



CAPITAL

DISTRIBUTION

TECHNOLOGY

Leveraging Cloud for Multiplatform Development

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Last week's theme: OmniChannel Retail



Jamie Henry
Senior Director Payment
Services
Walmart



Nick Sheth
Senior Director, Global
Business Development
Gap, Inc.



Scott Shakespeare
GM, Branding Advertising
& Promotions
Alon Brands / 7-Eleven



Robb Walters
Director, Mobile and
eCommerce
Costco



Tim Stepp
Director, POS and
Payment Systems
Walgreens



Gary Eppinger
CISO & IT VP of Enterprise
Security, Retail Market
Development, Legal and
Healthcare Systems
SuperValu



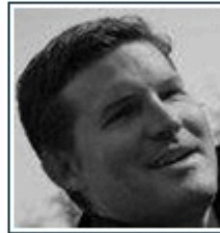
Mario Di Prizio
Divisional Vice President,
Mobile Commerce and
Integrated Retail
Applications
Sears Holdings



Jonathan Stephen
Head of Mobile &
Emerging Technologies
JetBlue Airways



Reuben Mendez
Manager, Mobile
Development Team
The Kroger Company



Dave Baldwin
President
Value Pay Services, LLC
(Subway)



George Findling
Director of Emerging
Technology & Enterprise
Technical Architecture
Crate & Barrel



Bob Murray
Manager of Store
Technology
Chicos FAS

Me and Multi Platform



About Kii: EXTENDING YOUR REACH TO THE MOST IMPORTANT MOBILE MARKETS IN THE WORLD



USERS LOVE YOUR APP WE'LL HELP YOU BUILD A GLOBAL BUSINESS

YOU HAVE



- Great Idea
- Passionate users
- App “Genius”

YOU NEED

CAPITAL

DISTRIBUTION

TECHNOLOGY



- Investment so you can focus on your users



- User acquisition and monetization deals



- Cloud technology

USERS LOVED ASTRO NOW ASTRO IS A PROFITABLE BUSINESS

BEFORE Kii



- 5 star ratings
- 9M downloads
- User community

NOW WITH Kii

US\$550k

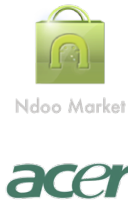
Kii CAPITAL

- \$550k Series A funding



Kii CATALOG

- Distribution deals in Japan and China
- Six figure multi-year advertising deal



Kii CLOUD

- Cloud technology for ASTRO Backup product
- Subscription Revenue opportunity

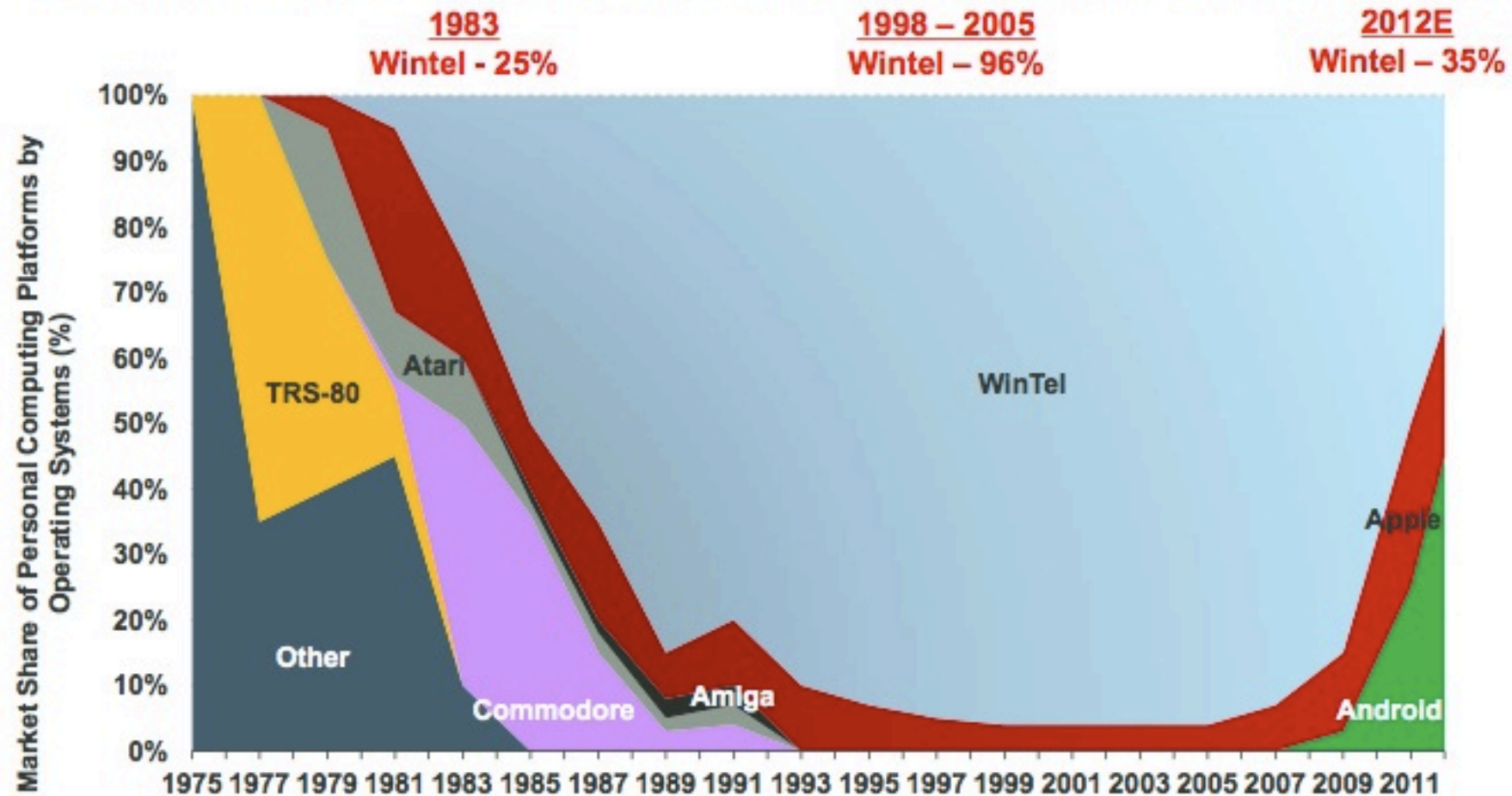
THE LAY OF THE LAND IN MOBILE PLATFORMS



Kii CAPITAL

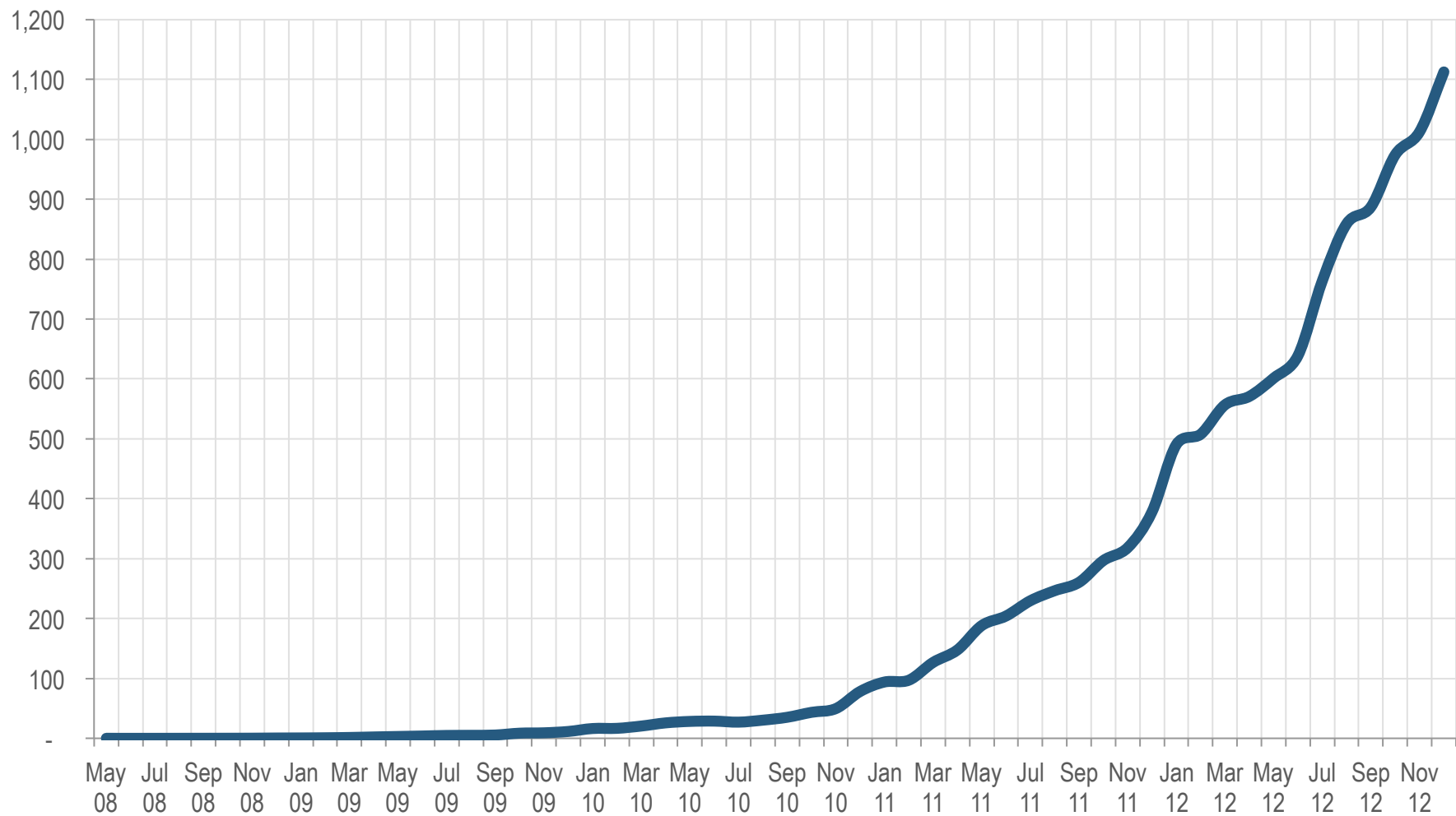
What's Happening in Multiplatform?

