

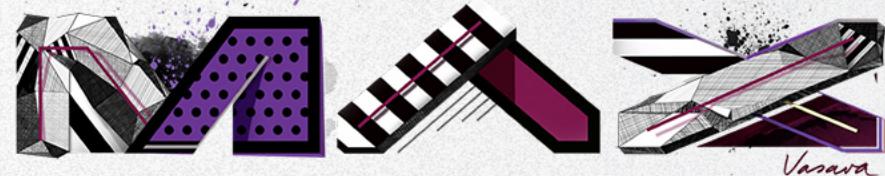
cynergy.

# IN THE TRENCHES

TIPS FOR CREATING REAL PHONEGAP APPS  
THAT LOOK AS GOOD AS THEY PERFORM

MIKE WOLF  
DIRECTOR OF TECHNOLOGY, CYNERGY

@



THE CREATIVITY CONFERENCE

A black and white photograph of a person with glasses and a patterned shirt, looking down at a laptop screen.

**MIKE WOLF**  
**DIRECTOR OF TECHNOLOGY, CYNERGY**  
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T: @GEEKPUNK  
PRESENTATION IS @ GITHUB.COM/GEEKPUNK

# cynergy.

**Doing PhoneGap right  
isn't easy.**

**Doing PhoneGap right  
isn't easy.**

< duck data-evileye="product managers">

**Doing PhoneGap wrong  
is incredibly easy.**

**Doing PhoneGap wrong  
is incredibly easy.**

< duck data-evileye="community">



**NO RULES.**



**With great  
flexibility...**

★★★★★

by Mohamed

4/1/2013

Ridiculous, just a wrapper to their mobile site, I guess I won't be using

★★★★★

by Bryan

3/31/2013

Horrible. A wrapper for their mobile site.

★★★★★

by Tiffany

3/31/2013

Much slower and missing features compared to the Android version.  
Looks like they put very little efforts into this.

★★★★★

by User

3/31/2013

Just a wrapper for the mobile site. No map. Not metro styled.

