

INTERNET TRENDS 2014 – CODE CONFERENCE

Mary Meeker

May 28, 2014

kpcb.com/InternetTrends



Outline

- 1) Key Internet Trends**
- 2) Status Update – Tech Stocks / Education / Healthcare**
- 3) Re-Imagining Continues**
- 4) Screen + Video Growth = Still Early Innings**
- 5) China's Epic Share Gains**
- 6) Public Company Trends**
- 7) One More Thing(s)...**
- 8) Ran Outta Time Thoughts / Appendix**

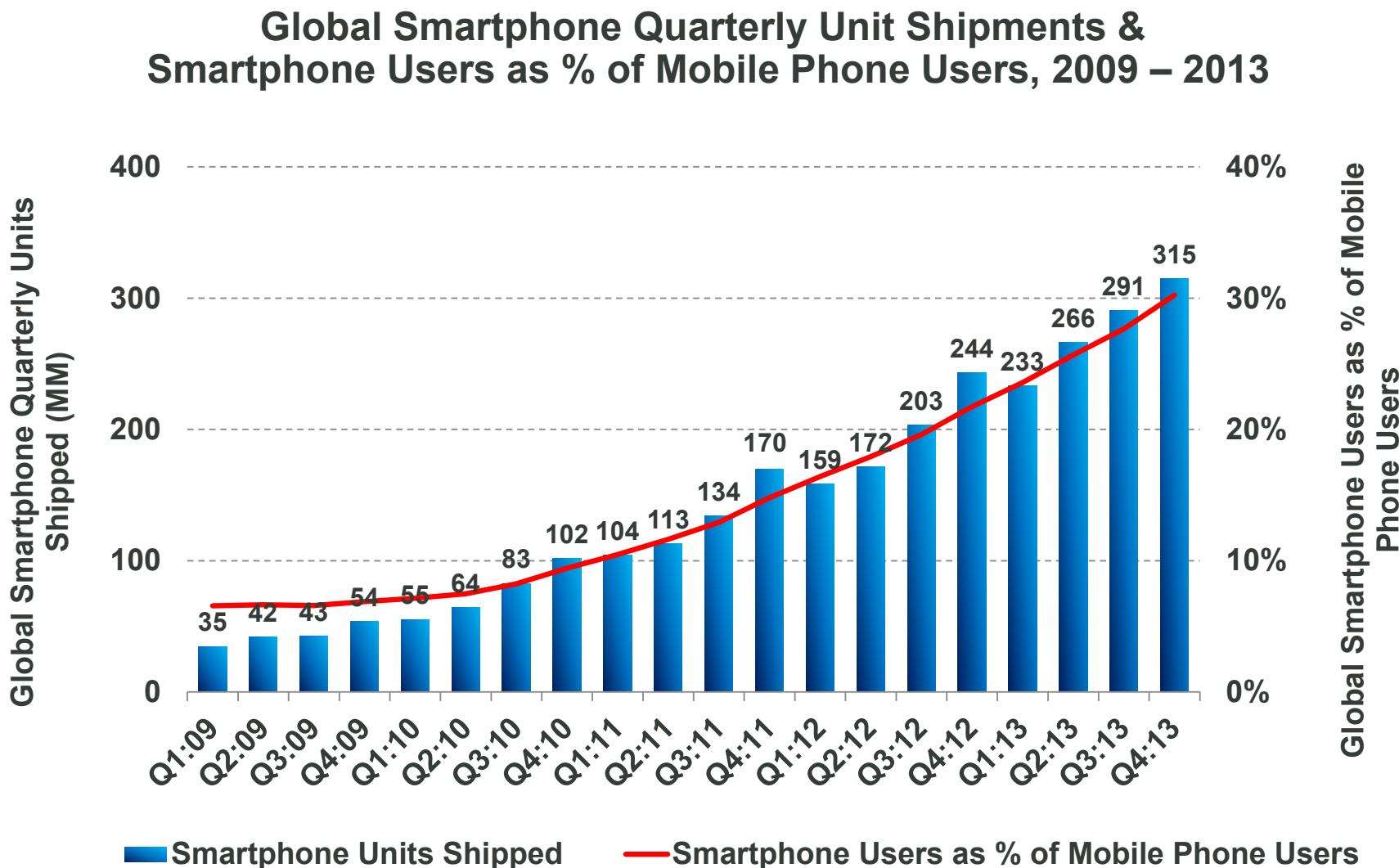
KEY INTERNET TRENDS

High-Level User / Usage Trends*

- **Internet Users**
<10% Y/Y growth & slowing...fastest growth in more difficult to monetize developing markets like India / Indonesia / Nigeria
- **Smartphone Subscribers**
+20% strong growth though slowing...fastest growth in underpenetrated markets like China / India / Brazil / Indonesia
- **Tablets**
+52% early stage rapid unit growth
- **Mobile Data Traffic**
+81% accelerating growth...video = strong driver

*Mobile Usage Growth =
Very Strong*

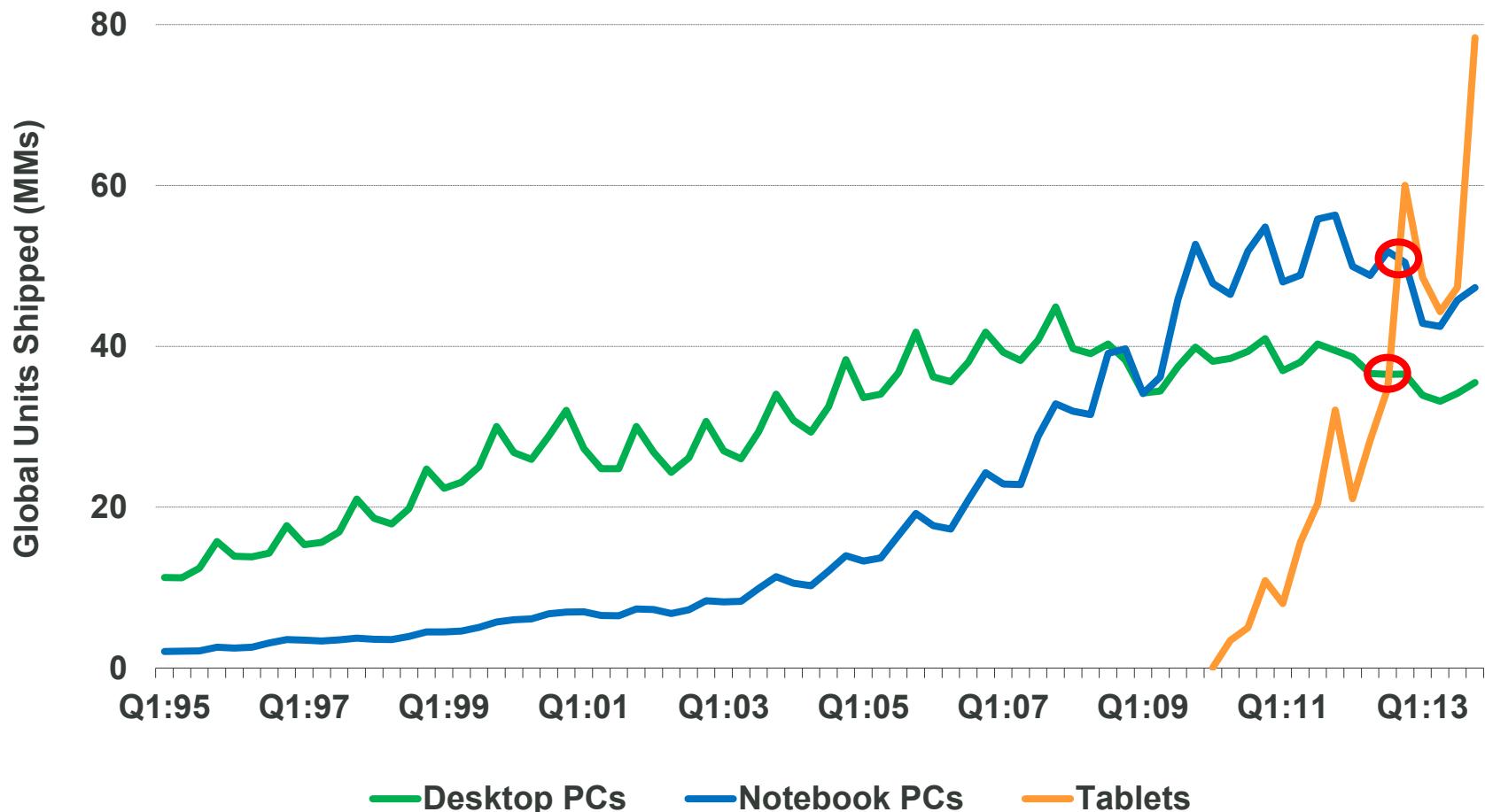
Smartphone Users = Still Lots of Upside... @ 30% of 5.2B Mobile Phone User Base



Source: Smartphone shipments per Morgan Stanley Research. User base per KPCB estimates based on Morgan Stanley Research and ITU data. Smartphone users & mobile phone users represent unique individuals owning mobile devices, as noted on slide 8; Mobile Subscribers based on number of connections & may therefore overstate number of mobile users.

Tablet Units = Growing Faster Than PCs Ever Did... +52%, 2013

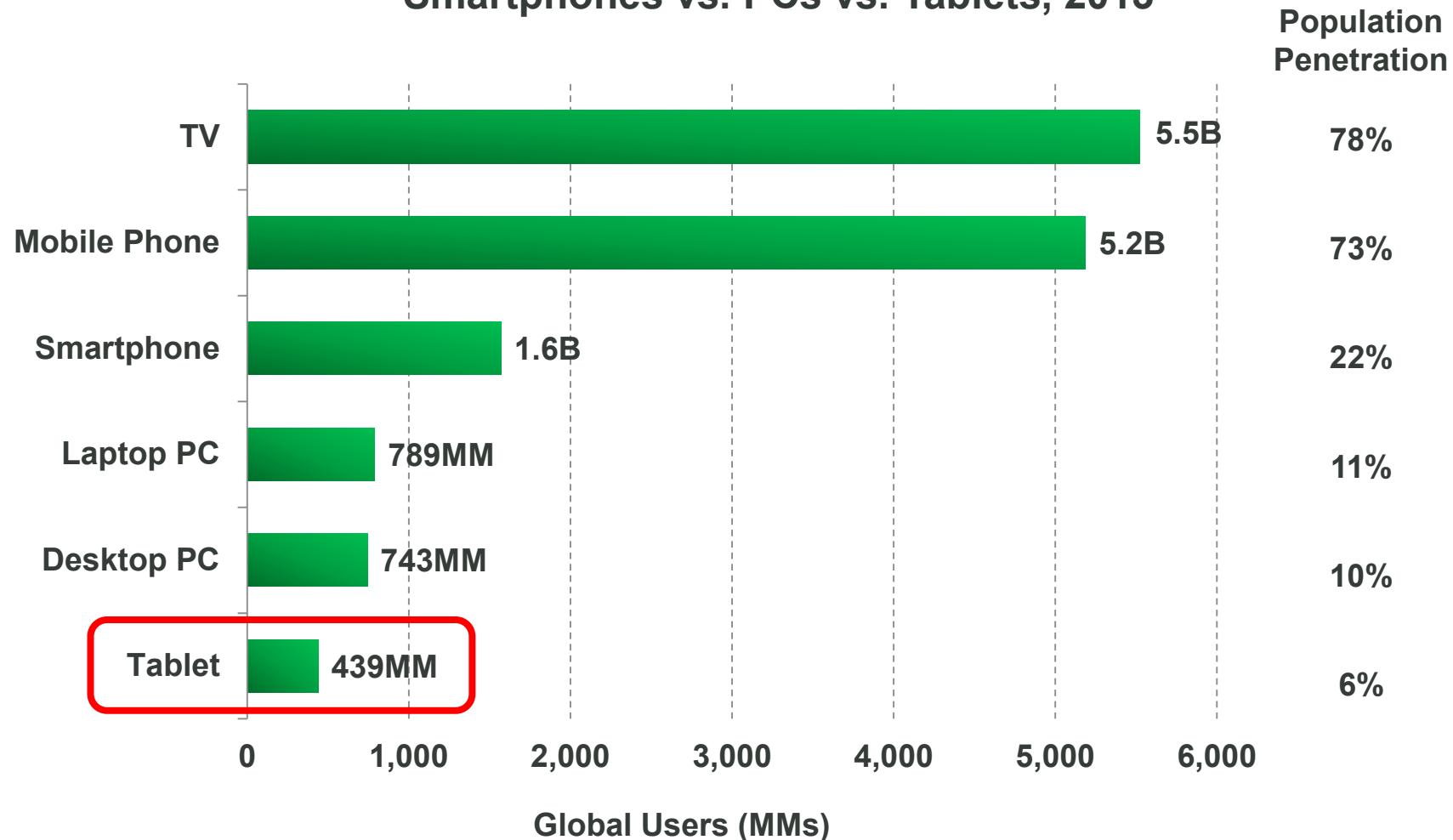
Global PC (Desktop / Notebook) and Tablet Shipments by Quarter
Q1:95 – Q4:13



Source: Morgan Stanley Research. Note: Notebook PCs include Netbooks.

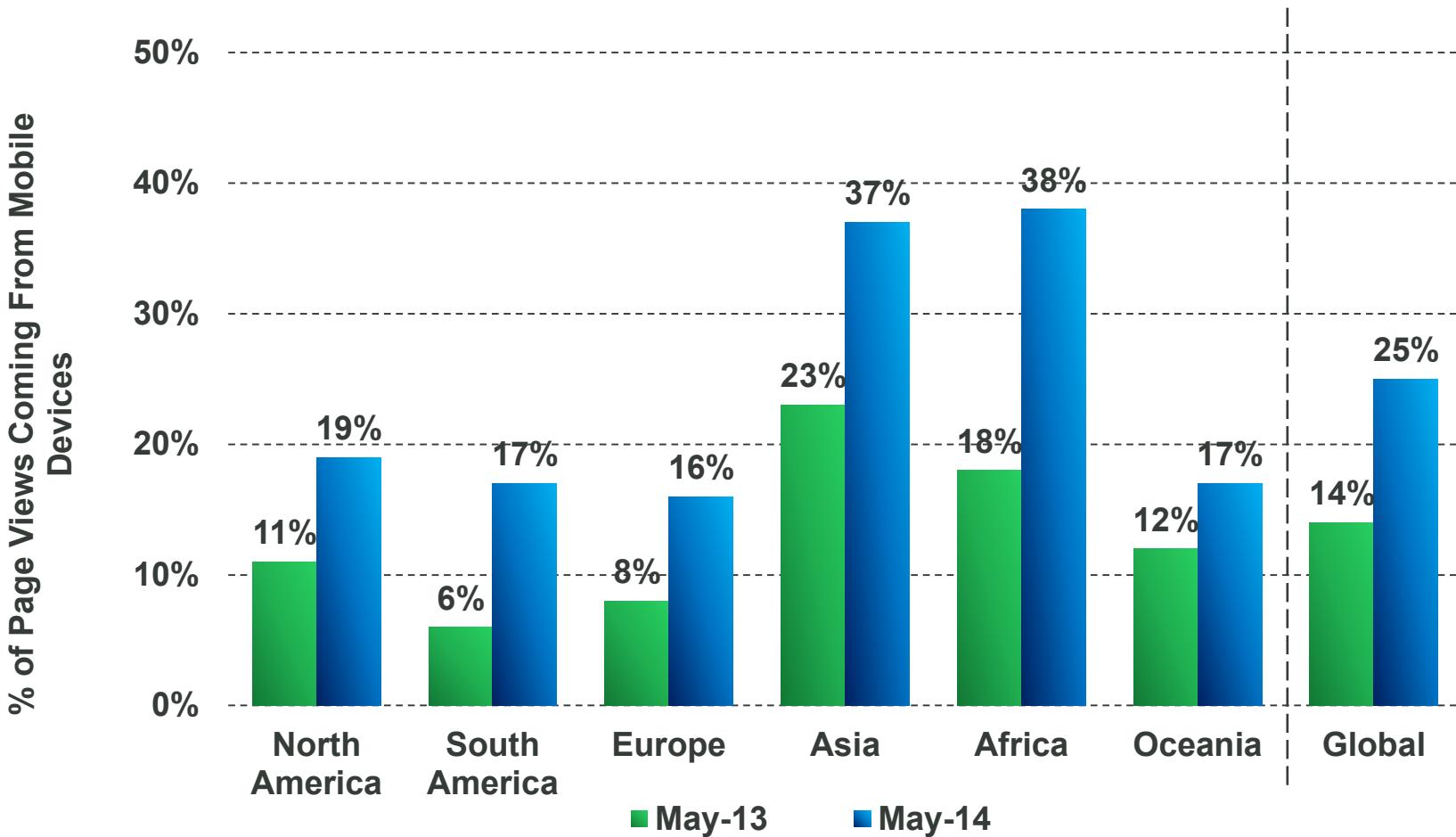
Tablet Users = Loads of Growth Ahead... @ 56% of Laptops / 28% of Smartphones / 8% of TVs

Global Users of TVs vs. Mobile Phones vs.
Smartphones vs. PCs vs. Tablets, 2013

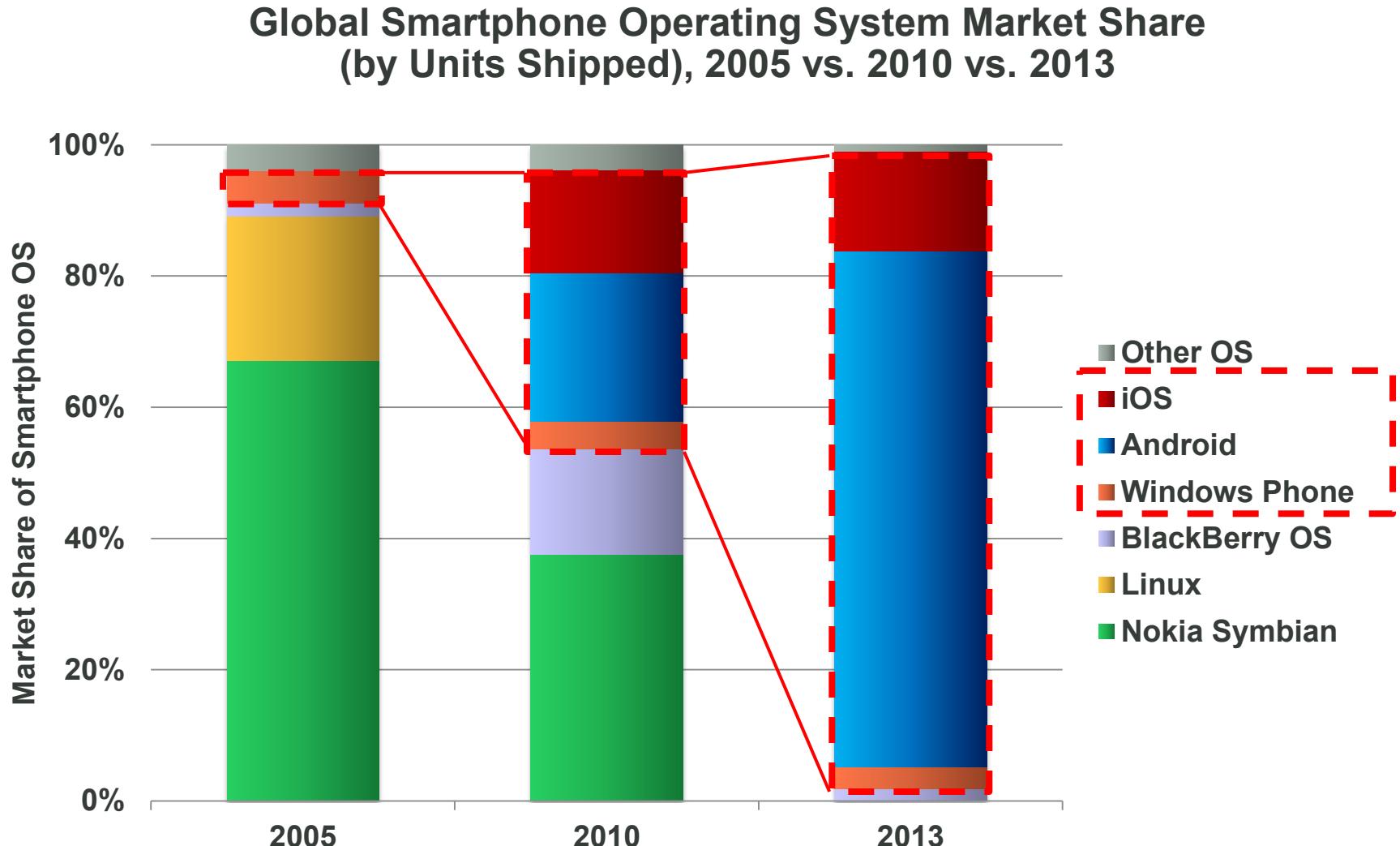


Mobile Usage = Continues to Rise Rapidly...
@ 25% of Total Web Usage vs. 14% Y/Y

Mobile Usage as % of Web Usage, by Region, 5/14



Global Smartphone Operating Systems ‘Made in USA’... 97% Share from 5% Eight Years Ago

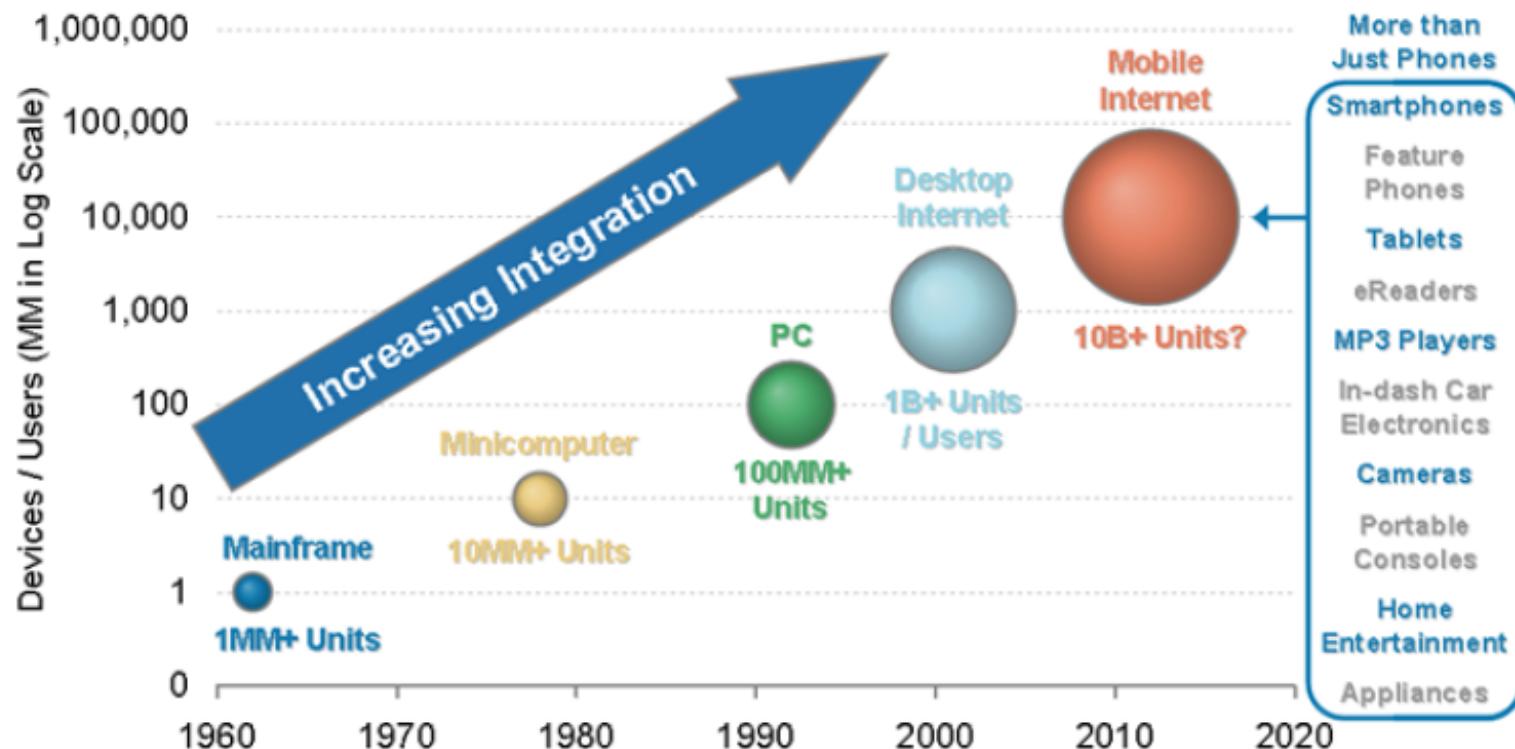


Each New Computing Cycle = 10x > Installed Base than Previous Cycle

Exhibit 29

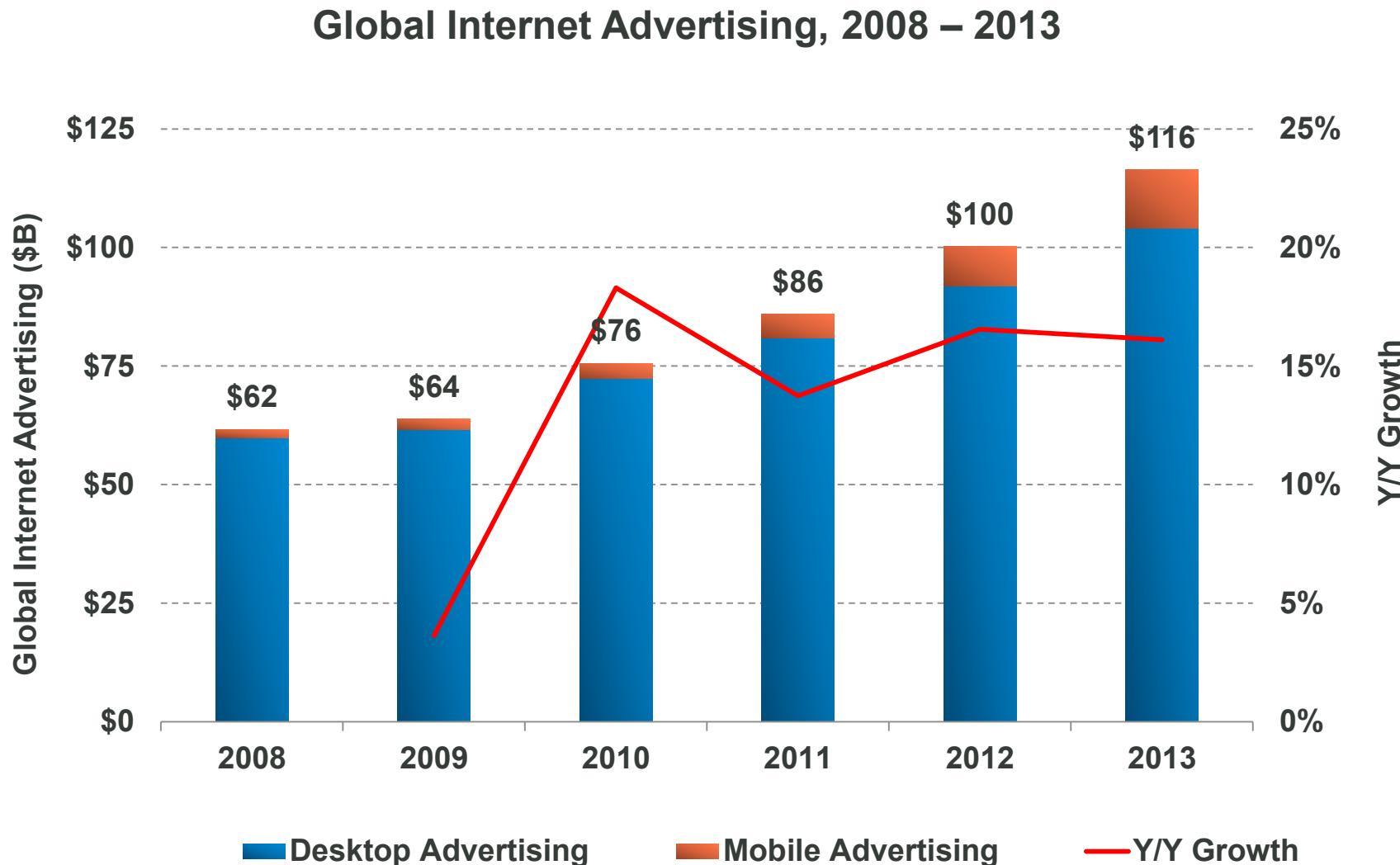
**Each new computing cycle typically generates
around 10x the installed base of the previous cycle**

Devices or users in millions; logarithmic scale



*Advertising / Monetization =
Mobile Especially Compelling*

Internet Advertising = Remains Strong... +16%...Mobile +47% to 11% of Total



ARPU Upside for Facebook + Twitter...