Global Market Share of Personal Computing Platforms by Operating System Shipments, 1975 – 2012E



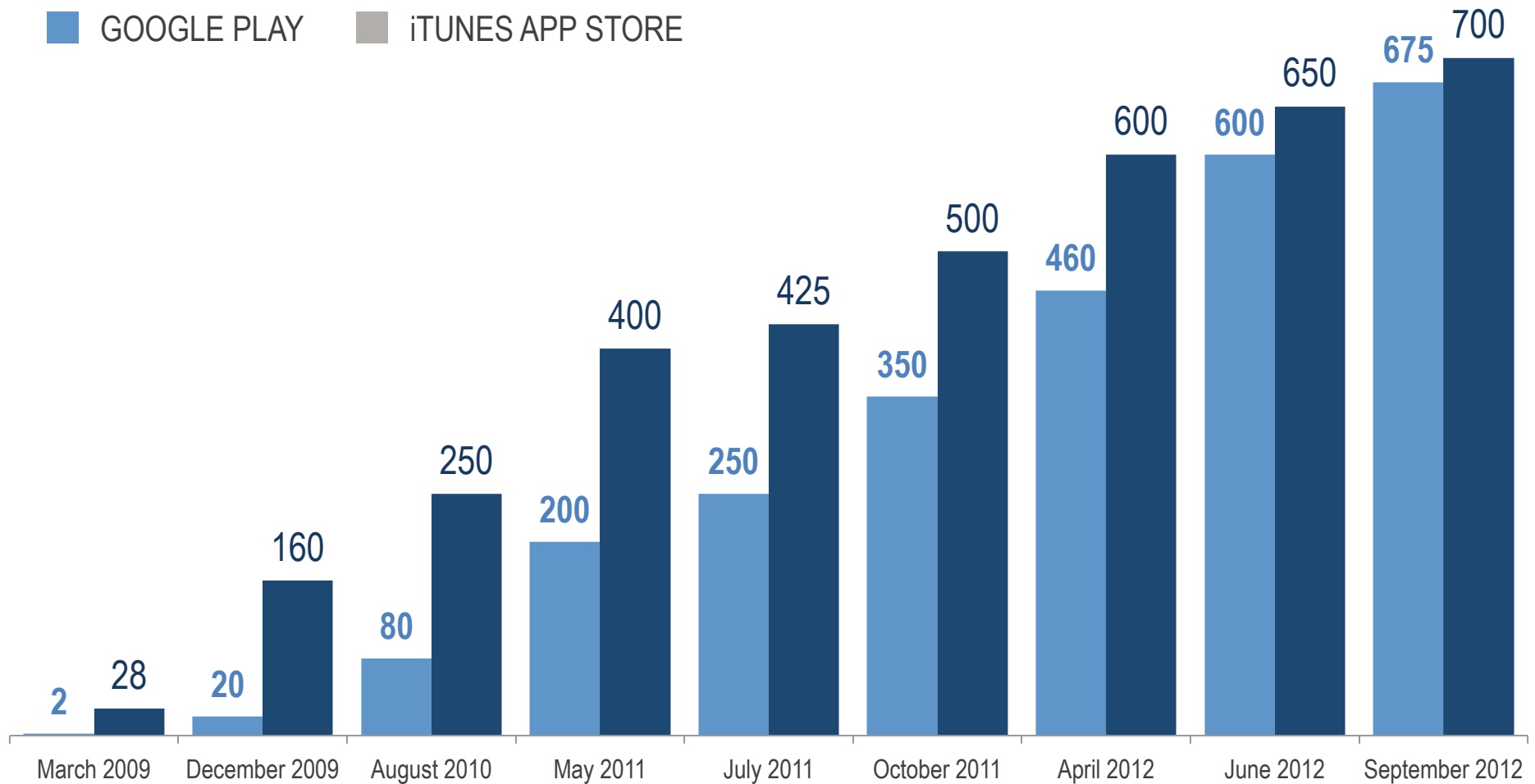
Unstoppable Market Growth for Mobile

Worldwide in-application events measured by Flurry (billions)



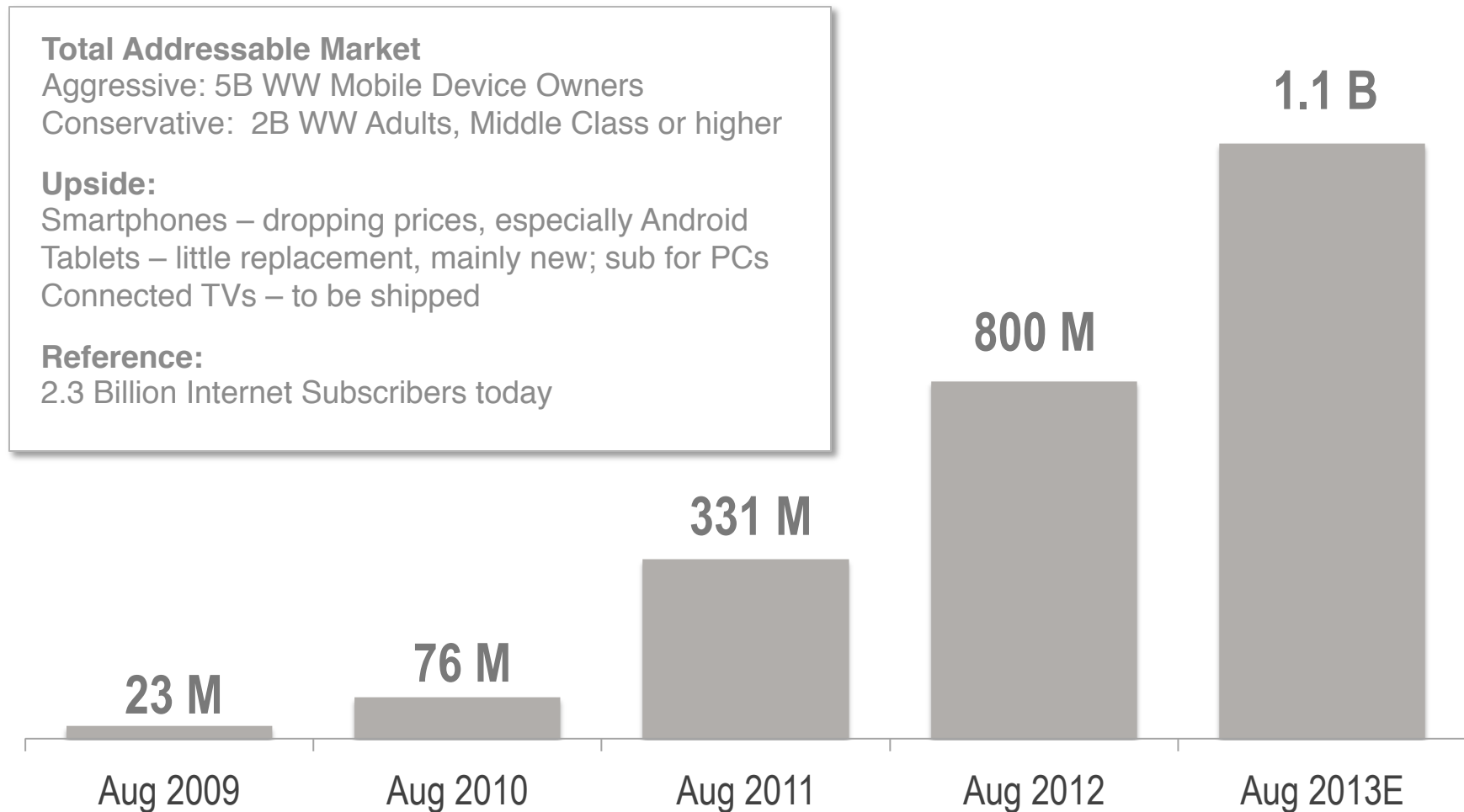
Competition for Consumers Continues to Increase