★★★★★

by Deepesh

3/30/2013

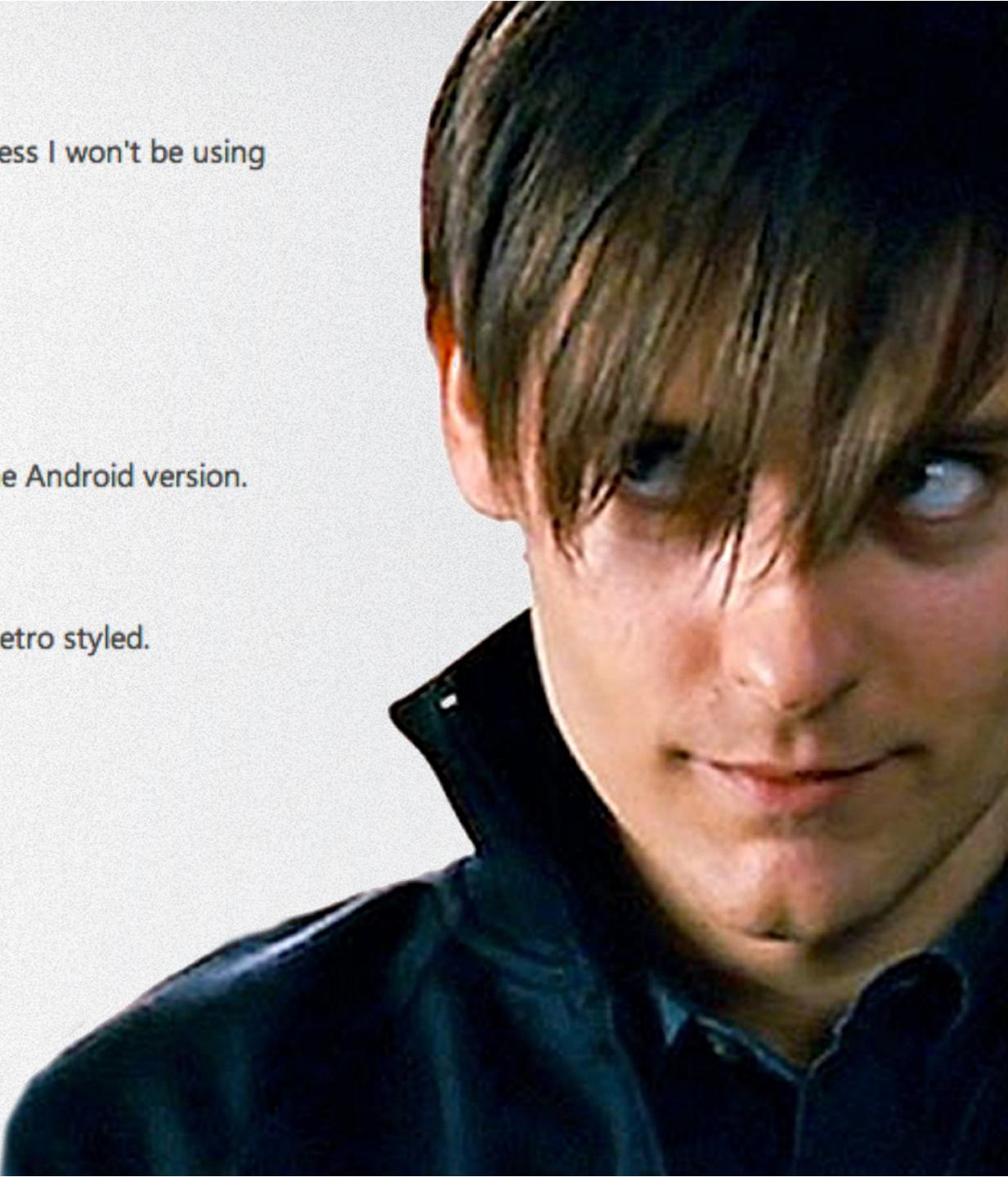
This app is an insult

★★★★★

by Shay

3/30/2013

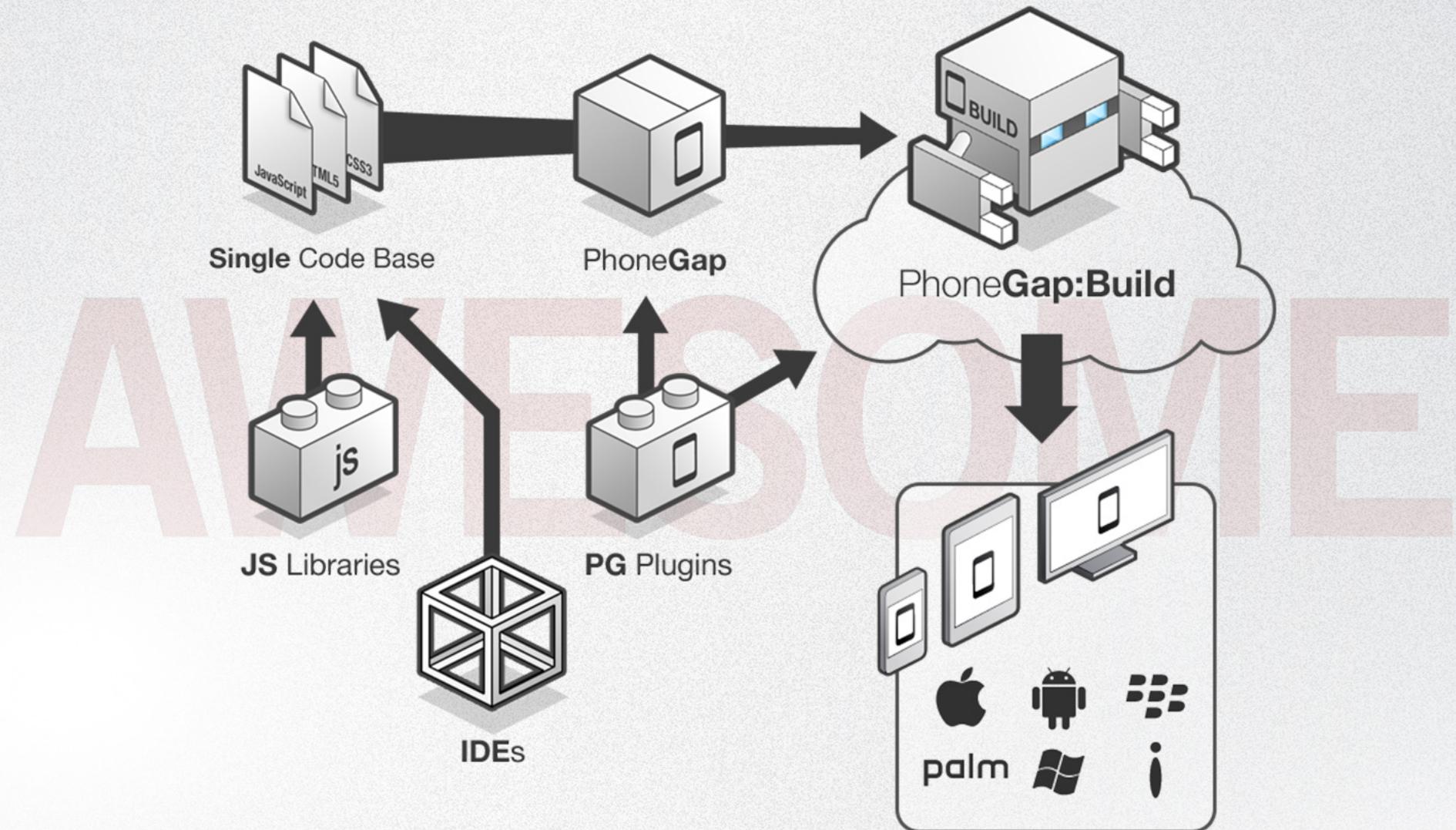
Great service, lame app!!



**AWESOME**



**AWESOME**



**Looks great.  
Feels great.  
Performs great.  
Continues to ship.**

K<sub>lab</sub> =  $\frac{M_p}{M_e + M_p}$  k<sub>lab</sub>  
 $\rightarrow \gamma \nu$   
 $\rightarrow \gamma \bar{\nu}$   
 $\rightarrow \gamma \beta^+$   
 $\rightarrow D + \bar{D} \gamma$   
 $\rightarrow \bar{K}_c + K_c \gamma$   
 $\rightarrow K_c + \bar{K}_c \gamma$   
 $\sum_i Y_i + \bar{Y}_i = 2$   
 $\pi (5.90 \times 10^{28} \text{ atoms/m}^3) (10^{-6} \text{ m})$   
 $\times 2 \times (6 \times 10^{-27} \text{ g})(8 \times 10^{-31} \text{ N})$   
 $\times (7.7 \times 10^3 \text{ V})(1.6 \times 10^{-19})$   
 $\times N_A \Delta f \lambda = \frac{N_A \Delta f \lambda}{2\pi r^2 \sin \theta d\theta} \cot \frac{\theta}{2}$   
 $\frac{d\theta}{2\pi \theta + \Delta \theta} \quad \frac{d\phi}{2\pi \phi}$   
 $E(\theta, \phi) = f(\theta)g(\phi)$   
 $E_{tot}(x_j, t) = \sum_{n \neq j} \frac{E_{rot}(x_j, t) + E_{adv}(x_j, t)}{2}$   
 $E_{rot}(x_j, t) = \sum_n \frac{E_{rot}}{2} \quad \text{constant}$   
 $E_{tot}(x_j, t) = \sum_n \frac{E_{rot}(x_j, t)}{2} + \sum_{n \neq j} \frac{E_{adv}(x_j, t)}{2}$   
 $E_{tot}(x_j, t) = E_{rot}(x_j, t) + E_{adv}(x_j, t)$   
 $\nabla^2 \psi(r, t) + V(r, t) \psi(r, t) - \frac{1}{r^2} \frac{\partial^2 \psi}{\partial r^2} = V(r) \psi(r, t) - E \psi(r, t) \quad \psi(r, t) = \psi(r) e^{-iEt/\hbar}$   
 $V(r) = V_0 \left(1 + \frac{1}{1 + (r/r_0)^2}\right)$   
 $\Delta p \Delta x \geq \frac{1}{2} \text{ and } (\hbar = h/2\pi = 6.6 \times 10^{-34} \text{ J s})$   
 $\Delta E \Delta t \geq \frac{1}{2} \cdot \frac{(1 \text{ eV})^2}{0.001}$   
 $\psi(r) \propto e^{-\frac{1}{2} \frac{r^2}{r_0^2}} \cdot e^{-iEt/\hbar}$   
 $\int_{-\infty}^{\infty} V_0(x) \psi_0(x) dx = 1 \quad A^2 \int_{-\infty}^{\infty} e^{-ax^2} dx =$   
 $2A^2 \int_0^{\infty} e^{-ax^2} dx = 1$   
 $2A^2 \left(\frac{1}{2} \sqrt{\frac{\pi}{a}}\right) = 1$   
 $V(r) = \frac{1}{r} \quad L = \ell(\ell+1)\hbar$   
 $E_{rot} = \frac{L^2}{2I} \quad P = \sum_{i=1}^n m_i v_i = m_1 v_1 + m_2 v_2 + m_3 v_3 = m_1 v_1$   
 $(E/c)^2 - p^2 = (mc^2)^2$   
 $E = mc^2$   
 $\frac{1}{4\pi\epsilon_0} \frac{e^2}{r^2} \cdot \frac{m^2}{r} \sim \text{and} \quad V = \frac{e}{\sqrt{4\pi\epsilon_0}mr} = \frac{e^2}{8\pi\epsilon_0 r} - \frac{e^2}{4\pi\epsilon_0 r} \sim \frac{e^2}{4\pi\epsilon_0 r}$   
 $N(\theta) / N_i = 32 \times 10^{-1} \text{ m}^{-2} = 3.2 \times 10^{-7} \text{ nm}^{-2}$   
 $V = c^2 / 4\pi\epsilon_0 r$   
 $\text{Hydrogen}$   
 $\text{electron} \quad a_r = \frac{r^2}{r}$   
 $\text{Neutron} \quad 2\pi n_0 = 2.2 \times 10^6 \text{ m}^{-3} < 0.01c$   
 $E = K_v V \pm m^2 - \frac{-c^2}{r}$   
 $L = rp = \frac{nh}{2\pi} = r$   
 $\int_{-\infty}^{\infty} g(v_x) dv_x = C' \left(\frac{2\pi}{\beta m}\right)^{1/2} = 1$   
 $\int_{-\infty}^{\infty} g(v_x) dv_x / C' = \left(\frac{\beta m}{2\pi}\right)^{1/2} \quad \text{mean velocity} \quad g(v_x)$   
 $= \left(\frac{\beta m}{2\pi}\right)^{1/2} \exp(-\frac{1}{2} \beta m v_x^2) dv_x$   
 $\sqrt{\frac{\beta m}{2\pi}} = \sqrt{\frac{m}{n}} = \sqrt{\frac{1}{f_m}}$   
 $\overline{v_x} = \int_{-\infty}^{\infty} v_x g(v_x) dv_x = C' \int_{-\infty}^{\infty} v_x \exp(-\frac{1}{2} \beta m v_x^2) dv_x = 0$   
 $\overline{v_x^2} = \int_{-\infty}^{\infty} v_x^2 g(v_x) dv_x = C' \int_{-\infty}^{\infty} v_x^2 \exp(-\frac{1}{2} \beta m v_x^2) dv_x$   
 $\overline{v_x^2} = C' \int_{-\infty}^{\infty} v_x^2 \exp(-\frac{1}{2} \beta m v_x^2) dv_x = \frac{\sqrt{\pi}}{2} \left(\frac{2}{\beta m}\right)^{1/2} = \frac{1}{\sqrt{\beta m}}$   
 $F = q[\vec{E} + (\vec{v} \times \vec{B})] \quad \vec{E} = \frac{\partial \Phi}{\partial t} \quad \vec{B} = \frac{\partial \Phi}{\partial x}$   
 $\vec{E} = \frac{1}{c} \frac{\partial \Phi}{\partial t} \quad \vec{B} = \frac{1}{c} \frac{\partial \Phi}{\partial x}$   
 $E = -\nabla \Phi - \frac{\partial \Phi}{\partial t} \quad \vec{E} = \vec{v} \times \vec{B} \quad \vec{B} = -\nabla \Phi \quad \vec{E} = -\nabla \Phi - \frac{\partial \Phi}{\partial t}$   
 $\vec{E} = -\nabla \Phi - \frac{\partial \Phi}{\partial t} \quad \vec{E} = \vec{v} \times \vec{B} \quad \vec{B} = -\nabla \Phi \quad \vec{E} = -\nabla \Phi - \frac{\partial \Phi}{\partial t}$   
 $\vec{F} = q(\nabla \Phi - \frac{\partial \Phi}{\partial t} + \vec{v} \times (\vec{v} \times \vec{B}))$   
 $E = -\nabla \Phi - \frac{\partial \Phi}{\partial t} \quad \vec{E} = \vec{v} \times \vec{B} \quad \vec{B} = -\nabla \Phi \quad \vec{F} = q(\nabla \Phi - \frac{\partial \Phi}{\partial t} + \vec{v} \times (\vec{v} \times \vec{B}))$   
 $\vec{F}_{mag} = q(\vec{v} \times \vec{B}) \quad \iint_S dA \cdot \vec{B}(r, t)$   
 $\text{Length} = 10^{-16} \text{ m}$





