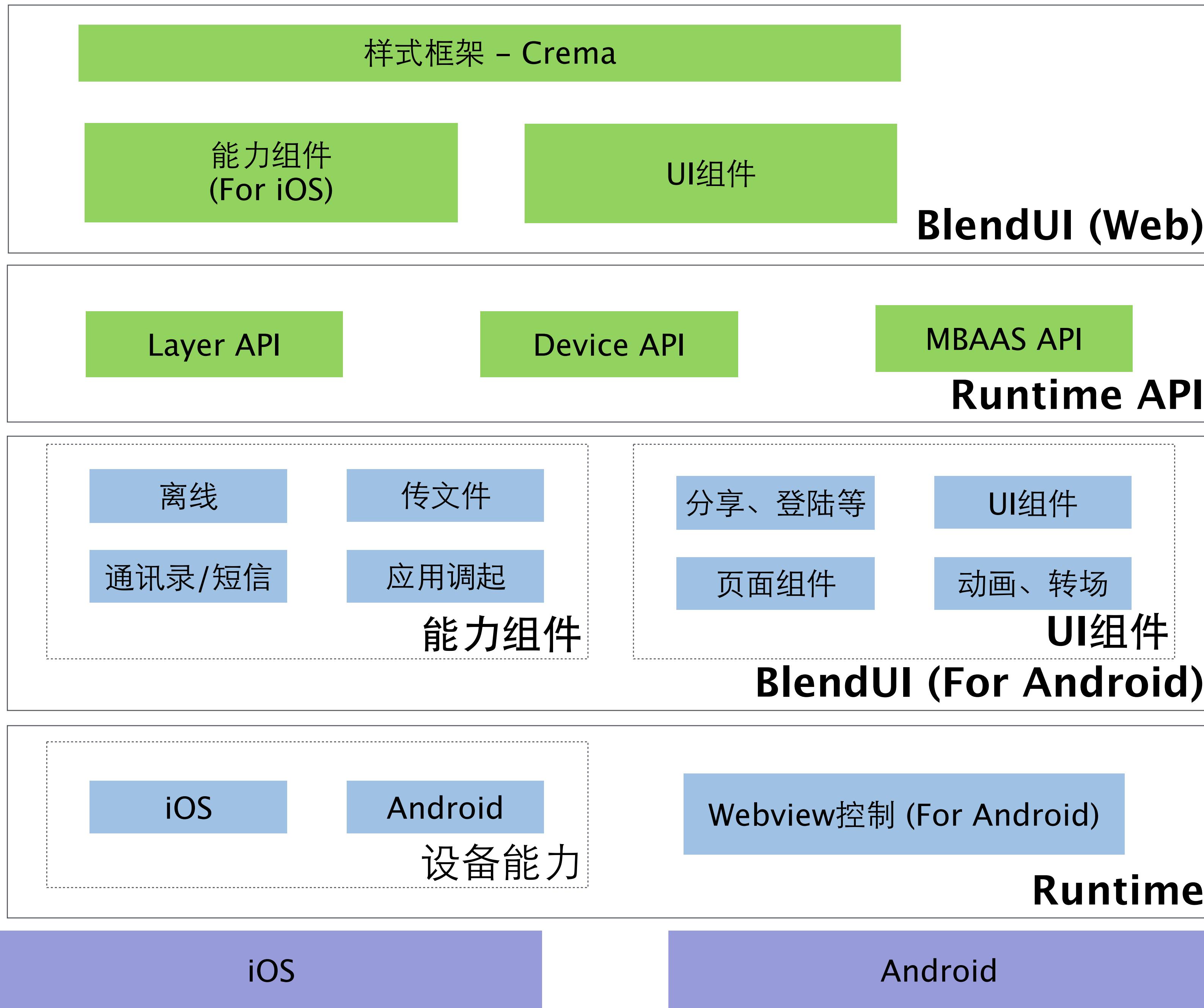


# 设计原则

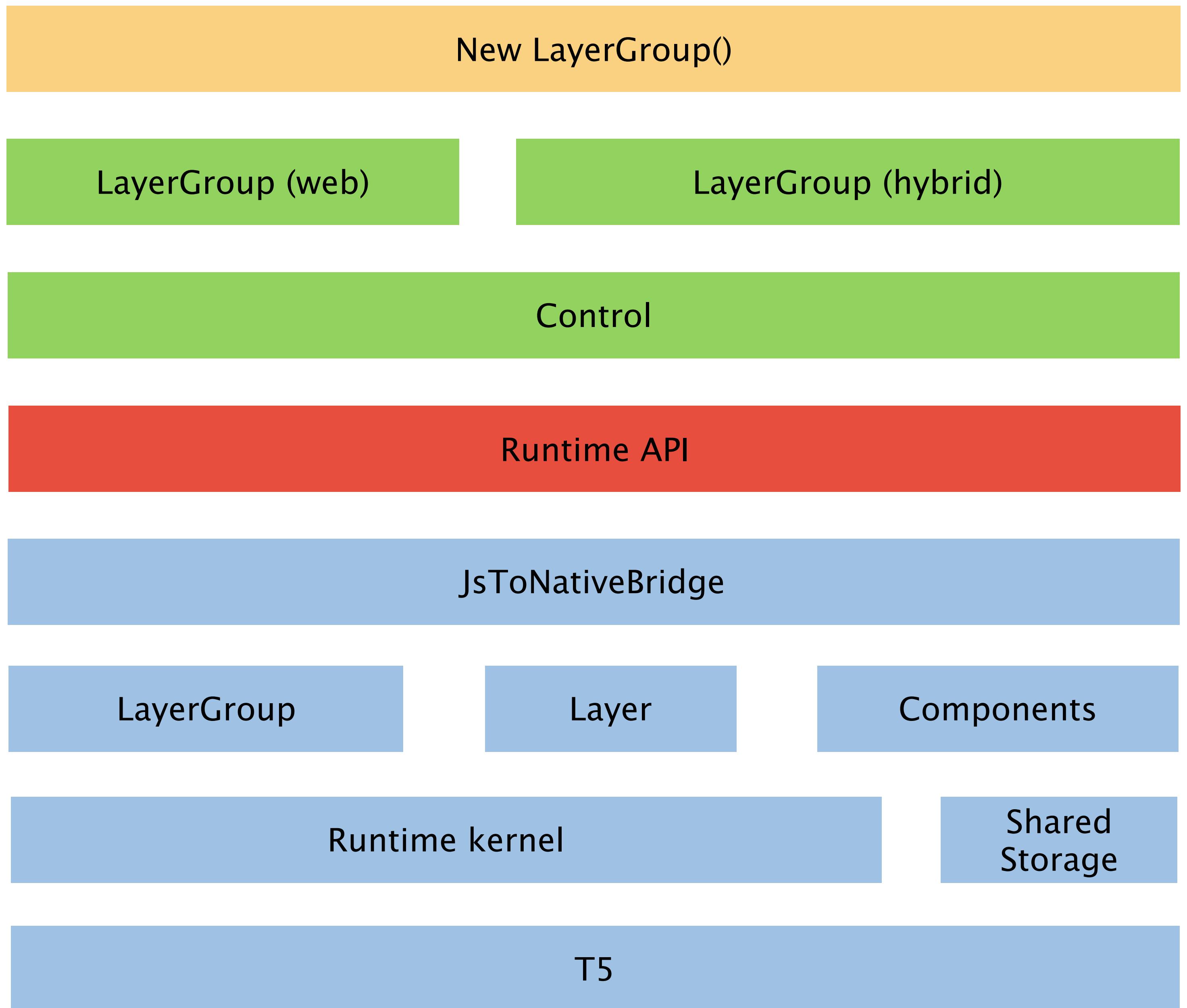
- 模型从简
- 事件驱动
- 尽可能灵活