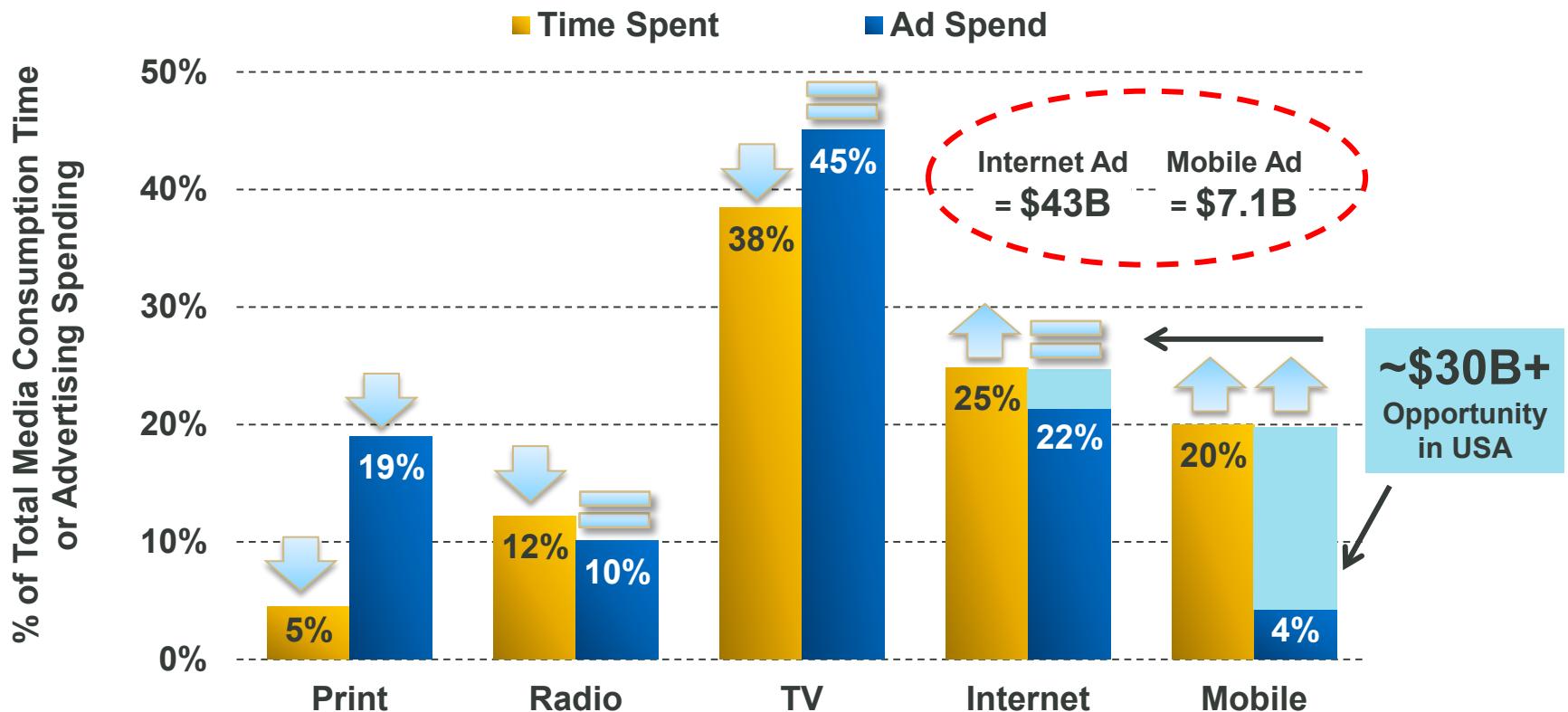
Google ARPU = 6x Facebook...Facebook = 2x Twitter

Annualized Ad ARPU (\$) & Mobile % of MAU

Annualized Ad ARPU (\$)	Q1:12	Q2:12	Q3:12	Q4:12	Q1:13	Q2:13	Q3:13	Q4:13	Q1:14
Google (\$)	\$37	\$37	\$38	\$43	\$42	\$41	\$41	\$46	\$45
<i>Y/Y Growth</i>	9%	6%	6%	14%	14%	11%	10%	8%	8%
Facebook (\$)	\$4.00	\$4.28	\$4.43	\$5.15	\$4.60	\$5.65	\$6.14	\$7.76	\$7.24
<i>Y/Y Growth</i>	1%	(2%)	7%	12%	15%	32%	39%	51%	57%
<i>Mobile % of MAU</i>	54%	57%	60%	64%	68%	71%	74%	77%	79%
Twitter (\$)	\$1.29	\$1.50	\$1.64	\$2.15	\$1.97	\$2.22	\$2.65	\$3.65	\$3.55
<i>Y/Y Growth</i>	90%	134%	108%	93%	52%	48%	61%	69%	80%
<i>Mobile % of MAU</i>	--	--	--	--	--	75%	76%	76%	78%

Remain Optimistic About Mobile Ad Spend Growth... Print Remains Way Over-Indexed

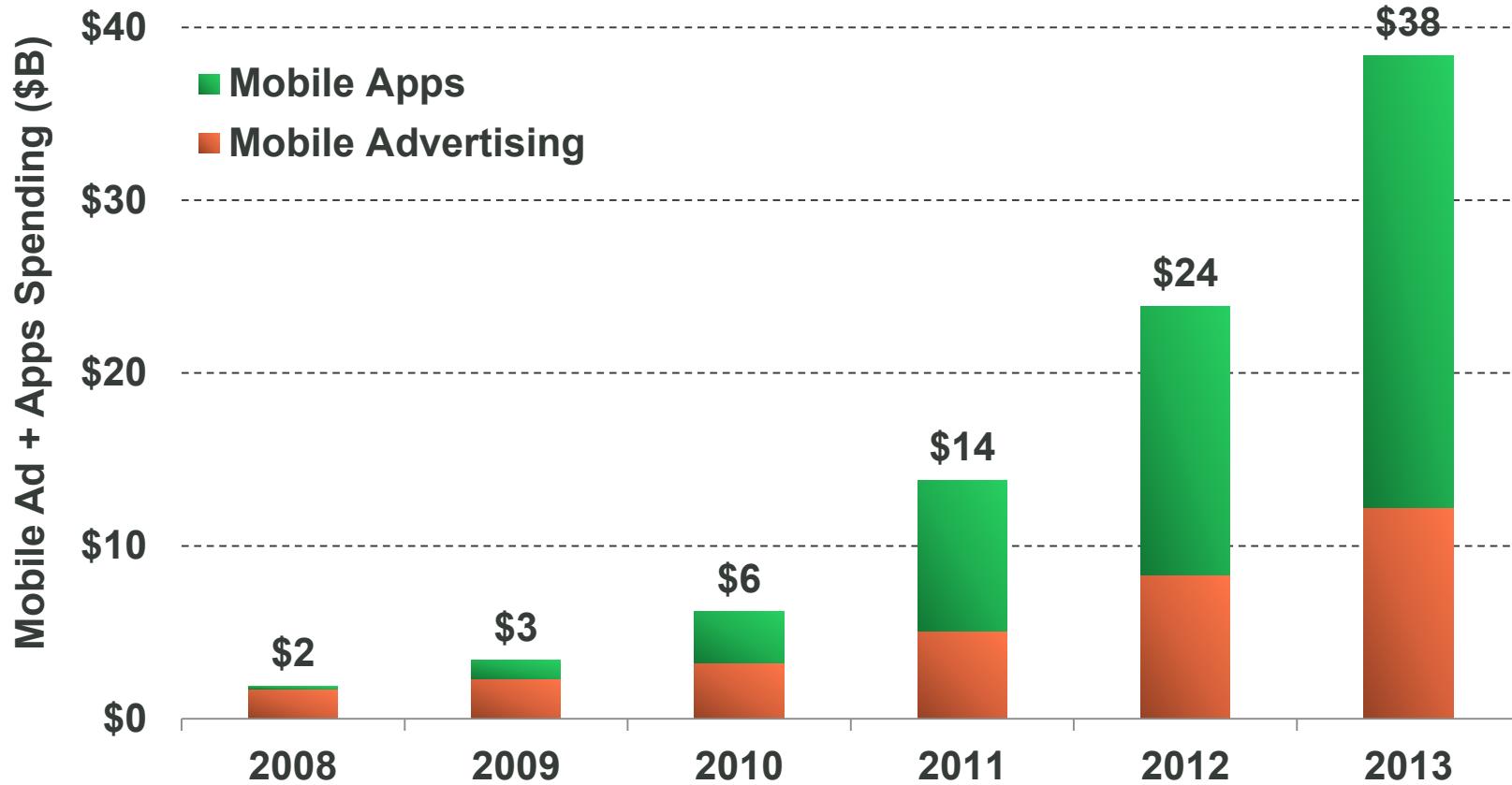
% of Time Spent in Media vs. % of Advertising Spending, USA 2013



Source: Advertising spend based on IAB data for full year 2013. Print includes newspaper and magazine. \$30B+ opportunity calculated assuming Internet and Mobile ad spend share equal their respective time spent share. Time spent share data based on eMarketer 7/13 (adjusted to exclude outdoors / classified media spend). Arrows denote Y/Y shift in percent share.

Mobile App Revenue = Still Trumps Mobile Ad Revenue... @ 68% of Mobile Monetization

Global Mobile App + Advertising Revenue, 2008 – 2013



Cyber Threats Intensifying...

Cybersecurity Trends – Kevin Mandia (Mandiant / FireEye)

- 1) # of Active Threat Groups Rising Rapidly =
300 (+4x since 2011) per Mandiant tracking**
- 2) Increased Nation-State Activities***
- 3) Vulnerable Systems Placed on Internet Compromised in
<15 Minutes****
- 4) +95% of Networks Compromised in Some Way**
- 5) As Mobile Platforms Grow, Directed Attacks Will Rise**

STATUS UPDATE – TECH STOCKS / EDUCATION / HEALTHCARE

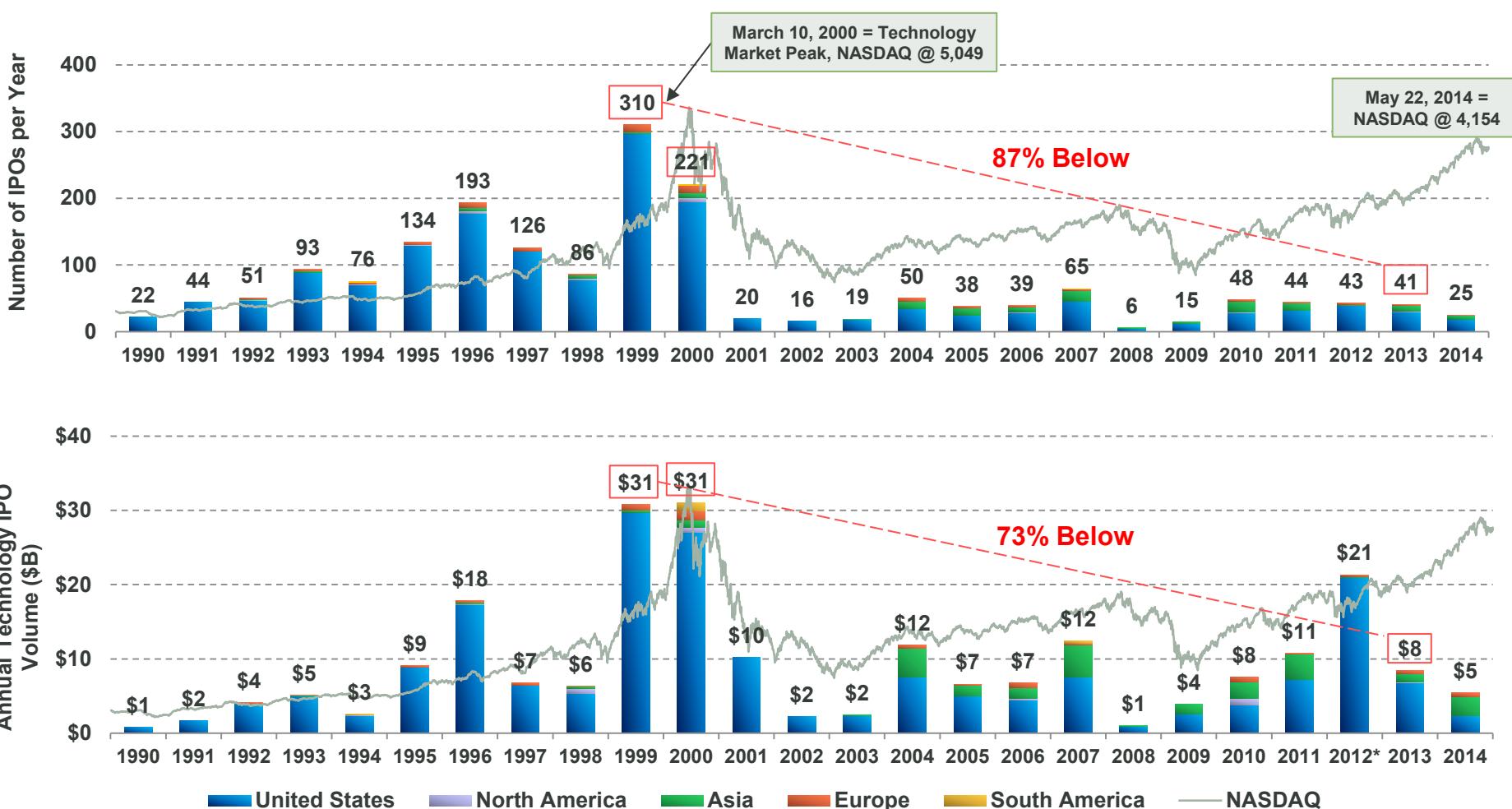
Technology Company Valuation Excess?

Some? Yes...

But, Let's Look @ Patterns...

2013 Technology IPOs = \$ Volume 73% Below 1999 Peak Level... NASDAQ 18% Below March 2000 Peak

Global Technology IPO Issuance, 1990 – 2014YTD

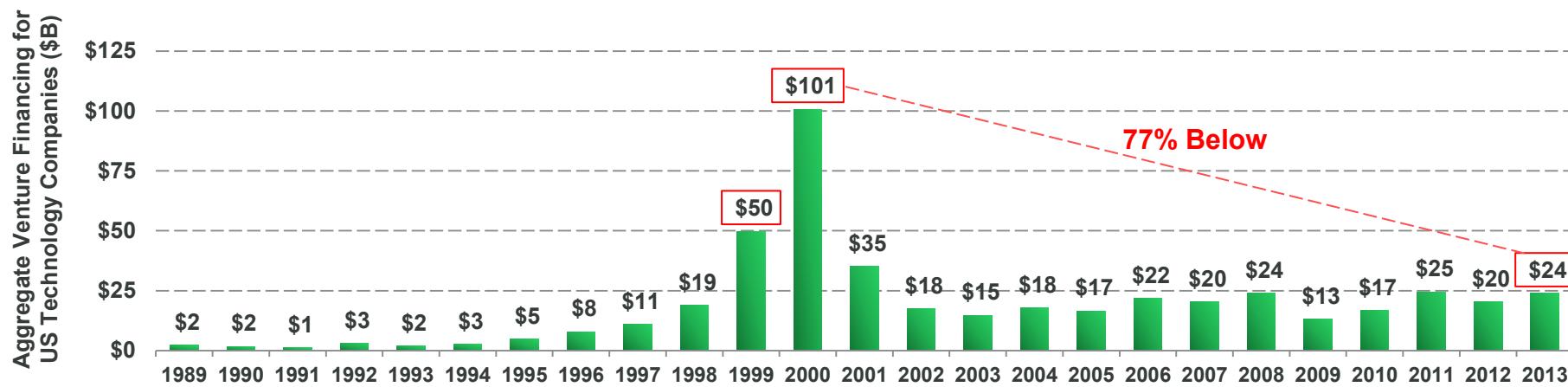
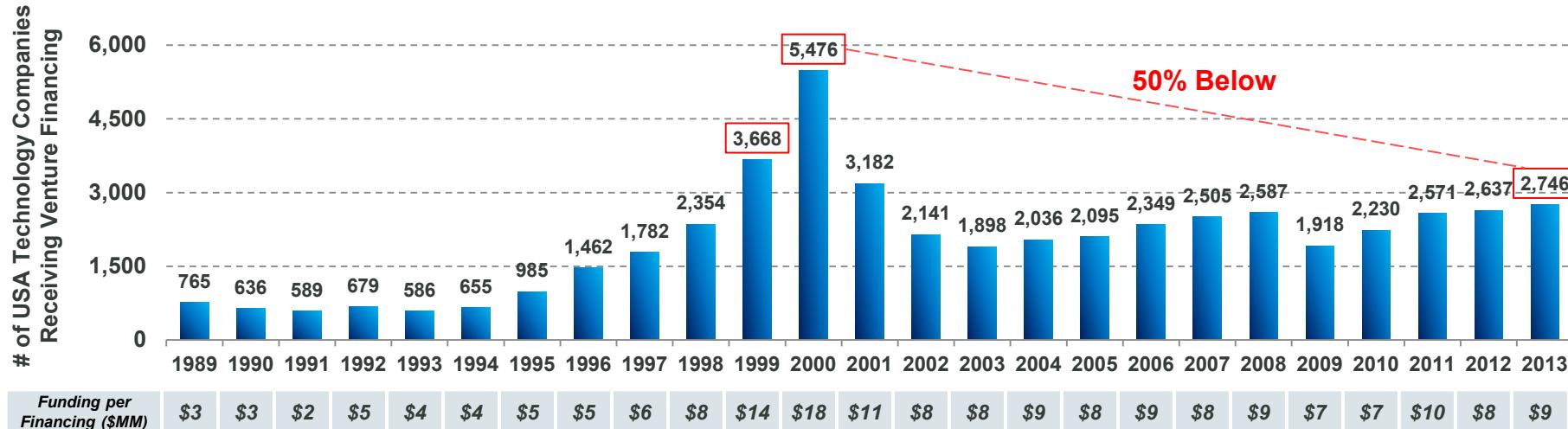


*Facebook = 75% of 2012 IPO \$ value.

Source: Morgan Stanley Equity Capital Markets, 2014YTD as of 5/21/14, data per Dealogic, Bloomberg, & Capital IQ.

2013 Venture Financings = \$ Volume 77% Below 2000 Peak Level

USA Technology Venture Capital Financing, 1989 – 2013



Tech Companies @ 19% of S&P500 Value = Well Below 35% March, 2000 Peak Level

Technology Company Market Value as % of S&P500, 1991 – 2014YTD



*Education =
May Be @ Inflection Point*

Education Realities = Facts – USA...

Education is Important – Getting education right is crucial for future success

Education is Expensive

- **Secondary School Costs** – USA ranks 4th globally in expenditure per student among 34 OECD countries*
- **Higher Education Costs** – 71% of 4-year college grads = \$30K average student loan debt. All in, this \$1T+ exceeds credit card & auto loan debt

Education Results Often Subpar

- **Public Schools** – Rank 27th globally in math / 20th in science / 17th in reading
- **College Job Prep** – 1/3 of four-year college graduates feel their education did not prepare them well for employment

...Education Realities = Reasons for Optimism...

- **People Care About Education** – 8 in 10 Americans say education issue is extremely / very important to them
- **Personalized Education Ramping** – People learn in different ways and Internet offers many options – on own terms and at low cost – to many, with real-time feedback
- **Distribution Expanding & Education Start Up Costs Declining** – Direct to consumer / teacher allows education products to receive rapid mass adoption...productization / distribution costs falling

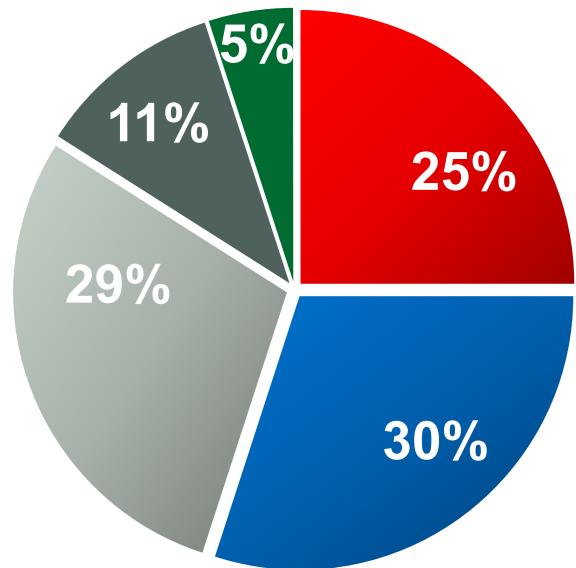
...Education Realities = Green Shoots Data

- **Graduation Rates Rising** – 81% of high school freshman graduated in 2012, up from 74% five years ago
- **Language Learning Easier / Fun** – 25MM+ people (+14x Y/Y) use Duolingo app to learn new language
- **Communication Easier** – 12MM+ teachers / students / parents (+15x Y/Y) use Remind101 to send 500MM+ messages
- **Behavior Feedback Easier** – 35MM+ teachers / students / parents using ClassDojo to help improve student behavior through real-time feedback
- **Online Courses Can Help Learning Process (for Teachers + Students)**
 - 430MM+ views (+69% Y/Y) on Khan Academy YouTube channel, 10MM MAUs
 - 65MM+ courses (+59% Y/Y) from iTunes U Open University downloaded
 - 7MM+ students (+ >2x Y/Y) enrolled in Coursera courses

Online Education = It's a Global Thing

Duolingo (25MM Users)

Traffic Distribution, 4/14

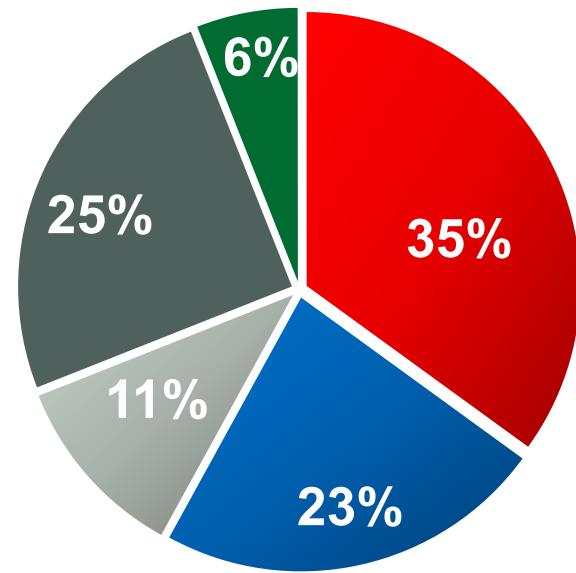


- North America
- Latin America
- Africa / Oceania

- Europe
- Asia

Coursera (7MM Users)

Student Distribution, 3/14



- North America
- Latin America
- Africa / Oceania

- Europe
- Asia

*Healthcare =
May Be @ Inflection Point*

Healthcare Realities = Facts – USA...

- **Costs Up to 17% of GDP** – @ \$2.8T in 2012, +2x as percent of GDP in 35 years
- **Waste = 27% of Spend** – \$765B of healthcare spend estimated from excess costs: \$210B = unnecessary services; \$190B = excess administrative; \$55B = missed prevention opportunities; \$310B = inefficient delivery of care / fraud / inflated prices (2009)
- **Employers Carry Big Burden** – \$620B spend by employers for 150MM Americans (2014E)...costs up 28% vs. 5 years ago...67% CFOs indicate healthcare costs = leading economic concern
- **Individual Costs Rising** – >25% of family income likely to go to healthcare spending in 2015E vs. 18% in 2005...top 5% healthcare consumers (most with multiple chronic illnesses) spent 50% of healthcare dollars (2009)...>50% of personal bankruptcies driven by healthcare costs
- **Chronic Conditions = +75% of Spend** – Most costly = cancer / diabetes / heart disease / hypertension / stroke...1 in 2 Americans has at least 1 chronic condition, 1 in 4 has 2+...32% of Americans obese in 2008, up from 15% in 1990
- **Behavior = Root Cause of Many Health Problems** – Health risk behaviors cause chronic diseases. 52% of adults did not meet recommendations of physical activity (2011)...50% of those with chronic conditions not complaint with taking medicine to manage disease = \$100B on avoidable hospitalizations (2010)

...Healthcare Realities = Reasons for Optimism...

- **Digital Technology Enables Change** – Healthcare system has relied on antiquated systems
- **Government Enabled Change Pushes Technology**
 - *HITECH Act* – \$35B administered by Office of the National Coordinator for Electronic Health Records (EHR) + health information technology in 2013...penalties exist for non-compliance
 - *Affordable Care Act* – Coverage expansion in works
- **Consumerization of Healthcare** – Majority (52%) of consumers want to access tools / websites rankings for quality / satisfaction / patients reviews of doctors + hospitals

...Healthcare Realities = Green Shoots Data

- **Digitization of Healthcare Happening**
 - *Providers Using Fully Functioning EHR* – 84% of Hospitals / Academic / Institutional practices...51% (& rising) of office-based practices
 - *Consumers Happy to Communicate via Email* – 62% for healthcare concerns
 - *Digital Health Venture Investments Rising* – +39% Y/Y to \$1.9B (2013, USA)
- **Quality Over Quantity Incentives Being Implemented**
 - *Payers Incentivized to Engage Patients / Improve Care / Outcomes / Reduce Costs*
 - *Providers Shifting to Value-Based from Fee-for-Service Payments*
 - *Employers Lowering Costs by Offering Services to Improve Engagement / Choices / Care* – 46% of employers will enact participatory / outcomes based incentives (like weight loss / cholesterol levels)... By 2015, 60% will offer price transparency tools from health plans
- **Patient Engagement Rising & Yielding Results**
 - *Redbrick Health* – employer engagement platform = 4:1 ROI savings per participant
 - *Teladoc* – employer focused telemedicine platform = \$798 savings per consultation vs. office visit & ER over 30 days
 - *Mango Health* – adherence app = 84% Statin adherence vs. 52% market average
 - *WellDoc* – chronic disease platform = diabetes app prescription with reimbursement

RE-IMAGINING CONTINUES

Re-Imagining Messaging / Communications

A Tweet – David Sacks (Yammer CEO / Founder)



David Sacks
@DavidSacks

Both WhatsApp and Secret represent the ascendency of the phone book over the friend graph. It's back to the future.

[Reply](#) [Retweet](#) [Favorite](#) [More](#)

3:17 PM - 19 Feb 2014

Global OTT (Over-the-Top) Messaging Services = >1B Users in <5 Years...

Global Messaging Ecosystem – Select Players, 2013



WhatsApp (USA), 4+ Years

MAUs = **400MM**, +100% Y/Y
Messages / Day = **50B**, +178% Y/Y



**Tencent WeChat (China),
3+ Years**

MAUs = **355MM**, +125% Y/Y



Line (Japan), 2+ Years

MAUs = **280MM**
Messages / Day = **10B**
Revenue = **\$388MM**, +5x Y/Y (Q4:13)



KakaoTalk (Korea), 3+ Years

Messages / Day = **5.2B**, +24% Y/Y
Revenue = **\$203MM**, +4xY/Y



Snapchat (USA), 2+ Years

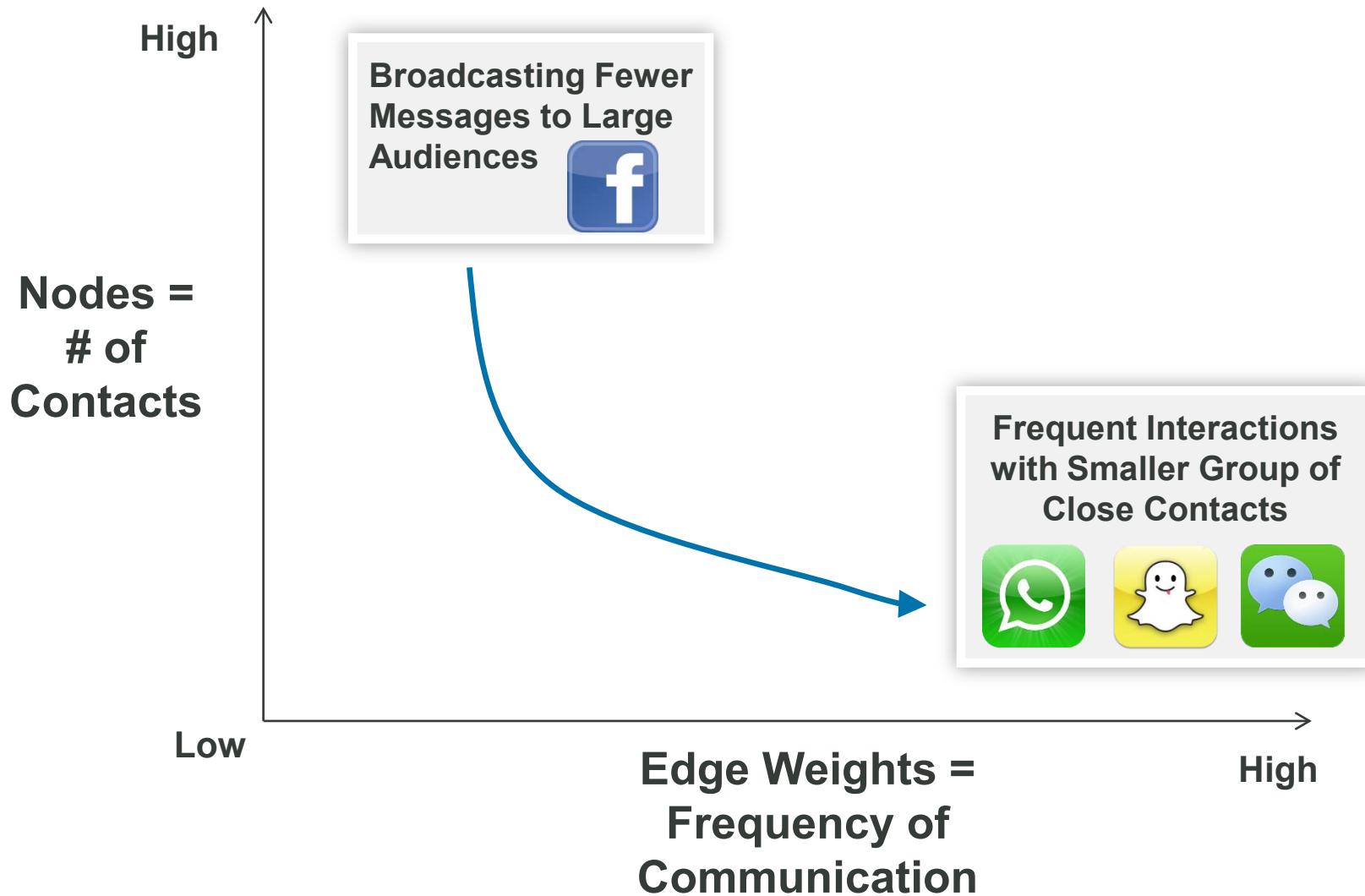
Messages / Day = **1.2B**



Viber (Israel), 3+ Years

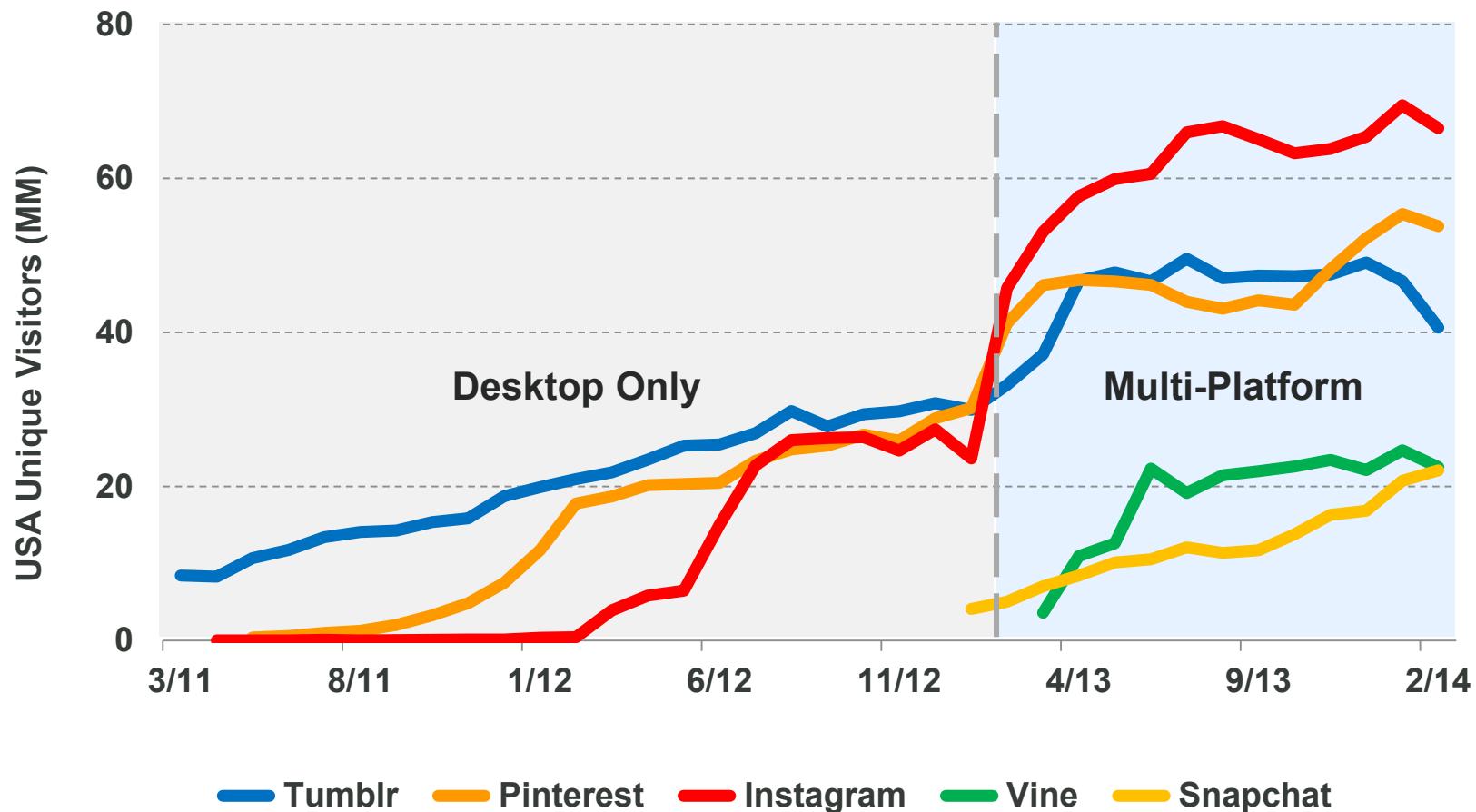
MAUs = **100MM**

Evolution of Messaging → New Social Graphs... Edges = Potentially More Value than Nodes...



Evolution of Communications → Image + Video Sharing Rising Rapidly

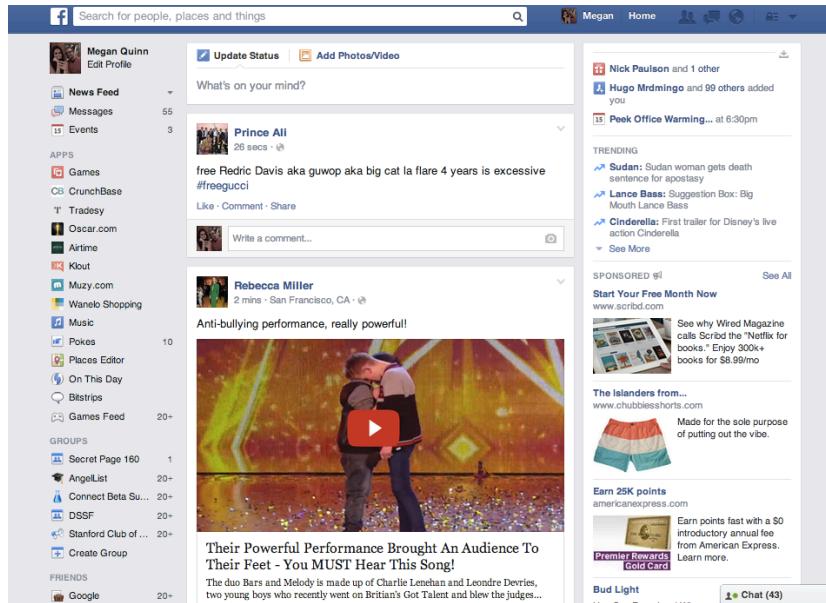
'Visual Web' Social Networks: Unique Visitors Trend, USA, 3/11 – 2/14



Re-Imagining Apps

Evolution of Apps → Internet Unbundling...

First, multi-purpose web apps... ...then, multi-purpose mobile apps...



...now, single-purpose = 'there's an app for that...'



Evolution of Apps → Internet Unbundling = Rise Of Invisible App

...now some apps are disappearing altogether...



Foursquare Swarm

Runkeeper Breeze

Dark Sky

WUT

We're entering the age of apps as service layers.

These are apps you have on your phone but only open when you know they explicitly have something to say to you.

They aren't for 'idle browsing,' they're purpose-built & informed by contextual signals like hardware sensors, location, history of use & predictive computation.