**Looks great.  
Feels great.  
Performs great.  
Continues to ship.**

# App Design

~~Web Design~~

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

# Should it look like the platform?

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

SEEK BARS AND SLIDERS



Title 2

Title 3

DEFAULT BUTTONS - HOLO DARK

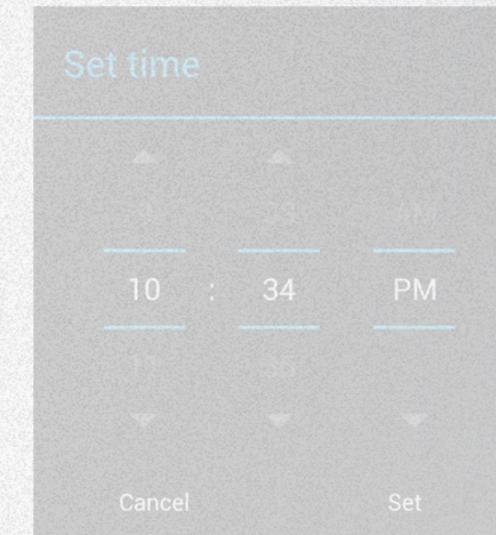
Normal

Pressed

SMALL BUTTONS - HOLO DARK

Normal

Pressed



Label

ON

Label

✓

Label

OFF

Label

Label >

Sample text over a textured background

Table Label

Label

>

Label

>

Label

>

Label

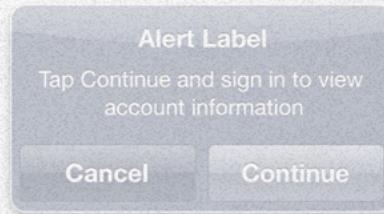
>

Button Label

NO

**“But I can get  
pretty close!”**

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



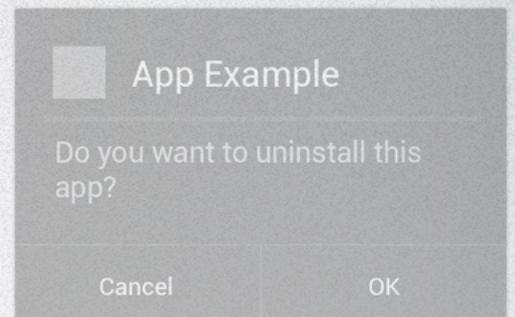
-webkit-linear-gradient



translate3d(0,0,0);