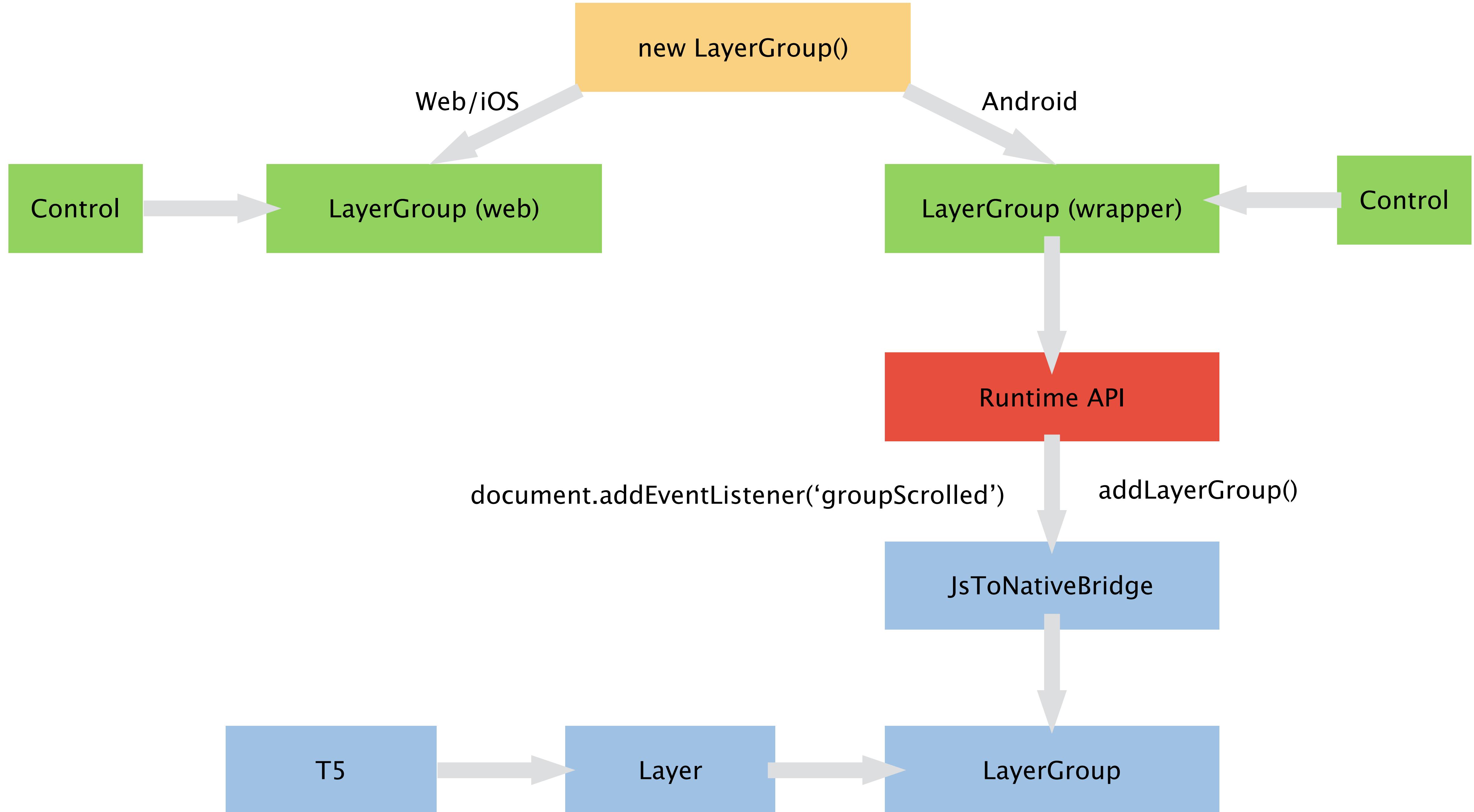


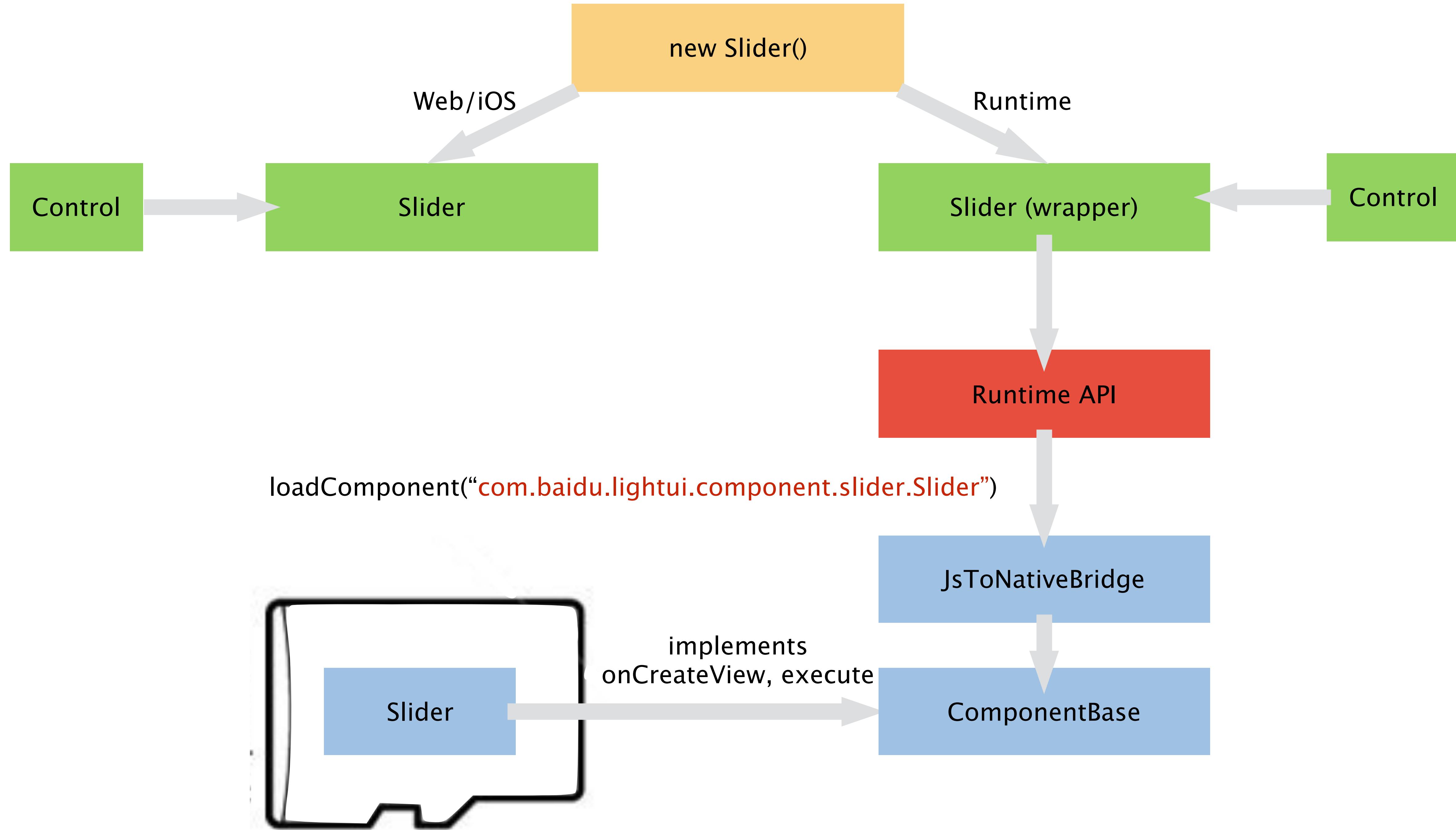
# System overview



# Technique overview







# Showcase