Over 1.4 million available apps on iOS and Android



Addressable Market to Surpass 1 Billion Next Year

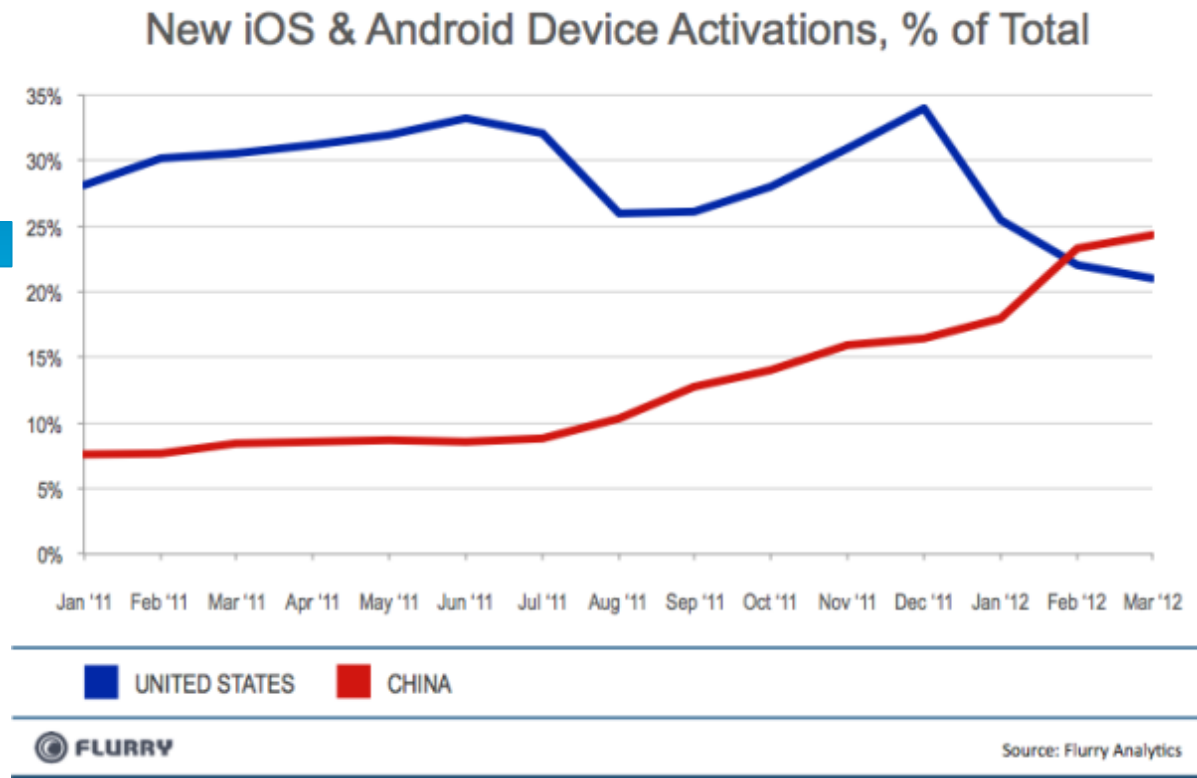
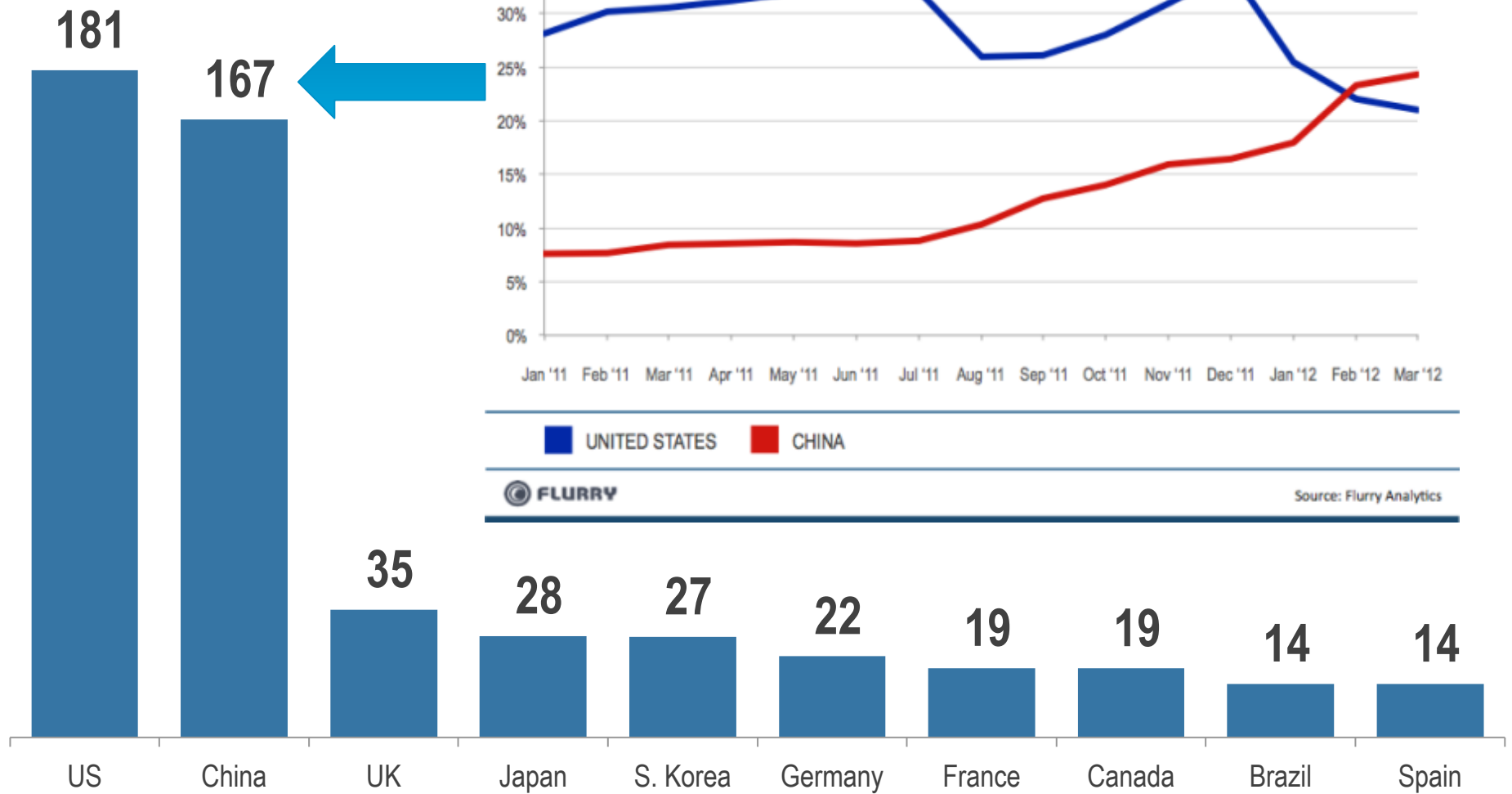
Active smartphone & tablet devices



A Global Phenomenon

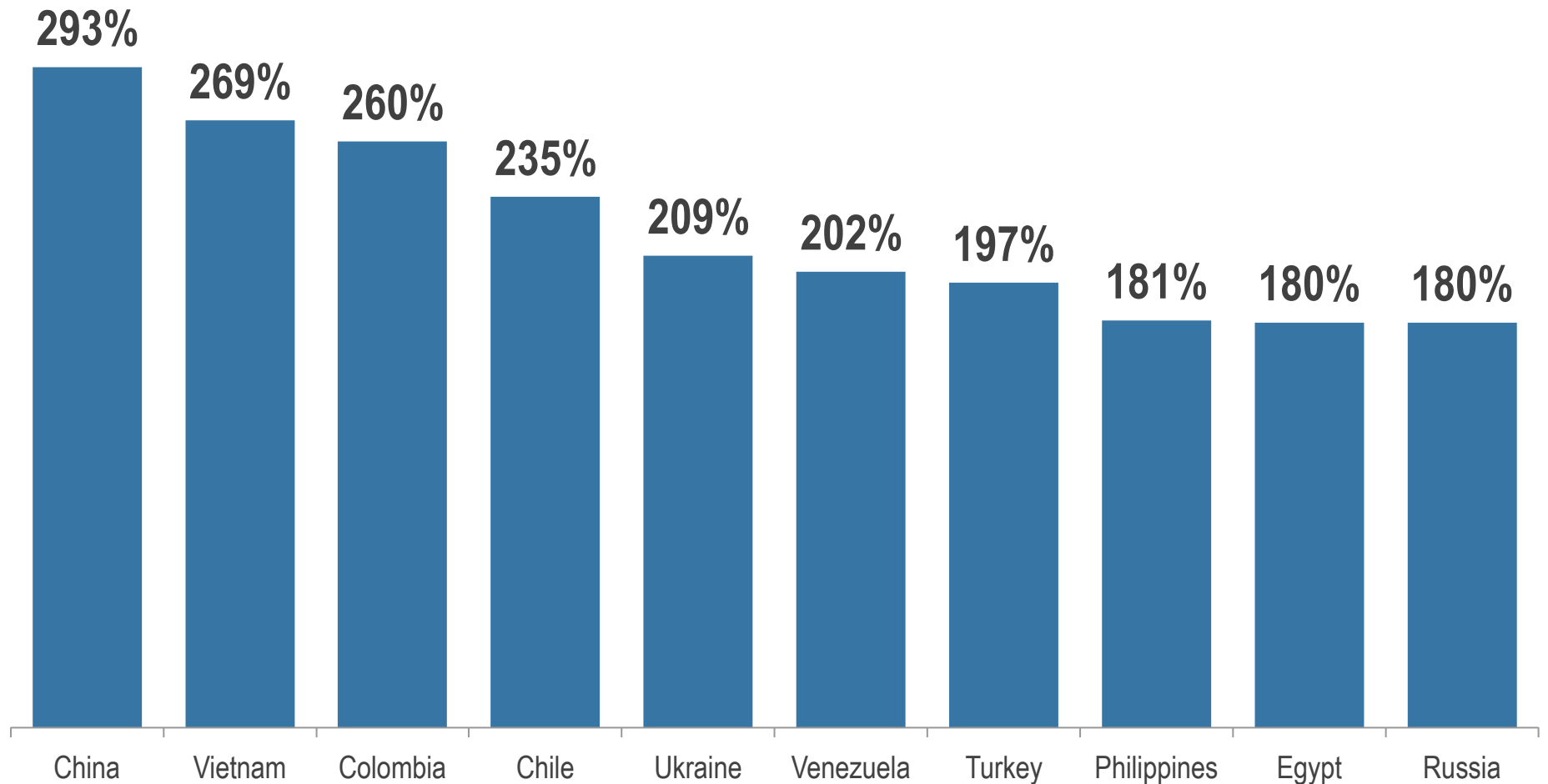
Top Countries by Active iOS & Android Devices (millions)

Already out of date!