:active  
.delay

-webkit-box-shadow



***“Obama  
looks nervous.”***

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



***“Obama  
looks nervous.”***

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



A lot to do with



trust

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

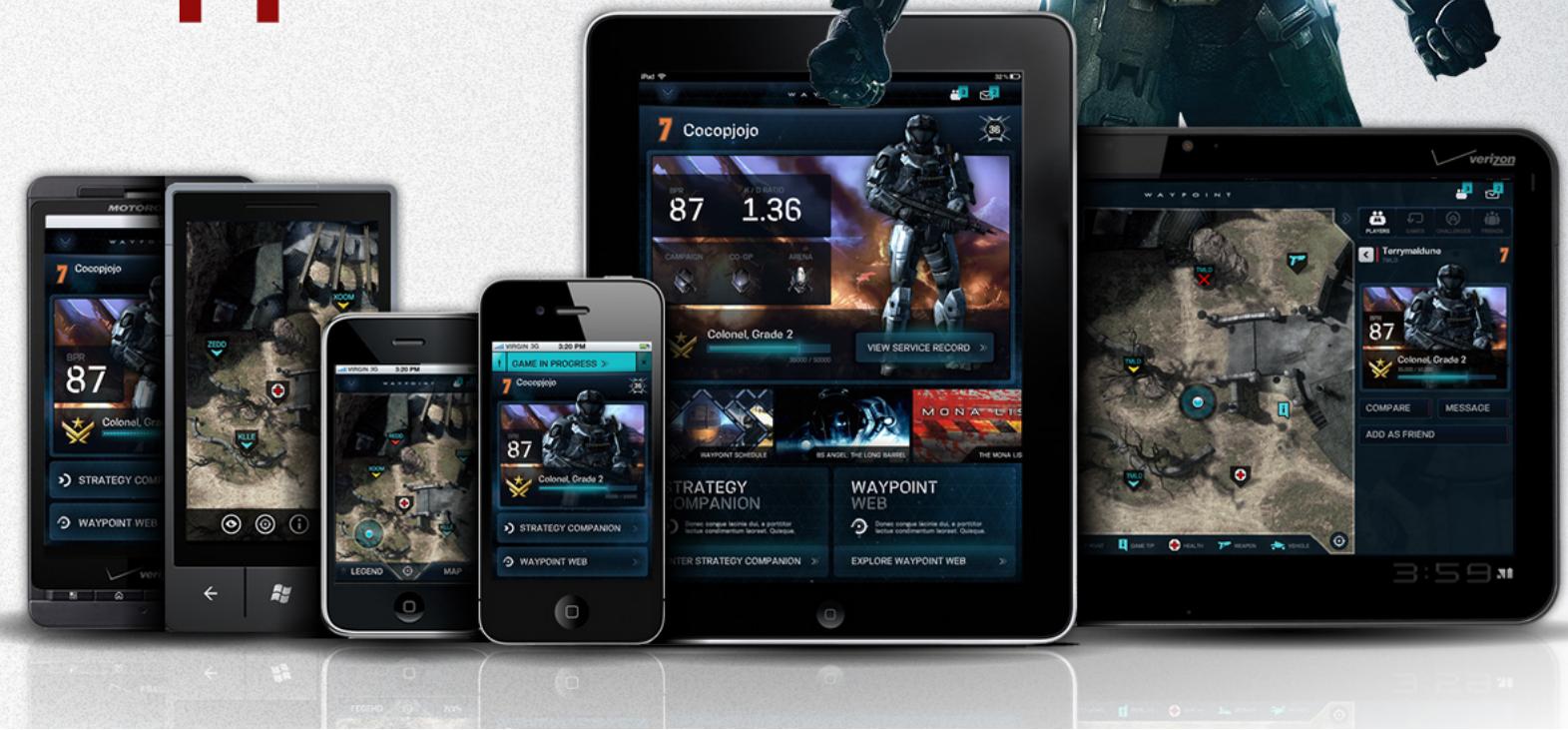
# A lot to do with

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Brand to the App.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Brand to the unique experience.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



*“What about  
the HIG?”*

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

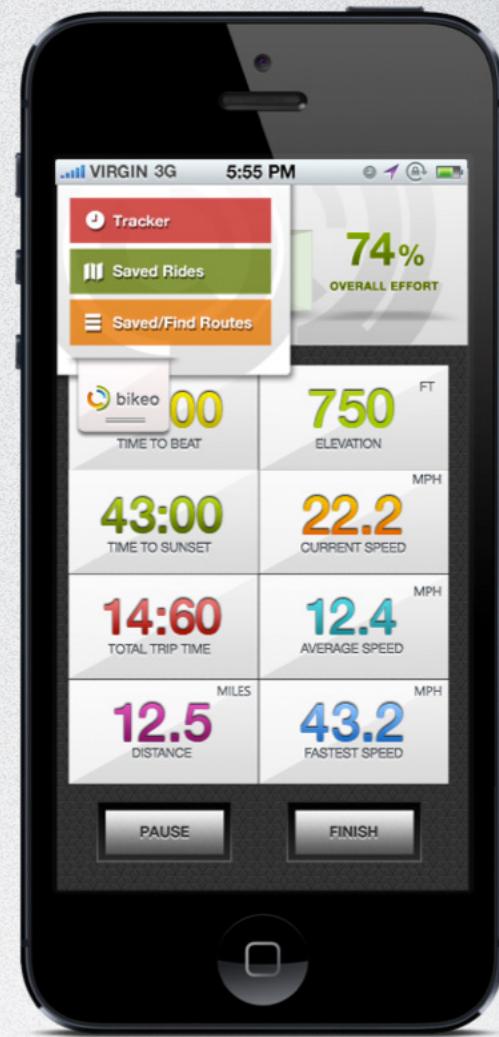
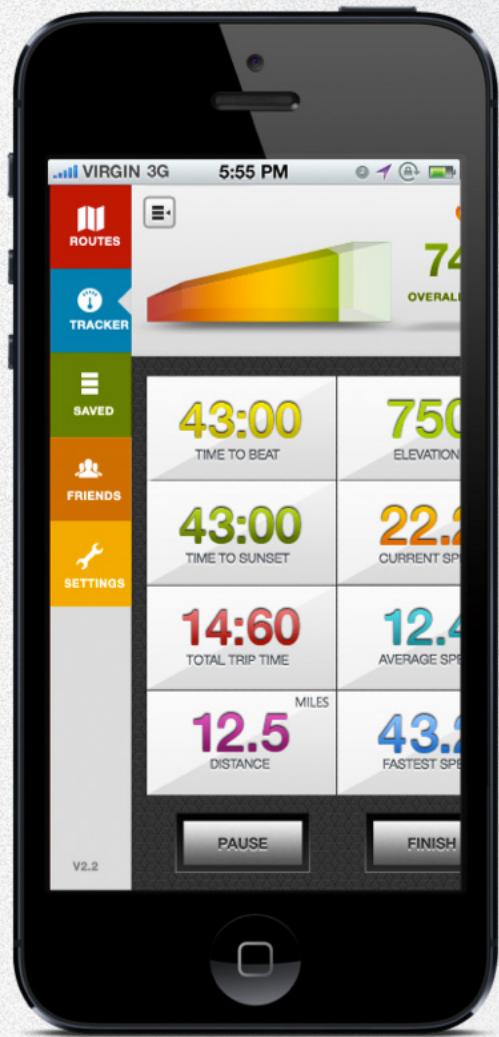


*“Unless you’re coming up with something new within a hybrid app, the design and implementation of **the simple stuff will always feel like a hack.**”*

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

– Dmitry Borodyansky (UX Lead)