– Matthew Panzarino, *TechCrunch*, 5/15/14

*Re-Imagining
Distribution Channels
& Content*

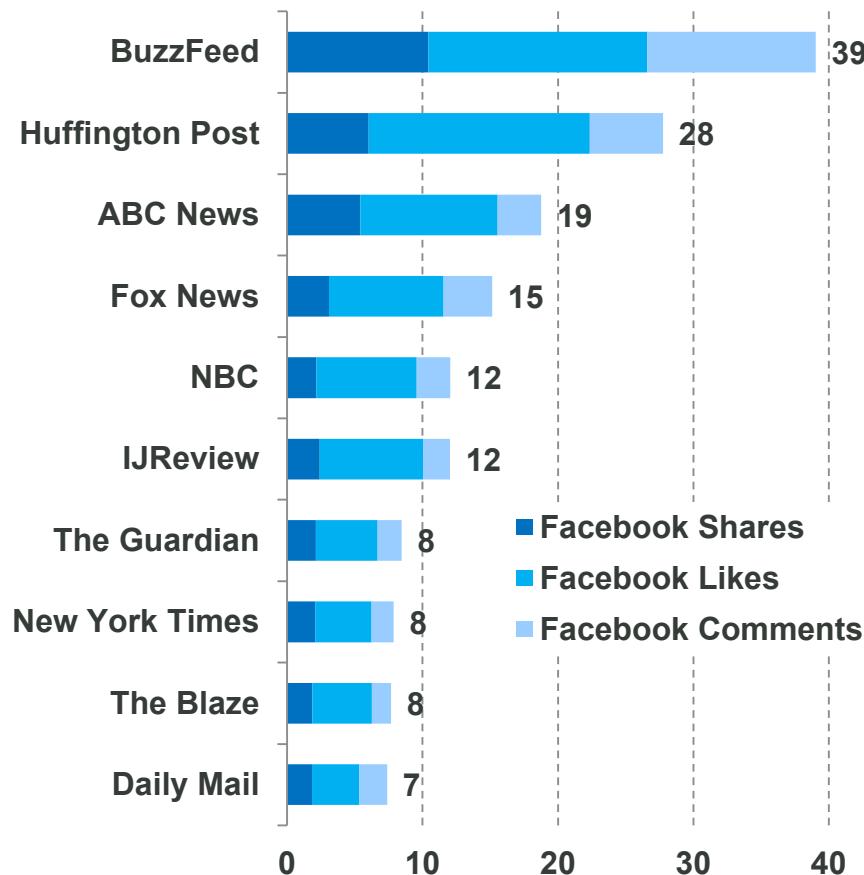
Social Distribution Leaders = Facebook / Pinterest / Twitter...

- **Social Media Traffic Referral Leaders =**
Facebook / Pinterest / Twitter with estimated
21%, 7%, 1% of global referrals, per
Shareaholic, 3/14.
- **Social Distribution Happens Quickly =**
Average article reaches *half* total social referrals
in 6.5 hours on Twitter, 9 hours on Facebook,
per SimpleReach, 5/14.

Social News Content Leaders = BuzzFeed / Huffington Post / ABC News...

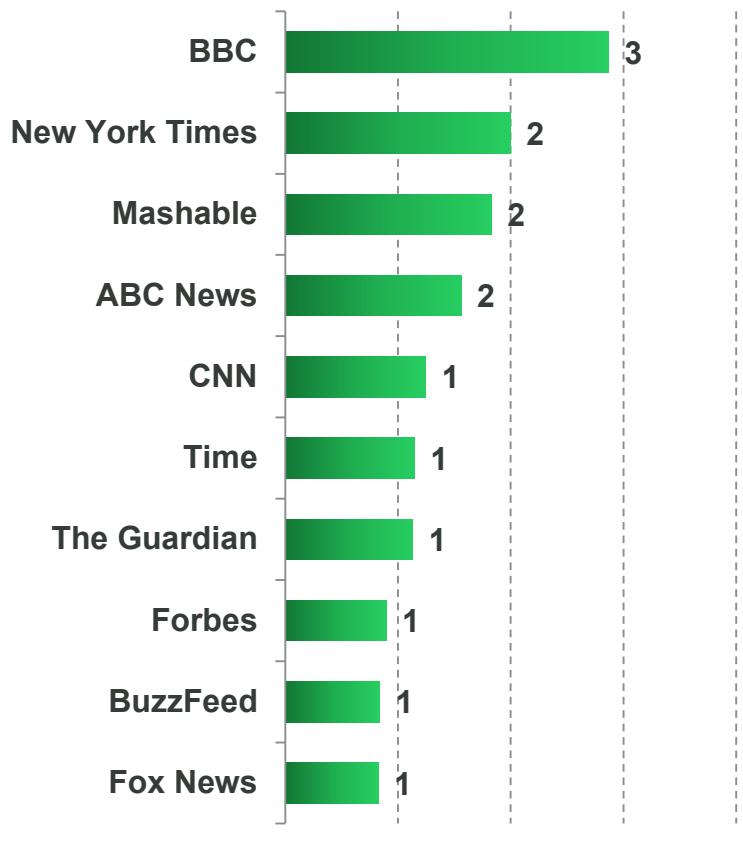
Top Facebook News Publishers, 4/14

of Interactions (MM)



Top Twitter News Publishers, 4/14

of Shares (MM)



Re-Imagining Content + Content Delivery = BuzzFeed... Lists / Quizzes / Explainers / Breaking / Video / Mobile

BuzzFeed

130MM+ Unique Visitors +3x Y/Y (5/14)
>50% Mobile, >75% Social, >50% age 18-34



15 Things You Didn't Know
Your iPhone Could Do
17MM+ views



What State Do You Actually
Belong In?
40MM+ views



Why I Bought A House In
Detroit For \$500
1.5MM+ views



Photoshopping Real Women
Into Cover Models
13MM+ video views

Re-Imagining Day-to-Day Activities

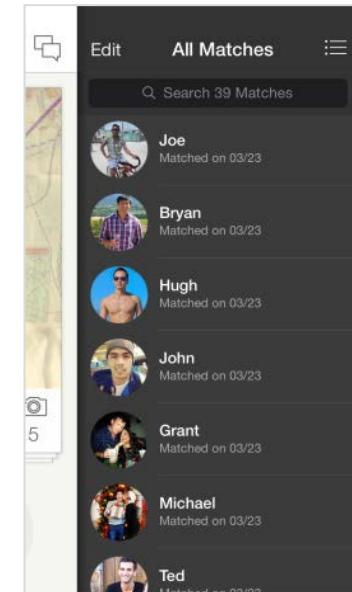
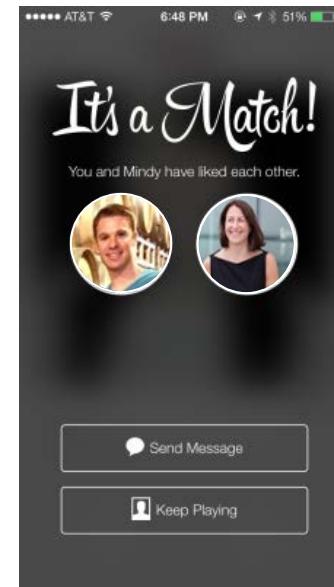
Re-Imagining How People Meet

**~70K Bars /
Nightclubs, USA**



Tinder

800MM Swipes per day, +21x Y/Y
11MM Matches per day, +21x Y/Y



Re-Imagining Local Services / Reputation = Leverage + Efficiency



**6MM Guest Stays
550K Listings, +83% Y/Y**

11x Ratio Guest Stays / Listings

Alibaba



**231MM Buyers, +44% Y/Y
8MM Sellers**

**29x Ratio
\$31K / Year Avg to Alibaba's China
Retail Marketplace Sellers**



**39MM Meal Orders, +74% Y/Y
29K Restaurants, +3X Y/Y**

**1,367x Ratio
\$35K / Year Avg to Restaurants**

Re-Imagining Grocery Shopping

>47% of Online Transactions Use 'Free-Shipping,' vs. 35% Five Years Ago...
Same-Day Local Delivery = Next Big Thing...



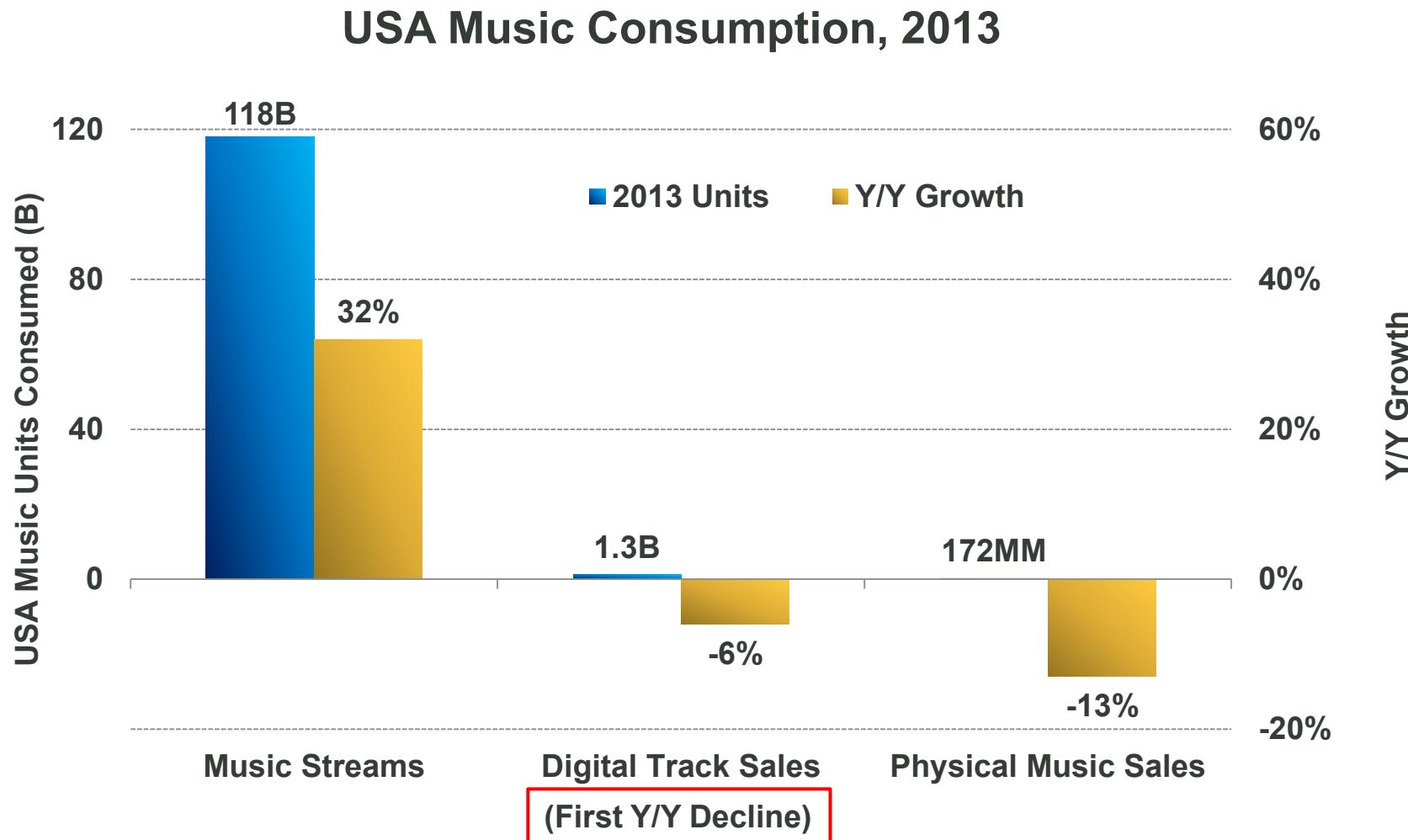
Instacart



Amazon Fresh

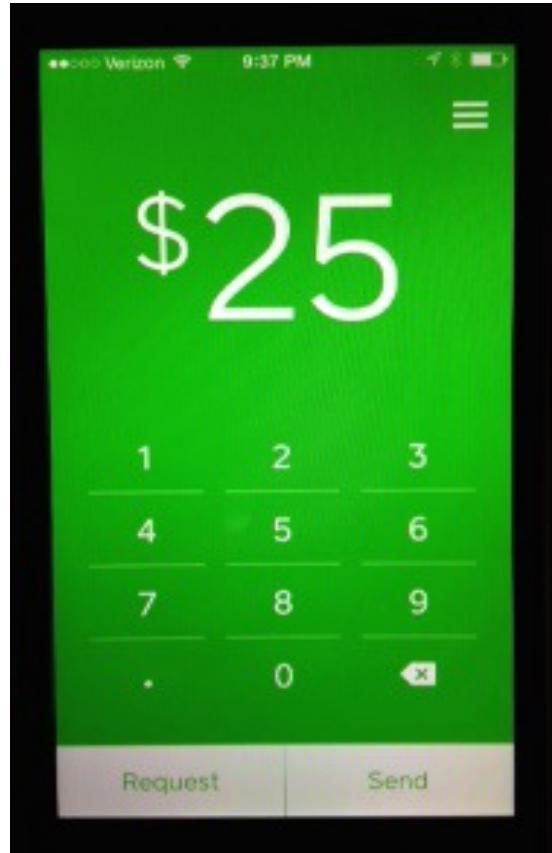


Re-Imagining Media (Music) Consumption = Streaming +32%, Digital Track Sales -6%

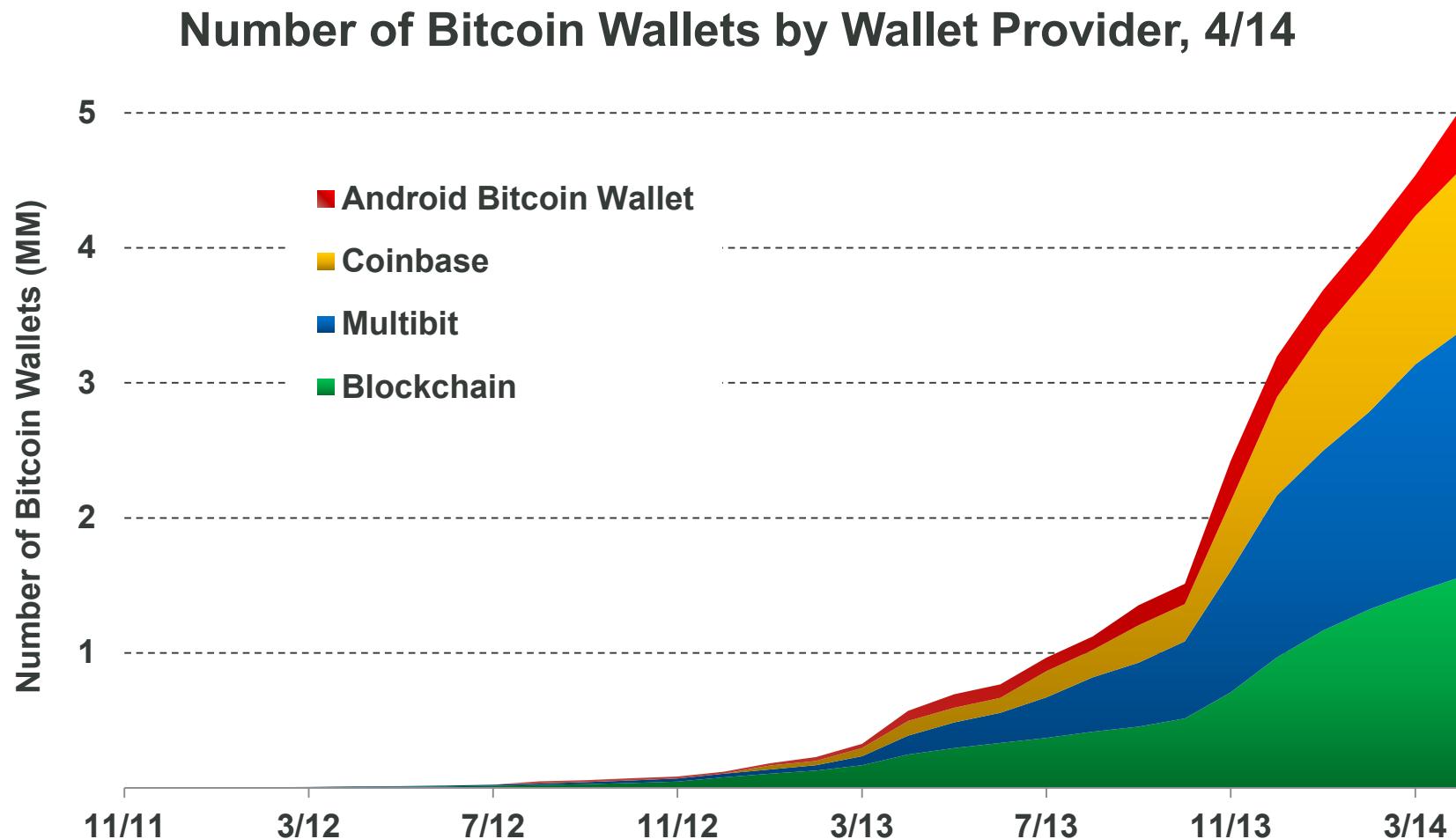


Re-Imagining Money

Re-Imagining Money



Fact that ~5MM Bitcoin Wallets (+8x Y/Y) Exist Proves Extraordinary Interest in Cryptocurrencies



*Re-Imagining
an
Industry Vertical*

Internet Trifecta =
Critical Mass of Content + Community + Commerce...

1) Content =

Provided by Consumers + Pros

2) Community =

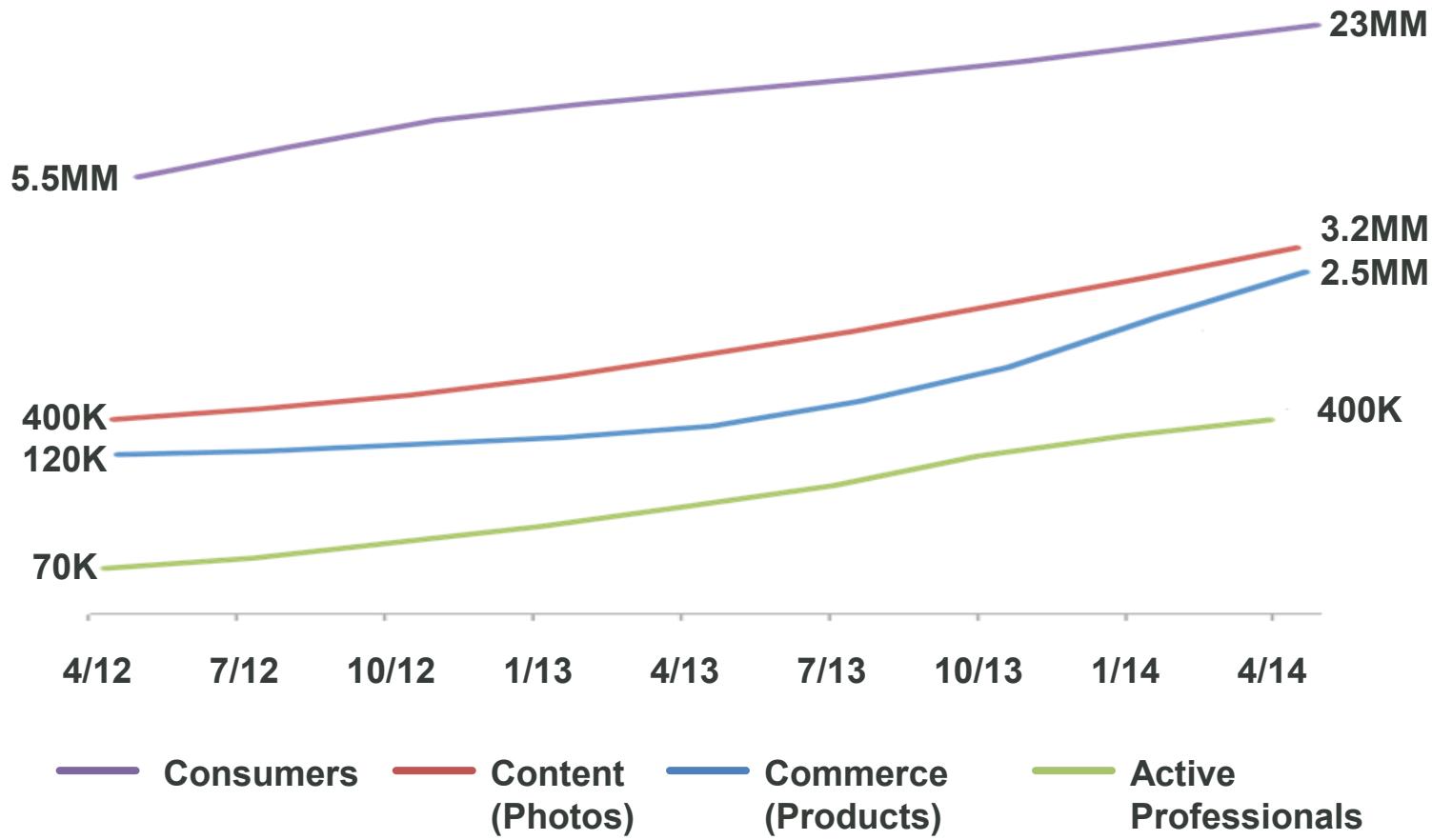
Context & Connectivity Created by & for Users

3) Commerce =

Products Tagged & Ingested for Seamless Purchase

...Internet Trifecta = Critical Mass of Content + Community + Commerce...

Houzz – Content (Photos) / Community (Professionals + Consumers) / Commerce (Products), 4/12 – 4/14



Source: Houzz, Consumer defined as unique monthly users, Active Professional defined as active users of Houzz with a business profile.

...Houzz = Ecosystem for Home Renovation & Design

Content



Inspiration - Photos

~3MM (+230% Y/Y)
World's largest photo database



Editorial - Guides / Articles

10K (+143%)
'Wikipedia' of home design

[Kitchen | Remodeling | Most Popular | Kitchen Workbook](#)
Homeowner's Workbook: How to Remodel Your Kitchen
9 steps to a kitchen remodel, from gathering design ideas through construction and final review

Rebekah Zwiehoff
Home contributor & founder, principal designer at [KitchenLab](#) - Reviews... More

[Comments](#) 220 [Bookmarks](#) 169 [Likes](#) 330 [Email](#) [Print](#)

[Facebook](#) [Twitter](#) [LinkedIn](#) [Pinterest](#) [Tumblr](#) [Reddit](#) [StumbleUpon](#) [Digg](#) [Delicious](#) [Furl](#) [Linkify](#) [Email](#) [Print](#)

You're decided to remodel your kitchen. Now what? Not knowing where to start, many homeowners fall into two camps. Some start by looking at examples. Others start by collecting inspiring kitchen photos. Some decide they need more room. Others simply want to upgrade their current kitchen. Homeowners may find themselves in this exploration stage for a year or longer before they start interviewing kitchen designers or general contractors.

Once you've pondered long enough and you're ready to green-light a kitchen remodeling project, then what? We'll start with the first 9 steps and we'll get into the nitty-gritty details under specific steps, as we move through the complete remodel.

Step 1: Think about what you need
This step is all about how you use your kitchen, and finding the layout and features that fit your needs. You can start by looking at examples of every resource possible, including Houzz guides and photos, showcases, books, magazines and blogs.

Think about your priorities: how many people will be cooking and gathering here, and how they'll need to move around in it. Do you need an island? Or maybe you work with your existing kitchen footprint?

If you haven't already, start saving photos of kitchens with features that suit your style. Your collection can be organized and beautiful like a scrapbook or it can be filled with random, unorganized images. I actually prefer the latter, because I like to randomly stuff images into my folders and dreamboards and go back to them later on for edits.

How to Organize Your Ideas

Community



Services – Professionals

400K (+198%)
Portfolios & reviews

[Kitchen | Remodeling | Most Popular | Kitchen Workbook](#)
Wilson Kitchen and Bath
Professional kitchen and bath remodeling services, including cabinet making, tile, and countertop installation.

Profile **Reviews** **Photos** **Services** **Portfolio** **Reviews** **Photos** **Services** **Portfolio**

[Comments](#) 120 [Bookmarks](#) 100 [Likes](#) 130 [Email](#) [Print](#)

[Facebook](#) [Twitter](#) [LinkedIn](#) [Pinterest](#) [Tumblr](#) [Reddit](#) [StumbleUpon](#) [Digg](#) [Delicious](#) [Furl](#) [Linkify](#) [Email](#) [Print](#)

Really struggling with this small dining room!

March 1, 2014 in [Design Dilemma](#)

I am starting a new thread with updated pictures for more advice. I lean toward neutrals in my home, I want this dining room to be glamorous and monochromatic, just beautiful but I have no idea how to do this. Pretty much everything I have seen online is either too dark or too bright. I am not sure if I should go with a light or a dark theme. I don't have much time if it did return, I think maybe a new light and possibly the rug. Can you help me?



Discussions

800K (+225%)
Pro & homeowner support / advice

Really struggling with this small dining room!

March 1, 2014 in [Design Dilemma](#)

I am starting a new thread with updated pictures for more advice. I lean toward neutrals in my home, I want this dining room to be glamorous and monochromatic, just beautiful but I have no idea how to do this. Pretty much everything I have seen online is either too dark or too bright. I am not sure if I should go with a light or a dark theme. I don't have much time if it did return, I think maybe a new light and possibly the rug. Can you help me?

Commerce



Products

2.5MM (+590%)
Discover & purchase



***Bigest
Re-Imagination of All =***

***People Enabled With
Mobile Devices + Sensors
Uploading Troves of
Findable & Sharable Data***

More Data + More Transparency = More Patterns & More Complexity

Transparency

Instant sharing / communication of many things has potential to make world better / safer place but potential impact to personal privacy will remain on-going challenge...

Patterns

Mining rising volume of data has potential to yield patterns that help solve basic / previously unsolvable problems but create new challenges related to individual rights...

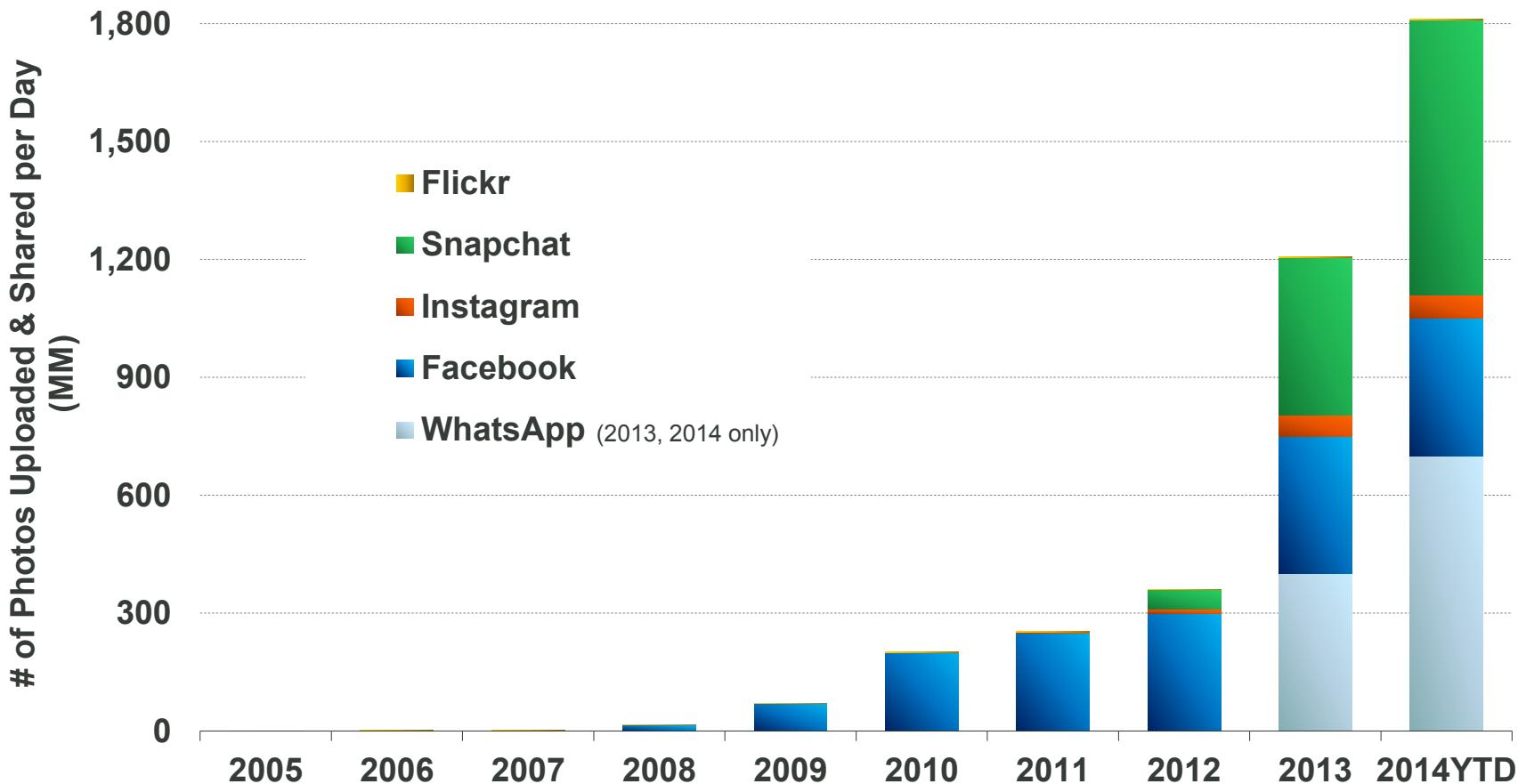
Big Data Trends

- 1) Uploadable / Findable / Sharable / Real-Time Data Rising Rapidly
- 2) Sensor Use Rising Rapidly
- 3) Processing Costs Falling Rapidly...While The Cloud Rises
- 4) Beautiful New User Interfaces – Aided by Data-Generating Consumers – Helping Make Data Usable / Useful...
- 5) Data Mining / Analytics Tools Improving & Helping Find Patterns
- 6) Early Emergence of Data / Pattern-Driven Problem Solving

*Uploadable / Sharable / Findable
Real-Time Data Rising Rapidly*

Photos Alone = 1.8B+ Uploaded & Shared Per Day... Growth Remains Robust as New Real-Time Platforms Emerge

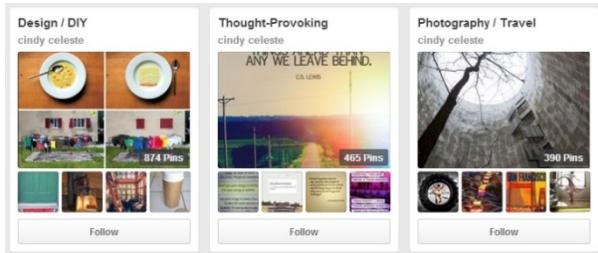
Daily Number of Photos Uploaded & Shared on Select Platforms,
2005 – 2014YTD



Uploadable / Sharable / Findable – Mojo Update

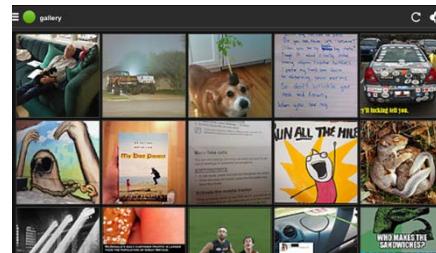
Pinterest

- 750MM+ cumulative Boards (4/14)
- 30B+ cumulative Pins
- +50% Pin growth vs. 10/13



IMGUR

- 130MM MAUs (3/14)
- 3B page views per month
- 1.5MM images uploaded & 1.3B images viewed per day



Fitbit

- 47B → 2.4T steps (2011 → 2013)... Distance = Earth to Saturn



MyFitnessPal

- 65MM registered users (+50% Y/Y, 5/14)
- 100MM+ pounds lost by users since inception



Source: Company data.

