

# INTERNET TRENDS 2014 – CODE CONFERENCE

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May 28, 2014

[kpcb.com/InternetTrends](http://kpcb.com/InternetTrends)

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# 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

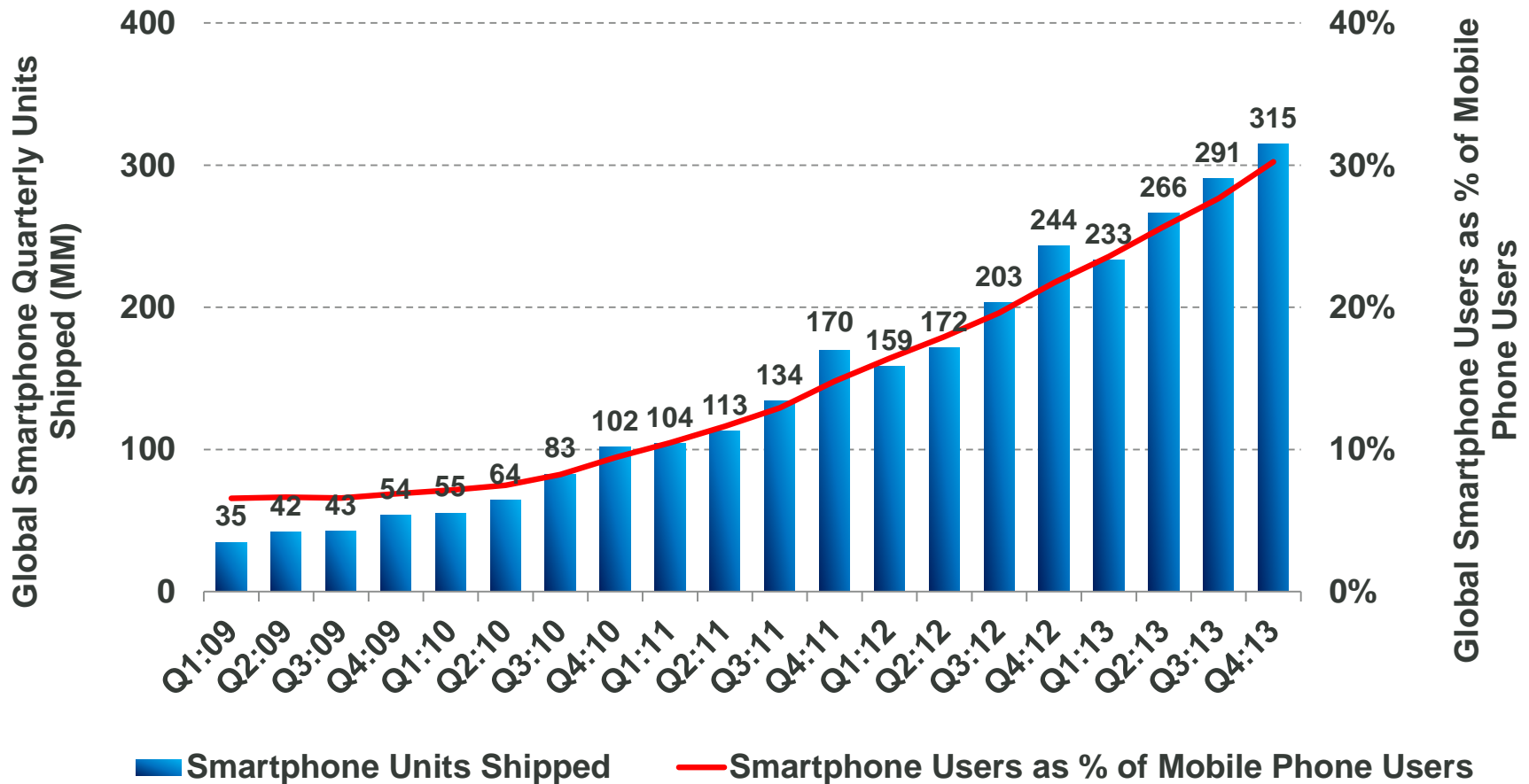
# High-Level User / Usage Trends\*

- **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*

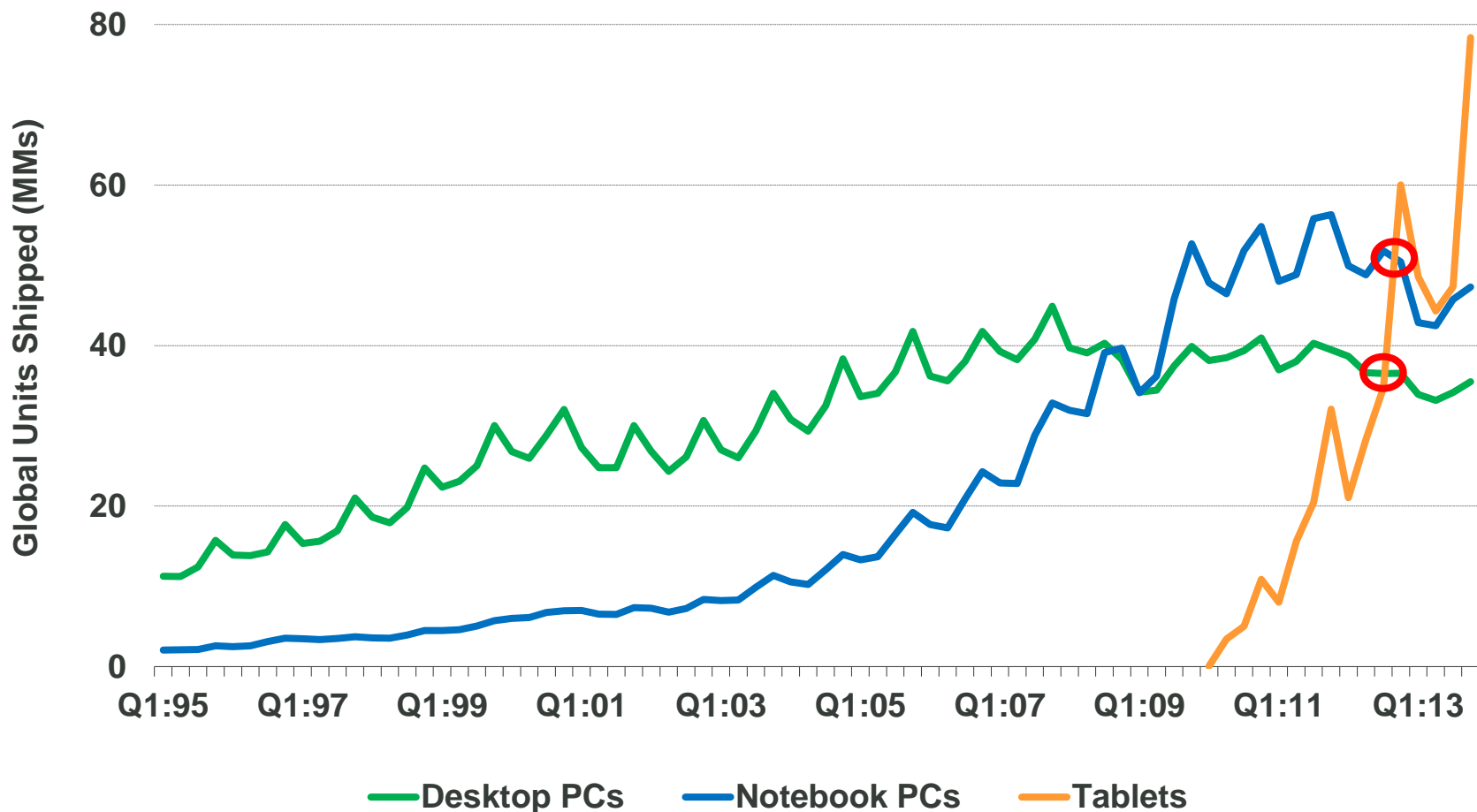
# Smartphone Users = Still Lots of Upside... @ 30% of 5.2B Mobile Phone User Base