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

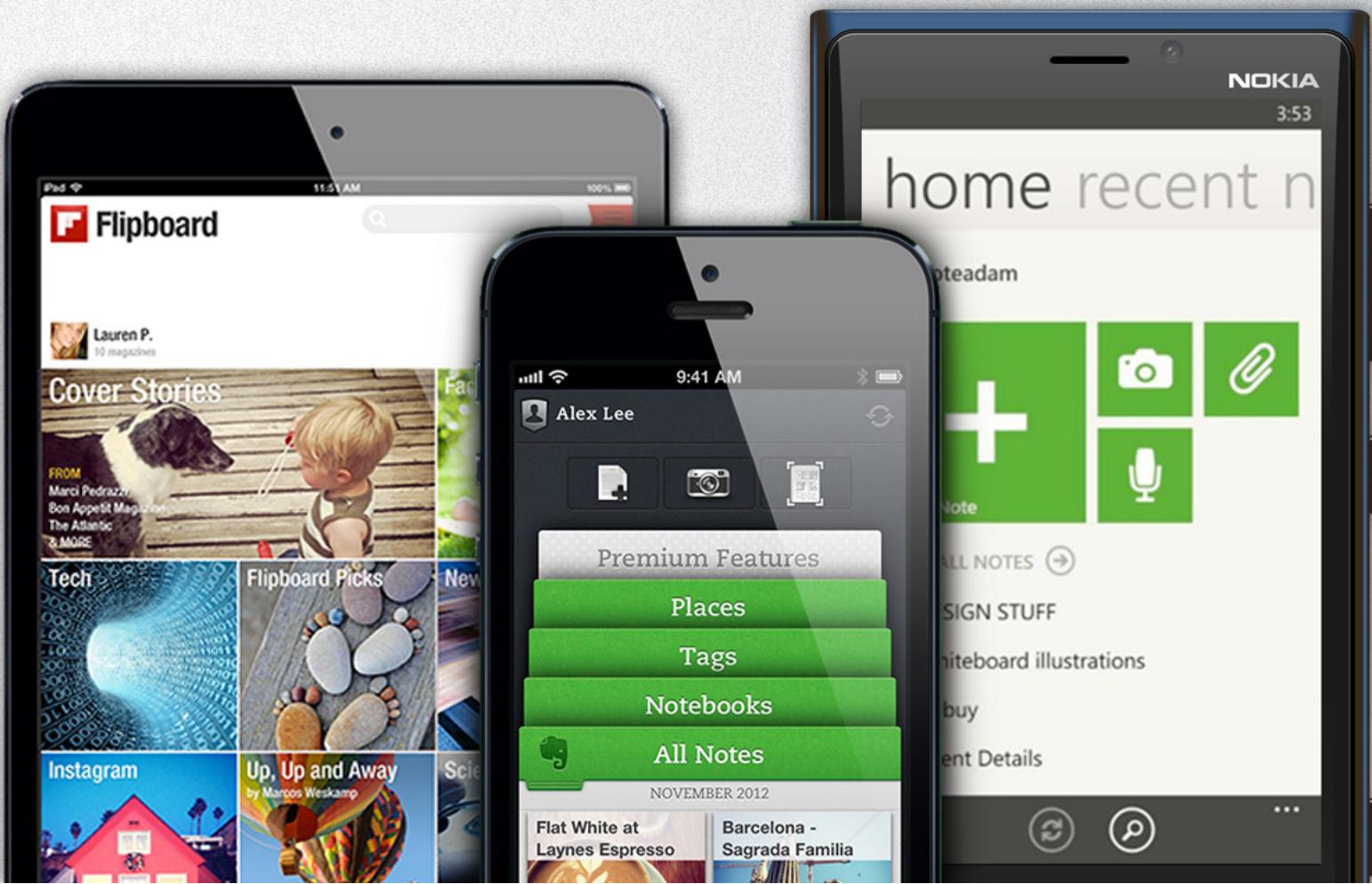


Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Be unique. It's okay.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



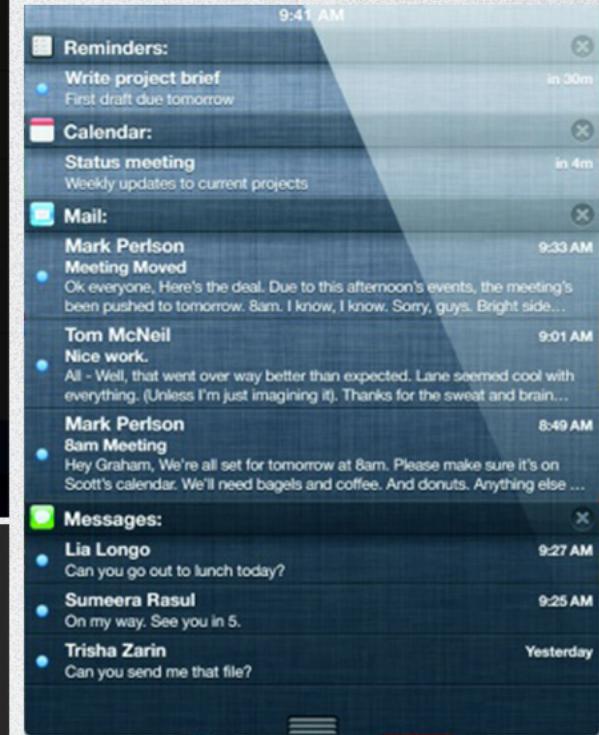
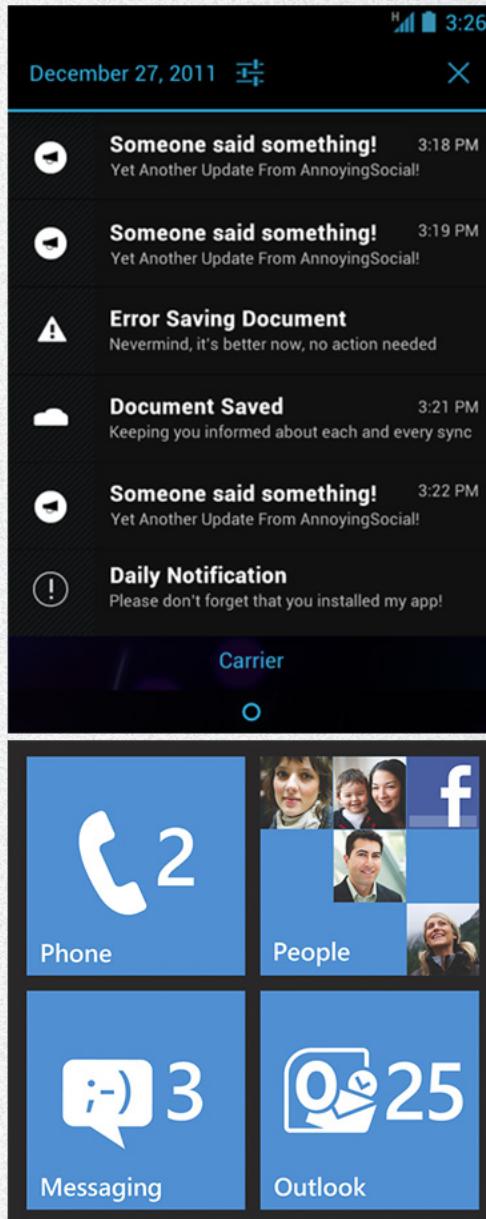


Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Embrace the platforms.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