30+ Countries Doubled in Last 12 Months

Fastest Growing iOS & Android Markets by Active Devices



JAPAN HAS THE WORLD'S HIGHEST DATA REVENUE PER USER

99% PENETRATION
OF 3G HANDSETS

47% MOBILE WEB USERS
OF WORLD MOBILE SUBSCRIBERS
(US IS 22%)

47M “TAP-AND-GO” PHONES
MOBILE PAYMENT MARKET

#1 AND #2 LOWEST CHURN
WORLDWIDE
NTT DOCOMO AND KDDI

122 MILLION MOBILE SUBSCRIBERS



Kii

WITH ONE BILLION MOBILE SUBSCRIBERS,
CHINA IS THE BIGGEST MARKET



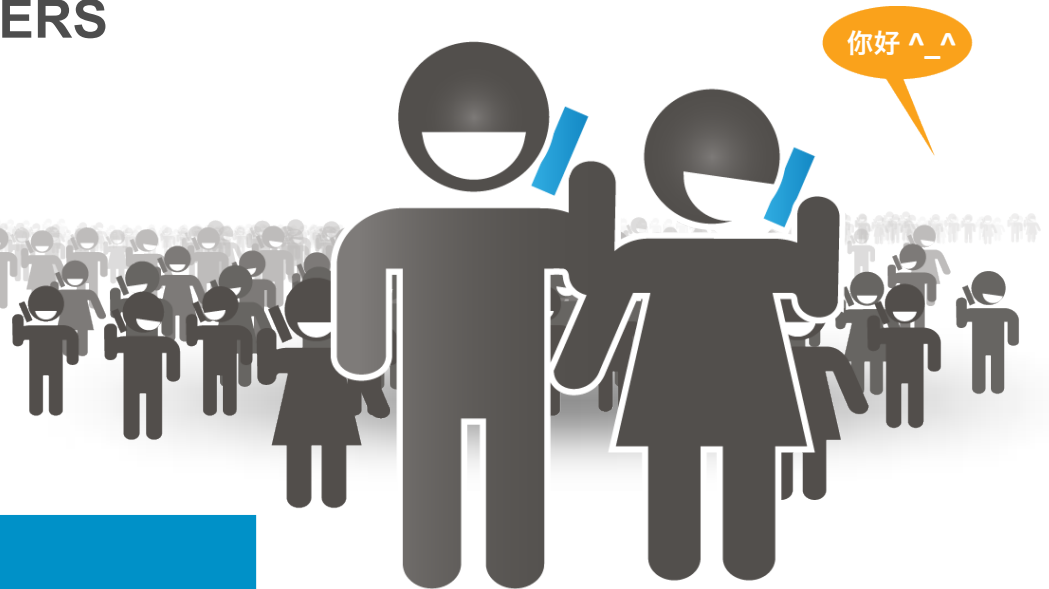
HIGHEST NUMBER DAILY SMARTPHONE ACTIVATIONS

#1 AND #2 BIGGEST TELCOS
IN THE WORLD

277 MILLION MOBILE WEB USERS
UP 43 MILLION IN SIX MONTHS

118 MILLION 3G USERS

HOME TO MOST
**HANDSET MAKERS/
HARDWARE OEMs**

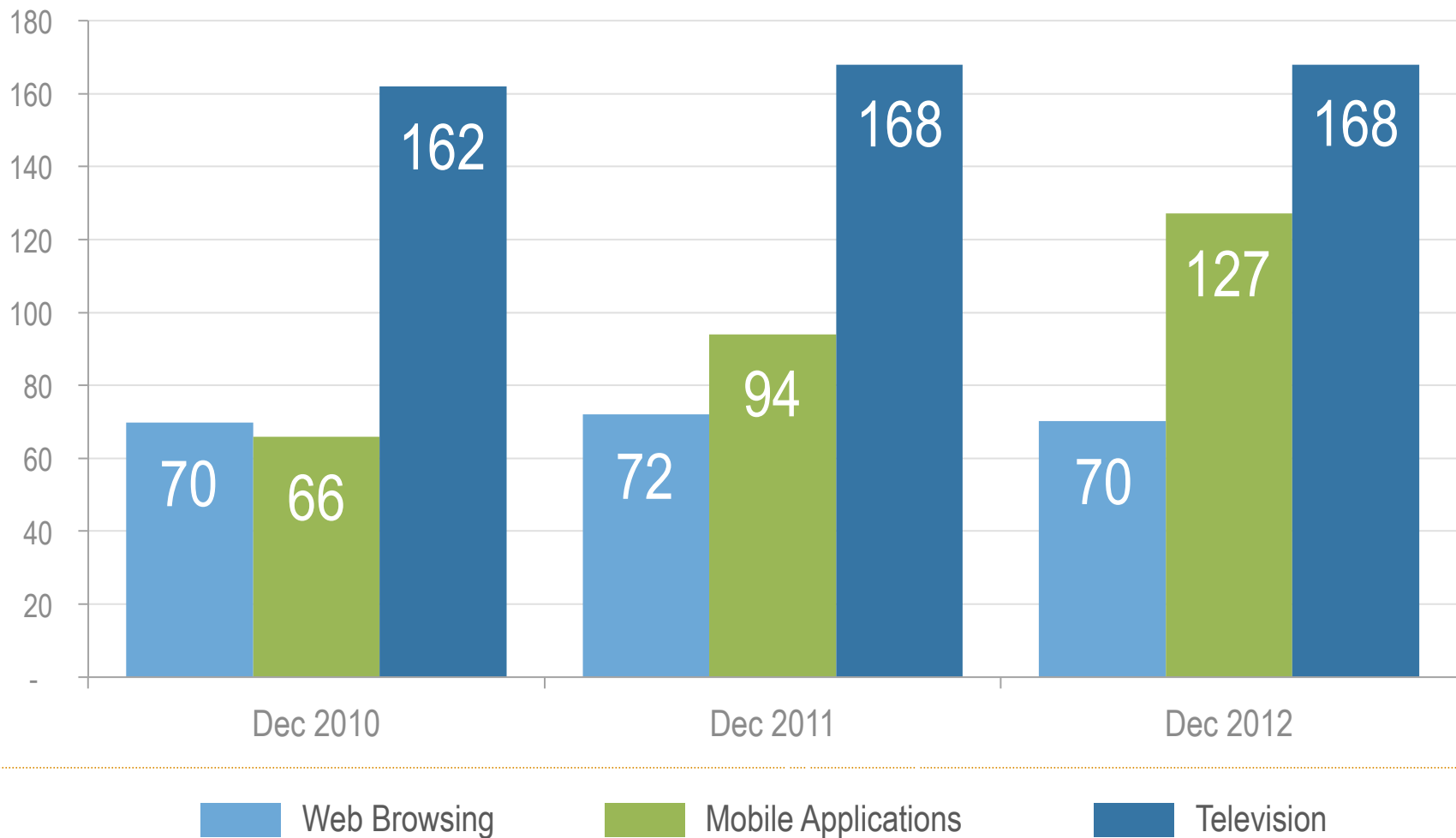


1 BILLION MOBILE SUBSCRIBERS !!!

Kii

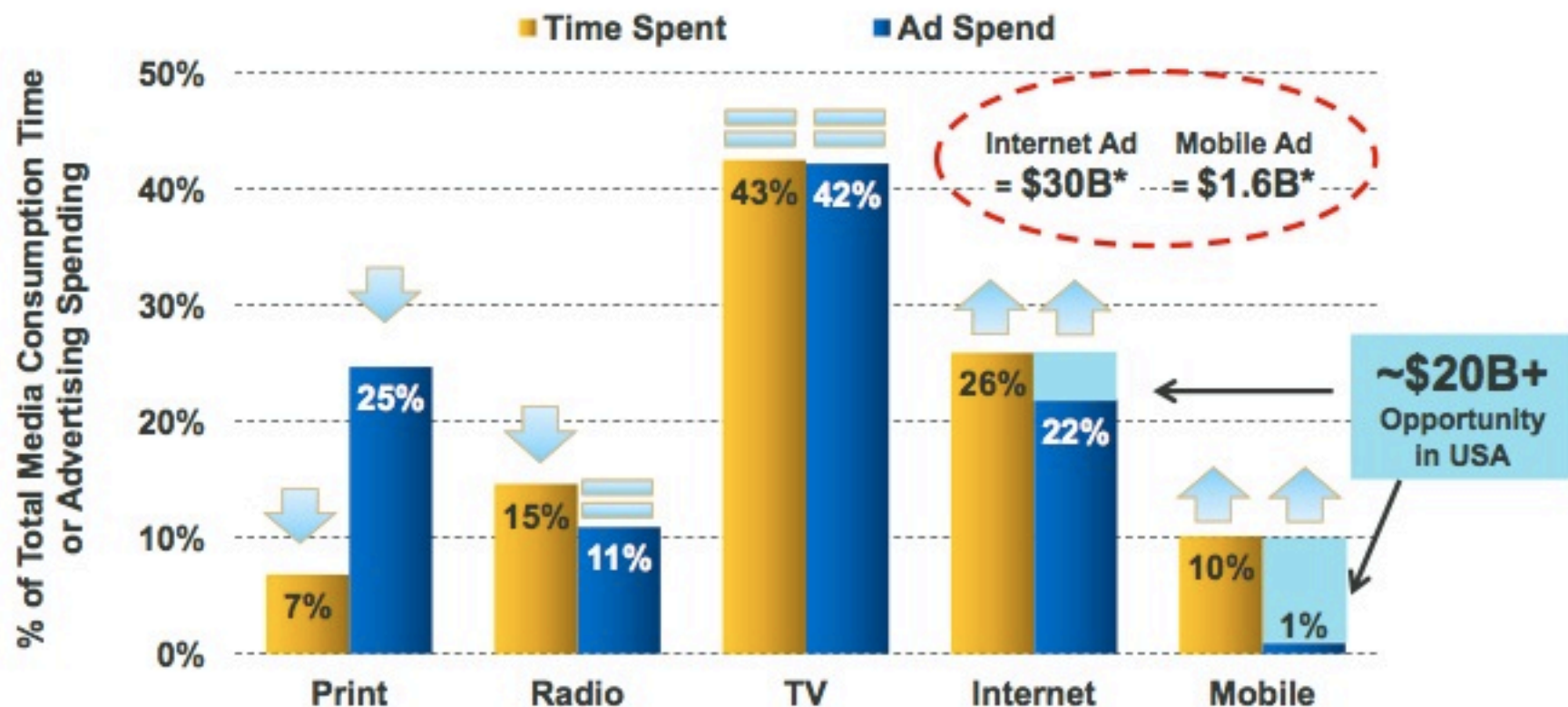
How Mobile Stacks Up Against TV and The Web

Web vs. Mobile App vs. TV Consumption, Minutes per Day



Material Upside for Mobile Ad Spend vs. Mobile Usage

% of Time Spent in Media vs. % of Advertising Spending, USA 2011



Note: *Internet (excl. mobile) advertising reached \$30B in USA in 2011 per IAB, Mobile advertising reached \$1.6B per IAB. Print includes newspaper and magazine. \$20B opportunity calculated assuming Internet and Mobile ad spend share equal their respective time spent share. Source: Time spent and ad spend share data eMarketer, 12/11, Internet and mobile ad dollar spent amount per IAB.