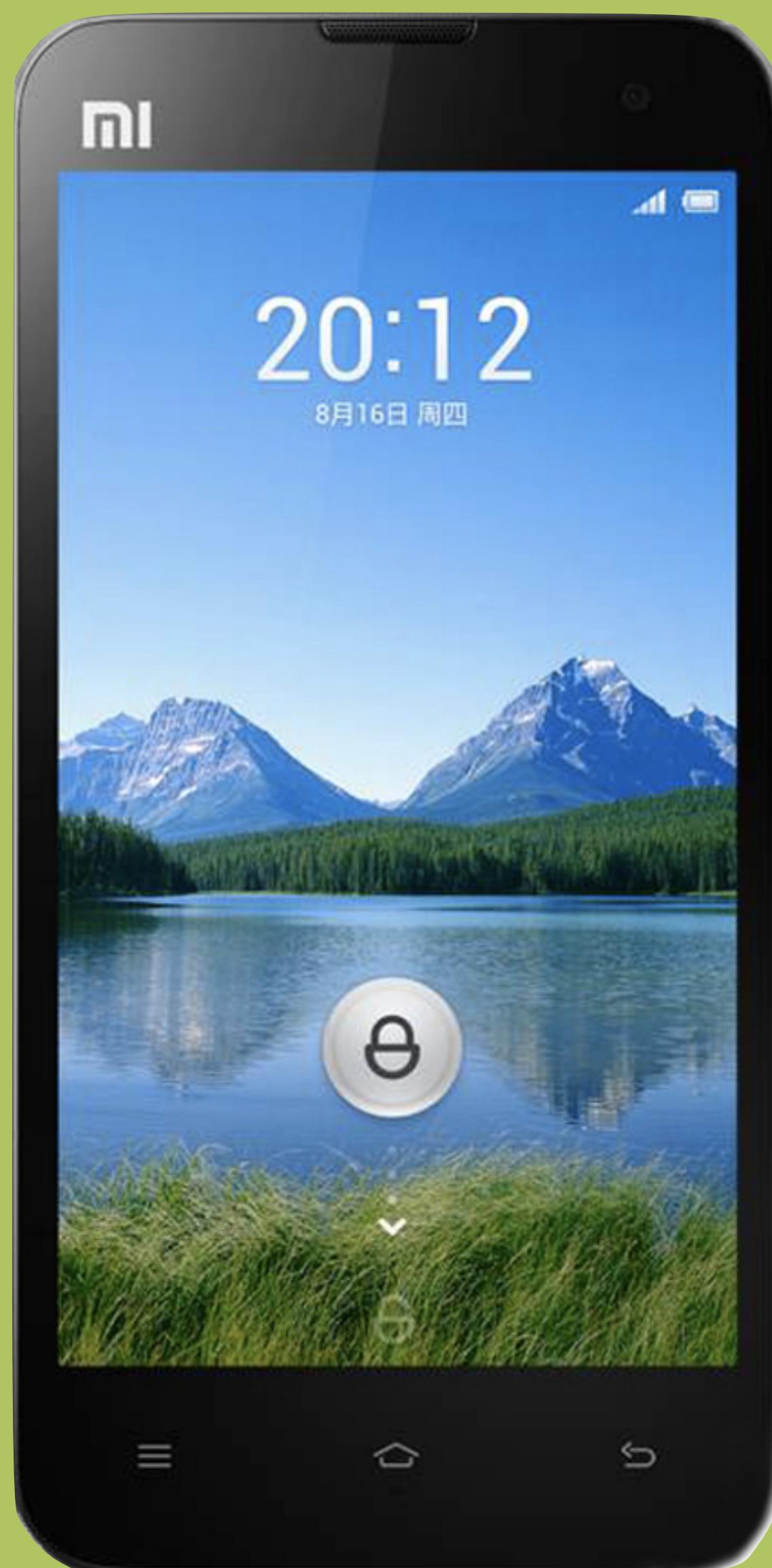
# 小米2 - 2012.8

4.3英寸超大屏幕

2G RAM

1.5GHz 四核

骁龙 APQ8064



小米2 - 2012.8

4.3英寸超大屏幕