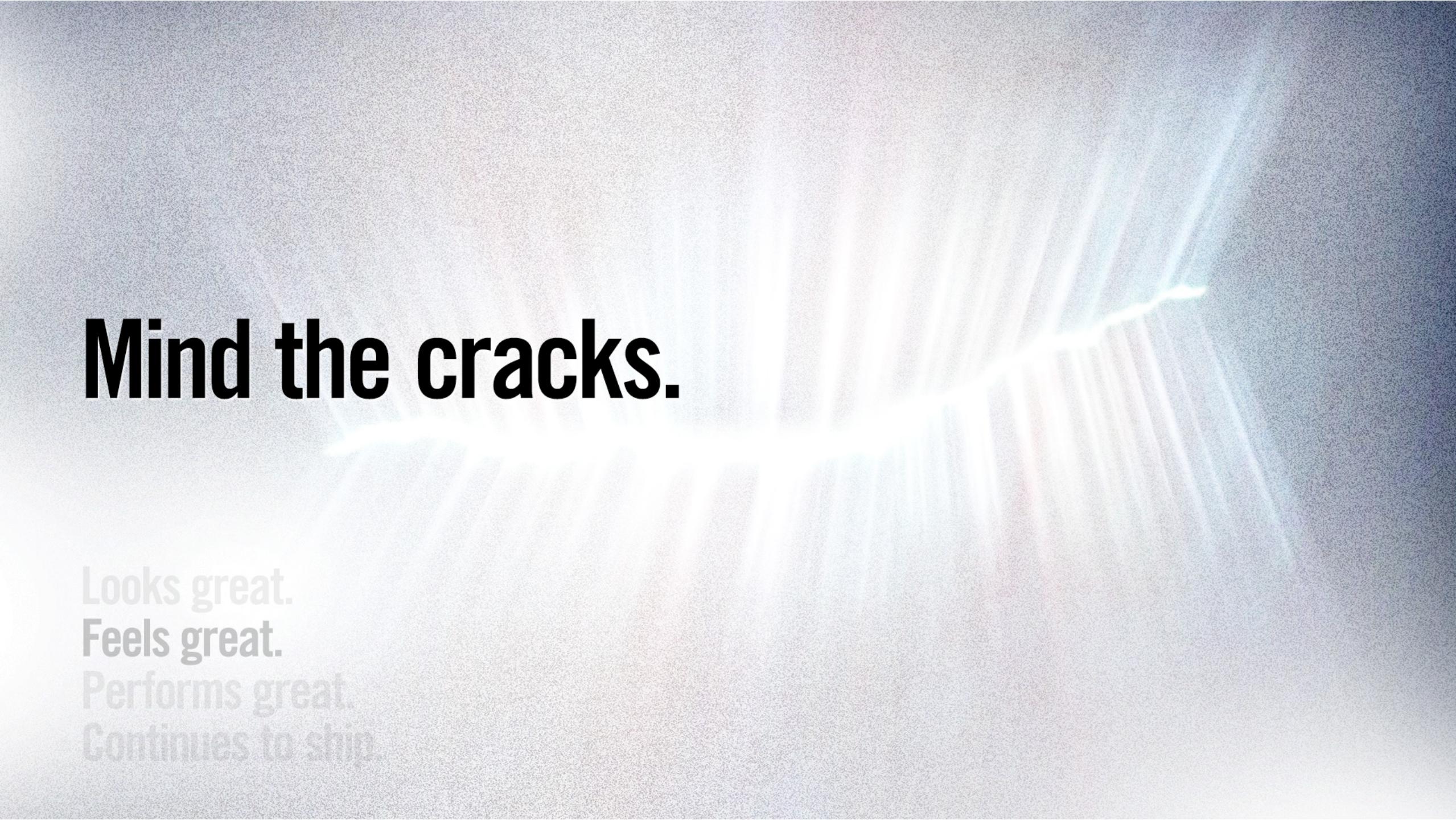
# Metro.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Simple is so **hot** right now.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

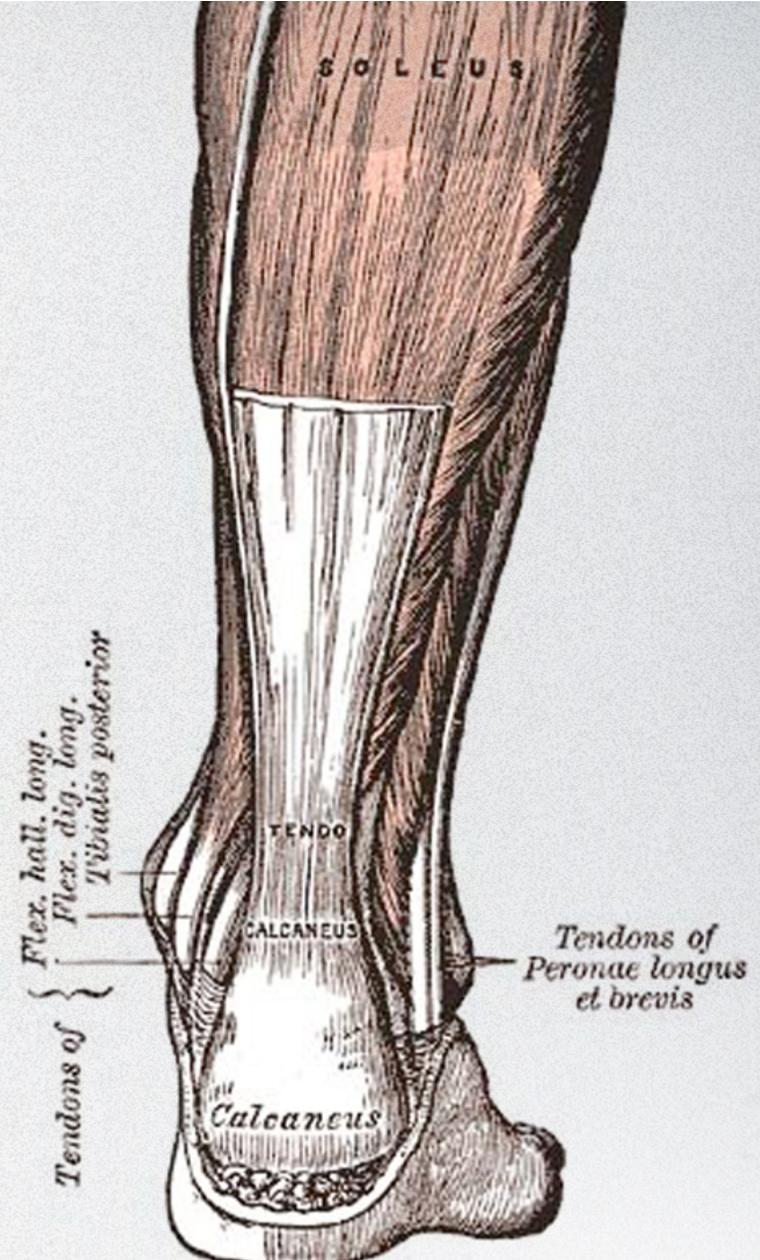


# Mind the cracks.

Looks great.  
Feels great.  
Performs great.  
Continues to show

# Scrolling is the enemy.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Really think about **touch**.

**fastclick:** [github.com/ftlabs/fastclick](https://github.com/ftlabs/fastclick)

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Keyboards show the cracks.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

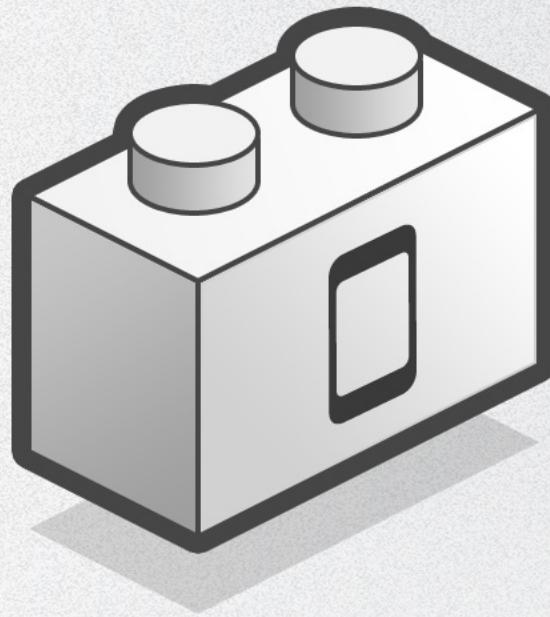


# Flickering cracks: **reflow.**

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

# Know when to plug the hole.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Everything in its right place.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Classic cracks