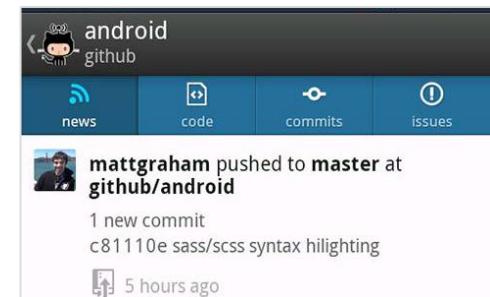
Eventbrite

- \$1B gross ticket sales in 2013 (+60% Y/Y)
- 58MM tickets sold (+61% Y/Y)
- 1MM events in 187 countries



Github

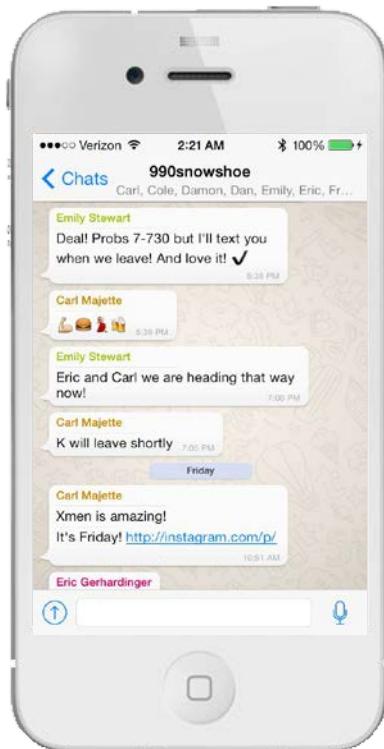
- 13MM repositories in 2013 (+100% Y/Y)
- 10K users added per weekday



Uploadable / Sharable / Not Findable* – Mojo Update

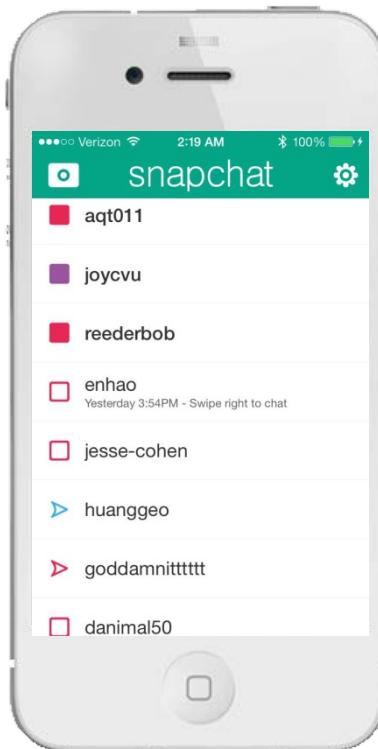
WhatsApp

- 50B messages sent per day (2/14)
- 700MM photos per day (4/14)
- 100MM videos per day



Snapchat

- 700MM+ snaps shared per day (4/14)
- 500MM stories viewed per day



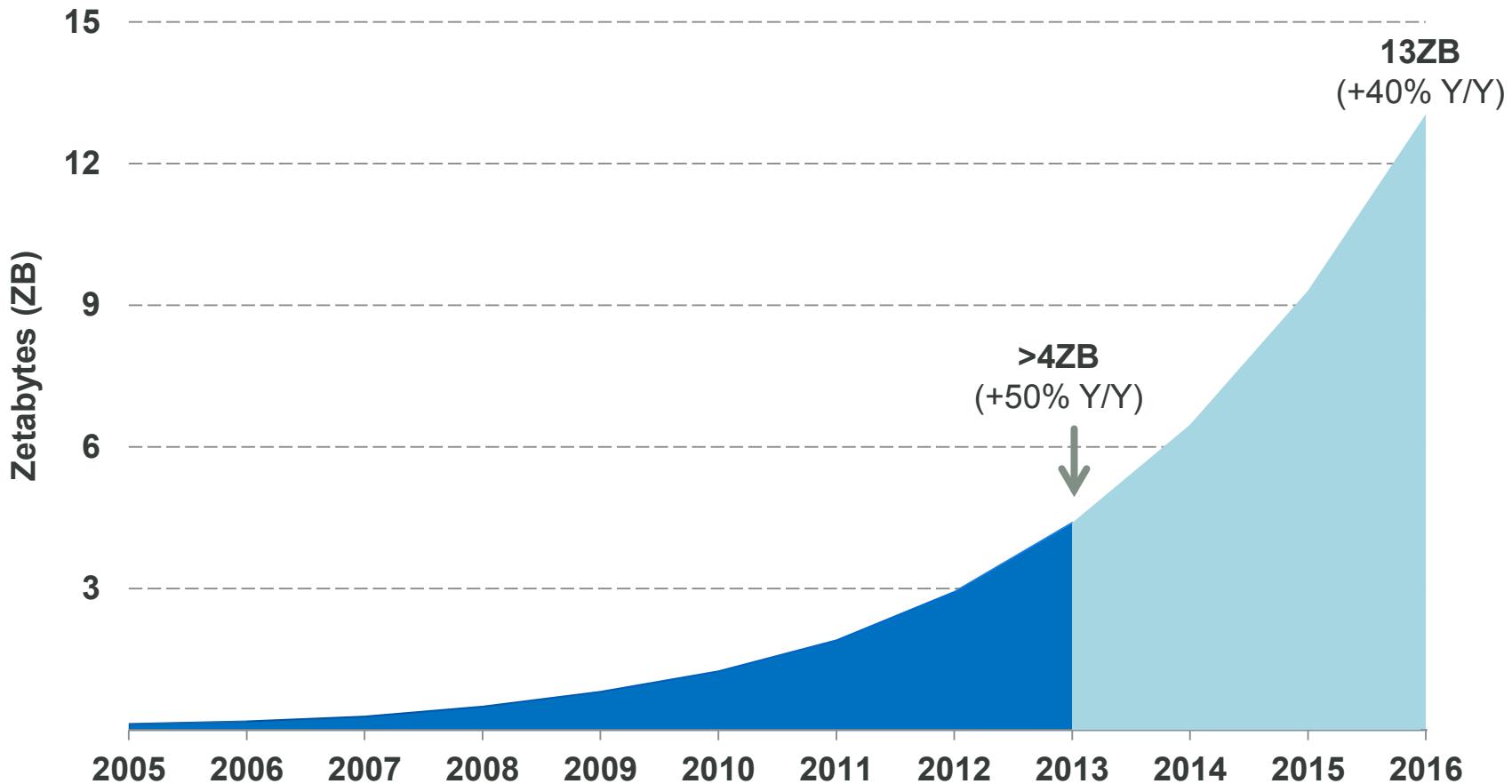
Tinder

- 800MM swipes per day (+21x Y/Y, 5/14)
- 11MM matches per day (+21x Y/Y)



'Digital Universe' Information Growth = Robust... +50%, 2013

2/3rd's of Digital Universe Content = Consumed / Created by Consumers
...Video Watching, Social Media Usage, Image Sharing...



Sensor Use Rising Rapidly

Sensors = Big / Broad Business, Rapid Growth, Rising Proliferation IN Devices...

iPhone (2007)
3 Sensors



Apple

iPhone 5s (2013)
5 Sensors



- Accelerometer / proximity / ambient light

- 3-axis gyro / fingerprint / accelerometer / proximity / ambient light

Galaxy S (2010)
3 Sensors



Samsung

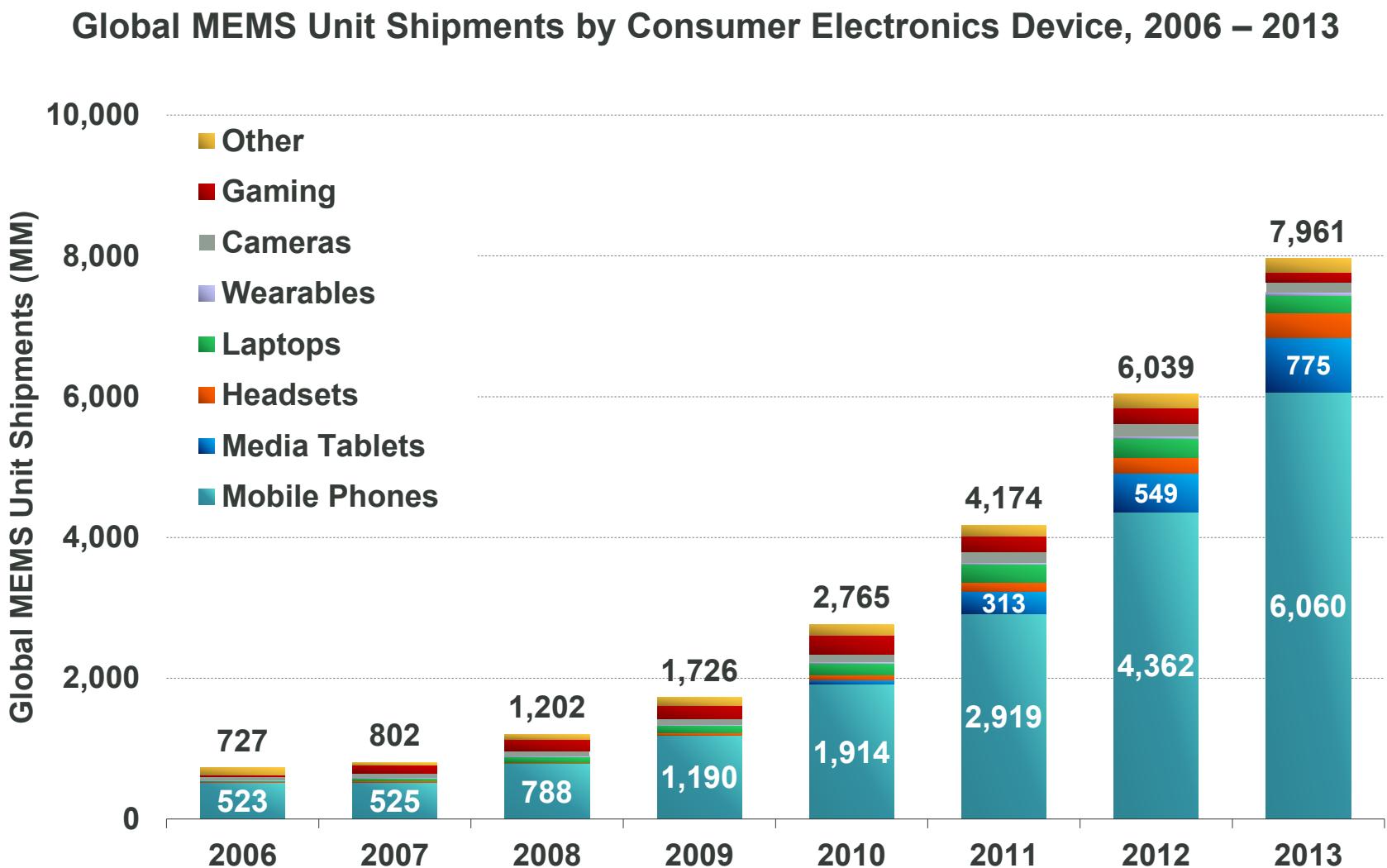
Galaxy S5 (2014)
10 Sensors



- Accelerometer / proximity / compass

- Gyro / fingerprint / barometer / hall (recognizes whether cover is open/closed) / RGB ambient light / gesture / heart rate / accelerometer / proximity / compass

...Sensors = Big / Broad Business (+32% Y/Y to 8B) Rising Proliferation OF Devices



Source: IHS Consumer & Mobile MEMS Market Tracker, April 2014.

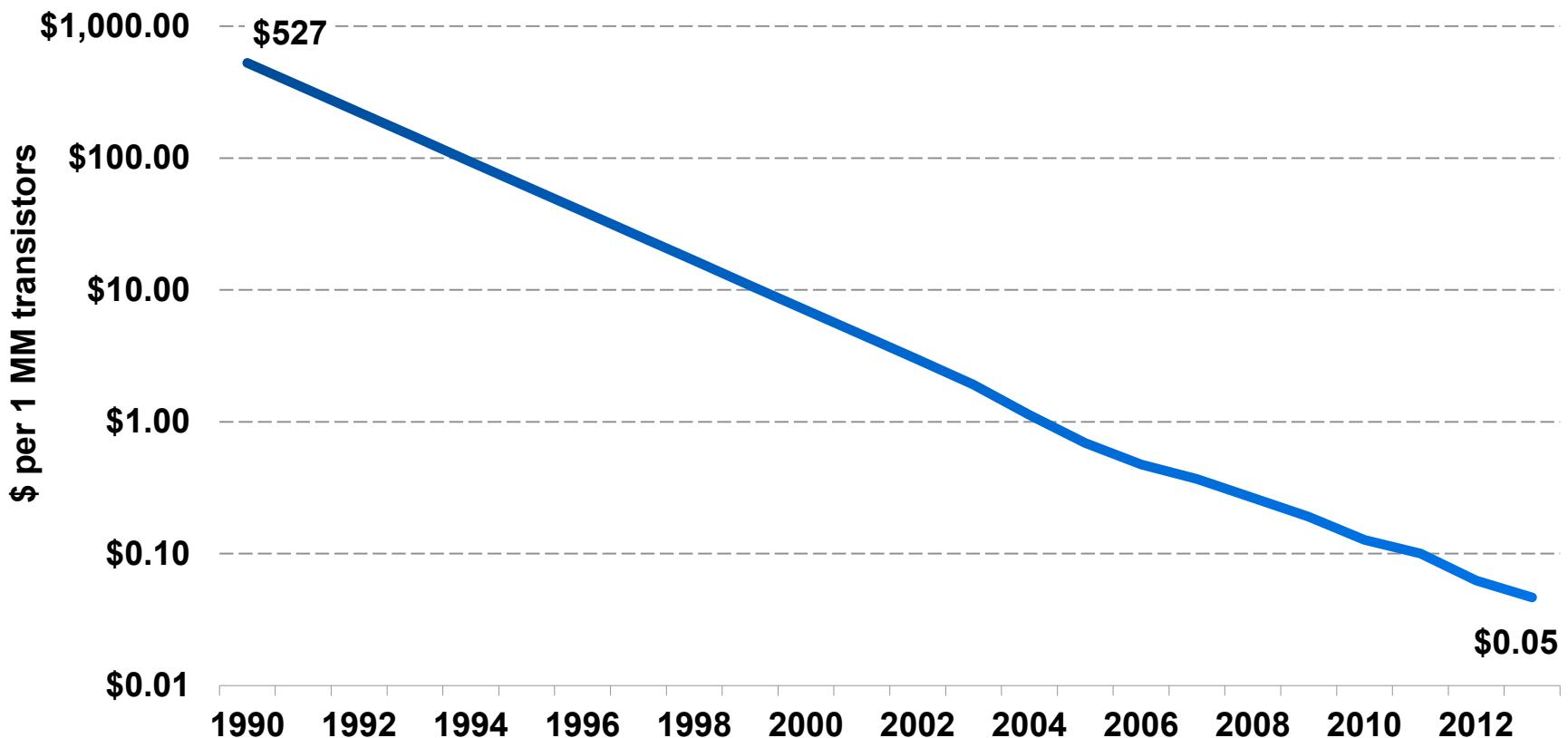
MEMS = microelectromechanical systems. Includes sensors + actuators (a type of motor that is responsible for moving or controlling a mechanism or system, such as an autofocus system in a camera).

*Processing Costs Falling Rapidly...
While The Cloud + Accessibility Rise*

Compute Costs Declining = 33% Annually, 1990-2013...

Decreasing cost / performance curve enables computational power @ core of digital infrastructure...

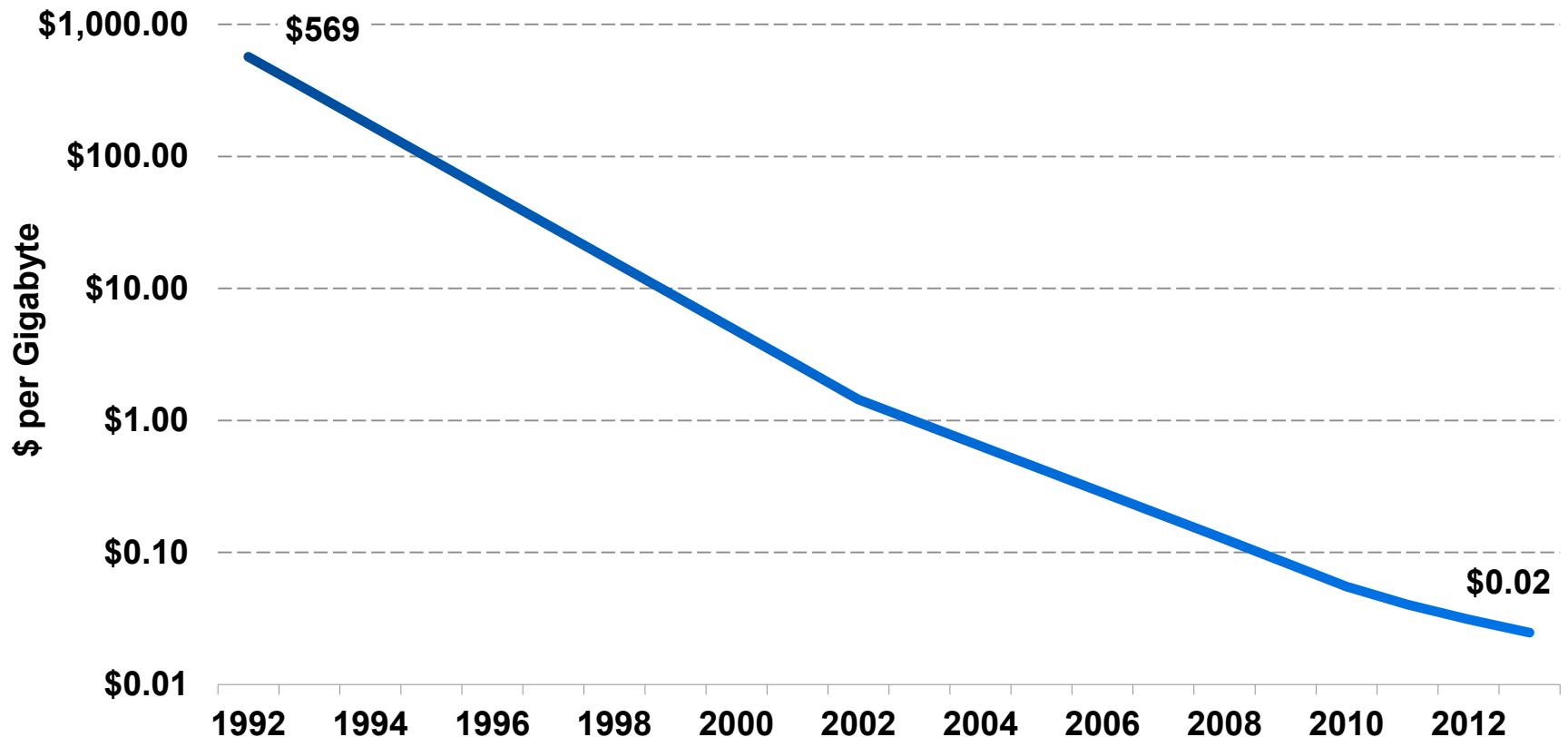
Global Compute Cost Trends



...Storage Costs Declining = 38% Annually, 1992-2013...

*Decreasing cost / performance of digital storage enables
creation of more / richer digital information...*

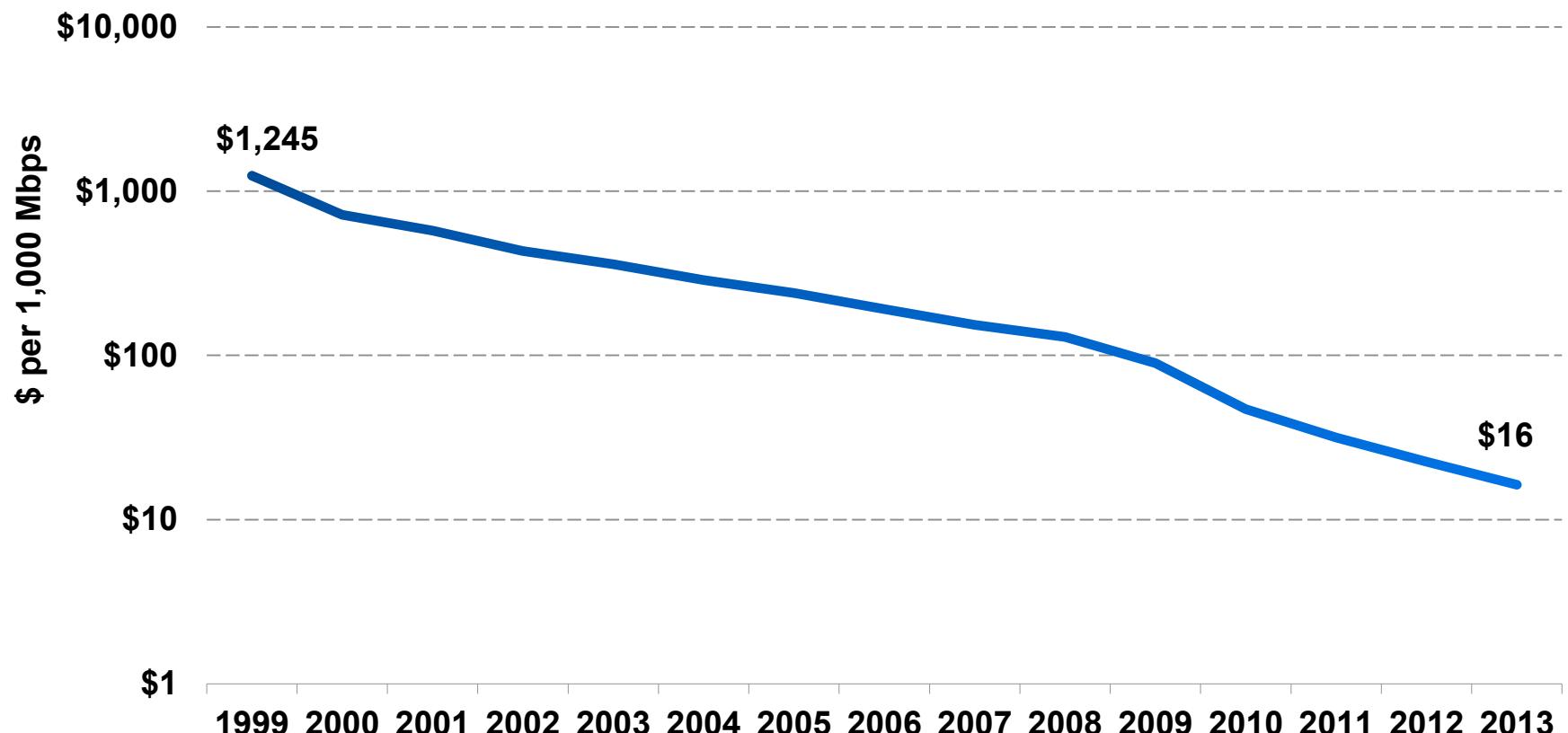
Global Storage Cost Trends



...Bandwidth Costs Declining = 27% Annually, 1999-2013...

*Declining cost / performance of bandwidth enables
faster collection & transfer of data to facilitate richer connections / interactions...*

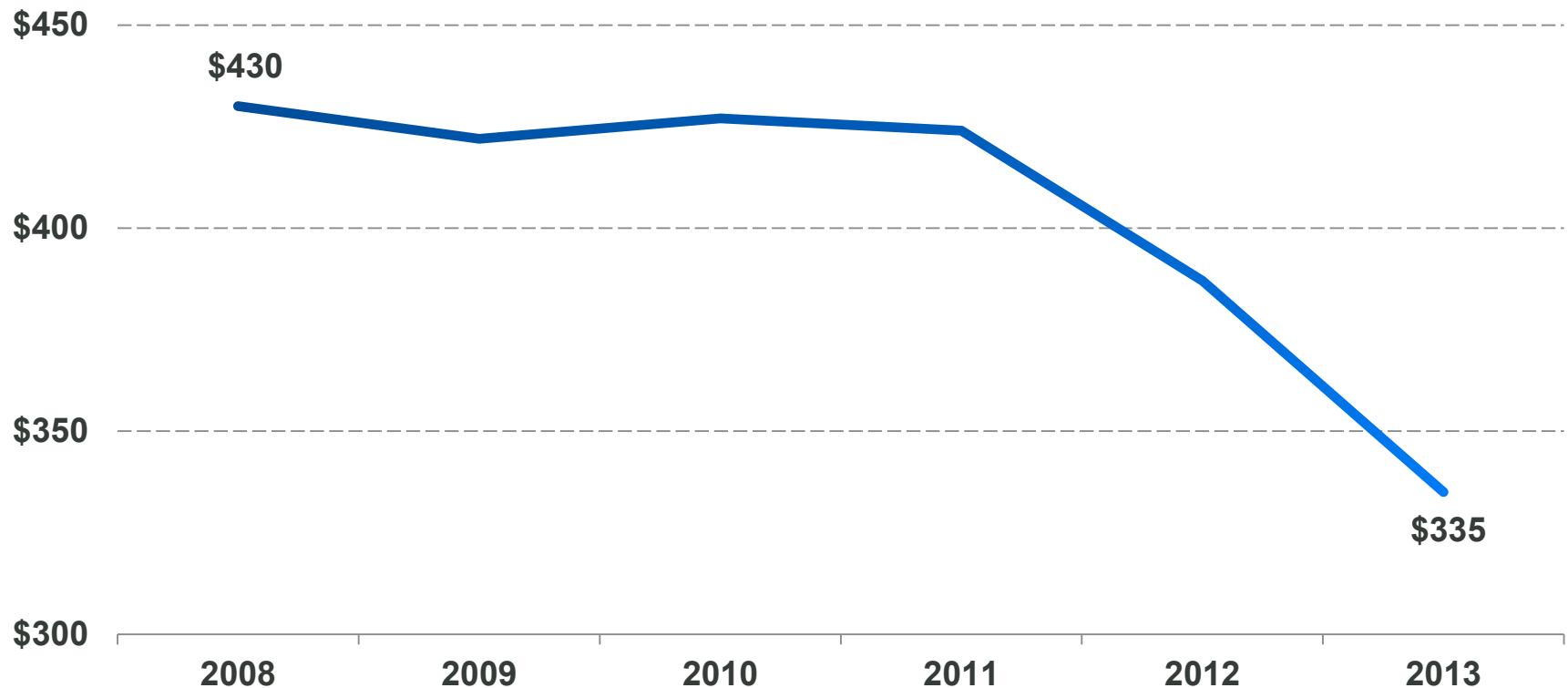
Global Bandwidth Cost Trends



...Smartphone Costs Declining = 5% Annually, 2008-2013

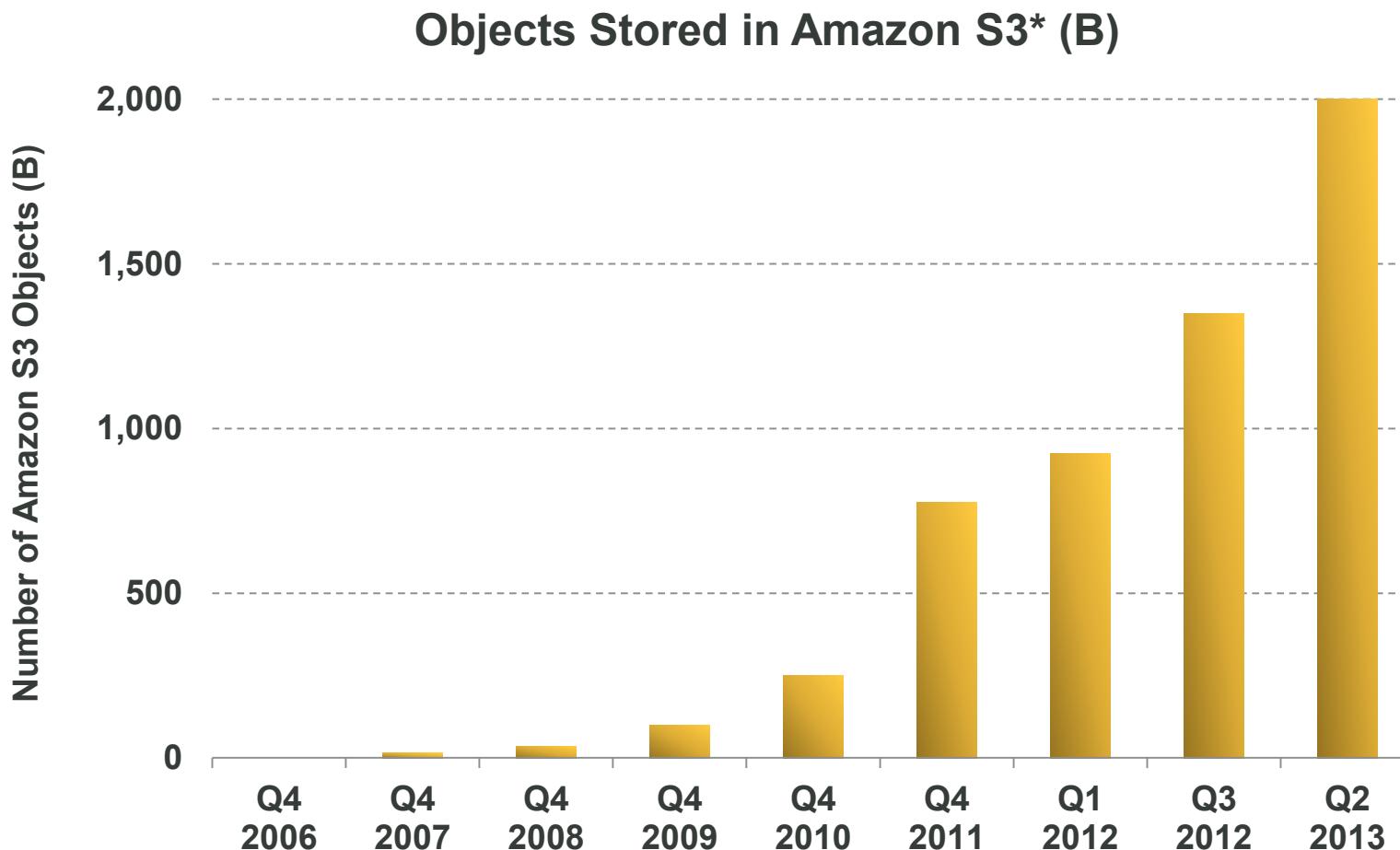
*Smartphone prices continue to decline,
increasing availability to masses...*

Average Global Smartphone Pricing Trends



...While The Cloud Rises

Amazon Web Services (AWS) Leading Cloud Charge...



*Note: S3 is AWS' storage product and used as proxy for AWS scale / growth .
Source: Company data.

Beautiful New User Interfaces

*– Aided by Data-Generating Consumers –
Helping Make Data Usable / Useful...*

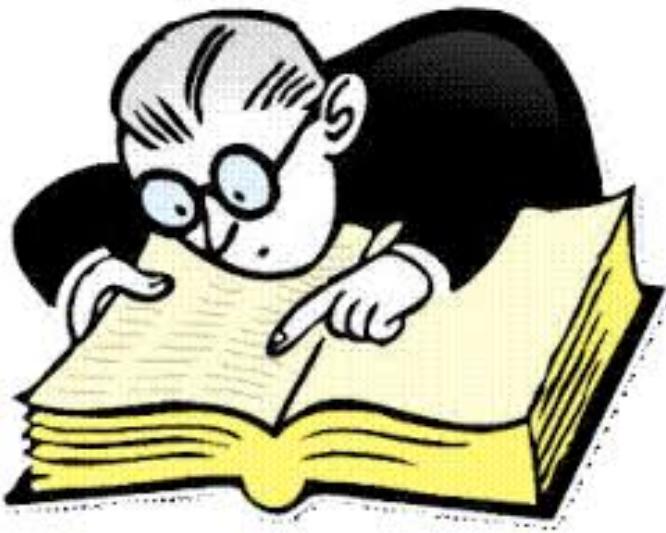
...Challenging Non-Cloud Business Models

*Startups – Often Helped by Crowdsourcing –
Often Don't Have Same Challenges with
Error-Prone Legacy Data*

New Companies
– *With New Data from New Device Types –
Doing Old Things in New Ways &
Growing Super Fast*

Re-Imagining User Interfaces – Finding a Local Business

Yellow Pages



Yelp

The image shows two side-by-side screenshots of the Yelp mobile application interface. Both screens have a red header bar with the Yelp logo and a search bar. The left screen displays a list of top-rated restaurants in San Francisco, while the right screen shows a single business entry for 'Madera' with a map below it.

Left Screen (Restaurant List):

Rank	Business Name	Price Range
1.	Lazy Bear	\$\$\$\$
2.	Gary Danko	\$\$\$\$
3.	Ike's Place	\$\$
4.	Beanstalk Cafe	\$
5.	The Boy's Deli	\$

Right Screen (Single Business View):

Business Name	Address	Rating	Reviews
Madera	2825 Sand Hill Rd, Menlo Park, CA 94025	4.5	429 Reviews

Re-Imagining User Interfaces – Finding a Place to Stay

Booking Hotel Room



Airbnb

The image displays two side-by-side screenshots of the Airbnb mobile application interface. Both screens show search results for "Potrero Hill" and "San Francisco, CA Potrero Hill".

Left Screen (Potrero Hill):

- Shows a listing for "Potrero Hill Garden Cabana" with a pink heart icon.
- Details: Entire home/apt • 114 reviews, \$190 per night.
- Shows another listing below for "Private Floor in Potrero Hill Home" with a white heart icon.
- Details: Entire home/apt • 19 reviews, \$150 per night.
- Includes a "Filters" button at the bottom.

Right Screen (San Francisco, CA Potrero Hill):

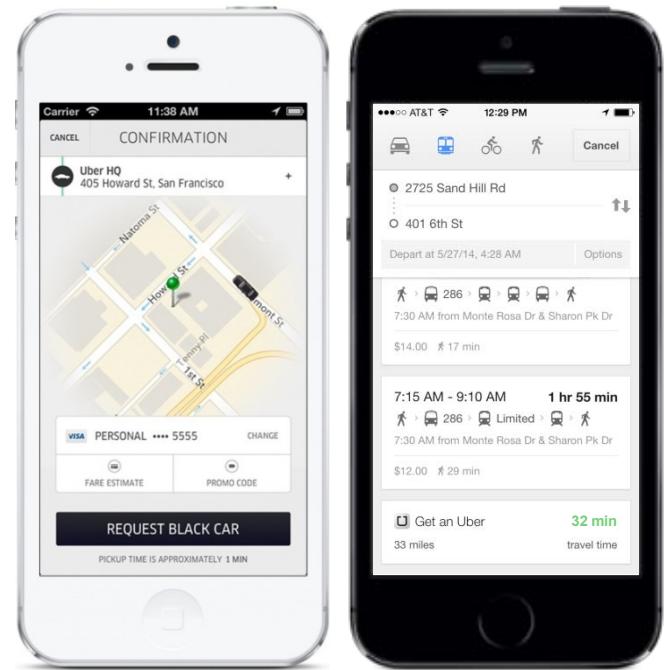
- Shows the same "Potrero Hill Garden Cabana" listing with a pink heart icon.
- Details: House - Entire home/apt, 1 bedroom, 1 bathroom, 1 bed.
- Includes a profile picture and rating for "Kepa" (★★★★★ 114 reviews).
- Buttons at the bottom: "Book it" and "Contact me".