## Global Smartphone Quarterly Unit Shipments & Smartphone Users as % of Mobile Phone Users, 2009 – 2013



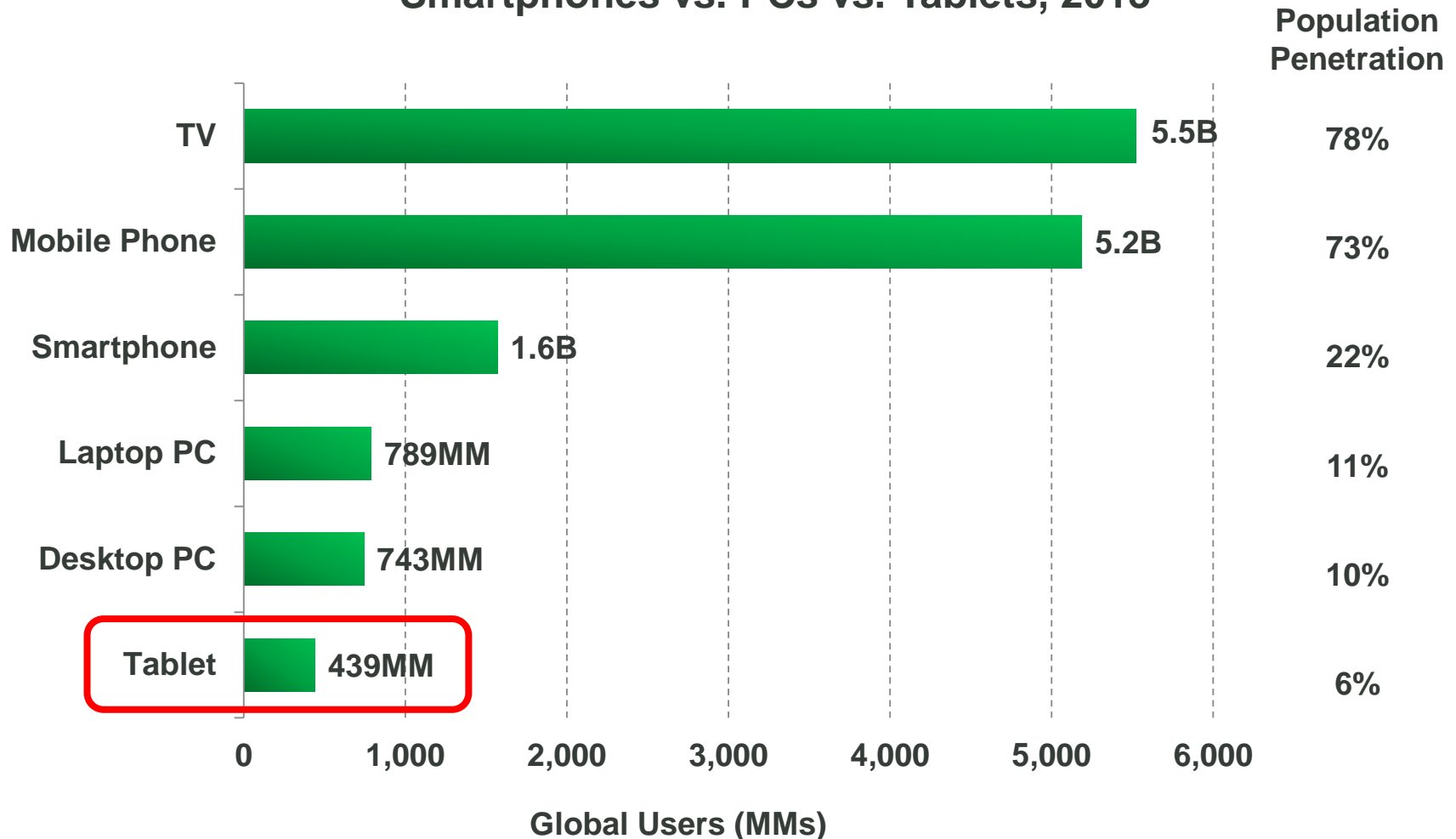
# Tablet Units = Growing Faster Than PCs Ever Did... +52%, 2013