SO WHAT TO DO?
STACK EXAMPLES



Kii CAPITAL

Some Stacks?

Support: Software Development Tools

Native and Web Delivery, Notification, Analytics

Theme, Style and Rendering for Viewports

Templating & Modularized Application Loading

Connectivity and Delivery Mechanisms

Web Pages and Lightweight Web Services



Then there's the data layer...

Main Data Models Adapted from [Emil Eifrem](#). [NoSQL databases](#).

Document Databases

Lineage: Inspired by Lotus Notes.

Data model: Collections of documents, which contain key-value collections.

Example: CouchDB, MongoDB

Graph Databases

Lineage: Euler and graph theory.

Data model: Nodes & relationships, both which can hold key-value pairs

Example: AllegroGraph, InfoGrid, Neo4j

Relational Databases

Lineage: E. F. Codd in [A Relational Model of Data for Large Shared Data Banks](#)

Data Model: a set of relations

Example: VoltDB, Clustrix, MySQL

Object Oriented Databases

Lineage: Graph Database Research

Data Model: Objects

Example: Objectivity, Gemstone

Key-Value Stores

Lineage: Amazon's [Dynamo paper](#) and [Distributed HashTables](#).

Data model: A global collection of KV pairs.

Example: Membase, Riak

BigTable Clones

Lineage: Google's [BigTable paper](#).

Data model: Column family, i.e. a tabular model where each row at least in theory can have an individual configuration of columns.

Example: HBase, Hypertable, Cassandra

Data Structure Servers

Lineage: ?

Example: Redis

Data model: Operations over dictionaries, lists, sets and string values.

Grid Databases

Lineage: Data Grid and Tuple Space research.

Data Model: Space Based Architecture

Example: GigaSpaces, Coherence

CREATING A MOBILE BACKEND THE HARD WAY

1. Pick a stack (PHP, Rails, Node, SQL, MongoDB, etc)
2. Hire server engineer(s)
3. Pick a provider (Amazon, Rackspace, etc)
4. Write the code, test, iterate, keep writing code
5. FTP upload the code to a staging server, test more
6. Transfer the staging code to production environment
7. Set up load balancers, multiple server instances, database clusters



EASING THE PAIN WEB SERVICES

Some great services have emerged to make developers happy!



For mobile developers, there's still something to be desired

- Still need to write server code, test, iterate, manage scaling
- Even though the process has improved, time and \$\$\$ are still spent

Memory Performance, Tooling, Testing, Ecosystem



you are reading...

Why LinkedIn dumped HTML5 & went native for its mobile apps

Main
Big Data
Business
Cloud
Deals
Dev
Entrepreneur
Gadgets
Green
Health
Lifestyle
Media
Mobile
New York
Science
Security
Small Biz
Social
GAMESBEAT

Why LinkedIn dumped HTML5 & went native for its mobile apps



April 17, 2013 9:00 PM

116 Comments

Jolie O'Dell

















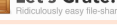











✓ Like 1.8k Tweet 3,083 Share VB More

OR YOU COULD JUST SAY
MBAAS...



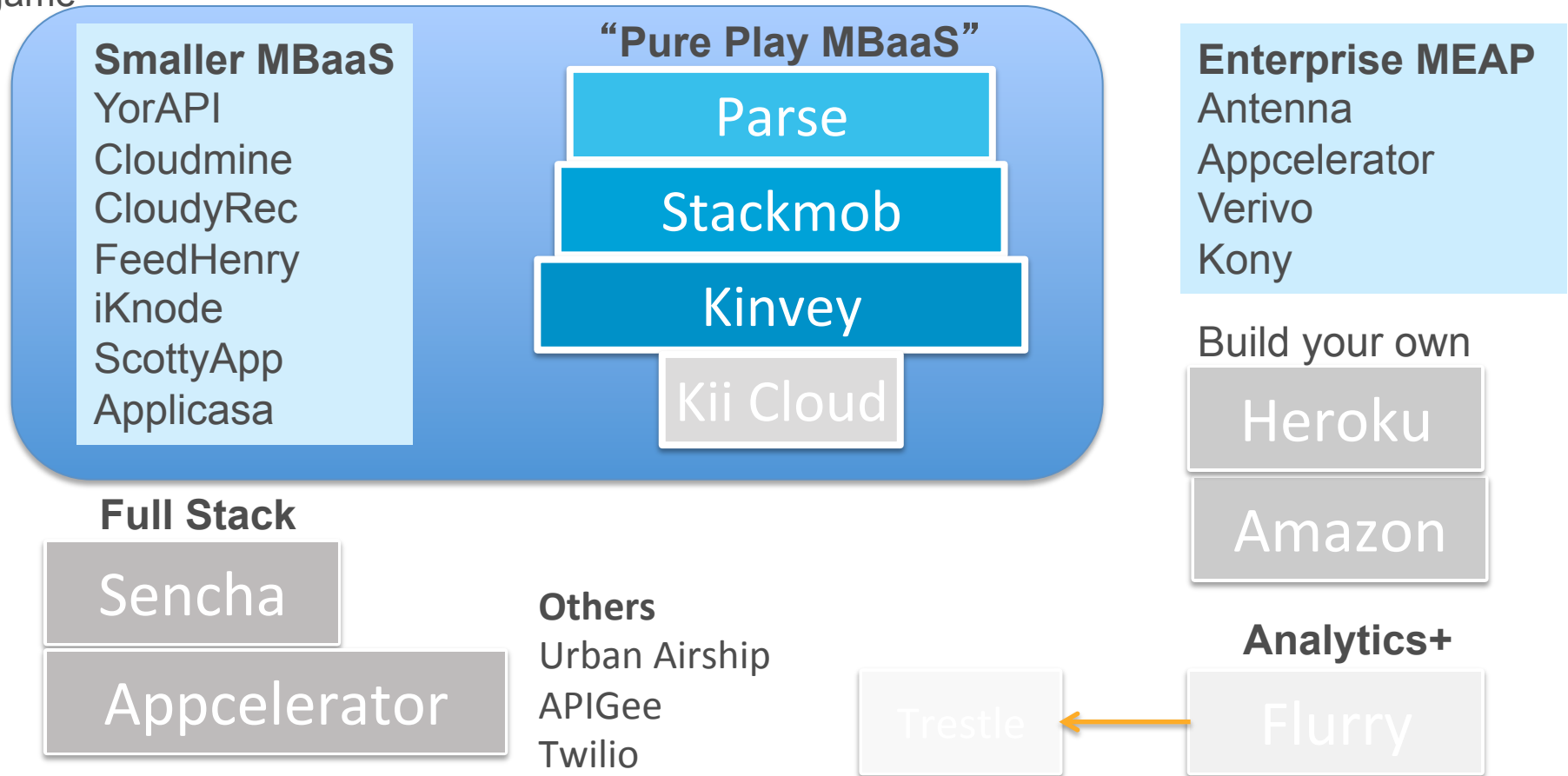
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Developer Platform Value Propositions

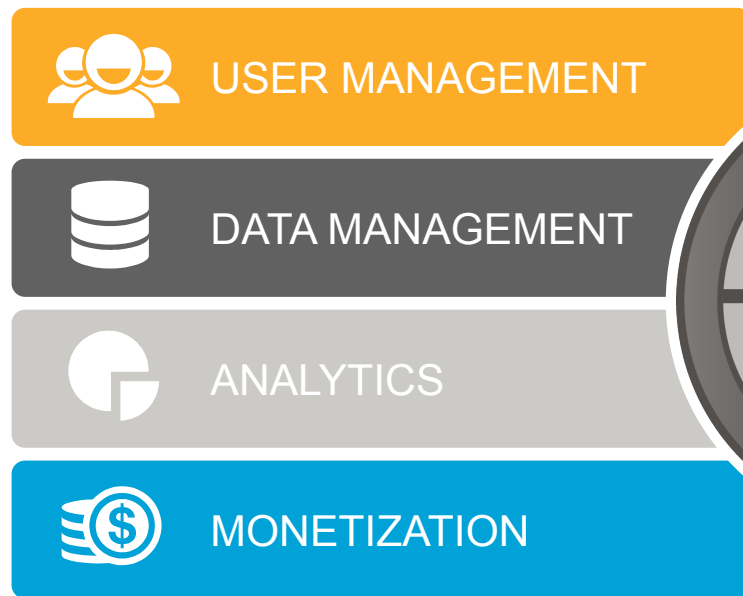
Idea	Examples	Save Cost		Revenue	
		Avoid Hard or Tedious Work	Get to Market Faster	Access New Markets	Acquire/ Retain Users Increase revenue per user
Compute Cloud		✓	✓		
Mobile App Cloud Svcs	      	✓	✓		
Mobile Cross Platform	 	✓	✓		
Personal Cloud and Sharing	    	✓	✓		
App Networks	 			✓	✓
Mobile & PC Sync	 	✓	✓		✓
Mobile Analytics + App network		✓	✓		✓
Ad Network					✓
Online Payments	 			✓	✓
Mobile and Web Game SNS	  	✓	✓	✓	✓

What does the MBaaS market look like?