Re-Imagining User Interfaces – Organized Logistics / People Moving

Hailing Cab



Uber

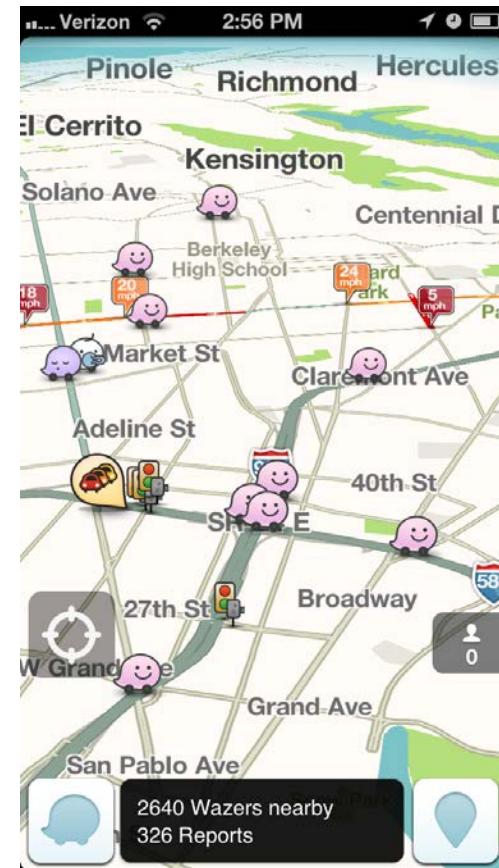


Re-Imagining User Interfaces – Managing Traffic With Crowdsourcing

Driving in Traffic



Waze

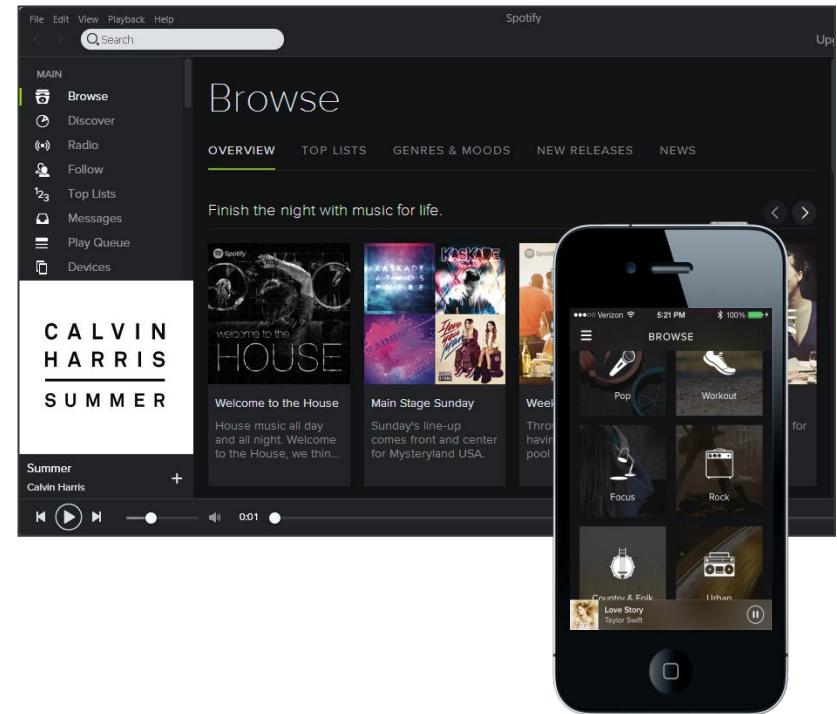


Re-Imagining User Interfaces – Finding Music

Satellite Radio



Spotify



Re-Imagining User Interfaces – Finding Video With Voice

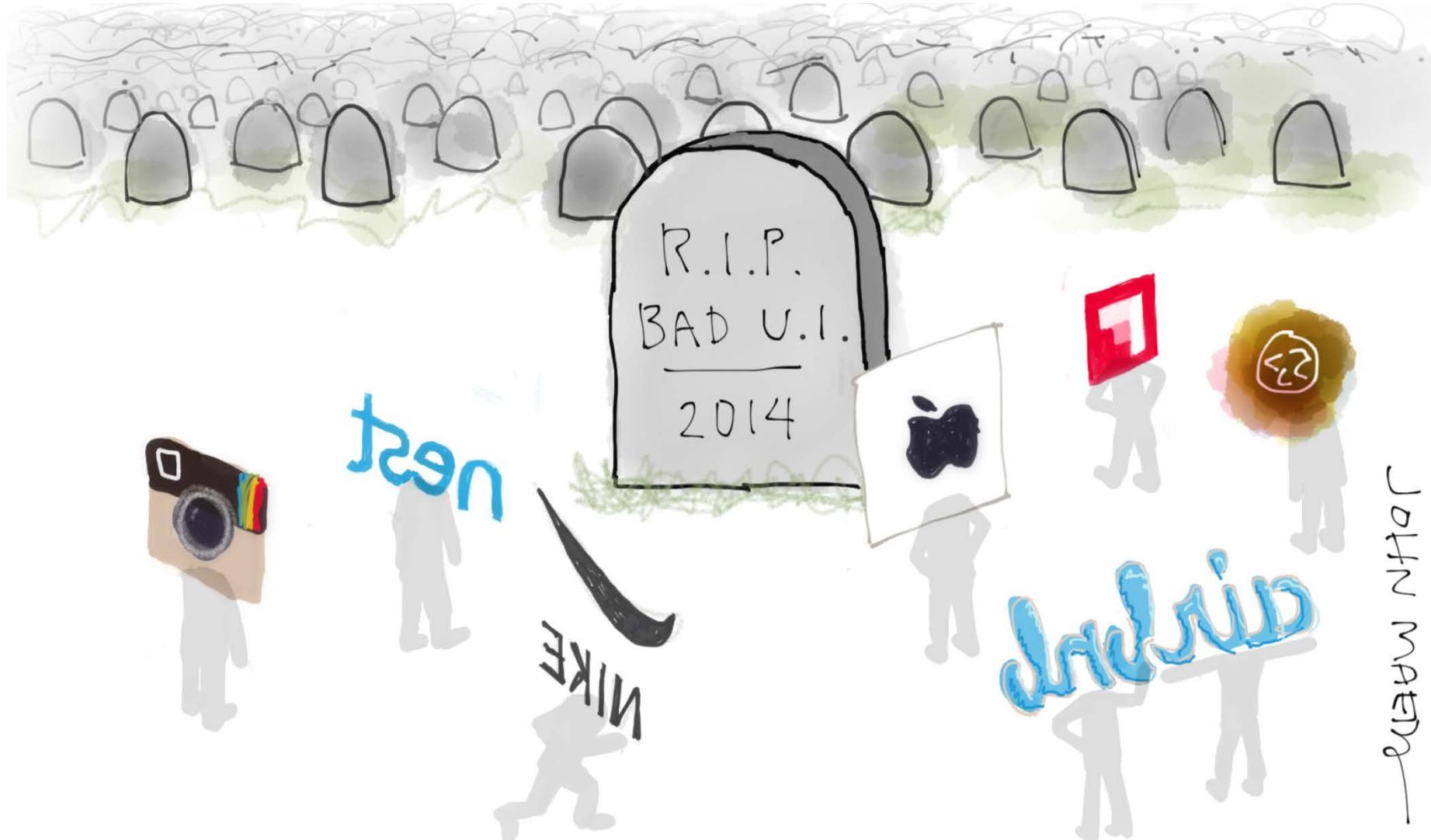
TV Remote Control



Amazon Fire TV



R.I.P. Bad User Interfaces



Data Mining / Analytics Tools

Improving & Helping Find Patterns

**34% (& Rising) of Data in ‘Digital Universe’ =
Useful but Only 7% Tagged...1% Analyzed**

Significant Portion (34%) of IDC Digital Universe Data = Useful –

Derived from embedded systems / data processing / social media / photos / sounds...

Small Portion (7%) Data = Tagged –

Fastest growing segment of valuable data comes from Internet of Things (IoT) – billions of sensors / intelligence systems capturing / sending data, increasingly in real-time...

Immaterial Portion (1%) Data = Analyzed –

Newer tech companies are making it easier to understand / make use of increasing amount of data...

Data Mining / Analytics Tools that Mine / Organize Data = Playing Catch Up to Demand & Growing Fast

Jawbone

Health Wearable

- 100MM nights of sleep logged = 27K years
- 50B activity data points crunched per week
- 1MM personalized insights per week



AppDynamics

App Performance Monitoring

- 500B Web / mobile transactions instrumented / tracked
- 1.4MM hours saved waiting on apps
- 1,200 enterprise customers



Dropcam

Home Monitoring

- ~100B video frames processed per hour
- +300% Y/Y revenue growth, 2013



Netflix

Media Personalization / Discovery

- Terabytes of user data analyzed to generate personalized media recommendations
- 44MM subscribers (+25% Y/Y, 2013)



SnapLogic

Cloud Integration / Data Transmission

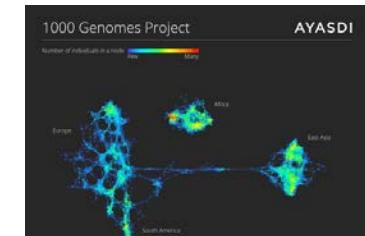
- 500MM+ machine / device scans integrated per day
- 160+ data / cloud connectors on SnapStore
- +128% Y/Y subscription revenue, 2013



Ayasdi

Automated Insight Discovery

- Auto extracts business insights from datasets with 1MM+ features
- 120K hours saved of manual data analysis in 2013
- +451% Y/Y bookings growth, 2013



*Early Emergence of
Data / Pattern-Driven
Problem Solving*

Big Data = Being Used to Solve Big Problems

Google Voice Search

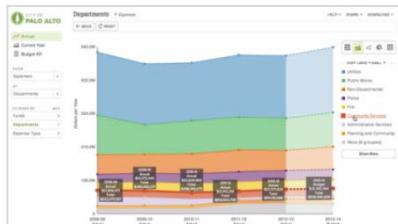
Voice Recognition

- Uses neural nets to reduce speech recognition errors by 25%
- Used by 1/6 of Google's U.S. mobile users



OpenGov Government Financials

- Compiles data of 37K US governments
- Real-time queries across millions of rows of transactions
- Adding new paying government customer every 4 days (& accelerating)



Nest

Energy

- 2B+ Kilowatt hours (kWh) of energy saved since 2011*
- Reduces heating / cooling costs up to 20%...an estimated annual savings of \$173 per thermostat



Automatic Connected Car

- Collects / analyzes hundreds of millions of data points daily
- Provides personalized feedback to drivers, saving up to 30% in fuel costs
- Discovered driving over 70 MPH saves <5% time, but wastes \$550 gas / year



Zephyr Health

Healthcare & Life Sciences

- Hundreds of millions healthcare data points ingested / organized (+192% Q/Q, Q3:13)
- 3,500+ independent life sciences sources used daily (+159% Q/Q & accelerating), spanning all major disease areas
- +111% Y/Y contracted revenue growth, 2013



Wealthfront Investment Management

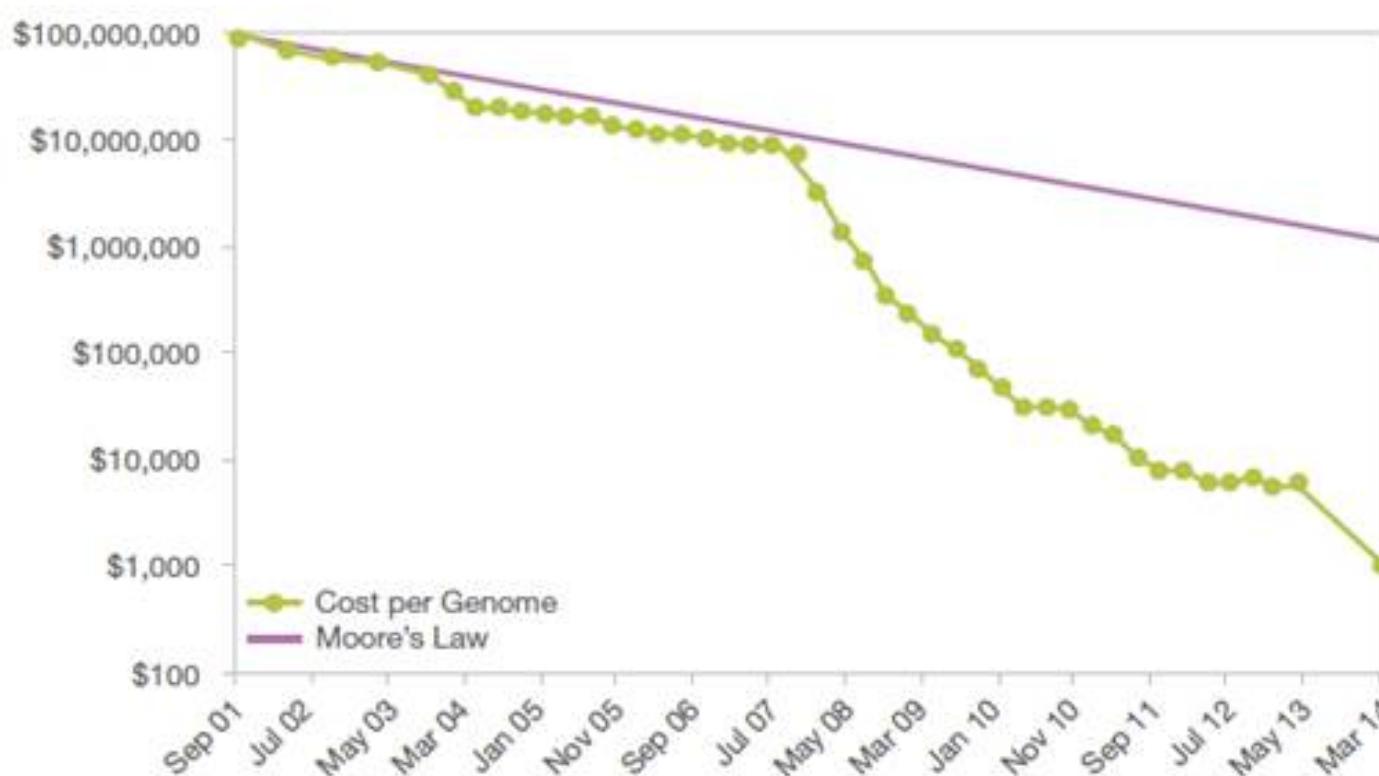
- +4.6% return vs. average mutual fund**
- 200K risk questionnaires completed
- 650K free trades, saving clients \$5MM+
- 10K+ clients
- \$800MM+ AUM, +700% since 1/13



Cost / Time to Sequence Genome Down to \$1,000 / 24 Hours – Treasure Trove of Patterns Will Rise Rapidly

*Accurate diagnosis is foundation for choosing right treatments for patients & clinical lab tests provide critical information health care providers use in ~70% of decisions**

*Genetic & genomic testing can be at heart of a new paradigm of [precision] medicine that is evidence-based & rooted in quantitative science***



*UK Department of Health. ** American Clinical Laboratory Association / BattelleTechnology Partnership Practice. Image: Illumina.
Note: Genome sequencing data per Eric Schadt. \$1,000 cost is price of sequencing a genome at 30x coverage in the Mount Sinai Genome Core, 5/14.

*Bigest
Re-Imagination of All =*

*People Enabled With
Mobile Devices + Sensors
Uploading Troves of
Findable & Sharable Data =*

Still Early & Evolving Rapidly

**SCREEN + VIDEO GROWTH =
STILL EARLY INNINGS**

Future of TV – Reed Hastings (Netflix CEO / Founder)

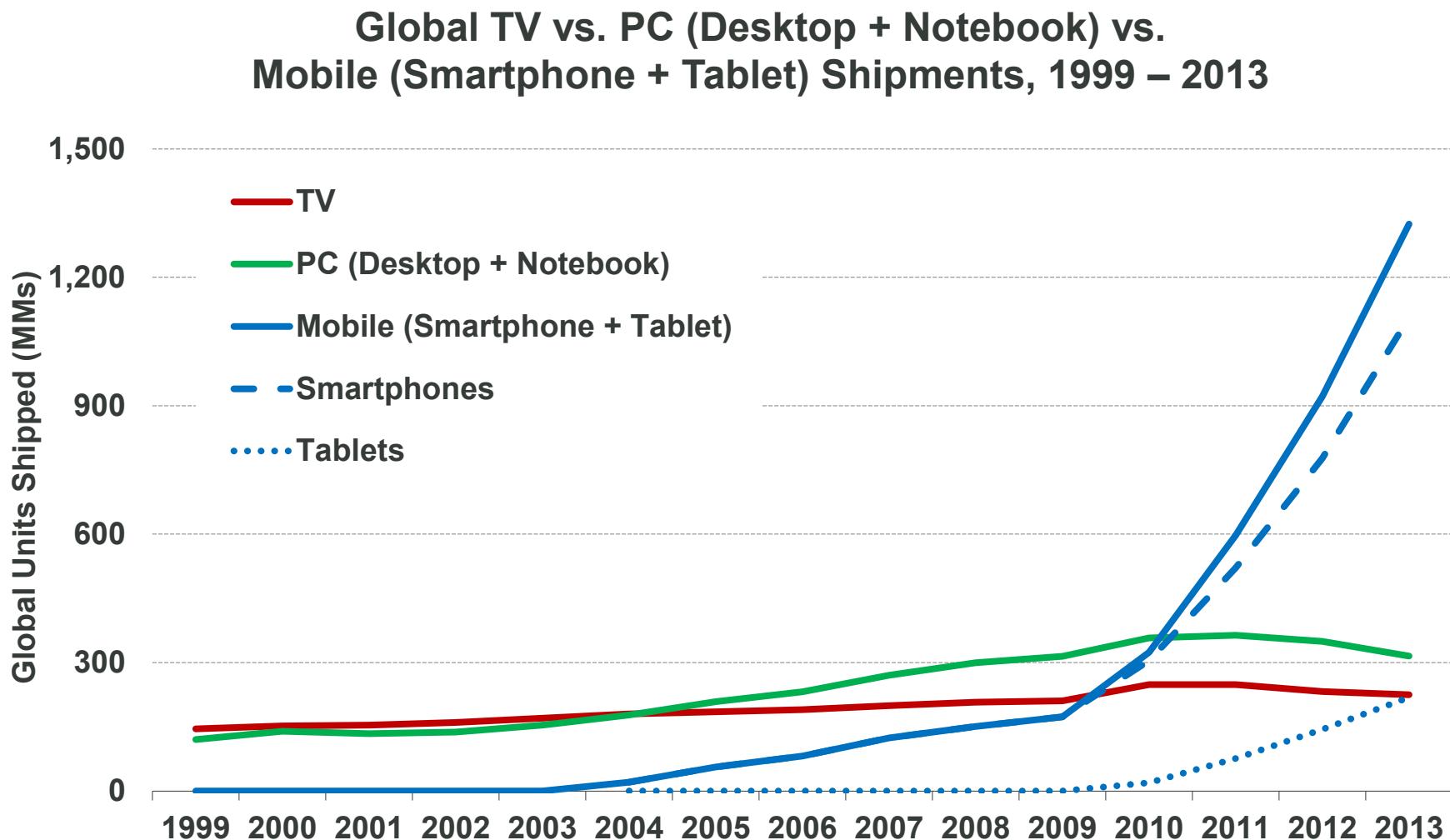
- 1) *Screens Proliferating*
- 2) *[Traditional] Remote Controls Disappearing*
- 3) *Apps Replacing Channels*
- 4) *Internet TV Replacing Linear TV*

Screens Proliferating

Screens Today = You Screen...I Screen...We All Screen

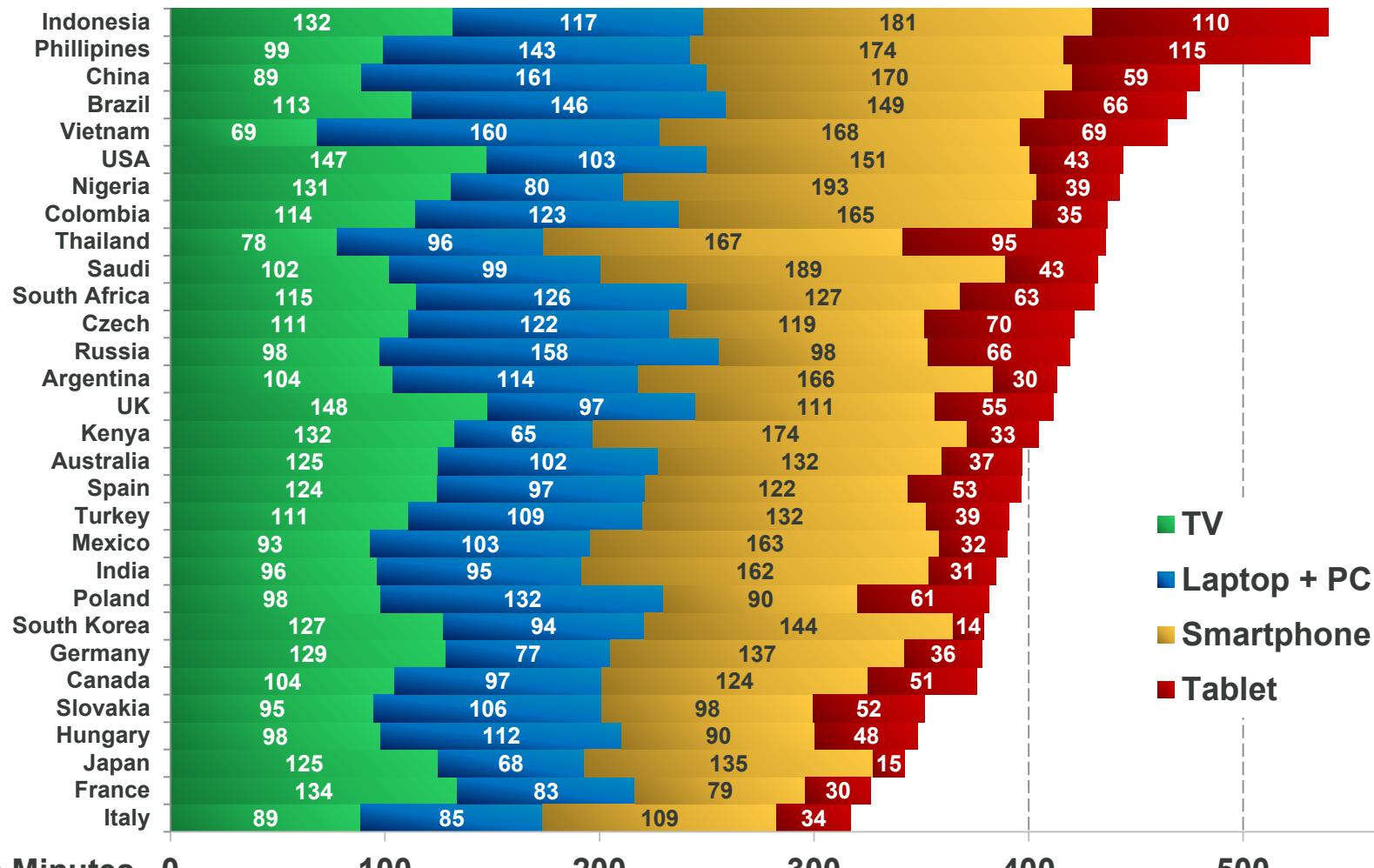


Mobile (Smartphone + Tablet) Shipments = 4-5x Unit Volume of TV & PC...Just 10 Years Since Inception



Smartphones = Most Viewed / Used Medium in Many Countries, 2014

Daily Distribution of Screen Minutes Across Countries (Mins)



- TV
- Laptop + PC
- Smartphone
- Tablet

Screen Minutes 0

100 200

300

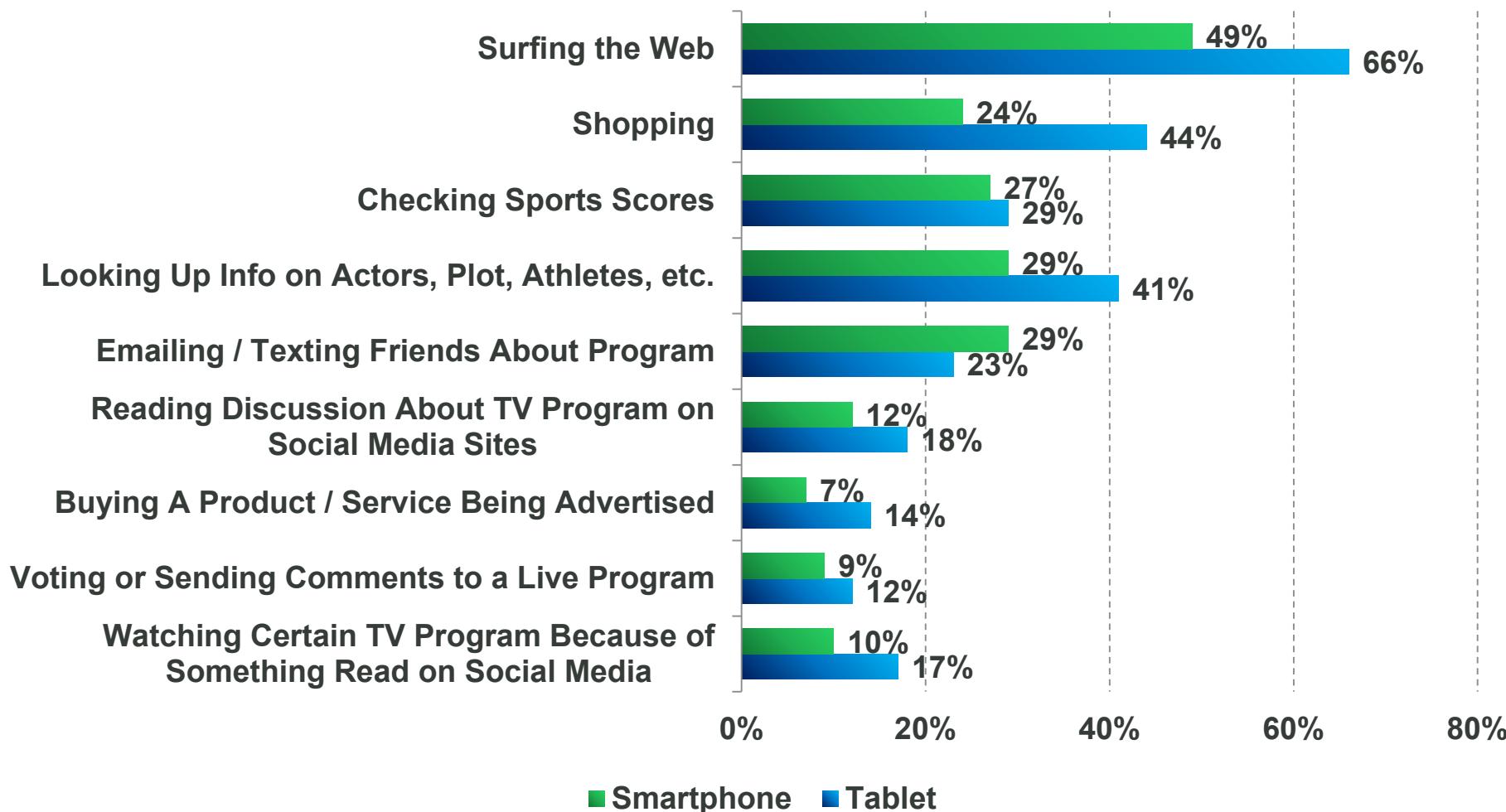
400

500

600

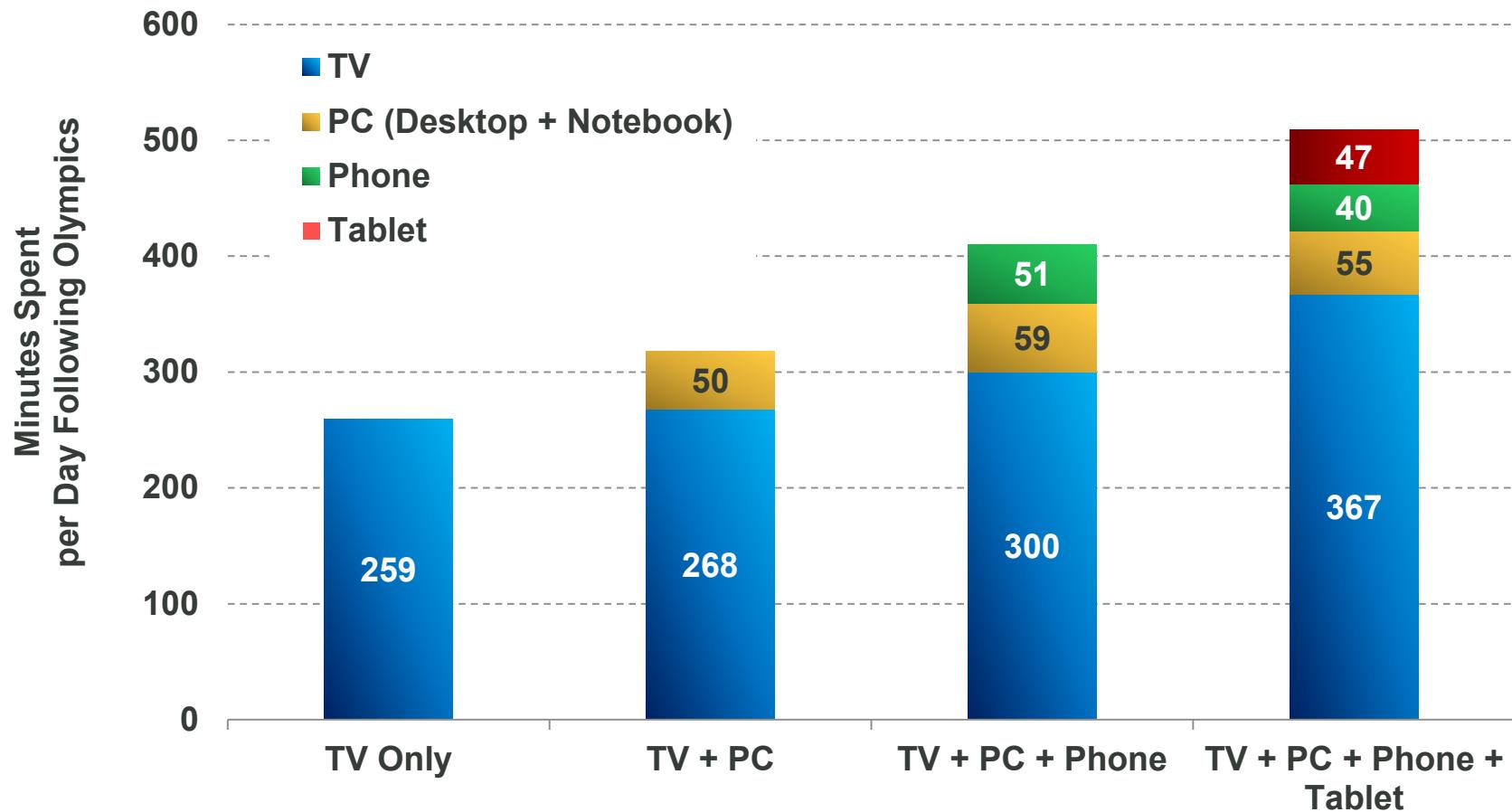
Mobile Owners (84%) Use Devices While Watching TV... ~2x Higher Over 2 Years

What Connected Device Owners are Doing While Watching TV, USA



Media Engagement Rises With Screen Usage = 2x Higher for 4 Screen Users vs. Solo TV During Olympics

Average Minutes per Day Following the Olympics, by Device, 2012 Olympics Fans



Source: ComScore Single Source Multi-Platform Study, London Olympics Lab for NBC, 7/12.
Note: Data based on total day time spent. N = 720 panelists that use multiple devices and are Olympic fans.

More Screens = Consumers Get More Content in Less Time?

**5 Hours of
TV Screen Media**

=

4 Hours of Content +
1 Hour of Commercials

vs.

**5 Hours of
Multiple Screen Media**

*Smartphone (35%) + TV (27%) +
PC (26%) + Tablet (12%)*

=

>5 Hours of Content?