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

- Back button doesn't exit the app
- CSS touch highlights
- Scrolling areas which shouldn't be scrollable
- Not dealing with keyboard positions properly
- If it's a search box, use `<input title="Search">`
- Resume states
- Alert boxes instead of notifications
- Slow, fake transitions

# **performance === ux**

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

# PhoneGap ≈ mobile web performance

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

# The basics

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

- PhoneGap performance is really mobile web perf
- Limit the DOM
- Use hardware accelerated CSS (but don't overdo it)
- Use CSS transitions and animations
- Avoid CSS gradients and box shadows
- Use canvas at will (not just for games)
- Combine files—no download but there is file I/O opens
- Do template, but also reduce DOM changes
- Kill errant http calls

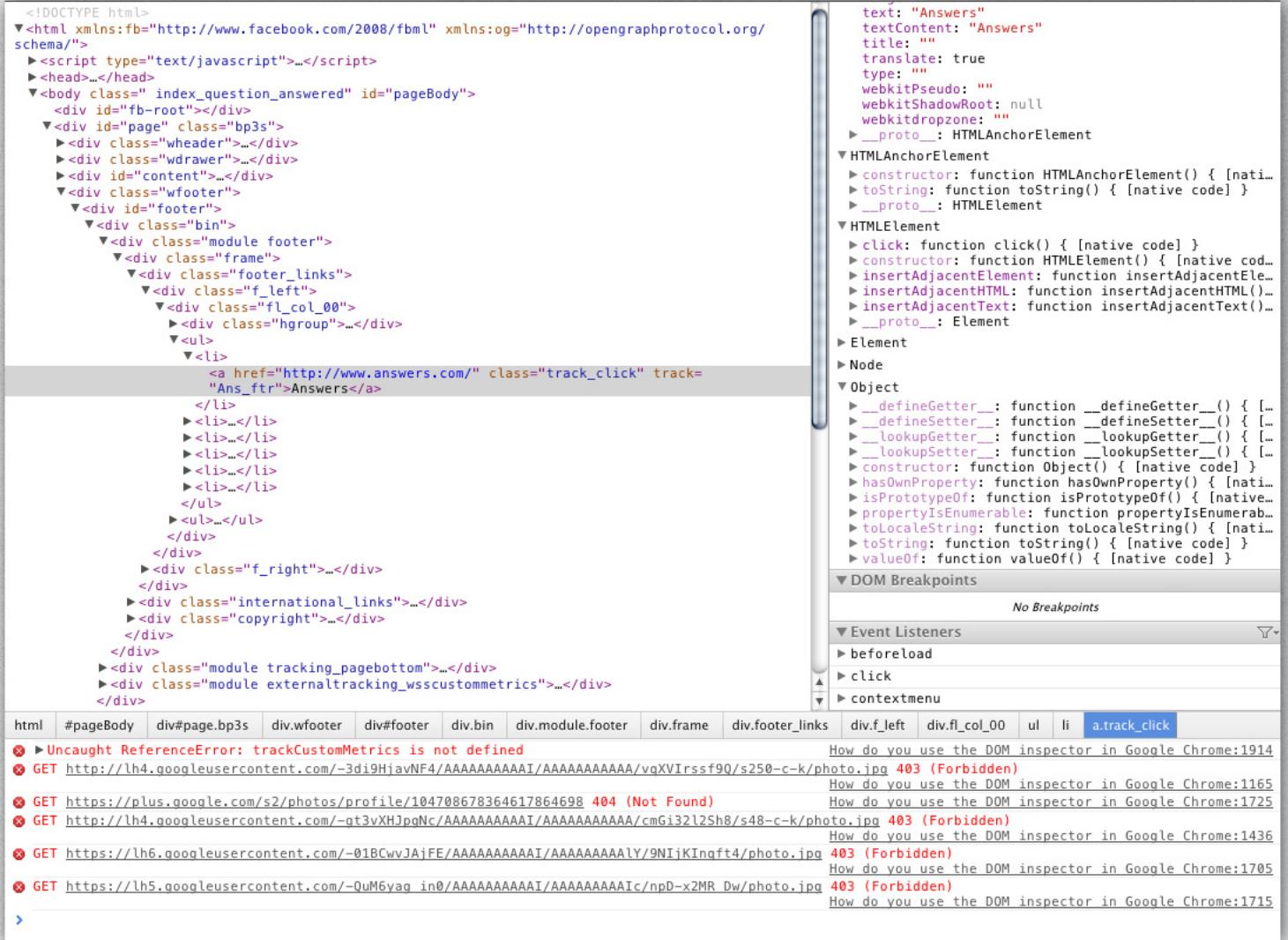
**It's the DOM,  
stupid!**

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# It's the DOM, stupid!

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



The screenshot shows a browser's DOM inspector with the following details:

- DOM Structure:** The tree view shows the entire HTML document structure, starting from the <!DOCTYPE html> tag and ending with the </div> tag of the footer. A specific link element is highlighted with a gray background and a red border, containing the URL <http://www.answers.com/>.
- Console:** Below the DOM tree, the developer console lists several errors and warnings:
  - Uncaught ReferenceError: trackCustomMetrics is not defined
  - GET http://lh4.googleusercontent.com/-3di9HjavNF4/AAAAAAAAAAAI/AAAAAAA/... 403 (Forbidden)
  - GET https://plus.google.com/s2/photos/profile/104708678364617864698 404 (Not Found)
  - GET http://lh4.googleusercontent.com/-gt3vXHJpgNc/AAAAAAAAAAI/AAAAAAA/.../cmGi3zL2Sh8/s48-c-k/photo.jpg 403 (Forbidden)
  - GET https://lh6.googleusercontent.com/-01BCwvJAjFE/AAAAAAAAAAI/AAAAAAA/.../9NIKIInqft4/photo.jpg 403 (Forbidden)
  - GET https://lh5.googleusercontent.com/-QuM6yag\_in0/AAAAAAAAAAI/AAAAAAA/.../npD-x2MR\_Dw/photo.jpg 403 (Forbidden)
- Network:** A separate tab shows network requests, all of which failed with status codes 403 (Forbidden) or 404 (Not Found).
- Event Listeners:** A sidebar shows event listeners for various elements, including 'click' and 'contextmenu'.