Past, Present, Future: Kii Cloud is late to the game



MBAAS = INSTANT MOBILE BACKEND WITHOUT WRITING A LINE OF SERVER CODE



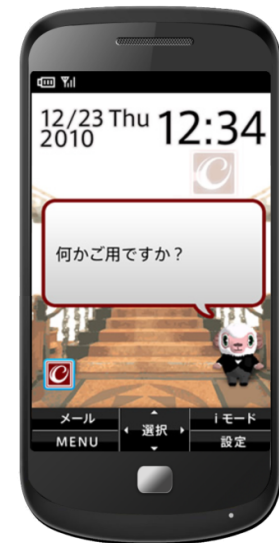
**BUILD AND ITERATE IN A
FRACTION OF THE TIME**

KiiCLOUD

Kii Cloud MBaaS: World's Biggest and Most Reliable

NTT
docomo

RELIABLE	Met NTT DoCoMo's tough Quality Standards
PRACTICAL	Backup and Content Deliver services
SCALABLE	12M paid subscribers of sync service
DURABLE	Nonstop for years even through earthquakes
PROFITABLE	Drives over \$150M USD in revenue



17:50PM

Info about specials
at a nearby store



22:45PM

Tomorrow's
schedule



12:45PM

Concert information
on favorite artist



11:30AM

Lunch coupon for
favorite restaurant



7:00AM

Traffic updates for
commute route



KiiCLOUD

SAVE THOUSANDS OF HOURS AND DOLLARS KEEP YOUR FOCUS ON KEEPING USERS HAPPY

ON
USER HAPPINESS 😊

COMPETING IN
THE APP STORE

PUMPING OUT
NEW APP VERSIONS

NEW HIRES		AVG. SALARY
Server Engineer		US\$ 91,000
System Admins		US\$ 77,000
Database Adminis		US\$ 83,000
Ad Traffickers		US\$ 41,000
Grand total:		US\$ 292,000

Source: USA National Averages 6/12/2012
Indeed.com

**STOP HIRING SERVER ENGINEERS
WE HAVE DOZENS!**



KiiCLOUD

Kii CLOUD COMPONENTS



USER MANAGEMENT



DATA MANAGEMENT



ANALYTICS



MONETIZATION



USER MANAGEMENT

LOGIN & REGISTRATION

- Basic registration/login
- Social registration/login
- Anonymous login
- Account verification

PROFILES & MANAGEMENT

- Store JSON key/values
- Query attributes
- Session management
- Password reset/change

GROUPS & PERMISSIONS

- Create groups
- Manage members
- Customizable access control for all objects

API ACCESS IS AVAILABLE FOR REST
FULL SDKs FOR ANDROID, iOS AND JAVASCRIPT

Android

```
KiiUser user = KiiUser.createWithUsername("myuser");  
user.register("mypassword");
```

iOS

```
KiiError *error = nil;  
KiiUser *user = [KiiUser userWithUsername:@"myuser"];  
[user performRegistrationSynchronous:@"mypassword"  
    withError:&error];  
  
if(error == nil) {  
    // registration was successful  
}
```



USER MANAGEMENT

SUCCESS
STORY

HÜGG delivered full product with cloud technology
in two months



HÜGG

- Registration and login with phone number
- SMS message is customizable
 - Uses UTF-8, easily localized
- Global SMS verification
 - Covers 700 global SMS networks
- Group functionality
 - Couple as group
 - Couples private data is secured ACL

KiiCLOUD



DATA MANAGEMENT

OBJECT STORAGE

- Store/retrieve JSON objects
- Flexible datatypes
- No fixed schema

FILE STORAGE

- Store/retrieve files
- Query attributes
- Sync/backup across devices
- Share files via URL

DATA HANDLING

- Utilize buckets optimized for access
- Customizable ACL + scope
- Query objects & files

API ACCESS IS AVAILABLE FOR REST
FULL SDKs FOR ANDROID, iOS AND JAVASCRIPT

Android

```
// Create an object
KiiObject object = Kii.bucket("mydata").object();

// Set key-value pairs
object.set("myid", 1);
object.set("name", "John Doe");

// Save the object
object.save();
```

iOS

```
// Create an object
KiiBucket *bucket = [Kii bucketWithName:@"mydata"];
KiiObject *obj = [bucket createObject];

[obj setObject:[NSNumber numberWithInt:1] forKey:@"myid"];
[obj setObject:@"John Doe" forKey:@"name"];

// Save the object
[object saveSynchronous:nil];
```



DATA MANAGEMENT

SUCCESS
STORY

HÜGG relies on dependable cloud performance



USERS SHARE DATA

Hugg.me provides functions like Pinterest and Instagram rolled into one

USERS STORE & SHARE PICTURES

Users will be able to store and share their pictures in the cloud

ANALYTICS

Advanced storage of arbitrary JSON objects allow for rich analytics and user profile development

Using lots of Query functionality, IN-query(SQL like) and Query by time stamp

Updating photo files, application uploads a file into the user bucket, but private to user, app sends ACL to share across to couple, SDK can also link data to embed sharable data by URL, partners can see photo directly in the other user's device

File is published by share file API

KiiCLOUD



ANALYTICS

OBJECT STORAGE

Intrinsic	Number of users, clicks, etc. are backed-in
Cloud data	Defined based on application data
Custom	Send any raw data for aggregation

MANAGE

- Data aggregation across metrics
- Data visualization
- Manipulate and view both intrinsic and custom metrics

API ACCESS IS AVAILABLE FOR REST
FULL SDKs FOR ANDROID, iOS AND JAVASCRIPT

Android

```
KiiAnalytics.initialize(this, APPID, APPKEY);  
  
KiiEvent event = KiiAnalytics.event(TAG);  
event.set("string", "value");  
event.upload();
```

iOS

```
[KiiAnalytics beginWithID:@"myappid" andKey:@"myappkey"];  
  
NSDictionary *extras = [NSDictionary dictionaryWithObject:@"someID"  
                                                         andKey:@"someKey"];  
[KiiAnalytics trackEvent:@"eventName" withExtras:extras];
```

Cloud Analytics play an important role in HÜGG's success



HÜGG

Which type of Hugg PARTNERS or ADs do well with which types of couple profiles?



Monetization Analytics

- Time
- Advertisement/partner
- IDs/types
- Couple profile information



MONETIZATION

INVENTORY TYPES

- Direct Ads (sell your own)
- Regional Ads (high performance in Asia)
- Mediated Ads (Fill unsold inventory using networks)

FILE STORAGE

- Dynamic configuration via web portal
- Get analytics for clicks and impressions



API ACCESS IS AVAILABLE FOR REST
FULL SDKs FOR ANDROID, iOS AND JAVASCRIPT

Android

```
// create an KiiAdnetLayout
KiiAdNetLayout adLayout = new KiiAdNetLayout(this, APP_ID, APP_KEY);
layout.addView(adLayout);
```

iOS

```
// create an KiiAdnetLayout
KiiAdnet *adView = [KiiAdnet requestAdWithDelegate:self
                    withApplicationId:@"<my-application-id>"
                    andApplicationKey:@"<my-application-key>"];

[self.view addSubview:adView];
```

KiiCLOUD



MONETIZATION

HÜGG was able to offer couples coupons right from the start



Launch partners include:

Docomo

Softbank

NEC

Fujitsu

Big Globe (large ISP in Japan)

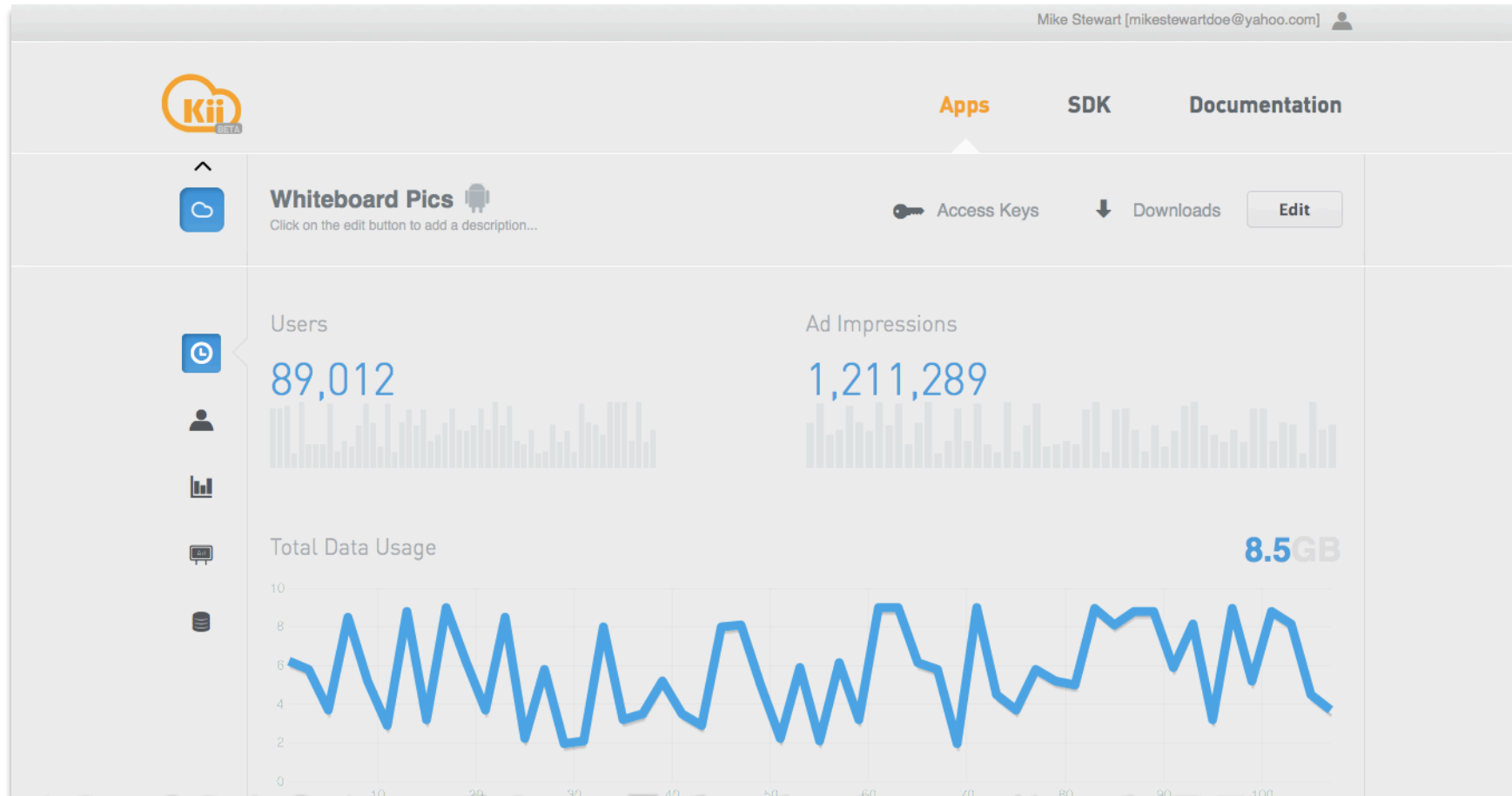
Wedding Park

OpenTable Japan

GuruNavi (largest restaurant info site)