[Traditional] Remote Controls

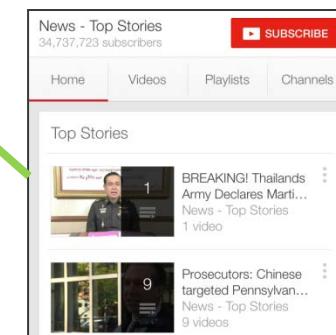
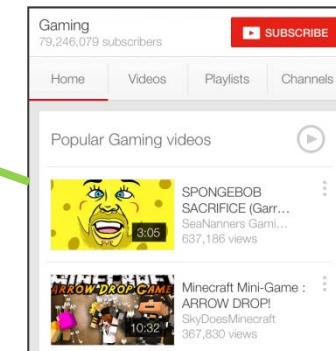
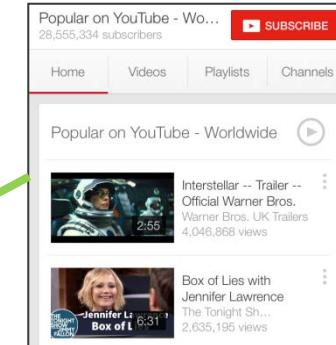
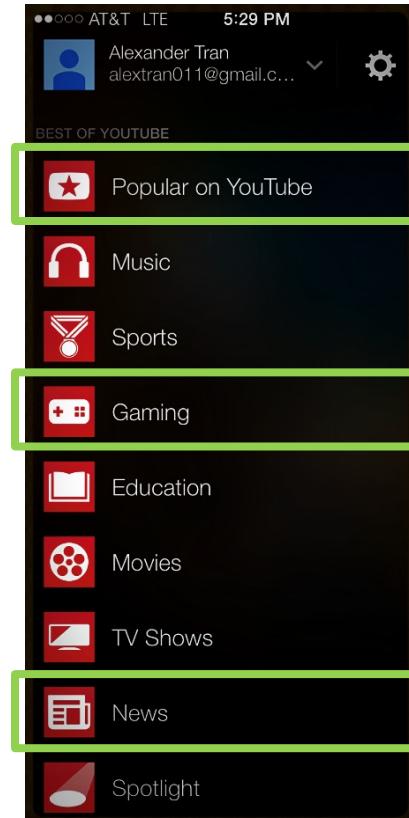
Disappearing

Re-Imagining Remote Controls = The ‘Now’ = A New IP-Enabled Search Engine

Then...



...Now



*As Smartphones Eclipsed
Feature Phones...*

*Smart TV Adapters + Smart TVs =
Game Changers for
Internet-Enablement of
Screens (Big & Small)*

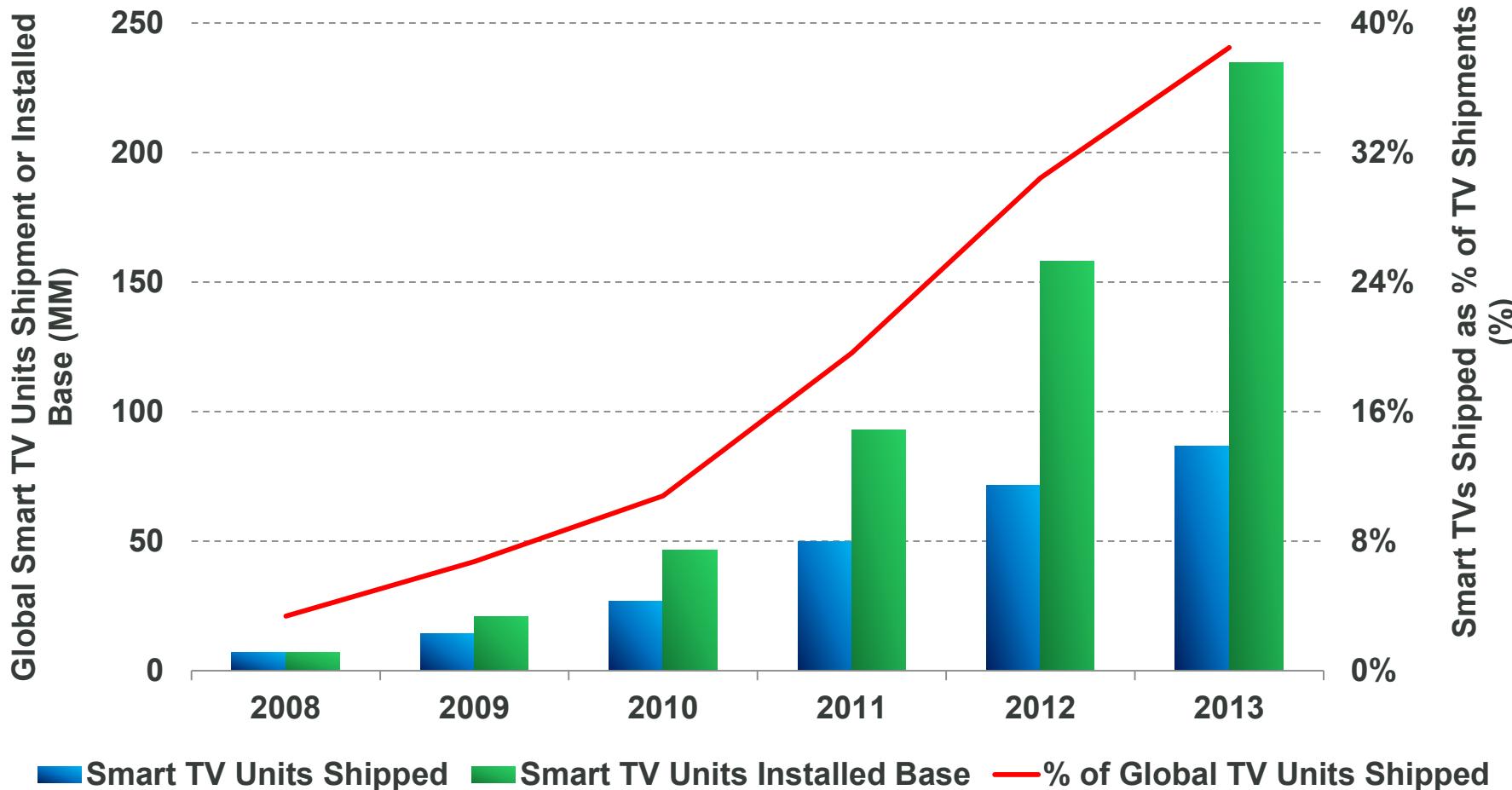
Smart TV Adapters = Tens of Millions of Users

Google Chromecast + Amazon Fire TV Raise Bar

	Company / Product	Launch Date
New	Amazon Fire TV	4/14
	Google Chromecast	7/13
	Roku	5/08
	Apple TV	1/07
Old	Nintendo Wii Nintendo Wii U	12/06
	Sony PlayStation 3 Sony PlayStation 4	11/06
	Microsoft Xbox 360 Microsoft Xbox One	11/05

Smart TV Shipments = Rising % of TVs Shipped... 39% = 2013...Still <10% Installed Base

Smart TV Units Shipped, Installed Base, & Shipment Mix
2008 – 2013, Global



Source: Generator Research, 2014.

Note: Smart TVs defined as internet-enabled television sets and exclude connected devices or adapters that stream content to television sets, such as game consoles or hybrid set-top boxes.

Apps Replacing Channels

Linear TV Channels Increasingly = On-Demand Apps

ESPN

- 34MM (52%) ESPN digital users access ESPN just on smartphones / tablets = 48% of time spent on ESPN digital properties, 4/14



BBC

- 234MM requests for TV programs on iPlayer in 2/14, +21% Y/Y
- 46% of requests from mobile / tablet vs. 35% Y/Y



HBO

- 1,000+ hours of video content



Internet = Evolved from Directory to Search / Apps...

TV = Evolving from Directory to Apps / Search

TV Guide

PRIME TIME Tuesday 9/18					
TONIGHT'S HIGHLIGHTS					
Eastern Central	8:00pm 7:00pm	9:30pm 7:30pm	9:00pm 8:00pm	9:30pm 8:30pm	10:00pm 9:00pm
GSN	Minute to Win It [25]		Minute to Win It [25]		Minute to Win It [25]
Hallmark	Little House on the Prairie: Part 1 of two. [H]		Little House on the Prairie: Conclusion. [H]		Frasier [25]
HBO	Movies: Rise of the Planet of the Apes (2011): Genetically engineered chimp Caesar (Andy Serkis) uses his mighty intellect to lead an ape uprising against all of humankind. PG-13				Real Sports with Bryant Gumbel: A profile of Marvin "Magic" Johnson [25] NEW
HBO Family	Movies: Star Trek: Gen. Patrick Stewart.				
HBO Signature	Movies: Empire of the Sun: New Year's resolution at the end of 1922. [H]				
HBO2	Movies: Love and Other Drugs (2010): A free-spirited young woman (Anne Hathaway) falls for a pharmaceutical salesman (Jake Gyllenhaal). R				
HGTV	Love It or List It: A family need more space. [H]		Property V. [H] NEW	Property Virgins [H]	House Hunters NEW
History	Pawn Stars: An 18th-Century War Heirloom. [H]		To Be Announced		House Hunters [10/31] Counting Cars NEW
HLN	Nancy Grace [H] NEW		Drew [H] NEW		Nancy Grace
IFC	Movies: *** + Harry Potter and the Sorcerer's Stone [H] NEW				
Inves. Disc.	Dateline on ID: Part 1 of 2. [ID] NEW		Dateline on NBC: [H] NEW		Twisted: Serial killer Herbert Mullin. NEW
Lifetime	Dance Moms: A national title competition [H] NEW		Dance Moms: Part 2 of 2: A reunion between Abby and Leah, plus a look ahead to the season. [H] NEW		Dance Moms: Part 1 of 2: A reunion between Abby and Leah, plus a look ahead to the season. [H] NEW
LMN	Movies: Murder in the Hampton (2005): An engrossing account of the death of Ted Ammons (David Souliffre), a millionaire who was found murdered just as he was finalizing an ugly divorce. [H] NEW				Movies: Living in Fear (2002): A wife hears disturbing news about her new husband. [H] NEW
More Max	Movies: (7:00) *** + 28 Days Later (2002):		Movies: *** + The Matrix Reloaded (2003): Neo (Keanu Reeves) continues to battle evil machines. Gravity-defying action powers the second chapter of the trilogy. Carrie-Anne Moss.		The Last Tycoon With Lawrence O'Donnell [H] NEW
NBC	The Ed Show [NEW]		The Rachel Maddow Show [NEW]		Family Ties: 2: Inseparable moments. NEW
MTV	Teen Mom [H] NEW		Teen Mom [H] NEW		Hard Times: A look at prison gangs that occupy an open-housing unit.
National Geographic	I Eat and You Gulp: Former cult members open up. [H] NEW		Cat Wars [H] NEW		
NatGeoWild	Clash/Calmans: Black calmans are examined. [H] NEW				
NBC Sports	Sports: International League Baseball Playoff: Playoff action. LIVE				
Nickelodeon	Victorious [H] NEW				
OWN	TV Guide Magazine's Top 25 Best Oprah Show Moments: Moments: 17-14. [H] NEW				
Oxygen	Movies: *** + The Sweetest Thing (2002): A party girl (Cameron Diaz) takes a road trip to find Mr. Right. Unseen, grossly comed out with Christine Applegate and Selma Blair. [H] NEW				
Science	Survivorman: A week in the Sonoran Desert. [H] NEW				
Showtime	Weeds [H] NEW		Movies: Mother's Day (2011): A dedicated mother and her two sons terrorize a couple that is residing in their neighborhood. [H] NEW		
Showtime 2	Movies: (7:30) Shakespeare High: Director: Alex Rotman. [H] NEW		Movies: *** + Eternal Sunshine of the Spotless Mind (2004): Firm erases man's memories of his ex-girlfriend in this provocative love story from the mind of Charlie Kaufman ("Adaptation"). [H] NEW		
SoapNet	Days of Our Lives [H] NEW		General Hospital [H] NEW		George Lopez [H] George Lopez [25]
Speed	Dumbest Stuff [H] NEW		Hard Parts [H] NEW		Guide Magazine's Top 25 Best Oprah Show Moments: Moments: 9-6. [H] NEW
Spike	Dumbest Stuff [H] NEW		Hard Parts [H] NEW		
Starz	7-Eleven: Rescuers [H] NEW		(8:55) Bar Rescue: An offbeat eyesore. [H] NEW		All the Right Moves: The guys prepare for the big debut show, but friendships are tested. NEW
Style	Sex and the City [H] NEW		(8:55) Bar Rescue: [H] NEW		Survivorman Ten Days [H] NEW
Sundance	Sex and the City [H] NEW		Sex and the City [H] NEW		
Syfy	Movies: *** + Carlito's Way (2003): Carlito leaves the phone and gets involved in organized crime. [H] NEW		Sex and the City [H] NEW		
TBS	Face Off: Zombie made-up characters from "Alice's Adventures in Wonderland" [H] NEW		Sex and the City [H] NEW		
Big Bang Theory	The Big Bang Theory: Leonard asks Penny out. [H] NEW		Junebug (2005): A Chicagoan goes south. [H] NEW		Movies: *** + Ghost World: Thora Birch [H] NEW
TCM	Movies: *** + Gabriel over the White House (1933): Walter Huston as the U.S. President in an imaginative political fantasy. Karen Morley, Franchot Tone, Arthur Byron, C. Henry Gordon. [H] NEW		Face Off: The contestants create makeup for sumo-wrestlers and their sideshow. [H] NEW		Hot Set: Teams must create a set for an astronaut on an alien planet in the series premiere.
TLC	High School Moms [H] NEW		The Big Bang Theory: Penny does a new guy. [H] NEW		
TMC	Movies: Southern Gothic (2007): A bouncer tries to protect a stripper and her daughter from a vampic preacher. Yul Vazquez, Nicole DaPur. [H] NEW		The Big Bang Theory: Sheldon [H] NEW		
TNT	Bones: Possible copycat murders that mimic the ones in Brennan's latest book. [TNT] NEW		19 Kids and Counting [H] NEW		
Travel	Mysteries at the Museum: The host investigates a fire. [H] NEW		19 Kids and Counting [H] NEW		Abby & Brittany: A trip to the beach. [H] NEW
Travel+TV	Hardcore Pawn [H] NEW		Mysteries at the Museum: [H] NEW		Abby & Brittany: The Bad Creek (2009): Brothers Victor (Damon Pericoli) and Henry (Henry Cavill) discover a Nazi experiment in the occult. R
TV Land	To Be Announced		Hardcore Pawn [H] NEW		Rizzoli & Isles: Friction escalates between Jane and Maura. [H] NEW
TV Land	The Cosby Show [H] NEW		To Be Announced		Mysteries at the Museum: An old school bus. [H] NEW
USA	Law & Order: Special Victims Unit: Detectives question the validity of a rape accusation. [H] NEW				Hardcore Pawn [H] NEW
VH1	Myst. Museum: The host investigates a fire. [H] NEW				To Be Announced
WE tv	Behind the Music [H] NEW				
	CST: Miami: Conclusion. H is in Brazil facing gunmen who want to kill him. [H] NEW				
	CST: Miami: Two pedophiles are murdered on the same day. The first is run down by a car. [H] NEW				

YouTube - Search Bar Comcast - X1 Guide

YouTube search results for "oppa gangnam style":

- oppa gangnam style
- opa gangnam style
- oppaa gangnam style
- oppa gangnam style lyrics
- optical illusions
- opera
- opet si pobedila toni cetinski
- opeth
- oppa gangnam style parody
- opposite of alduts chiddy

Comcast X1 Guide showing the search bar highlighted:

Guide / All Channels

Today, 11/25 9:00p 9:30p 10:00p

CBS 808	Undercover Boss	CSI: NY
NBC 810	The Amazing Spider-Man	Grindhouse
CW 811	House	American Dad
HLN 812	Say Yes to the Dress	Say Yes to the Dress
TCM 815	The Big Lebowski	Breakfast

Guide Search: 8

Channel: 008 TCN Comcast NETWORK

7:30 - 10:00p

94% 93%

The Amazing Spider-Man (2013) High-school outcast Peter Parker embraces his destiny as Spider-Man as he investigates his late father's secrets, falls for the beautiful Gwen Stacy and battles the nefarious Lizard.

*There's a Bevy of
New Channels on
Premier Distribution Network
YouTube...*

*Of Which 40% (& Rising)
of Users Are Mobile*

YouTube Channels = Huge Reach + Growth

Channel	Subscribers (MM)	Y/Y Growth (%)
Music	85	166%
Gaming	79	165%
Sports	78	164%
News	35	213%
Popular	28	133%
Spotlight	22	342%
Movies	18	195%
TV Shows	12	106%
Education	10	--

Music



Demi Lovato - Let It Go (from "Frozen") [Official]
by DemiLovatoVEVO
151,068,172 views

Gaming



Minecraft: Diamonds Are Forever
by CorridorDigital
7,486,601 views
CC

Sports



Top 10 Reign on Plays of the Playoffs: First Round
by NBA
114,323 views

News



National Climate Assessment cites looming...
by News - Top Stories
3 videos

Popular



Official Extended Trailer | GOTHAM | FOX...
by FOX
1,898,217 views

Spotlight



Elon Musk: The Rocket Scientist Model for 'Iron...'...
by TIME
6,854 views

Movies



Frozen (2013)
by DisneyMoviesOnDemand
\$4.99 | CC

TV Shows



Modern Family
3 k subscribers

Education



3D Scanning at the Smithsonian
by Smithsonian
66,457 views
CC

*Consumers Love Video –
Long-Form & More / More
Short-Form*

Every New Medium → New Stars...YouTube Top Videos = 6 - 26MM Subs...Top 10 Video Average Duration = ~7 Minutes

Video Game Commentator

PewDiePie

26MM+ subscribers,
+230% Y/Y



Spanish Comedian

HolaSoyGerman

17MM+ subscribers,
+157% Y/Y



Make-Up Artist

Michelle Phan

6MM+ subscribers,
+70% Y/Y



Comedy Duo

Smosh

17MM+ subscribers,
+81% Y/Y



Comedian

nigahiga

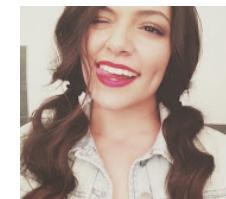
12MM+ subscribers,
+50% Y/Y



Style and Beauty Blogger

Bethany Mota

6MM+ subscribers,
+180% Y/Y



Consumers Loving Best Ads = The Art of Short-Form

#1 = Nike Football
@ 49MM+ Views



#2 = Dove: Patches
@ 20MM+ Views



#3 = Evian Spider Man
@ 16MM+ Views



#4 = Castrol Footkhana
@ 14MM+ Views



#5 = “Unsung Hero” (Thai Life)
@ 12MM+ Views



Ads the Digital Way... Google TrueView = Game-Changer

**YouTube's TrueView Ads =
'Cost-per View' Video Marketing**

*AdWords Dynamically Places Video Ad Content
on Google / YouTube Users Can Skip*

- **Ads = Great Content** – Transformation potential from commercials users want to skip to short-form content users choose to watch
- **Advertisers Win** – Better results as only pay for users who are engaged & watch video...improves direct click-through options with consumers
- **Data** – As YouTube collects data on how users engage with ads, it continues to improve the user experience and advertiser ROI



*Evian Baby & Me = Most Watched
YouTube Ad Of 2013 = 87MM+ views*



Fans Trump Audiences – Alex Carloss (YouTube)

*An audience tunes in when they're told to,
a fanbase chooses when and what to watch...*

*...An audience changes the channel
when their show is over...*

...A fanbase shares, comments, curates, creates...

Consumers Voting for Social Video / TV

New Genre(s) of Video = ‘Spectator Gaming’* – Players → Players / Active Spectators

Twitch

45MM MAUs (12/13) vs. 8MM Three Years Ago (7/11)

12B Minutes Watched / Month, +2x Y/Y

900K Broadcasters / Month, +3x Y/Y

Featured Games Games people are watching now

League of Legends 118,190 Viewers	Dota 2 78,224 Viewers	Hearthstone: Heroes of Warcraft 27,230 Viewers	Counter-Strike: Global Offensive 17,534 Viewers	Diablo III: Reaper of Souls 13,292 Viewers	Minecraft 12,874 Viewers	Magic: The Gathering 12,615 Viewers	Dark Souls II 9,903 Viewers	Call of Duty: Black Ops II 9,641 Viewers
--------------------------------------	--------------------------	---	--	---	-----------------------------	--	--------------------------------	---

Twitch = Top Live Video Streaming Site by Volume, USA, 4/14

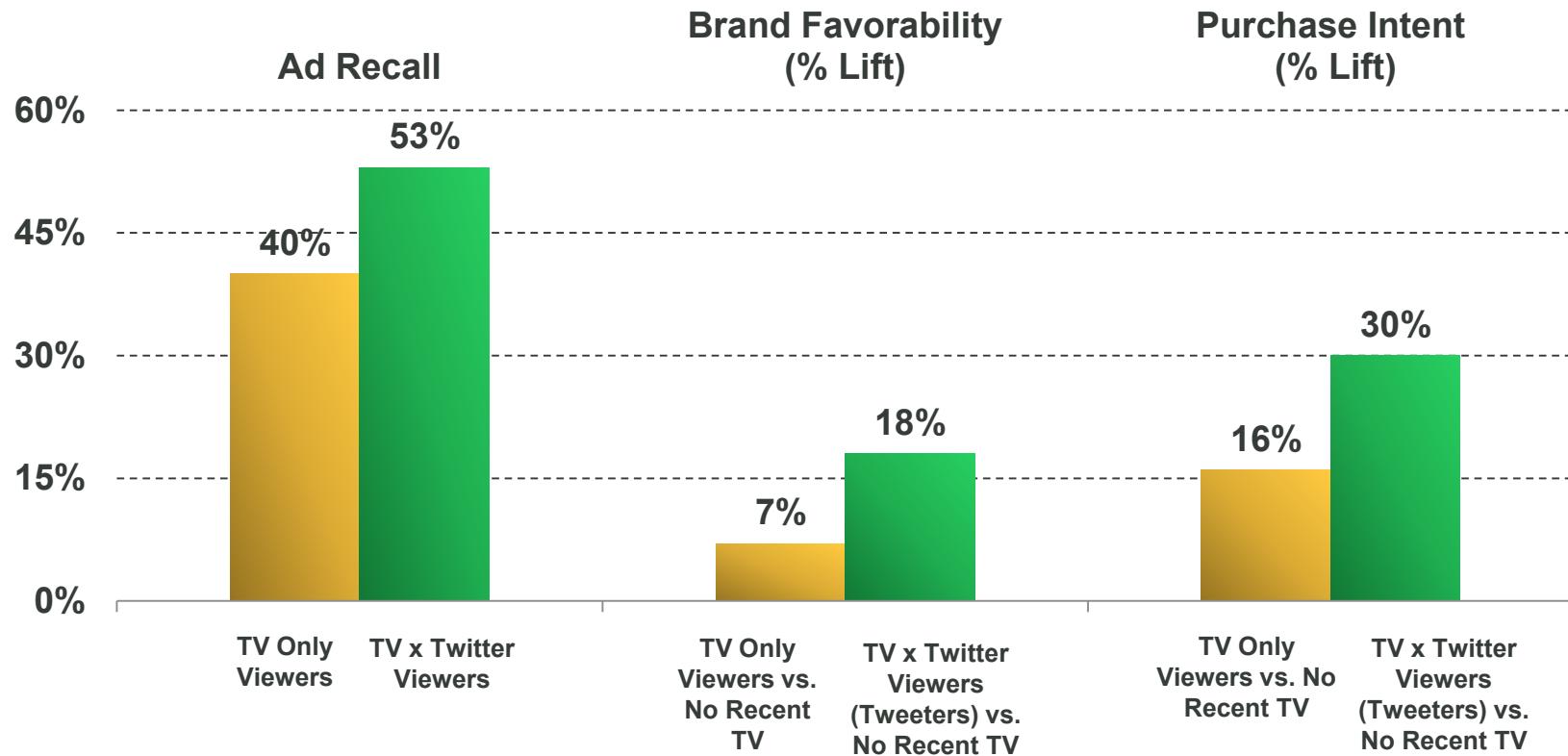
Rank	Site	Volume (%)
1	Twitch	44%
2	WWE	18%
3	Ustream	11%
4	MLB.com	7%
5	ESPN	6%

Source: Company data. Qwilt, 4/14.
*ReadWrite

Social TV =
Can Provide Advertiser Lift

TV + Twitter = Boosts Ad Impact

Impact of TV Ads on Viewers – TV with Twitter vs. TV without Twitter



Source: Twitter x TV Study, Millward Brown Digital, 12/13.

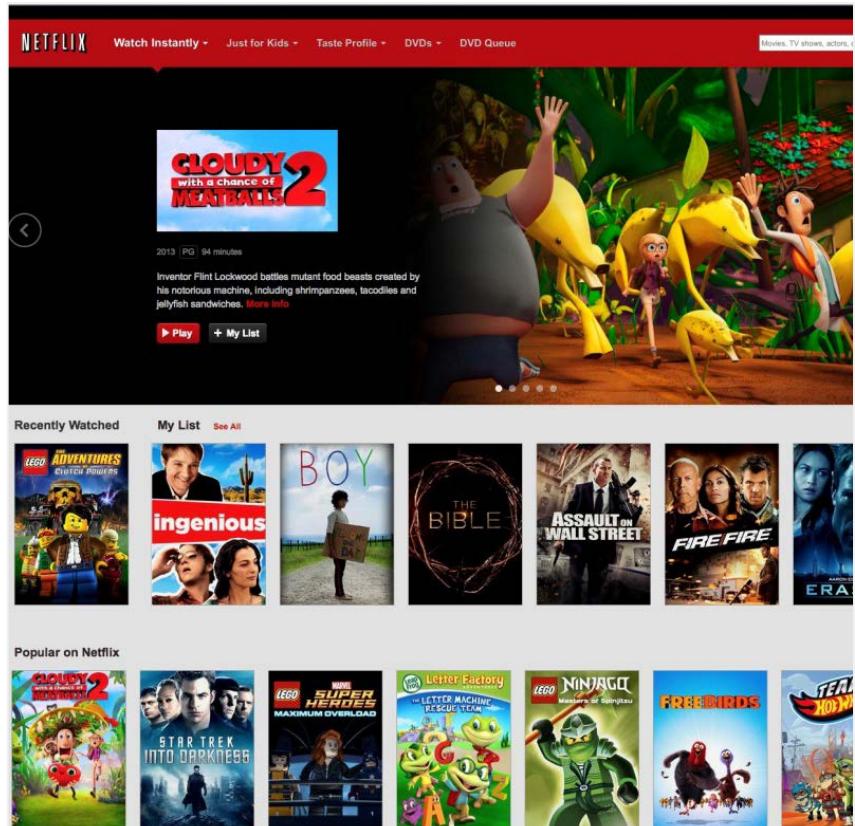
Note: TV x Twitter users defined as people who used Twitter while watching TV.

N = 7,500+ respondents who were part of a study to assess impact of TV ads among people who watched TV with and without Twitter.

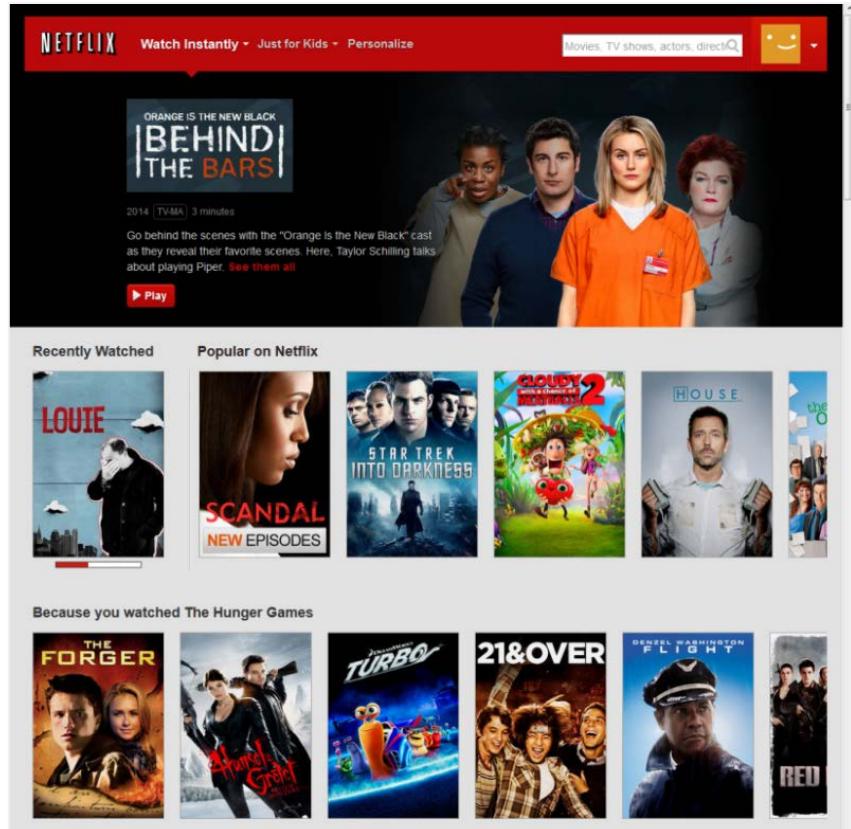
Consumers Voting for Personalization

Netflix = Personalization...

A Father of Two



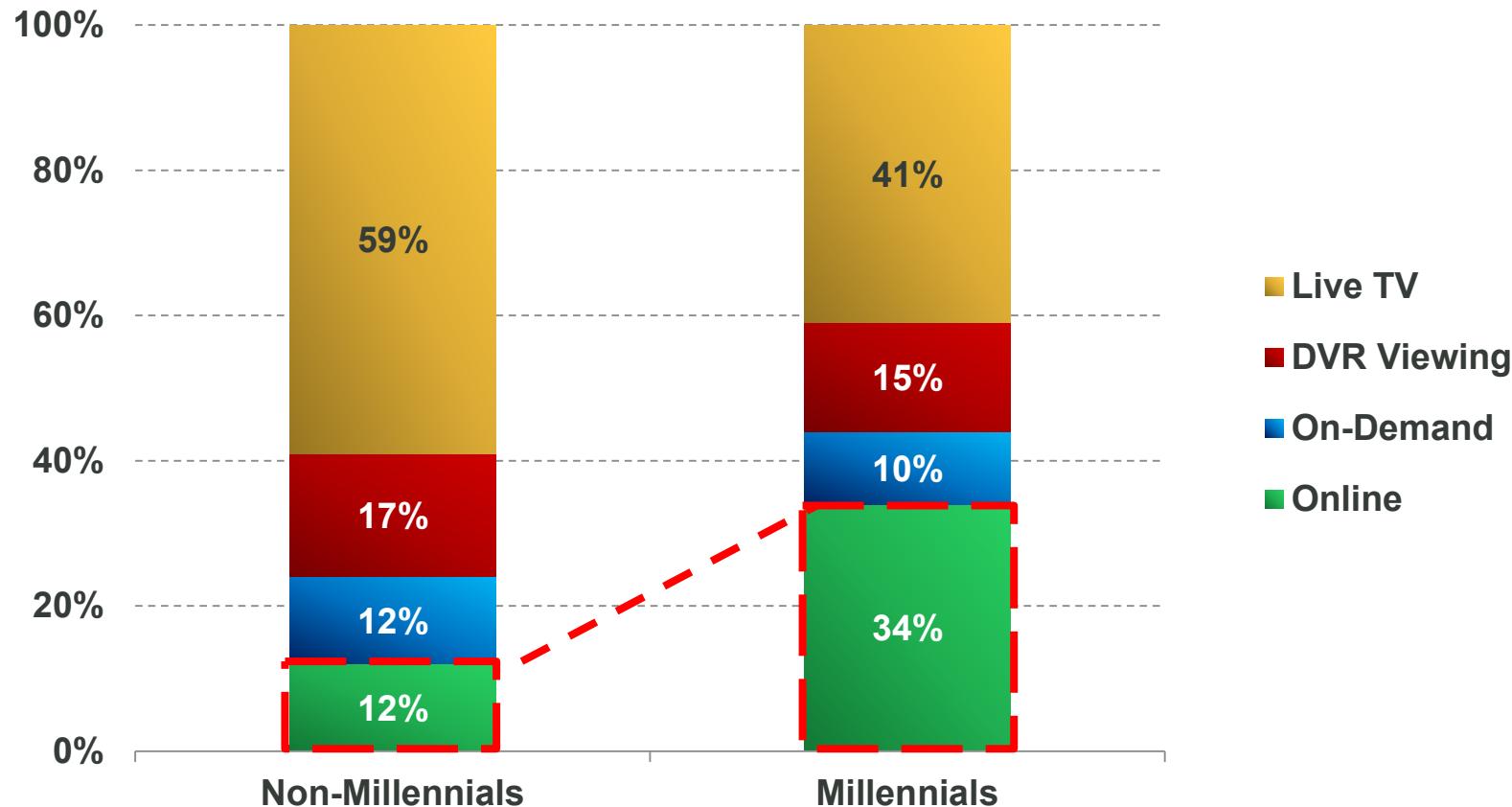
A Female Millennial



Younger Consumers Voting for On-Demand Video

Millennials = 34% of TV Time Online, ~3x > Non-Millennials

Distribution of Total TV Time Millennials vs. Non-Millennials, USA



Source: Verizon Digital Media Study, 3/14.

Note: Study encompassed quantitative survey of 1,000 USA consumers (800 millennials age 16-34 and 200 non-millennials age 35-64). Data collected on 11/13.

