MOBILE IN THE FUTURE

@lukew

LUKE WROBLEWSKI  IGNITERS 2017
10 YEARS AGO...

JUNE 29 2007
“What we wanna do is make a leapfrog product that is way smarter than any mobile device has ever been...”
Worldwide Device Shipments

Source: Gartner, Worldwide Devices Shipments per Year by Device Type
Worldwide Device Shipments

2006

239M
PCS

68M
SMARTPHONES

2016

269M
PCS

1,729M
SMARTPHONES & TABLETS

Source: Gartner, Worldwide Devices Shipments per Year by Device Type
Facebook Monthly Active Users

**2006**

**12M**

Desktop MAU

**2016**

**120M**

Desktop MAU

**1,740M**

Mobile MAU

Source: Facebook, Quarterly Earnings Report & Press Releases

4 days to 40M downloads
hit 40M in December 2016

630 days to 40M users
hit 40M in Q2 2005

Source: http://tcrn.ch/2hchH0L & http://on.wsj.com/1m9VUQZ
<table>
<thead>
<tr>
<th>Time (Days)</th>
<th>App</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUPER MARIO RUN</td>
</tr>
<tr>
<td>2</td>
<td>POKEMON GO</td>
</tr>
<tr>
<td>3</td>
<td>ANGRY BIRDS SPACE</td>
</tr>
<tr>
<td>16</td>
<td>GOOGLE+</td>
</tr>
<tr>
<td>780</td>
<td>TWITTER</td>
</tr>
<tr>
<td>852</td>
<td>FACEBOOK</td>
</tr>
</tbody>
</table>
PayPal™ Annual Mobile Payments Volume

Source: PayPal, Quarterly Earnings Reports

- Less than $1 million in 2006
- $102 billion in 2016
Cyber-Monday (US) vs. Single’s Day (China)

2006

$610M
CYBER MONDAY

2016

$3.4B
CYBER MONDAY

$17.8B
SINGLE’S DAY


84% of Single’s Day sales completed on mobile
31% of Cyber Monday sales completed on mobile
Global Population

Source: Benedict Evans, a16z http://bit.ly/2mTepkp
what have we learned about designing for this World?
Ten Years of iOS Camera Design

take photo, view it

IOS 2
Ten Years of iOS Camera Design
Ten Years of iOS Camera Design
Ten Years of iOS Camera Design

take photo
view it
take square photo
take pano photo
take live photo
take portrait photo
take video
take slo-mo video
take time-lapse video
switch front/rear camera
switch telephoto/non camera
loop, bounce & long exposure
options for live photos
turn filters on/off
turn timer on/off
turn live photos on/off
turn HDR on/off
turn flash on/off
Ten Years of iOS Camera Design

- take photo
- view it
- take square photo
- take pano photo
- take live photo
- take portrait photo
- take video
- take slo-mo video
- take time-lapse video
- switch front/rear camera
- switch telephoto/non camera
- loop, bounce & long exposure options for live photos
- turn filters on/off
- turn timer on/off
- turn live photos on/off
- turn HDR on/off
- turn flash on/off
Classic Case of Feature Creep? Or…

take photo
view it
take square photo
take pano photo
take live photo
take portrait photo
take video
take slo-mo video
take time-lapse video
switch front/rear camera
switch telephoto/non camera
loop, bounce & long exposure options for live photos
turn filters on/off
turn timer on/off
turn live photos on/off
turn HDR on/off
turn flash on/off
Building a Minimum Viable Product at Scale?

take photo
view it
take square photo
take pano photo
take live photo
take portrait photo
take video
take slo-mo video
take time-lapse video
switch front/rear camera
switch telephoto/non camera
loop, bounce & long exposure options for live photos
turn filters on/off
turn timer on/off
turn live photos on/off
turn HDR on/off
turn flash on/off

IOS 2  IOS 3  IOS 4  IOS 5  IOS 6  IOS 7  IOS 8  IOS 9  IOS 10  IOS 11
Classic Case of Feature Creep?

OR

Minimum Viable Product Process?
Probable Use of Each Action

88% take picture
90% photo
9% video
.5% square
.2% slo-mo
.01% time lapse
.2% pano

10% review/send picture

.4% turn settings on/off
.02% flash on/off
.005% HDR on/off
.01% Live Photos on/off
.005% timer on/off
.01% select filter

1.6% switch front/rear camera

NOT ACTUAL DATA BUT BASED ON VERY COMMON PATTERNS
Ten Years of iOS Messaging Design

**IPHONE 2G**
**IOS 1, 2007**
send text messages

**IPHONE 7 PLUS**
**IOS 10, 2016**
send text, photos, videos, audio, drawings, annotated photos & videos, touch gestures, and much more through messaging app store
Ten Years of iOS Sharing Design

**IPHONE 2G**
**IOS 1, 2007**
- Email
- Assign to contact
- Use as wallpaper

**IPHONE 7 PLUS**
**IOS 10, 2016**
- Email, message, copy, print, duplicate, slideshow, airplay, hide, assign to contact, use as wallpaper, save to cloud, and lots more through share extensions.
Ten Years Later on iOS...
Ten Years of iOS Calculator Design
Ten Years of iOS Calculator Design

have we come full circle?
Twitter iOS App

2010  “We need an iOS app.”

2011  “People don’t understand Twitter, add some labels.”

2013  “Flat design!”

2014  “People really don’t understand Twitter, ditch the @ and #.”

2015  “We’re real-time news!”

2016  “If we put Moments in Search, more people will use them.”