2G RAM

1.5GHz 四核

骁龙 APQ8064

锤子 - 2013.5

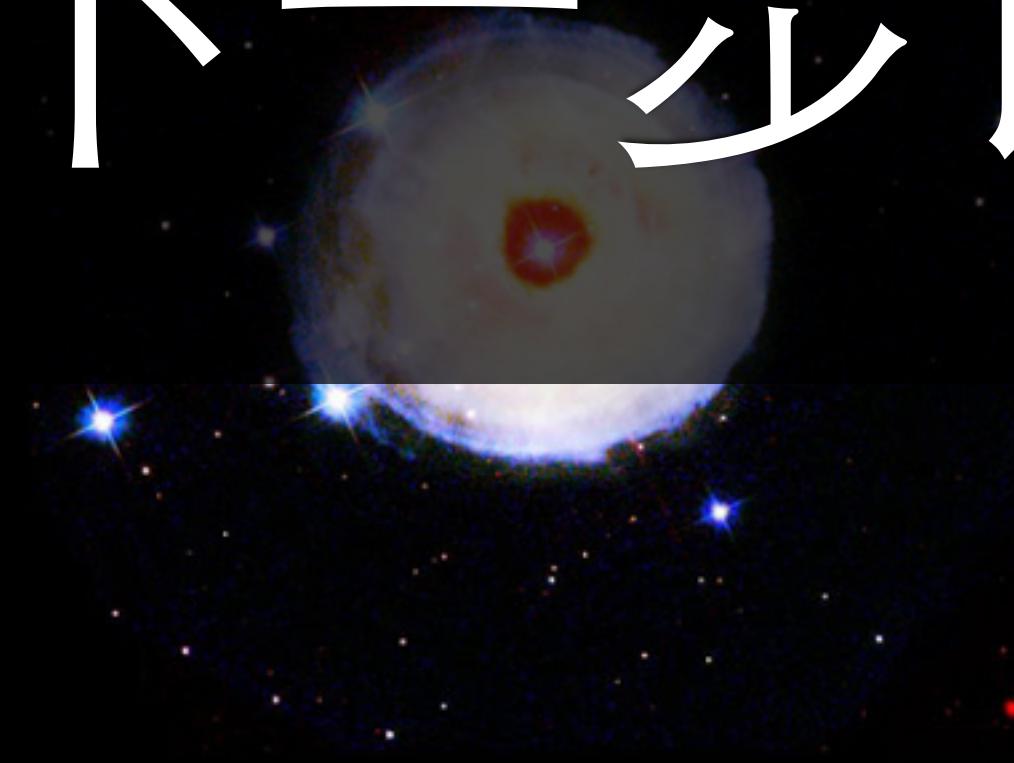
5.5寸1080P高清

3G RAM