Internet TV Replacing Linear TV –

*Early Stages of TV Golden Age With
Epic*

*Content Creation / Consumption /
Curation / Distribution*

Consumers Increasingly Expect to Watch TV Content... On Own Terms

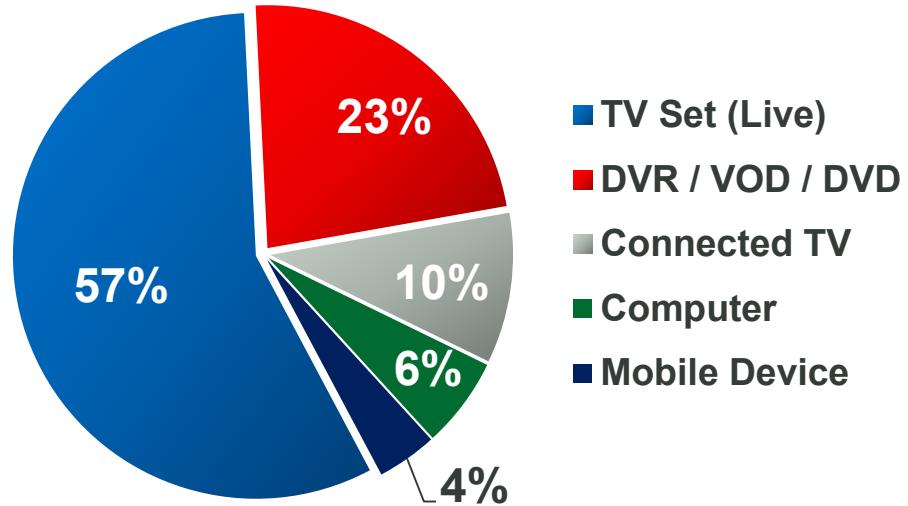
Device Share of TV Content, USA, 1/14

Circa 1950



TV Set (Live) =
100% of viewing

Circa 2014



Source: Horowitz Associates, State of Cable and Digital Media Report, 4/14.

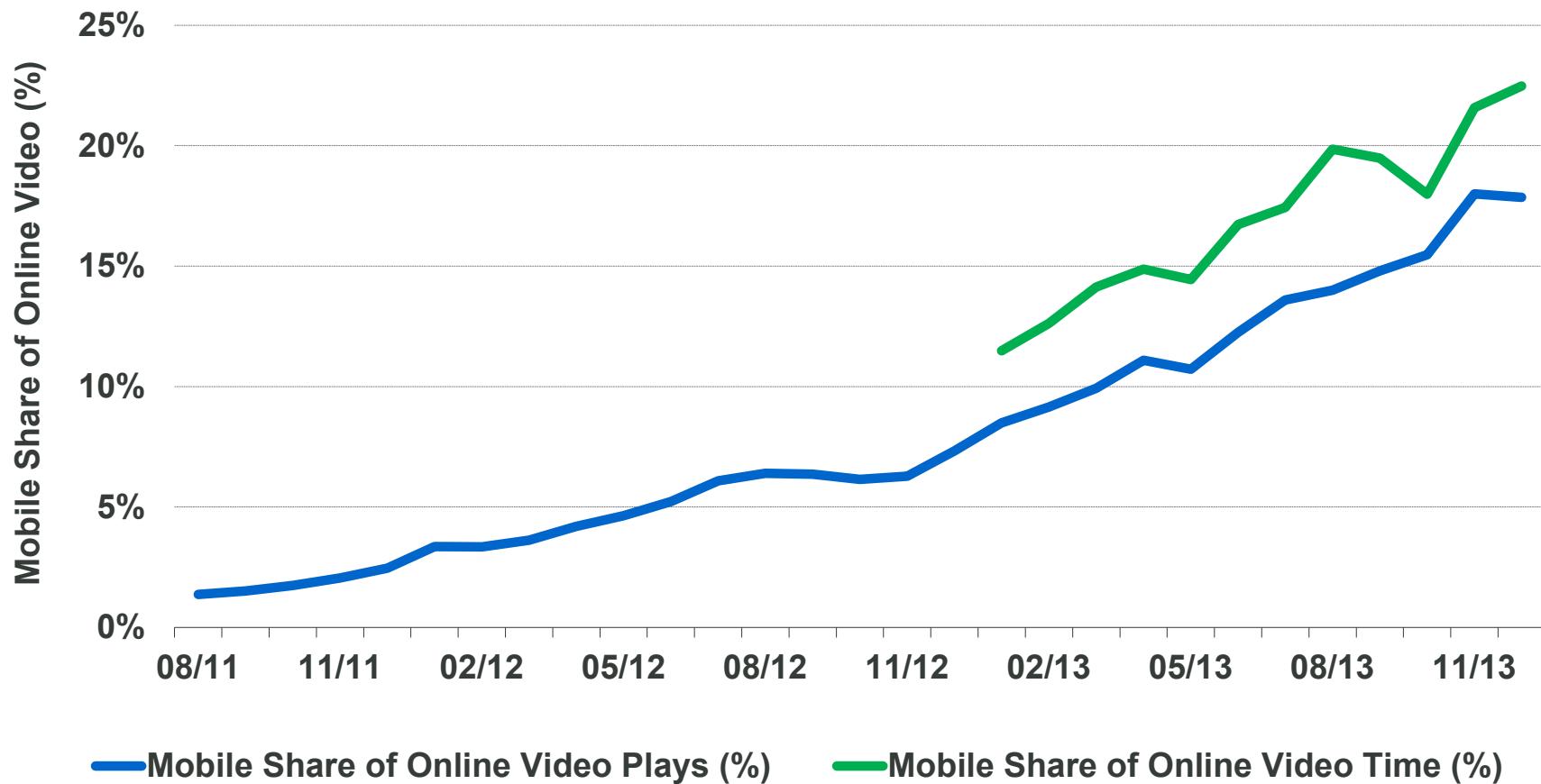
Note: Study based on 1,200 interviews in 1/14 among heads of households (18+) who watch any kind of TV.

Live TV defined as watching linear programming that is not time-shifted from original programming time intended.

TV Content defined as any type of video content. Computer includes desktop + notebook. Mobile includes smartphone + tablet.

Mobile = More & More Video Consumption... 22% (+2x Y/Y) of Online Video Time Spent

Mobile Share of Online Video Plays and Time, 8/11 – 12/13, Global



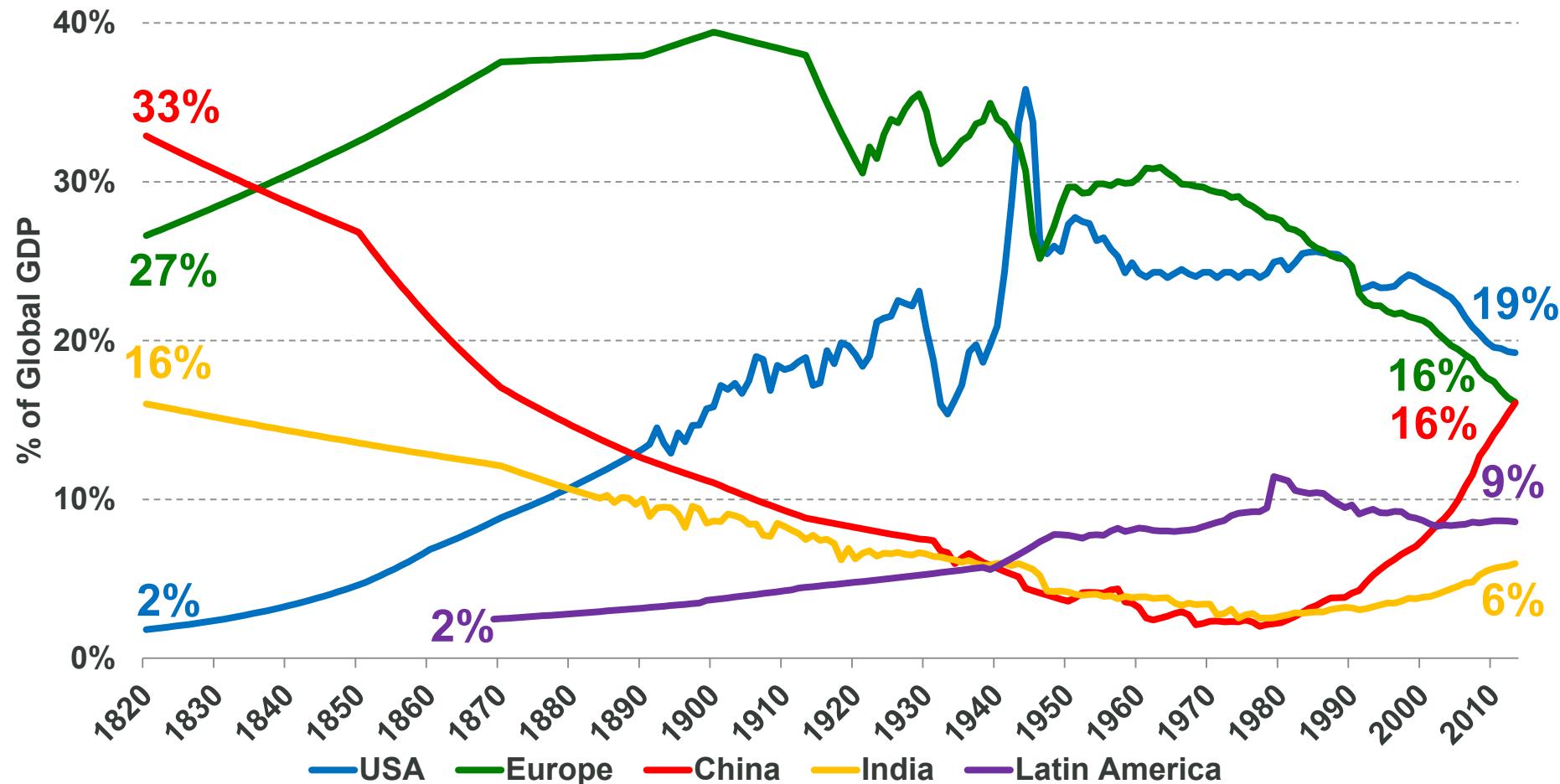
Future of TV – Reed Hastings (Netflix CEO / Founder)

- 1) *Screens Proliferating*
- 2) *[Traditional] Remote Controls Disappearing*
- 3) *Apps Replacing Channels*
- 4) *Internet TV Replacing Linear TV*

CHINA'S EPIC SHARE GAINS

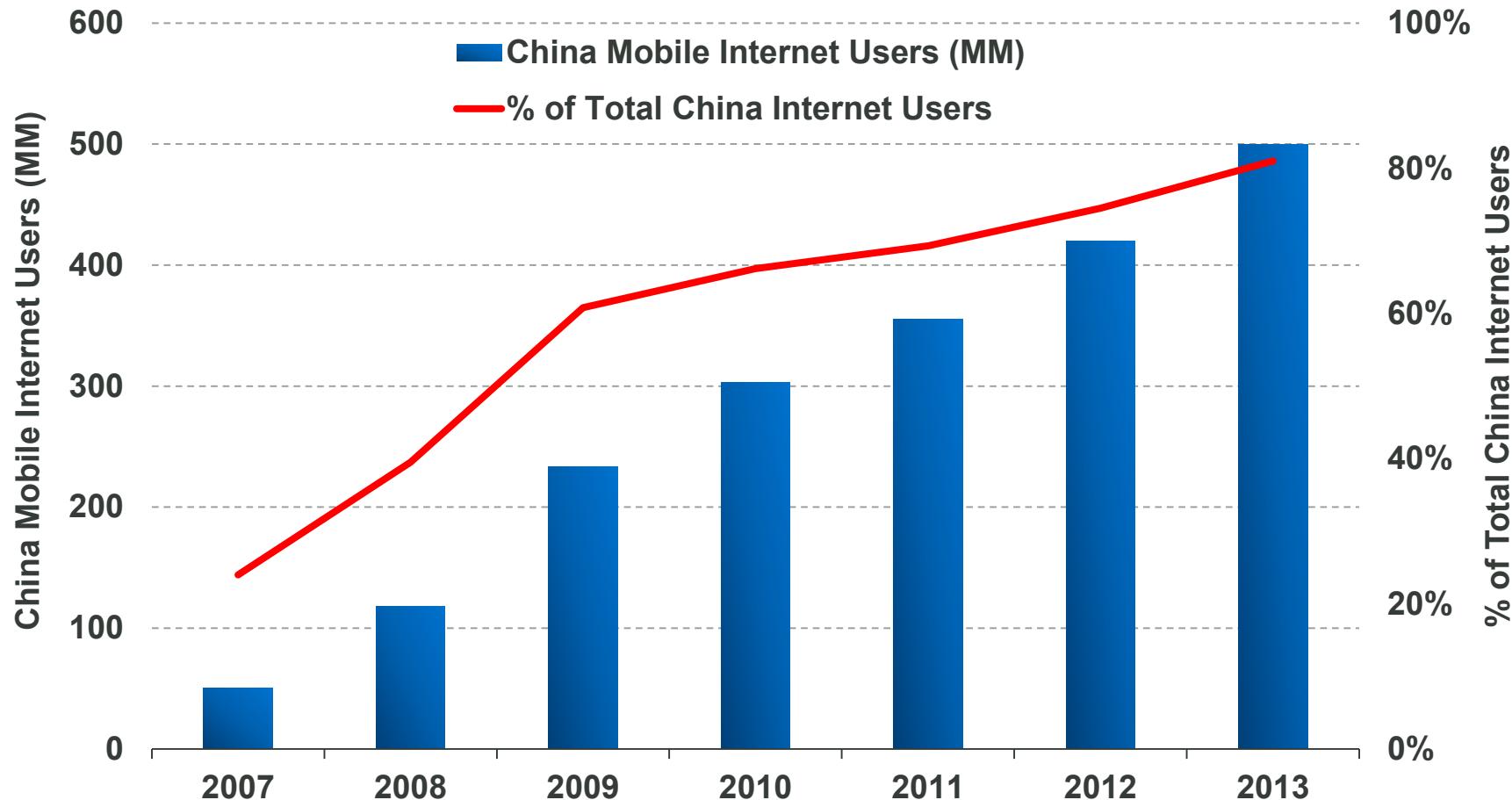
Global GDP = China Rise Continues

Percent of Global GDP, 1820 – 2013,
USA vs. Europe vs. China vs. India vs. Latin America



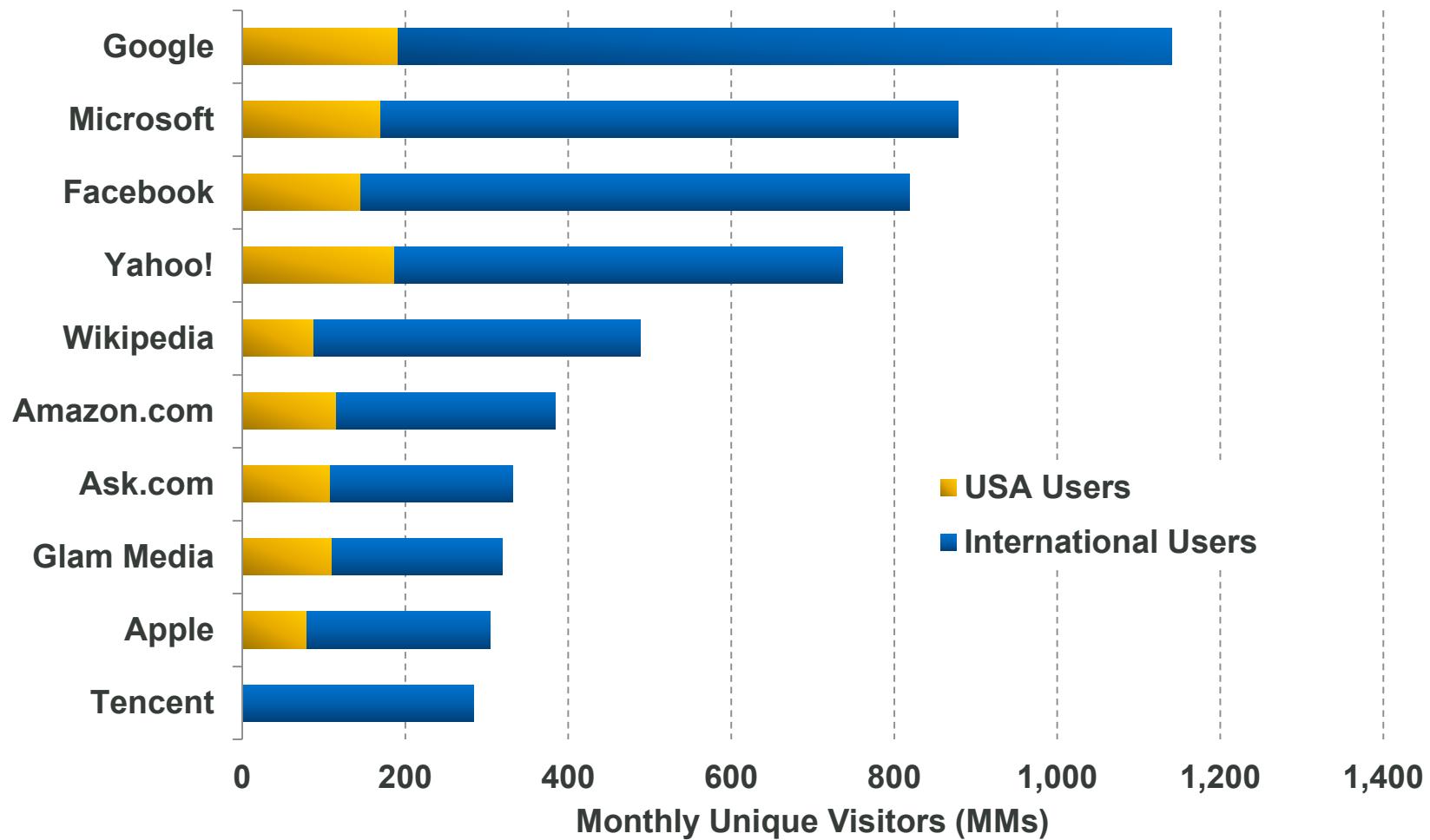
500MM (80%) of China Internet Users = Mobile... More Critical Mass than Any Place in World

China Mobile Internet Users as % of Total Internet Users, 2007 – 2013



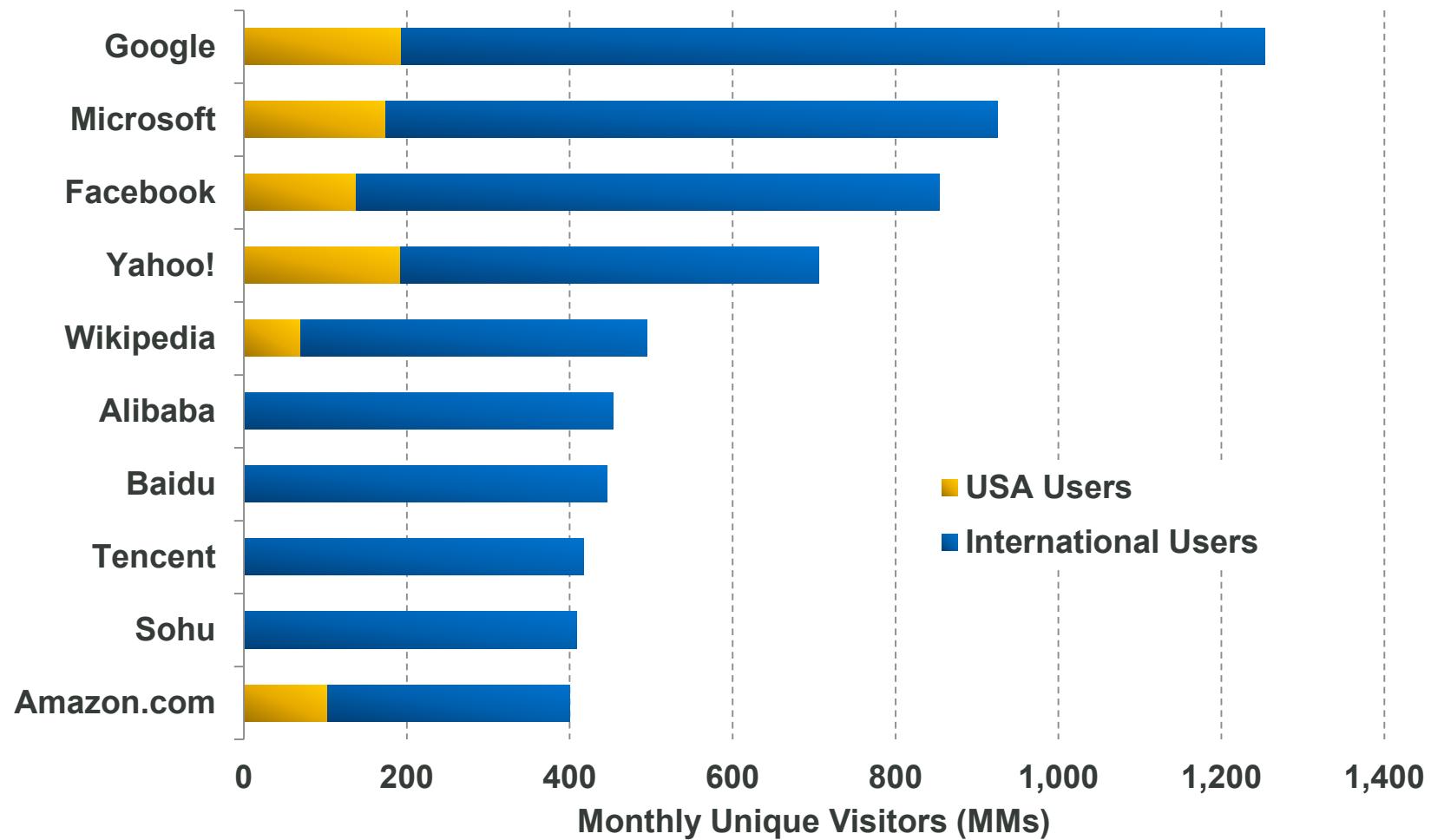
1/13 – 9 of Top 10 Global Internet Properties ‘Made in USA’... 79% of Their Users Outside America

Top 10 Internet Properties by Global Monthly Unique Visitors, 1/13



3/14 – 6 of Top 10 Global Internet Properties ‘Made in USA’...
>86% of Their Users Outside America...China Rising Fast

Top 10 Internet Properties by Global Monthly Unique Visitors, 3/14



China = Mobile Commerce Innovation Leader

Source: Liang Wu, Hillhouse Capital*

*Disclaimer – The information provided in the following slides is for informational and illustrative purposes only. No representation or warranty, express or implied, is given and no responsibility or liability is accepted by any person with respect to the accuracy, reliability, correctness or completeness of this Information or its contents or any oral or written communication in connection with it. A business relationship, arrangement, or contract by or among any of the businesses described herein may not exist at all and should not be implied or assumed from the information provided. The information provided herein by Hillhouse Capital does not constitute an offer to sell or a solicitation of an offer to buy, and may not be relied upon in connection with the purchase or sale of, any security or interest offered, sponsored, or managed by Hillhouse Capital or its affiliates.

Tencent WeChat = 400MM Mobile Active Chat Users... Increasingly Using Payments + Commerce

WeChat 'My Bank Card' Page



Manage money / invest in
money market funds
via WeChat Payment



Order taxi - powered by Didi -
pay via WeChat Payment



New Year Lucky Money –
fun / social game to incentivize
users to link bank cards to
WeChat Payment...
5MM users used on
Chinese New Year Eve, 2014

Find restaurants /
daily group buy deals
- powered by Dianping -
pay via WeChat Payment



Tencent WeChat Services = Virtual Assistant

WeChat Service Accounts = Interactive Accounts with Communication / CRM / Ordering Capability

Personal Banker

China Merchant Bank allows customers to check & repay balances and ask live questions via WeChat



Shopping Assistant

Mogujie / Meilishuo (fashion discovery & shopping sites) give customers tailored suggestions via WeChat



Private Chef

Hahajing (a chain deli restaurant) allows customers to order & deliver food via WeChat



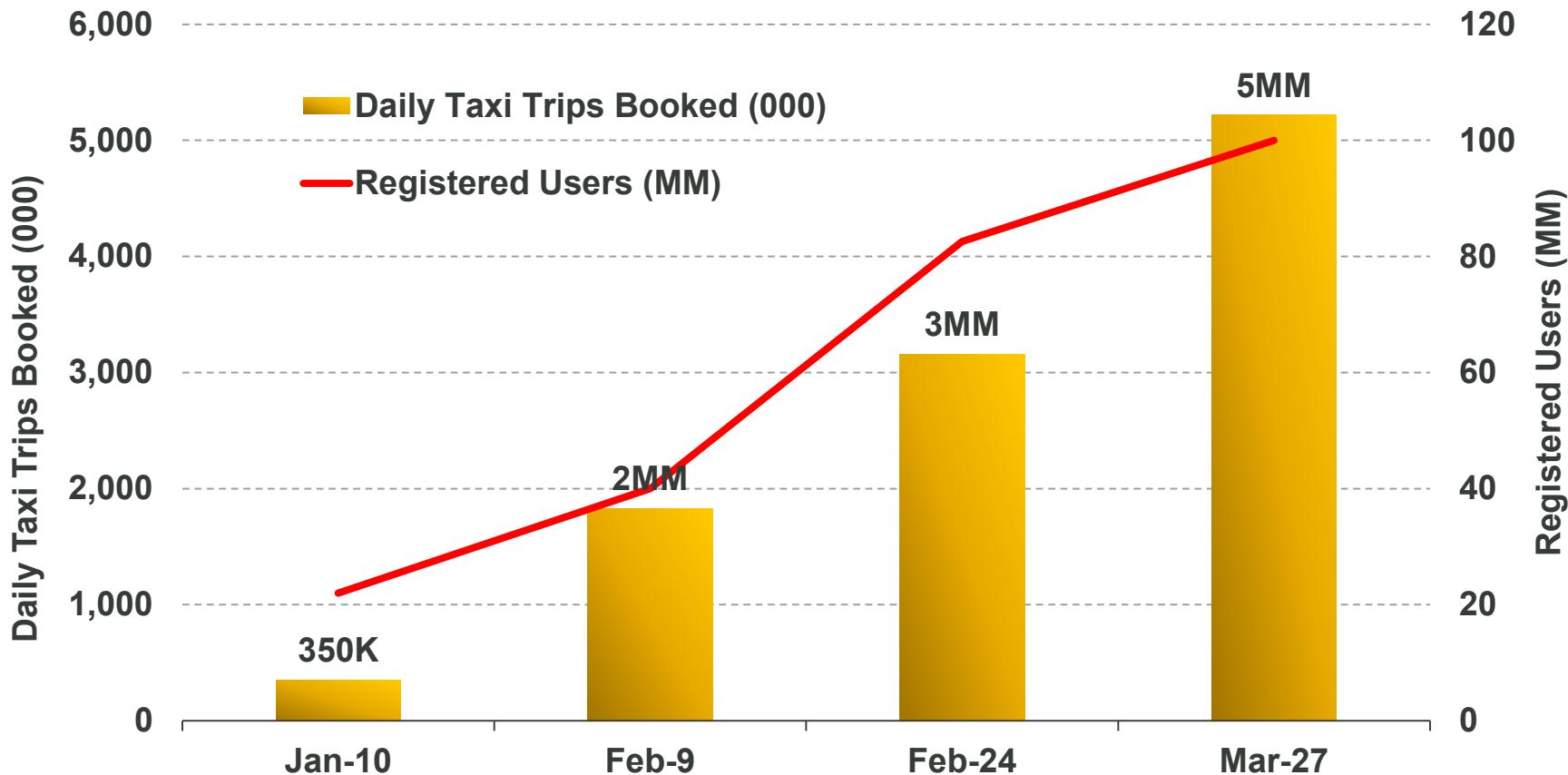
Grocery Getter

Xiaonongnv (a grocery delivery startup) prepares fresh groceries & delivers to your address via WeChat



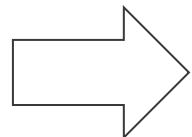
Didi Taxi – 100MM+ Users = 5MM+ Daily Rides, +15x in 77 Days...
Driven by WeChat Payment Integration & Subsidy*

Didi Taxi, Daily Taxi Trips Booked, 1/10/2014 – 3/27/2014



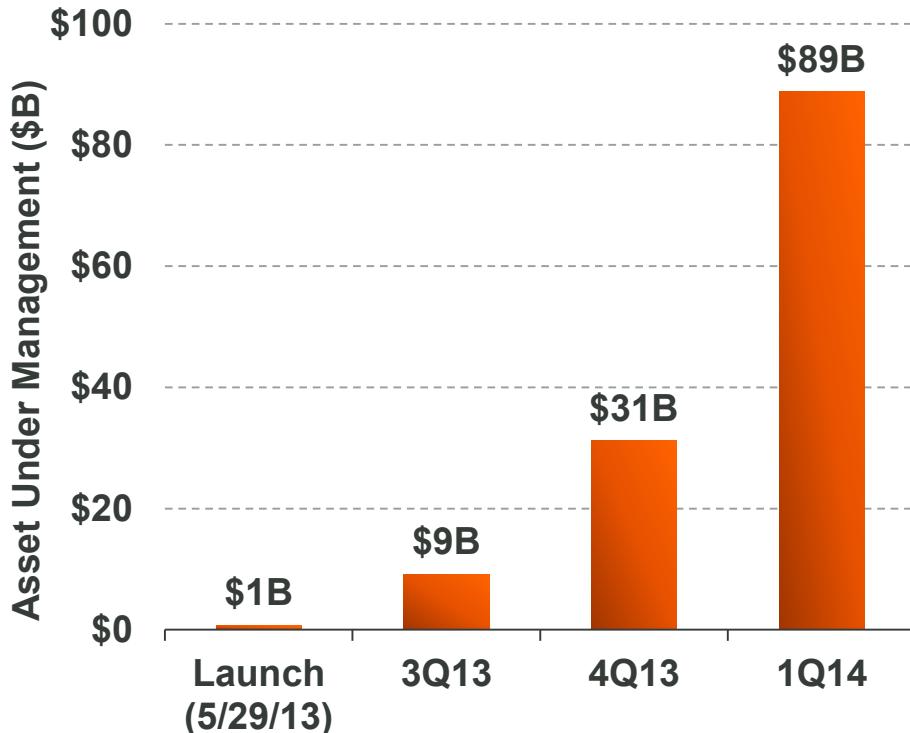
Alipay Yu'E Bao – Mobile Money Market Fund Launch... Drove \$89B AUM* in 10 Months

- Simple, fun-to-use mobile product
- Built on top of Alipay – the most popular online payment platform in China with 160MM+ accounts.
- Technology enables same-day settlement.



- \$0 → \$89B asset under management in 10 months
- Top 3 global money market fund by assets under management (AUM)

Alipay Yu'E Bao Assets Under Management, 5/13 to C1:14



*Note: AUM is asset under management, Fidelity and Vanguard manage more assets than Alipay's Yu'E Bao.
Source: Alipay, Liang Wu (Hillhouse Capital).

PUBLIC COMPANY TRENDS

Global Internet Public Market Leaders = Apple / Google / Facebook / Amazon / Tencent...

Rank	Company	Region	2014 Market Value (\$B)	2013 Revenue (\$MM)
1	Apple	USA	\$529	\$173,992
2	Google	USA	377	59,825
3	Facebook	USA	157	7,872
4	Amazon	USA	144	74,452
5	Tencent	China	132	9,983
6	eBay	USA	66	16,047
7	Priceline	USA	63	6,793
8	Baidu	China	59	5,276
9	Yahoo!	USA	35	4,680
10	Salesforce.com	USA	33	4,071
11	JD.com	China	29	11,454
12	Yahoo! Japan	Japan	25	3,641
13	Netflix	USA	24	4,375
14	Naver	Korea	23	2,190
15	LinkedIn	USA	19	1,529
16	Twitter	USA	18	665
17	Rakuten	Japan	16	4,932
18	Liberty Interactive	USA	14	11,252
19	TripAdvisor	USA	13	945
20	Qihoo 360	China	11	671
Total			\$1,787	\$404,644

...Global Internet Leaders = Intense M&A + Investment Activity

Company / Market Cap (\$B)	Volume, 2012- 2014YTD (\$B)	Select Transactions, 2012-2014YTD					
Google \$377B	\$6B (M&A)	DeepMind	\$400MM (1/14)	Nest	\$3B (1/14)	Waze	\$1B (6/13)
	\$3B* (Investments)	Cloudera	\$160MM* (3/14)	DocuSign	\$100MM* (3/14)	Uber	\$258MM (8/13)
Facebook \$157B	\$24B (M&A)	Oculus	\$2B (3/14)	WhatsApp	\$19B+ (2/14)	Instagram	\$1B (4/12)
Tencent \$132B	\$7B* (Investments)	JD.com	\$3B (3/14)	CJ Games	\$500MM (3/14)	Activision Blizzard	\$429MM (7/13)
Alibaba TBD	\$5B (M&A)	ChinaVision	\$800MM (3/14)	AutoNavi	\$1B+ (2/14)		
	\$5B* (Investments)	Youku Tudou	\$1B (4/14)	Weibo	\$1B (4/13)		

ONE MORE THING(S)...

*From One Extreme
To the Other...*

Live Streaming = Oculus Rift-Enabled Drones?



Re-Imagining Global Access to Internet? ☹



Thanks...