ALL COMPONENTS EASILY MANAGED THROUGH THE Kii DEVELOPER PORTAL

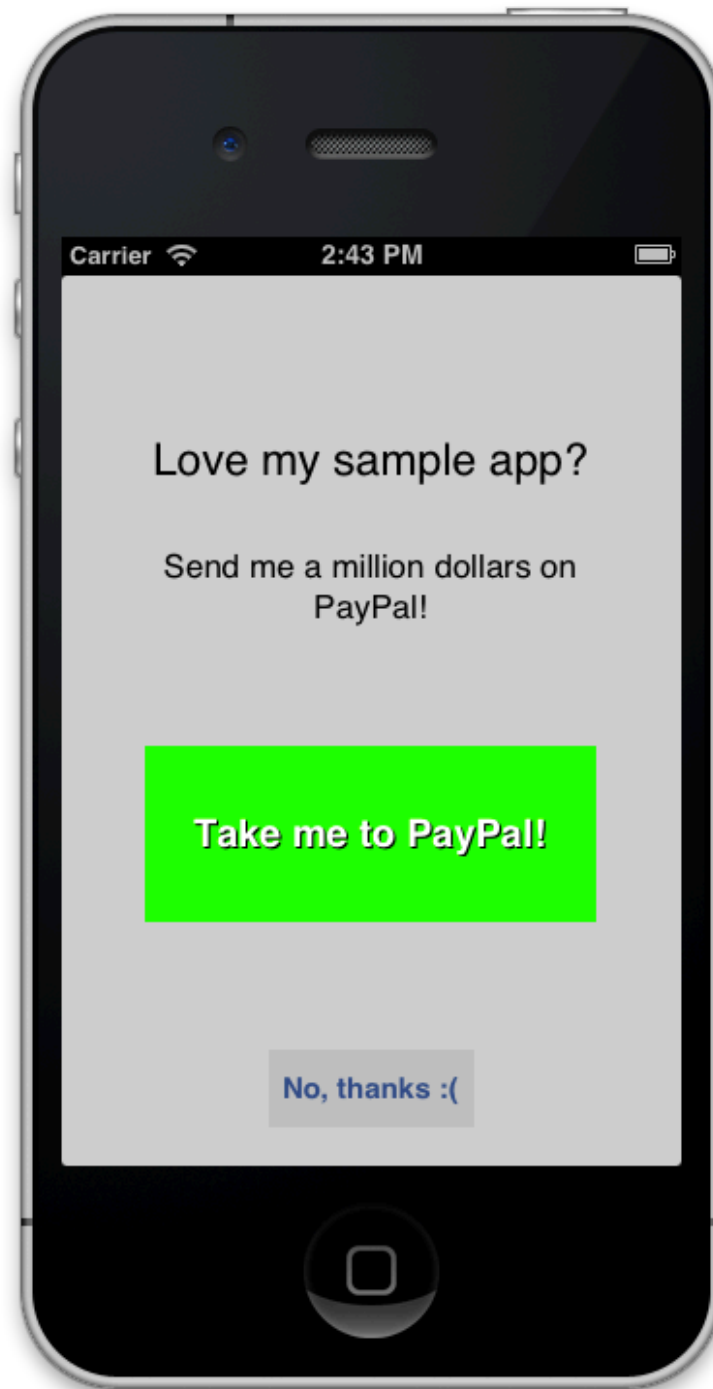


Hey this is open source!

DEMO
A/B TEST



More Info: <http://bit.ly/kiisviphone>



Love my sample app?

Send me a million dollars on
PayPal!

Take me to PayPal!

No, thanks :(

```
31 int redsDisplayed = [ABStorage getDisplayed:@"red"];
32 int redsClicked = [ABStorage getClicked:@"red"];
33 double redPercentageClicked = (redsDisplayed > 0) ? ((double)redsClicked / (double)redsDisplayed) : 0.0;
34 int redWeight = 100 + 1000*redPercentageClicked;
35
36 int greensDisplayed = [ABStorage getDisplayed:@"green"];
37 int greensClicked = [ABStorage getClicked:@"green"];
38 double greenPercentageClicked = (greensDisplayed > 0) ? ((double)greensClicked / (double)greensDisplayed) : 0.0;
39 int greenWeight = 100 + 1000*greenPercentageClicked;
40
41 int bluesDisplayed = [ABStorage getDisplayed:@"blue"];
42 int bluesClicked = [ABStorage getClicked:@"blue"];
43 double bluePercentageClicked = (bluesDisplayed > 0) ? ((double)bluesClicked / (double)bluesDisplayed) : 0.0;
44 int blueWeight = 100 + 1000*bluePercentageClicked;
45
```

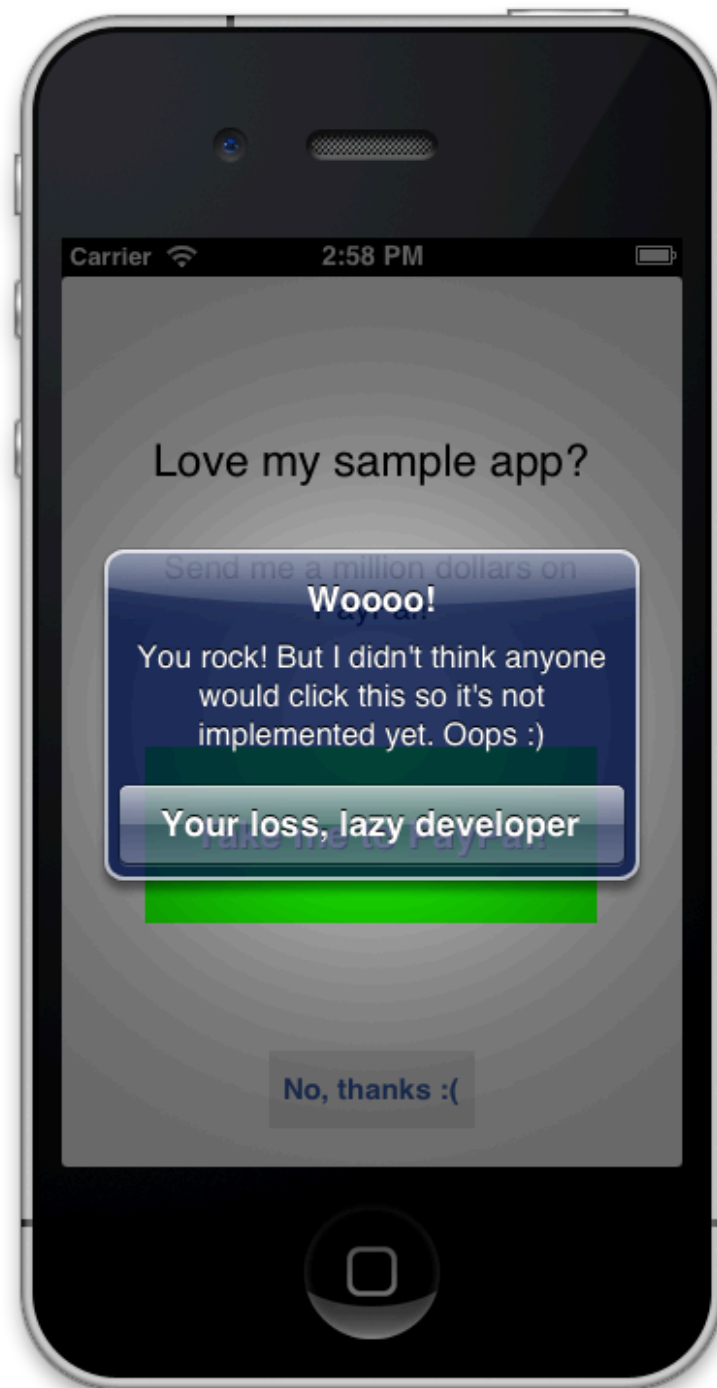
```

46 NSRange redRange = NSMakeRange(0, redWeight); // { 0, 106 }
47 NSRange greenRange = NSMakeRange(redWeight, redWeight + greenWeight); // { 106, 228 }
48
49 // we don't need this... but just to show the approximate range:
50 //NSRange blueRange = NSMakeRange(redWeight + greenWeight, redWeight + greenWeight + blueWeight); // { 228, 341 }
51
52 int rand = arc4random() % (redWeight + greenWeight + blueWeight);
53 if(NSLocationInRange(rand, redRange)) {
54     // make the button red
55     _donateButton.backgroundColor = [UIColor redColor];
56     _buttonColorString = @"red";
57 } else if(NSLocationInRange(rand, greenRange)) {
58     // make the button green
59     _donateButton.backgroundColor = [UIColor greenColor];
60     _buttonColorString = @"green";
61 } else {
62     // make the button blue
63     _donateButton.backgroundColor = [UIColor blueColor];
64     _buttonColorString = @"blue";
65 }
66
67
68
69
70
71
72
73

```




```
73  
74     NSMutableDictionary *extras = [NSMutableDictionary dictionary];  
75     [extras setObject:_buttonColorString forKey:@"button_color"];  
76     [extras setObject:@"displayed" forKey:@"event_status"];  
77  
78     [KiiAnalytics trackEvent:@"button" withExtras:extras];  
79
```



Love my sample app?

Send me a million dollars on
Woooo!

You rock! But I didn't think anyone
would click this so it's not
implemented yet. Oops :)

Your loss, lazy developer

No, thanks :(

```
82
83 - (IBAction)sendToDonate:(id)sender
84 {
85
86     NSMutableDictionary *extras = [NSMutableDictionary dictionary];
87     [extras setObject:_buttonColorString forKey:@"button_color"];
88     [extras setObject:@"clicked" forKey:@"event_status"];
89
90     [KiiAnalytics trackEvent:@"button" withExtras:extras];
91
92     UIAlertView *av = [[UIAlertView alloc] initWithTitle:@"Woooo!" message:@"You rock! But I didn't
        think anyone would click this so it's not implemented yet. Oops :)" delegate:nil
        cancelButtonTitle:@"Your loss, lazy developer" otherButtonTitles:nil];
93     [av show];
94 }
95
```

Where to look for more resources

<http://bit.ly/kiisviphone>

A LITTLE MORE ON
ANALYTICS...