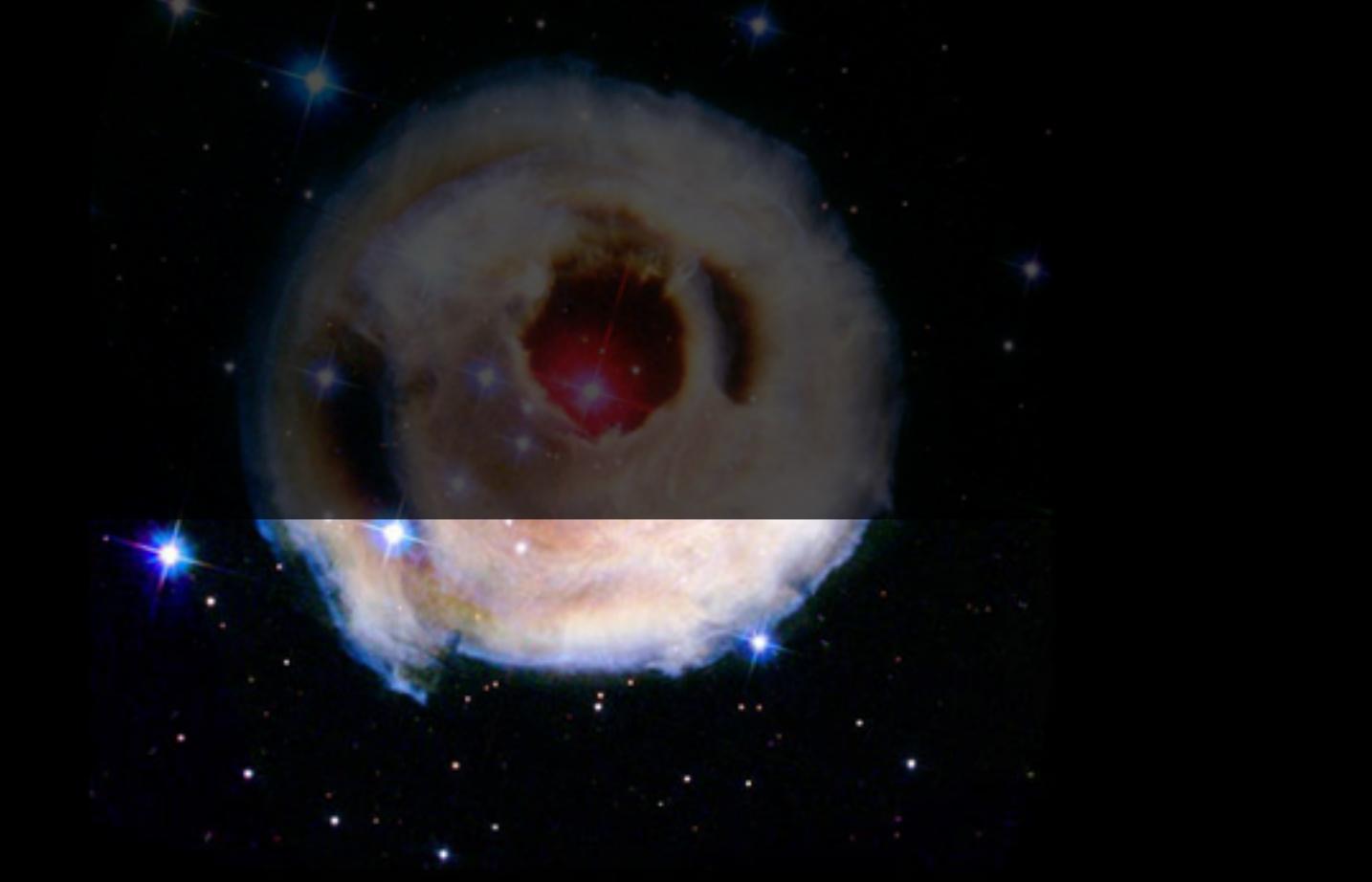
2.3GHz 四核

骁龙800

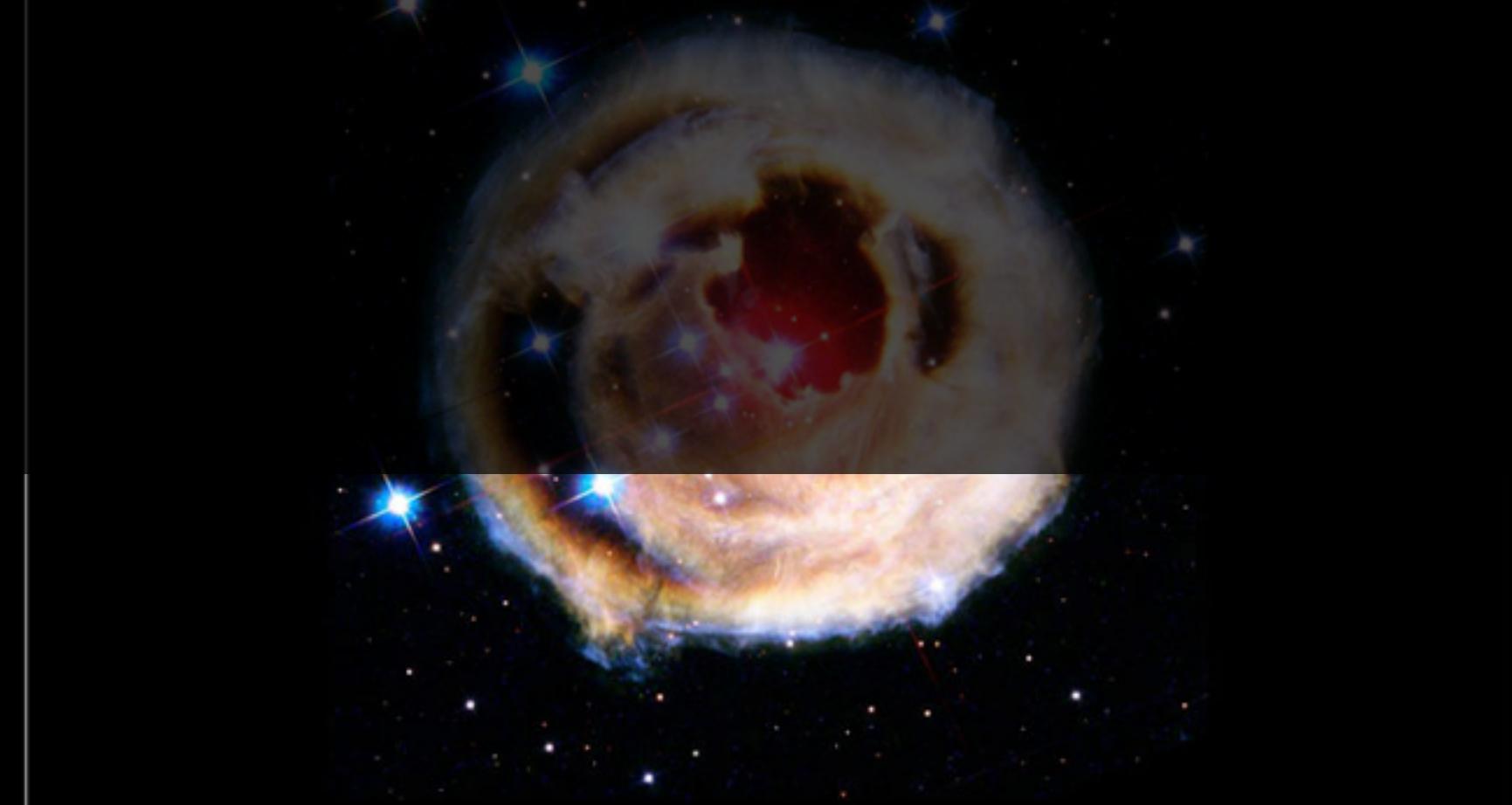
# 下一步计划



May 20, 2002



September 2, 2002