# Make it.

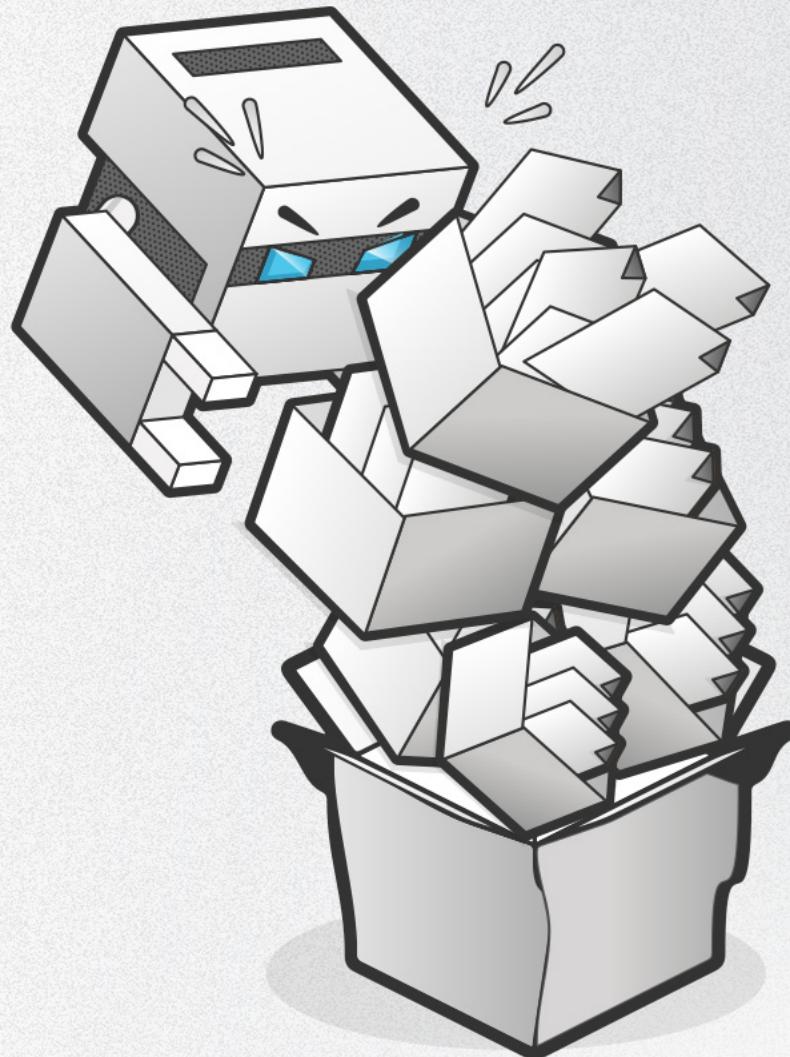
Looks great.  
Feels great.  
Performs great.  
Continues to ship.

# Make it.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.

**“can’t”**  
**“shouldn’t”**

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Cache is your friend.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



When you don't  
make it your **enemy**.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Stupid and old can't be fixed.

Looks great.  
Feels great.  
Performs great.  
Continues to ship.



# Releasing.

Looks great.  
Feels great.  
Performs great.  
Continues to ship. Ship. Ship.



# Create a build process.

Looks great.

Feels great.

Performs great.

Continues to ship. Ship. Ship.



# Airport security will **love** you.

Looks great.  
Feels great.  
Performs great.  
Continues to ship. Ship. Ship.



**These aren't the platforms  
you're looking for.**

Looks great.  
Feels great.  
Performs great.  
Continues to ship. Ship. Ship.



# Test. Test. Test. Also: Test.

Looks great.  
Feels great.  
Performs great.  
Continues to ship. Ship. Ship.



**“F\*\*\* old Android.”**

— Ross Williams (developer)

Looks great.  
Feels great.  
Performs great.  
Continues to ship. Ship. Ship.

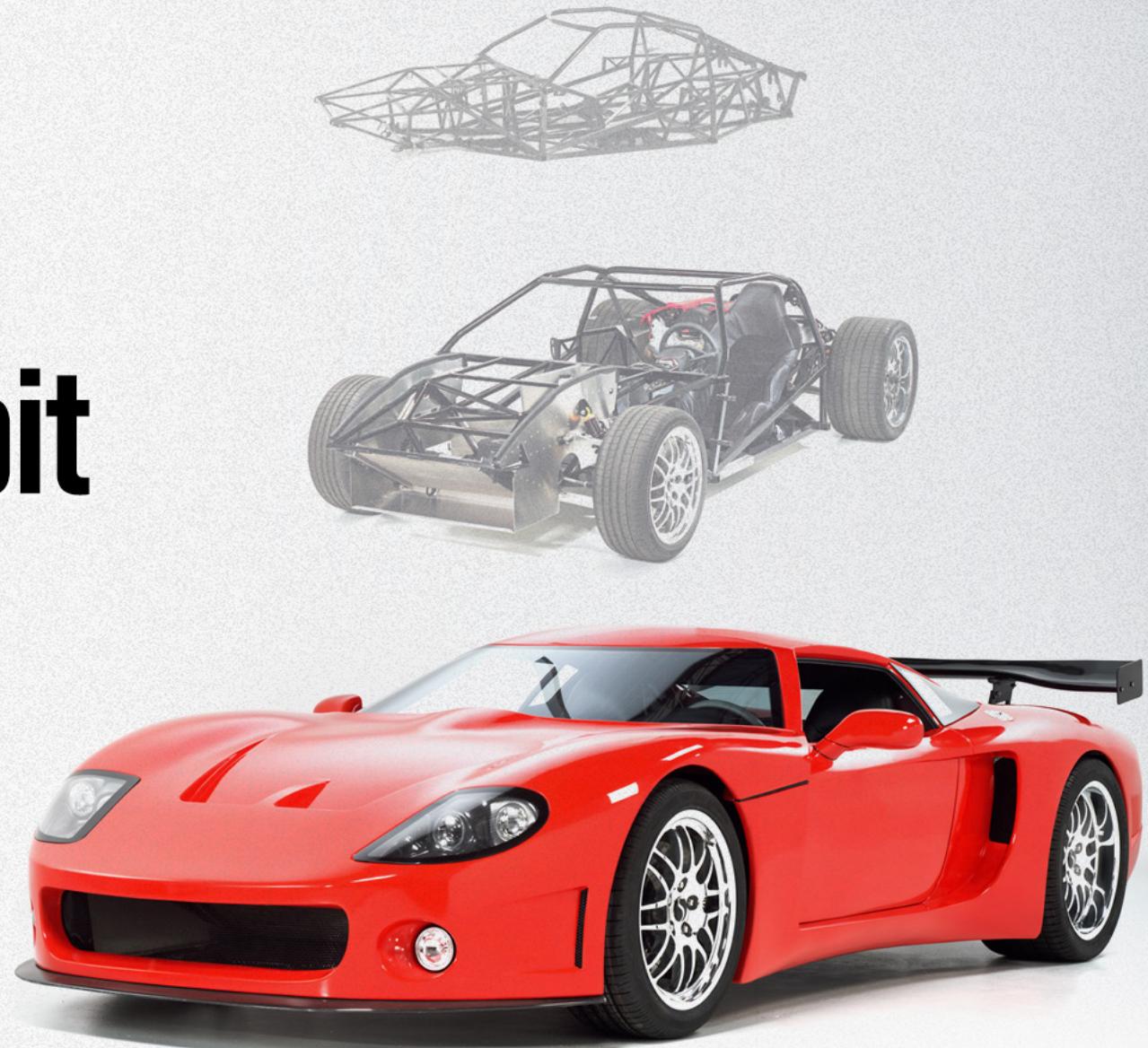
**It only hurts the  
first time.**

Looks great.  
Feels great.  
Performs great.  
Continues to ship. Ship. Ship.



# PhoneGap is a bit like a kit car.

Looks great.  
Feels great.  
Performs great.  
Continues to ship. Ship. Ship.



**AWESOME**

**cynergy.**

THE  
EXPERIENCE  
AGENCY

**Contributors:**  
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Adrian Irwin, Vu Trong,  
Ryan Lee, Dmitry Borodyansky**



**Adobe**

Pretty Pretty please fill out your survey in the Adobe Max app