2017  “Just do whatever the design team wants.”
Twitter iOS App

have we come full circle?

2010

2017
Facebook Mobile App
Ten Years of eBay Android App Design
from desktop to mobile
DESKTOP DESIGN VS MOBILE DESIGN
can't view password when logging in
tap to reveal password
Can’t view password
Tap to reveal password
Password revealed by default, tap to hide
Reveal password below as you type
sign in with your fingerprint
what are we iterating toward?
"your face is your password"

"enter randomly chosen by the system from your password characters into an empty unmarked fields"
Shipping

A signature is required for delivery. We do not ship to PO Boxes.

*First Name          MI          *Last Name

*Street Address      Add another street address field

*City                    *State       *Postal Code

*Phone Number          *Email Address

*Billing Address  What is this?

☐ Same as Shipping information

☐ Use a different address and contact
22 INPUTS

5 INPUTS
Avoid Splitting Inputs
Inline Validation
Inline Validation
Input Mask

Scan Card
Smart Defaults
Reduced inputs

Address Lookup

Inline Validation

Input Masks

Smart Defaults

+10%

people starting checkout

-50%

reduction in checkout time

-70%

reduction in guest checkout clicks
swipe to purchase

accounting for one-handed use
what are we iterating toward?
Amazon Dash Button

press button to order the product
NO LINES. NO CHECKOUT.
(NO, SERIOUSLY.)
happy humans

technical complexity
Amazon Dash Button

press button to order the product
open the case near iPhone to connect

put in ears to start playing music

take out of ears to pause music

put into case to charge
Google Home

talk to get answers, manage tasks
AMAZON DASH
press button to order the product

APPLE AIRPODS
take out of ears to pause music
put in ears to start playing music

GOOGLE HOME
talk to get answers, manage tasks
NUI
NATURAL USER INTERFACES

VS

GUI
GRAPHICAL USER INTERFACES

can be a great north star
Snapchat Spectacles

tap once to take a 10 second video
take out phone, open app

tap Memories

tap Specs

tap (multiple times) to find video

swipe or long press to share

select where to send...
March Madness

- Kansas new betting favorite in NCAA tournament
- A look at the biggest March Madness upsets
- Sweet 16 power rankings: Kansas on top

SEE LATEST SCORES & COVERAGE

Woman dies after undergoing cosmetic surgery

Ivanka Trump brand sees 223 percent 'purge surge'

Study reveals surprising link between dogs and people

Atomic bomb footage released after years of being...
get request

What’s your address?

respond with one tap
tap to translate for Android
“Not every interaction on mobile can/should be that simple, right?”

perhaps not, but it really helps to try
Mobile 3G Traffic Patterns

Laptop

Tablet

Smartphone

lots of short, bursty sessions

9  12  15  18  21  24

80x per day, people log into their iPhones

76x separate phone sessions a day (Android study)

Source: Apple Computer Inc. | http://dailym.ai/1GPs1mm | http://bit.ly/29mTe1f
more than half of sessions are 30secs or less
What do you dislike most when browsing Web on mobile?

- Waiting for slow pages to load: 46%
- Being shown interstitials: 16%
- Encountering unplayable videos: 14%
- Getting redirected to the homepage: 13%
- Other: 11%

Cognitive Load with Stressful Situations

- Solving a math problem
- **Experiencing mobile delays**
- Watching a horror movie
- Standing at the edge of a virtual cliff
- Watching a melodramatic TV show
- Waiting in line at retail store

Level of stress caused by mobile delays is comparable to watching a horror movie.

Source: Ericsson ConsumerLab, Neurons Inc. 2015
7s average interaction times

Source: Mobile Life Research Centre, University of Stockholm

38s average interaction times
Before: need to explicitly save workouts

After: workouts saved automatically
FIRST TIME

all actions equal size, default ordered

SECOND TIME

last used action at top, larger size

Source: https://developer.apple.com/videos/wwdc/2015/?id=802
light tap on the wrist

lift arm to view

which direction to look

from where you are
- Take the work on yourself
- Learn from past behavior
- Make use of sensors/hardware
login without the login form
checkout without the checkout form
checkout without the checkout form
walk up to car with key

door handle emerges & car unlocks
tap screen with pencil to unlock & open notes app
instant information from a tap on my wrist via bluetooth connected smartwatch with haptic controls

real-time portal/view of my front door via activity monitoring video camera viewed on pocket supercomputer
"i don’t understand what is new here. [...] i’m struggling to see what is the innovation in a motion-activated webcam, in 2017. Please correct me if this is a sarcastic post, otherwise..."
happy humans

technical complexity
There isn’t enough time in the world for people to sacrifice infinite amounts of opportunity and cognition. It follows that much of this activity should be done for us by other people. A class of aware, well-informed, trained and educated people...
be done for us by other people. A class of aware, well-informed, trained and educated people...

People who will make it their professional business, no, even their calling, their practice, their very mode of being—to create a human-object relationship that is as advanced as we can manage while still being acceptable. Who would that be then? Designers. Who else is there?

Bruce Sterling, 2005
MOBILE DESIGN NOW...

1. **Immense Opportunity**
   MOBILE DEVICES, AUDIENCE, GROWTH, REVENUE
   AT GLOBAL SCALE

2. **Optimize for Today**
   FOR CRITICAL INTERACTIONS
   MANY IMPROVEMENTS POSSIBLE NOW

3. **Aim for the Future**
   SET VISION, ITERATE TOWARD IT
   NUIS AS A GUIDING STAR
THANKS

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