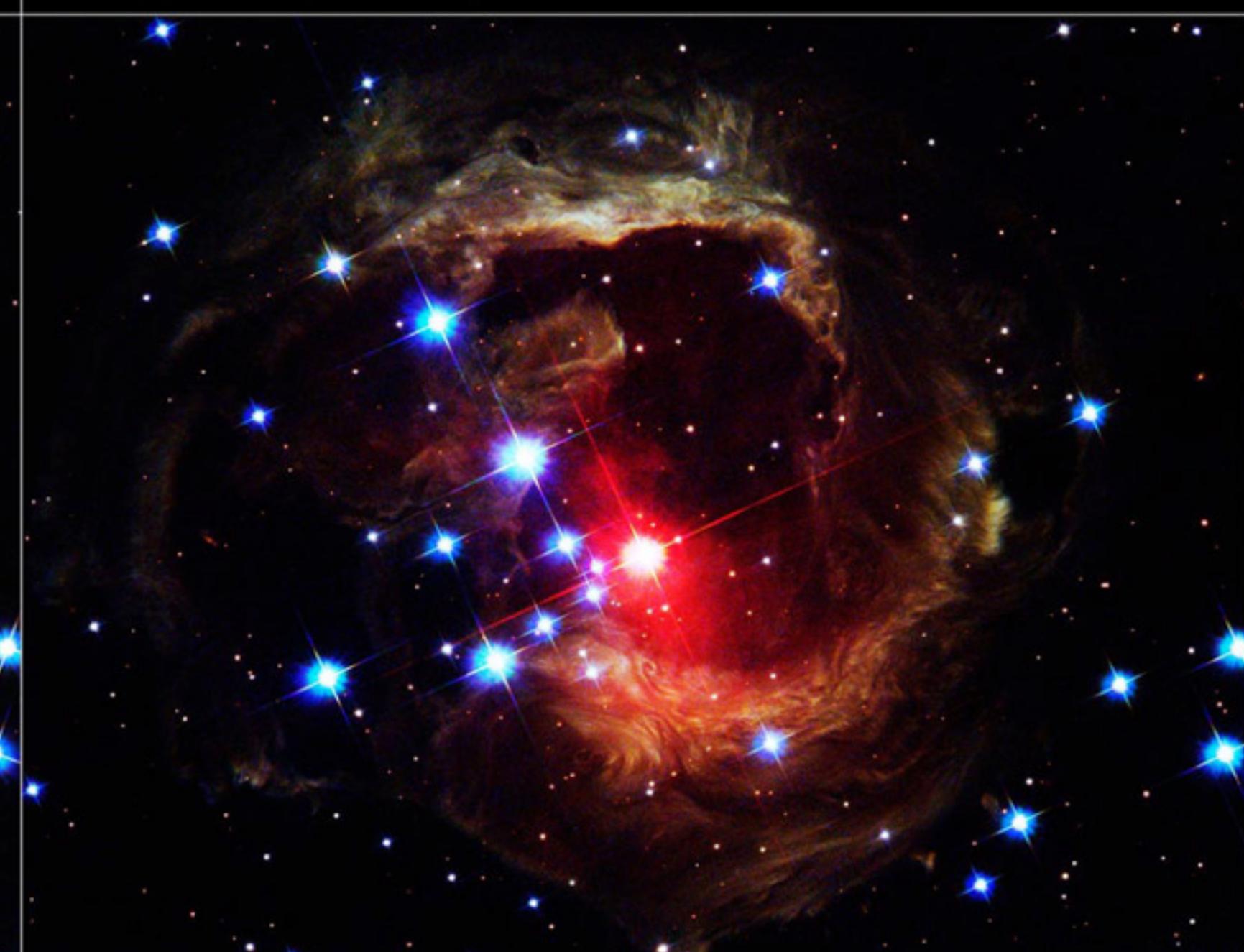
October 28, 2002



December 17, 2002



February 8, 2004



October 24, 2004



- Components
  - 能力组件
  - UI组件(web)
- TRUE offline
- 开放
  - BD合作
  - 内部合作

# 小结



- Webapp的瓶颈在于性能和与Native交互
- BlendUI解决此问题的方法是：
  - 用web封装轻量级的Native运行环境  
满足性能、灵活性、能力、API四方面要求
    - 动画、调度、资源管理由Native保证性能和稳定性
    - 所有的可视元素都可用独立的webview或Native组件实现

thanks

@berg