KPCB Partners

Especially Alex Tran / Cindy Cheng / Alex Kurland who helped take spurts of ideas and turn them into something we hope is presentable / understandable...

Participants in Evolution of Internet Connectivity

From creators to consumers who keep us on our toes 24x7...

Walt & Kara

For continuing to do what you do so well...

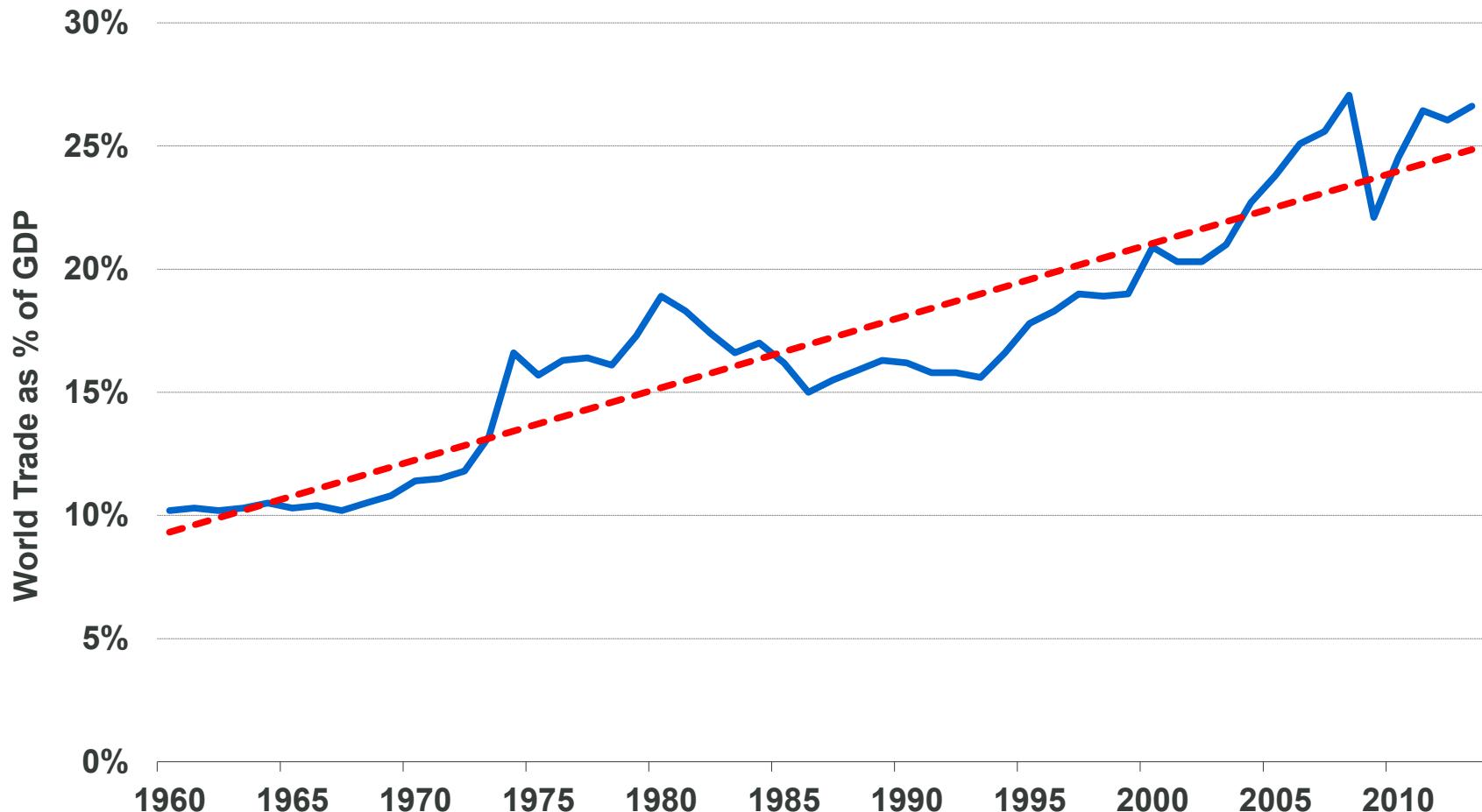
RAN OUTTA TIME THOUGHTS / APPENDIX

IMMIGRATION UPDATE

REPORT: <http://www.kpcb.com/file/kpcb-immigration-in-america-the-shortage-of-high-skilled-workers>

Global Economies / People = Increasingly Connected / Co-Dependent

World Trade as % of World GDP, 1960 - 2013



Source: Trade data per World Trade Organization (WTO), GDP data per United Nations (UN).

Note: World trade calculated as the sum of all countries' imports (or exports). The biggest trading partners of USA includes EU nations, Canada, China, Mexico, Japan and South Korea.

60% of Top 25 Tech Companies Founded by 1st and 2nd Generation Americans = 1.2MM Employees, 2013

Founders / Co-Founders of Top 25 USA Public Tech Companies, Ranked by Market Capitalization

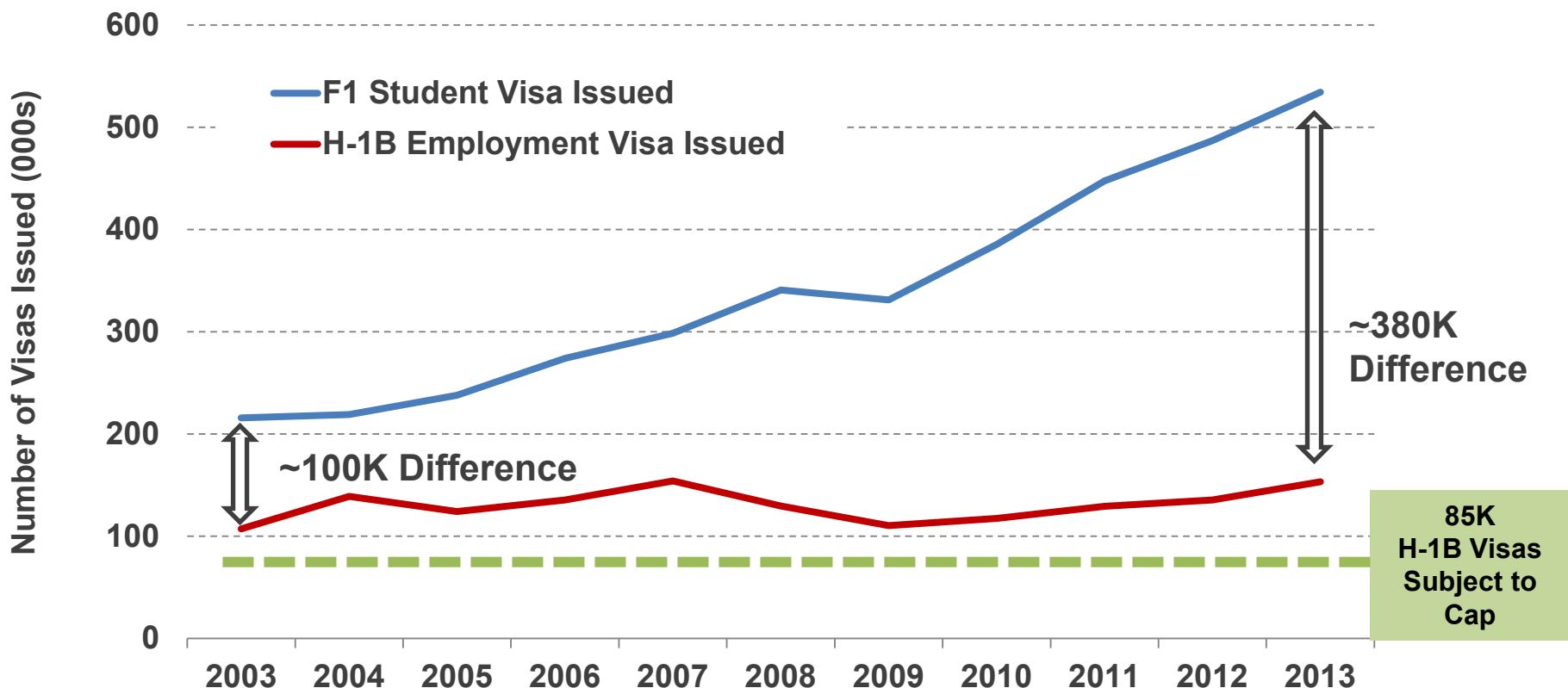
Rank	Company	Mkt Cap (\$MM)	LTM Rev (\$MM)	Employees	1st or 2nd Gen Immigrant Founder / Co-Founder	Generation
1	Apple	\$529,000	\$176,035	80,300	Steve Jobs	2nd-Gen, Syria
2	Google	376,536	62,294	47,756	Sergey Brin	1st-Gen, Russia
3	Microsoft	331,408	83,347	99,000	--	--
4	IBM	188,205	98,827	431,212	Herman Hollerith	2nd-Gen, Germany
5	Oracle	187,942	37,902	120,000	Larry Ellison / Bob Miner	2nd-Gen, Russia / 2nd-Gen, Iran
6	Facebook	157,448	8,916	6,337	Eduardo Saverin	1st-Gen, Brazil
7	Amazon.com	143,683	78,123	117,300	Jeff Bezos	2nd-Gen, Cuba
8	Qualcomm	134,827	25,712	31,000	Andrew Viterbi	1st-Gen, Italy
9	Intel	130,867	52,892	107,600	-- *	--
10	Cisco	125,608	47,202	75,049	--	--
11	eBay	65,927	16,561	33,500	Pierre Omidyar	1st-Gen, France
12	Hewlett-Packard	63,903	111,820	317,500	William Hewlett	--
13	Priceline	62,767	7,133	9,500	Jay Walker	--
14	EMC	54,458	23,314	63,900	Roger Marino	2nd-Gen, Italy
15	Texas Instruments	49,920	12,303	32,209	Cecil Green / J. Erik Jonsson	1st-Gen, UK / 2nd-Gen, Sweden
16	VMware	41,549	5,376	14,300	Edouard Bugnion	1st-Gen, Switzerland
17	Automatic Data Processing	38,014	11,958	60,000	Henry Taub	2nd-Gen, Poland
18	Yahoo!	35,258	4,673	12,200	Jerry Yang	1st-Gen, Taiwan
19	salesforce.com	32,783	4,405	13,300	--	--
20	Adobe Systems	32,004	4,047	11,847	--	--
21	Cognizant Technology	29,583	9,245	171,400	Francisco D'souza / Kumar Mahadeva	1st-Gen, India** / 1st-Gen, Sri Lanka
22	Micron	29,253	13,310	30,900	--	--
23	Netflix	24,120	4,621	2,327	--	--
24	Intuit	22,595	4,426	8,000	--	--
25	Sandisk	21,325	6,341	5,459	Eli Harari	1st-Gen, Israel
Total Founded by 1st or 2nd Gen Immigrants		\$2,053,676	\$577,580	1,226,873		

Source: CapIQ, Factset as of 5/14. "The 'New American' Fortune 500", a report by the Partnership for a New American Economy; "American Made, The Impact of Immigrant Founders & Professionals on U.S. Corporations."

*Note: while Andy Grove (from Hungary) is not a co-founder of Intel, he joined as COO on the day it was incorporated. **Francisco D'souza is a person of Indian origin born in Kenya.

USA Sending More Qualified Foreign Students Home Post Graduation – 3.5x Rise in Student & Employment Visa Issuance Gap Over Decade

Number of Student Visas (F1) vs. Employment (H-1B) Visas Issued per Year, 1992 – 2013



USA, INC. UPDATE

REPORT: http://www.kpcb.com/usainc/USA_Inc.pdf

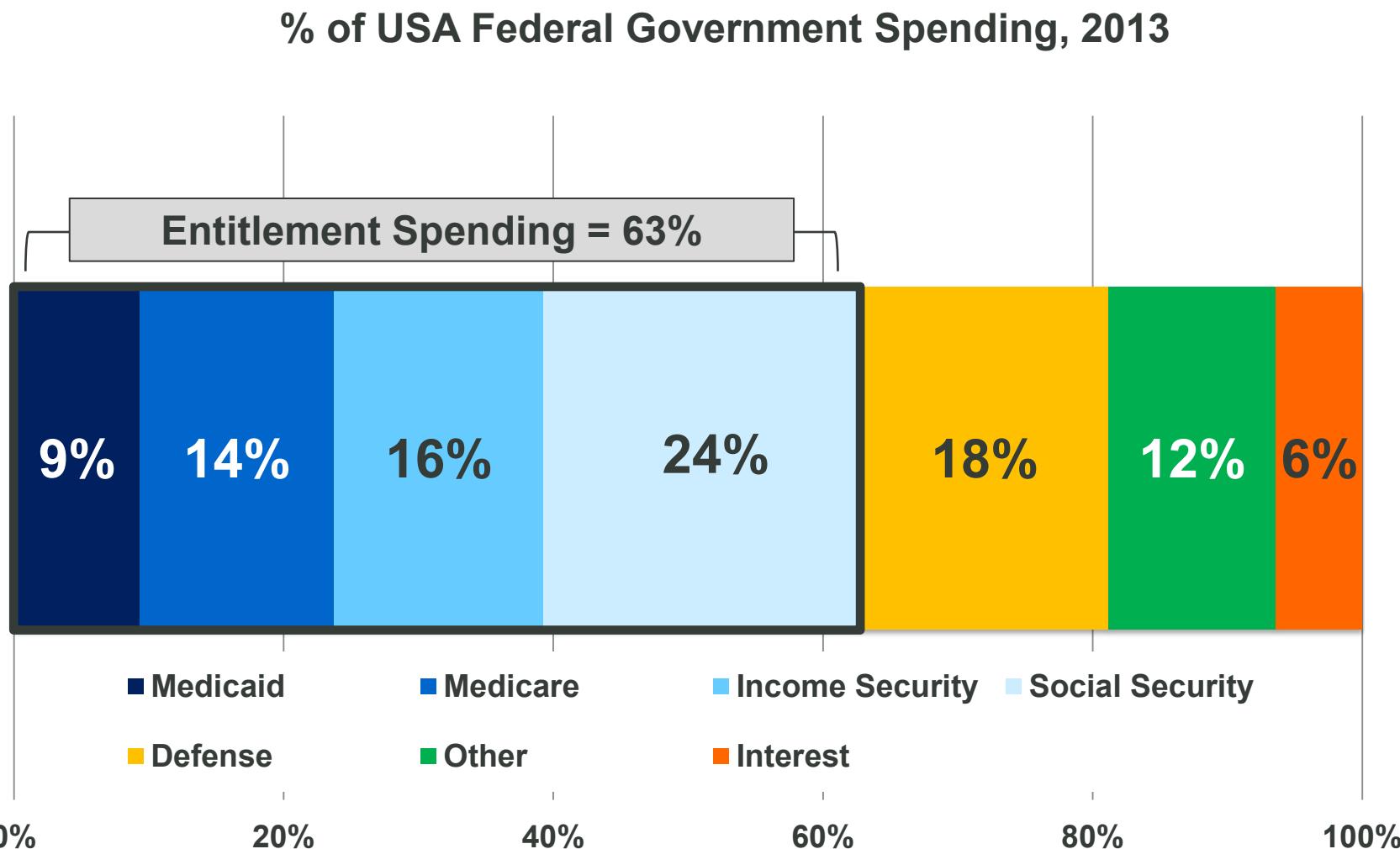
VIDEO: <http://www.kpcb.com/insights/2011-usa-inc-video>

USA Inc. Income Statement, F2013 – Revenue (Taxes) +13%... Expenses -2%... -24% Net Margin

USA Inc. Profit & Loss Statement, F1998 / F2003 / F2008 / F2013

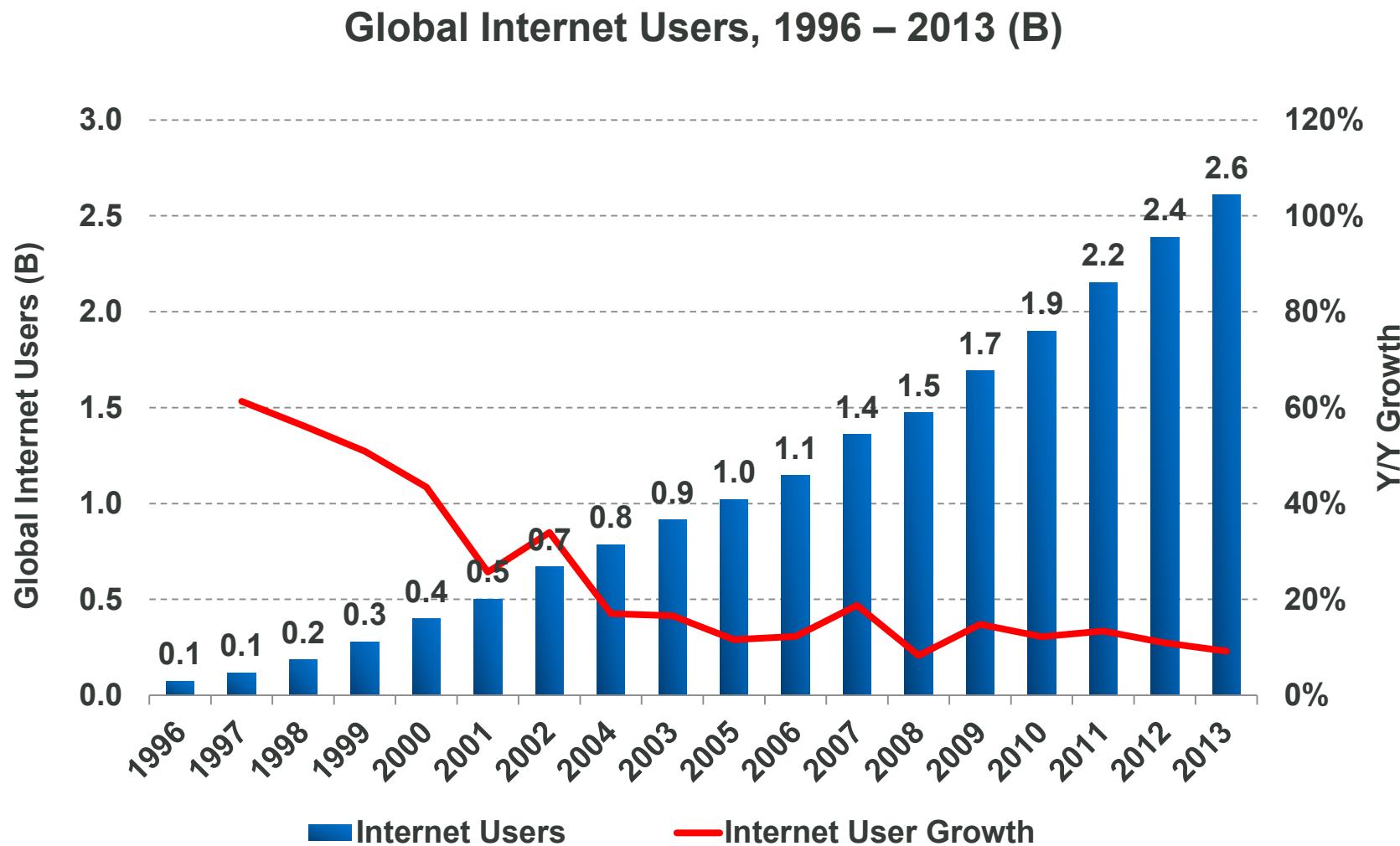
	F1998	F2003	F2008	F2013	Comments
Revenue (\$B)	\$1,722	\$1,783	\$2,524	\$2,775	
Y/Y Growth	9%	-4%	-2%	13%	On average, revenue grew 3% Y/Y over the past 15 years
Individual Income Taxes*	\$829	\$794	\$1,146	\$1,316	Largest driver of revenue
% of Revenue	48%	45%	45%	47%	
Social Insurance Taxes	\$572	\$713	\$900	\$948	Payroll tax on Social Security & Medicare
% of Revenue	33%	40%	36%	34%	
Corporate Income Taxes*	\$189	\$132	\$304	\$274	Fluctuates significantly with economic conditions
% of Revenue	11%	7%	12%	10%	
Other	\$133	\$144	\$174	\$237	Includes estate & gift taxes / duties & fees; relatively stable
% of Revenue	8%	8%	7%	9%	
Expense (\$B)	\$1,652	\$2,160	\$2,983	\$3,455	On average, expense grew 5% Y/Y over the past 15 years
Y/Y Growth	3%	7%	9%	-2%	
Entitlement / Mandatory	\$870	\$1,168	\$1,582	\$2,049	Significant increase owing to aging population and rising healthcare costs
% of Expense	53%	54%	53%	59%	
Non-Defense Discretionary	\$273	\$434	\$518	\$551	Includes education / law enforcement / transportation / general government
% of Expense	17%	20%	17%	16%	
"One-Time" Items	--	--	\$14	--	Includes discretionary spending on TARP, GSEs, and economic stimulus
% of Expense	--	--	0%	--	
Defense	\$268	\$405	\$616	\$633	Significant increase owing to on-going War on Terror
% of Expense	16%	19%	21%	18%	
Net Interest on Public Debt	\$241	\$153	\$253	\$221	Decreased owing to historic low interest rates
% of Expense	15%	7%	8%	6%	
Surplus / Deficit (\$B)	\$69	-\$377	-\$459	-\$680	USA Inc. median net margin between 1998 & 2013 = -16%
Net Margin (%)	4%	-21%	-18%	-24%	

Where Your Tax Dollars Go – Entitlements as % of Government Spending = 63% vs. 59% Y/Y



...KEY INTERNET TRENDS

Internet User Growth = +9% in 2013 vs. +11% in 2012 = Solid, But Slowing



Established ‘Big’ Internet Markets (China / USA / Japan / Brazil / Russia) = +7% Growth in 2013 vs. 8% Y/Y = Slowing, Past / Near 50% Penetration

Countries with Internet Penetration >45%, 2013

Rank	Country	2013 Internet Users (MMs)	2013 Internet User Growth	2012 Internet User Growth	Population Penetration	Total Population (MMs)
1	China	618	10%	10%	46%	1,350
2	USA	263	2	2	83	316
3	Japan	101	0	1	79	127
4	Brazil	100	12	12	50	201
5	Russia	76	9	14	53	143
6	Germany	68	1	1	84	81
7	United Kingdom	55	1	3	87	63
8	France	55	5	4	83	66
9	Iran	45	16	19	56	80
10	South Korea	41	1	0	84	49
11	Turkey	36	6	9	45	81
12	Italy	36	2	6	58	61
13	Spain	34	7	3	72	47
14	Canada	30	5	4	87	35
15	Poland	25	0	4	65	38
Top 15		1,583	6%	7%	58%	2,739
World		2,609	9%	11%	37%	7,098

'Big' Internet Markets (India / Indonesia / Nigeria / Mexico / Philippines) = +20% Growth in 2013 = Strong, Material Penetration Upside

Countries with Internet Penetration ≤45%

Rank	Country	2013 Internet Users (MMs)	2013 Internet User Growth	2012 Internet User Growth	Population Penetration	Total Population (MMs)
1	India	154	27%	36%	13%	1,221
2	Indonesia	71	13	15	28	251
3	Nigeria	57	19	21	33	173
4	Mexico	46	11	14	38	119
5	Philippines	38	27	18	36	106
6	Egypt	38	13	29	44	85
7	Vietnam	37	14	16	39	92
8	South Africa	20	20	41	41	49
9	Pakistan	19	12	14	10	193
10	Thailand	18	12	6	27	67
11	Ukraine	15	17	22	34	45
12	Kenya	14	17	105	32	44
13	Venezuela	13	11	9	44	28
14	Peru	11	7	5	38	30
15	Uzbekistan	10	22	52	37	29
Top 15		560	18%	24%	22%	2,532
World		2,609	9%	11%	37%	7,098

Established ‘Big’ Smartphone Markets (USA / Japan / UK / Germany / Korea) = +17% Growth in 2013 = Slowing, Well Past 50% Penetration

Markets with >45% Penetration

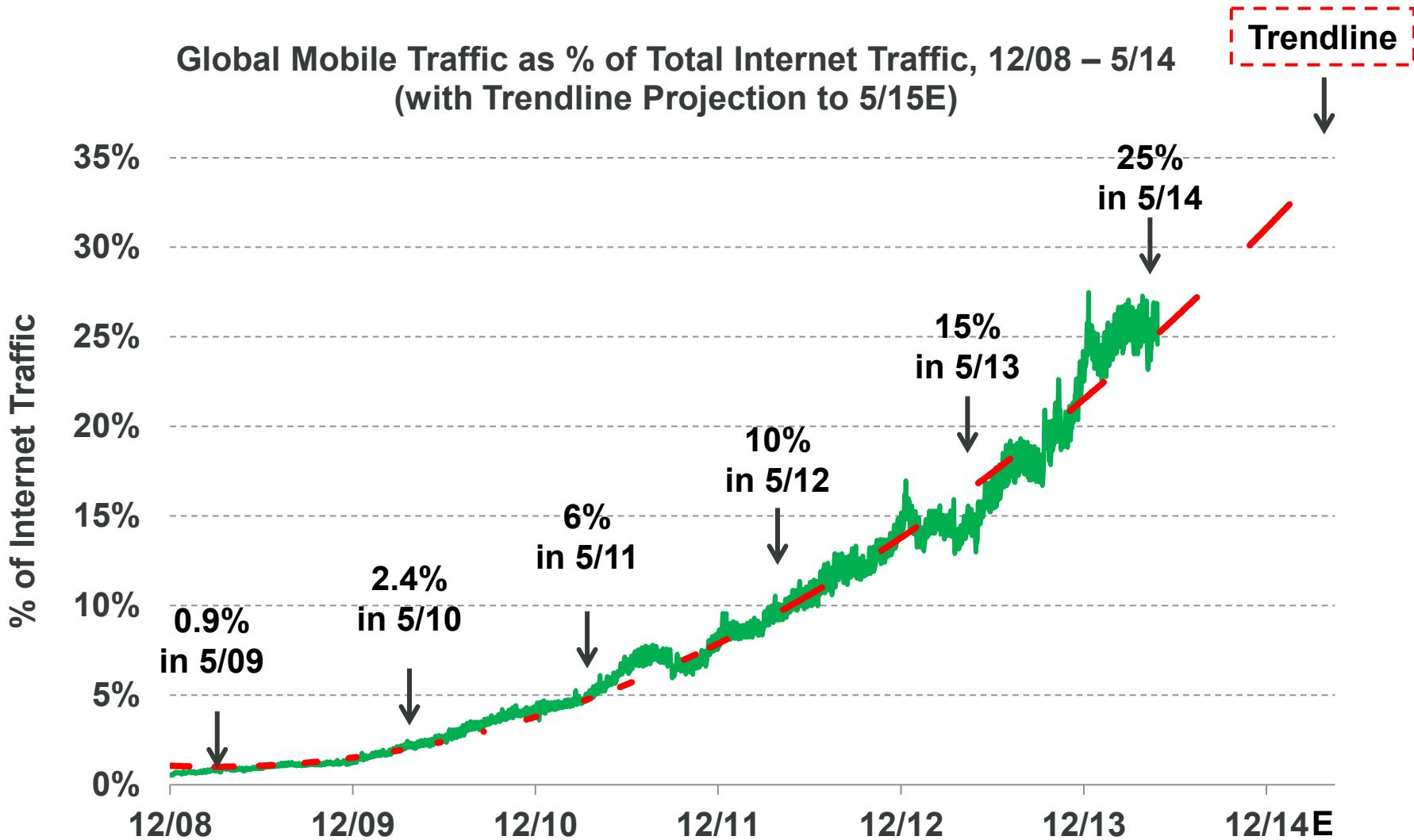
Rank	Country	2013 Smartphone	2013 Smartphone	Population	Total	2014E Smartphone
		Subs (MMs)	Sub Growth	Penetration	Population (MMs)	Sub Growth
1	USA	188	21%	59%	316	12%
2	Japan	99	5	78	127	5
3	UK	43	18	68	63	12
4	Germany	40	34	49	81	31
5	Korea	38	18	79	49	5
6	France	33	29	50	66	21
7	Saudi Arabia	30	20	110	27	15
8	Poland	22	29	57	38	24
9	Australia	19	20	85	22	12
10	Canada	18	21	53	35	15
11	Malaysia	16	23	54	30	21
12	Netherlands	12	18	69	17	13
13	Taiwan	11	23	49	23	27
14	Sweden	9	10	94	10	4
15	UAE	9	20	160	5	14
Top 15		588	19%	65%	910	13%
World		1,786	28%	25%	7,098	24%

Developing 'Big' Smartphone Markets (China / India / Brazil / Indonesia / Russia) = +32% Growth in 2013 = Strong, Material Penetration Upside Remains

Markets with ≤45% Penetration

Rank	Country	2013 Smartphone Subs (MMs)	2013 Smartphone Sub Growth	Population Penetration	Total Population (MMs)	2014E Smartphone Sub Growth
1	China	422	26%	31%	1,350	19%
2	India	117	55	10	1,221	45
3	Brazil	72	38	36	201	30
4	Indonesia	48	42	19	251	36
5	Russia	46	30	33	143	27
6	Mexico	22	49	19	119	39
7	Egypt	21	41	25	85	36
8	Italy	21	33	34	61	41
9	Spain	21	20	44	47	17
10	Philippines	20	43	19	106	36
11	Nigeria	20	43	12	173	39
12	South Africa	20	32	41	49	27
13	Thailand	18	27	27	67	24
14	Turkey	18	32	22	81	28
15	Argentina	17	40	41	43	34
Top 15		905	33%	23%	3,996	28%
World		1,786	28%	25%	7,098	24%

Mobile Traffic as % of Global Internet Traffic = Growing >1.5x per Year & Likely to Maintain Trajectory or Accelerate



...PUBLIC COMPANY TRENDS

Financial Philosophy – Michael Marks (Stanford GSB)

- 1) Three Ways to Get Capital into Company** – Sell stock, borrow money, earn it. Earn it is best!
- 2) Balance Sheets Matter** – Without a balance sheet, it's hard to understand where a company stands.
- 3) Great Companies Grow Revenue, Make Profits and Invest for Future** – Companies that do just 2 of 3 are signing up for being just ‘OK,’ not ‘great.’
- 4) Companies Learn to Make Money or Not** – Companies that make money generally continue to do so, companies that don't make money generally continue that also. It becomes core to ‘culture.’

Tech Companies = Top 1 or 2 Sector by Market Cap in S&P500 for Nearly 2 Decades

20 Years Ago:

Dec 1994 – S&P500 = \$3.2T

Sector	Weight	Largest Companies
CONS. STAPLES	14%	COCA-COLA ALTRIA
CONS. DISC.	13%	MOTORS LIQUIDATION FORD
INDUSTRIALS	13%	GENERAL ELECTRIC 3M
FINANCIALS	11%	AIG FANNIE MAE
TECHNOLOGY	11%	IBM MICROSOFT
HEALTHCARE	10%	MERCK JOHNSON & JOHNSON
ENERGY	9%	EXXON MOBIL
TELECOM	8%	SOUTHWESTERN BELL GTE
MATERIALS	7%	DUPONT DOW CHEMICAL
UTILITIES	4%	SOUTHERN COMPANY DUKE ENERGY

Peak of NASDAQ:

Mar 2000 – S&P500 = \$11.7T

Sector	Weight	Largest Companies
TECHNOLOGY	35%	MICROSOFT CISCO
FINANCIALS	13%	CITIGROUP AIG
CONS. DISC.	10%	TIME WARNER HOME DEPOT
HEALTHCARE	10%	MERCK PFIZER
INDUSTRIALS	8%	GENERAL ELECTRIC TYCO
TELECOM	7%	SOUTHWESTERN BELL AT&T
CONS. STAPLES	7%	WAL-MART COCA-COLA
ENERGY	5%	EXXON MOBIL CHEVRON
MATERIALS	2%	DUPONT ALCOA
UTILITIES	2%	DUKE ENERGY AES

Today:

May 2014 – S&P500 = \$17.4T

Sector	Weight	Largest Companies
TECHNOLOGY	19%	APPLE GOOGLE
FINANCIALS	16%	WELLS FARGO JPMORGAN CHASE
HEALTHCARE	13%	JOHNSON & JOHNSON PFIZER
CONS. DISC.	12%	AMAZON.COM WALT DISNEY
INDUSTRIALS	11%	GENERAL ELECTRIC UNITED TECHNOLOGIES
CONS. STAPLES	11%	WAL-MART PROCTOR & GAMBLE
ENERGY	10%	EXXON MOBIL CHEVRON
MATERIALS	3%	DUPONT MONSANTO
UTILITIES	3%	DUKE ENERGY NEXTERA ENERGY
TELECOM	2%	VERIZON AT&T

Disclosure

This presentation has been compiled for informational purposes only and should not be construed as a solicitation or an offer to buy or sell securities in any entity.

The presentation relies on data and insights from a wide range of sources, including public and private companies, market research firms and government agencies. We cite specific sources where data are public; the presentation is also informed by non-public information and insights.

We publish the Internet Trends report on an annual basis, but on occasion will highlight new insights. We will post any updates, revisions, or clarifications on the KPCB website.

KPCB is a venture capital firm that owns significant equity positions in certain of the companies referenced in this presentation, including those at www.kpcb.com/companies.

INTERNET TRENDS 2014

kpcb.com/InternetTrends