Kii CAPITAL



Demostagram

iOS



Demo app



Access Keys



Downloads

Edit

Analytics

Metrics

Config

Aggregation Rules

Add

Name

To-Do Tasks entered

Data

App Data

Event Data

Conversion Rule

A conversion rule is required to start aggregating data from your app

Task

Aggregate using

Select a column and a function to aggregate on.

Count

of

InputMethod

Dimensions

Select field to use as dimensions. If none is selected, time will be used as default.

InputMethod

Save

Name

Untitled

ID: Available upon activation

inactive



```
{  
  "ItemTitle": "Pick up groceries",  
  "InputMethod": "voice"  
  .....  
}
```

Analytics

Metrics

Config

Messaging feature Usage Purchase made To-Do Tasks entered

InputMethod

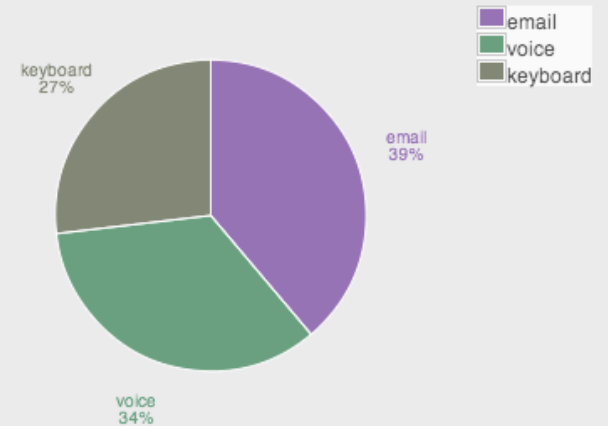


Sliced by
'InputMethod'

Cumulative Total
10904

Filters
None

InputMethod	Total
email	4234 (39%)
voice	3741 (34%)
keyboard	2929 (27%)



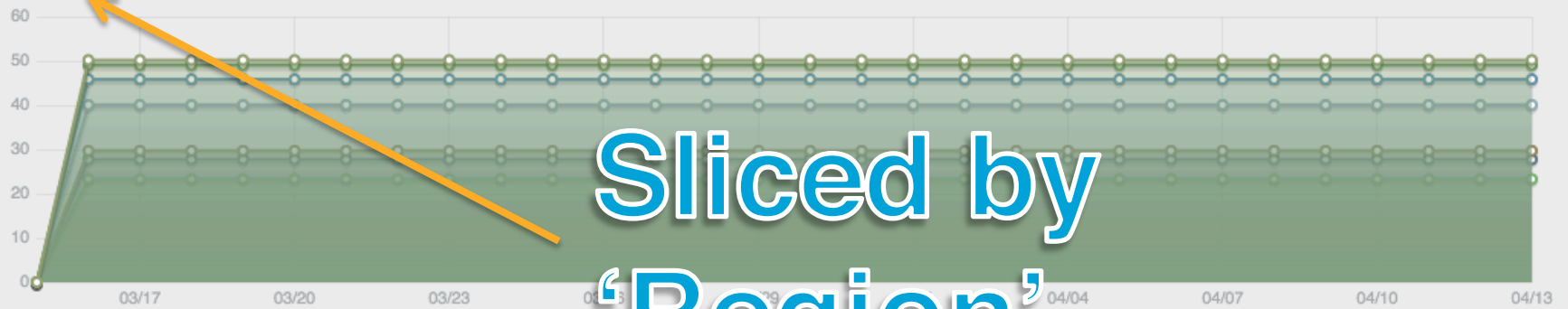
Analytics

Metrics

Config

Messaging feature Usage Purchase made To-Do Tasks entered

Region User Type Gender



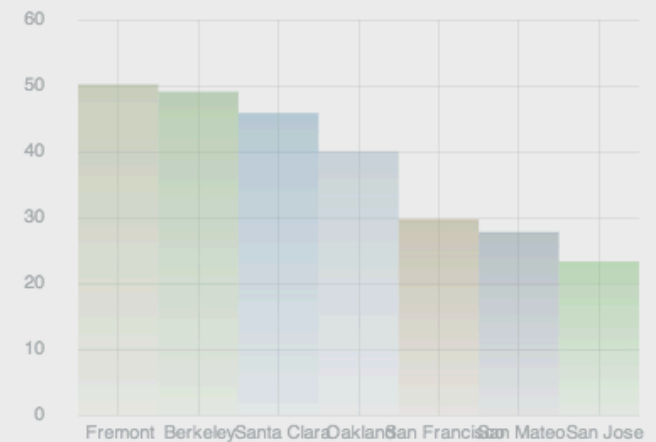
Sliced by
“Region”

Cumulative avg Total
38.28

Filters
None

Region	avg Total
Fremont	50.19 (+11.91)
Berkeley	49.08 (+10.80)
Santa Clara	45.84 (+7.56)
Oakland	40.06 (+1.78)
San Francisco	29.70 (-8.58)
San Mateo	27.77 (-10.51)
San Jose	23.29 (-14.99)

Cumulative avg Total
37.99



Analytics

Metrics

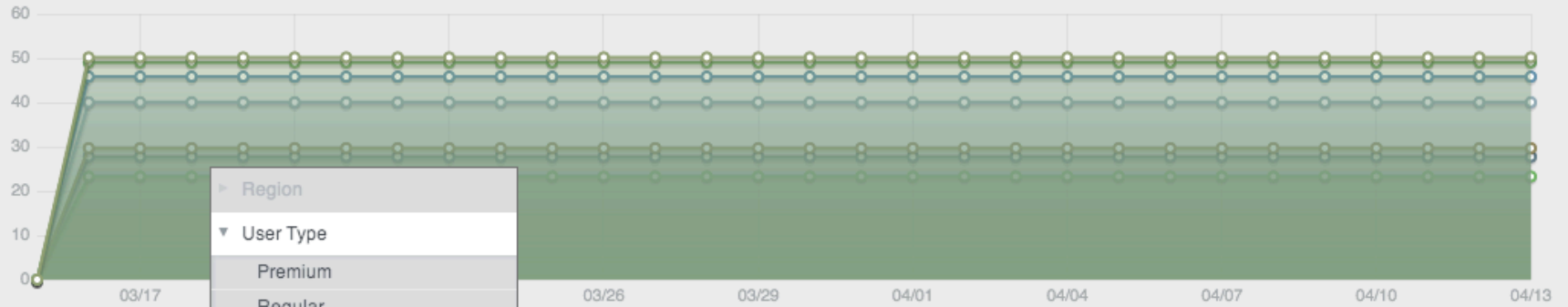
Config

Messaging feature Usage

Purchase made

To-Do Tasks entered

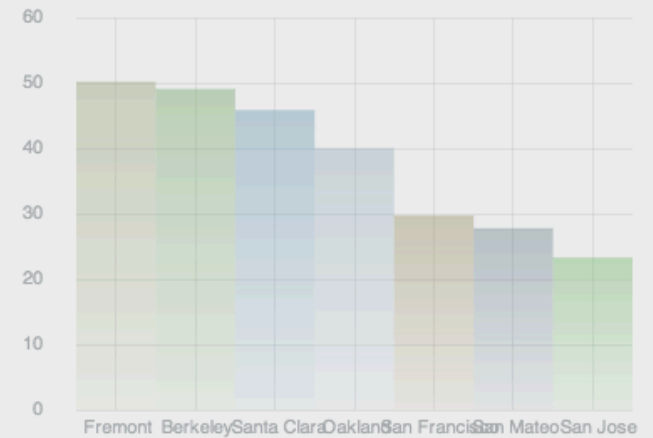
Region User Type Gender



Cumulative avg Total
38.28

Region	avg Total
Fremont	50.19 (+11.91)
Berkeley	49.08 (+10.80)
Santa Clara	45.84 (+7.56)
Oakland	40.06 (+1.78)
San Francisco	29.70 (-8.58)
San Mateo	27.77 (-10.51)
San Jose	23.29 (-14.99)

Cumulative avg Total
37.99



Analytics

Metrics

Config

Messaging feature Usage

Purchase made

To-Do Tasks entered

Region

User Type

Gender

Sliced by 'Region'
AND
'UserType'='Premium'

Cumulative avg Total
38.28

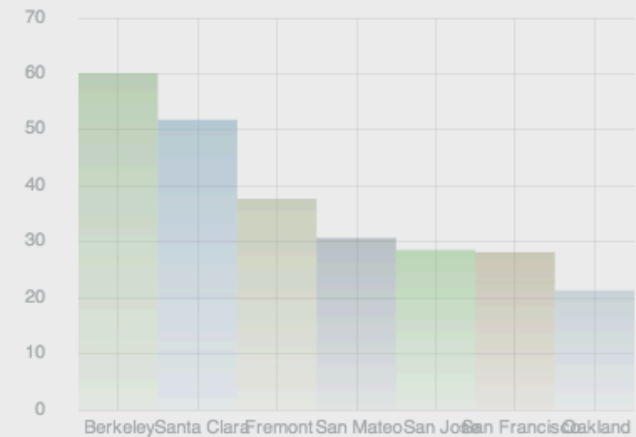
Filters

x UserType

Premium

Region	avg Total	avg Total of UserType: Premium
Fremont	50.19 (+11.91)	37.70 (-12.49)
Berkeley	49.08 (+10.80)	60.10 (+11.02)
Santa Clara	45.84 (+7.56)	51.81 (+5.96)
Oakland	40.06 (+1.78)	21.33 (-18.73)
San Francisco	29.70 (-8.58)	28.17 (-1.54)
San Mateo	27.77 (-10.51)	30.69 (+2.93)
San Jose	23.29 (-14.99)	28.55 (+5.25)

Cumulative avg Total of UserType: Premium
36.91



**TURN YOUR APP
INTO A GLOBAL
BUSINESS**

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