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



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

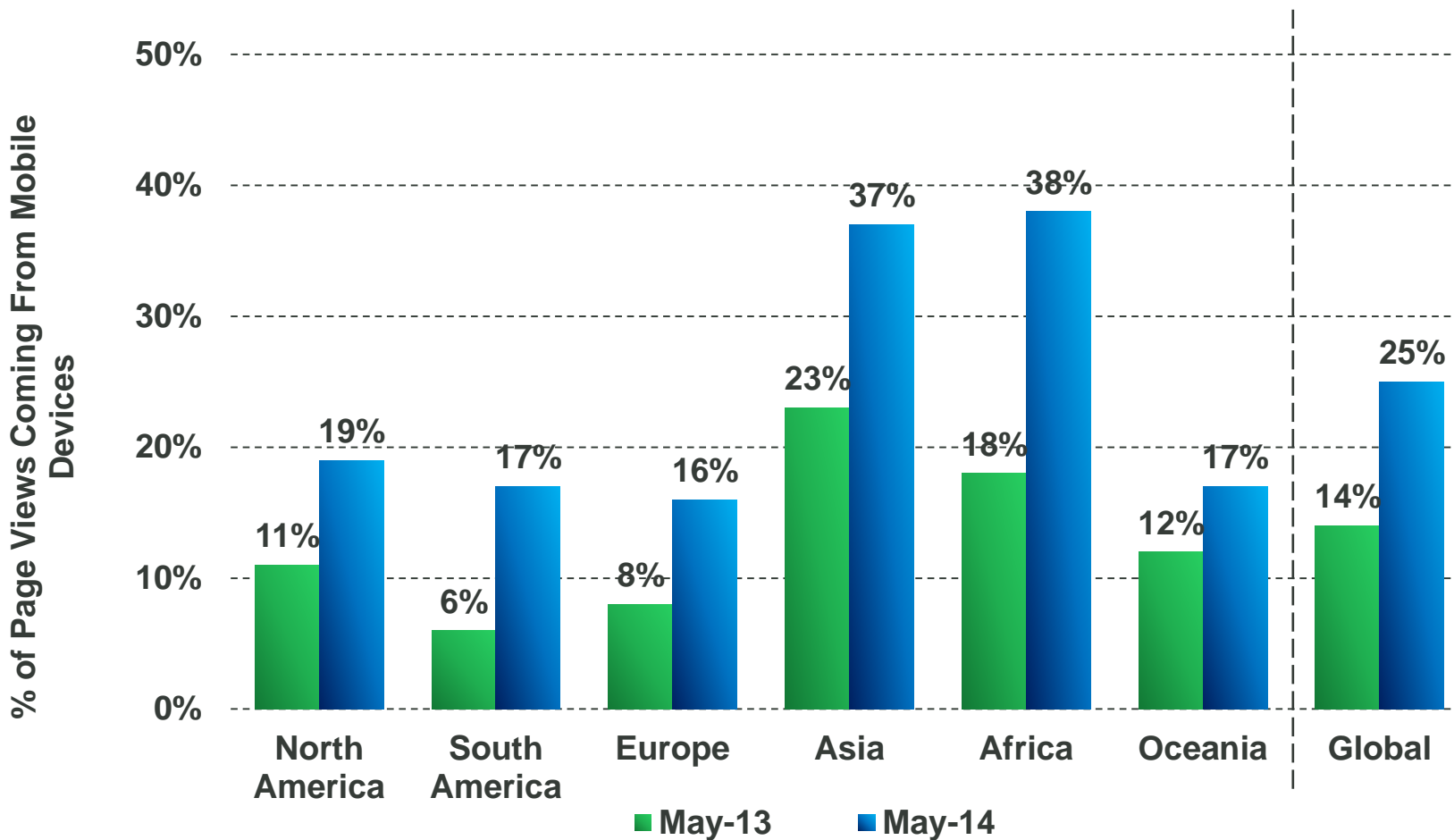
**Global Users of TVs vs. Mobile Phones vs. Smartphones vs. PCs vs. Tablets, 2013**





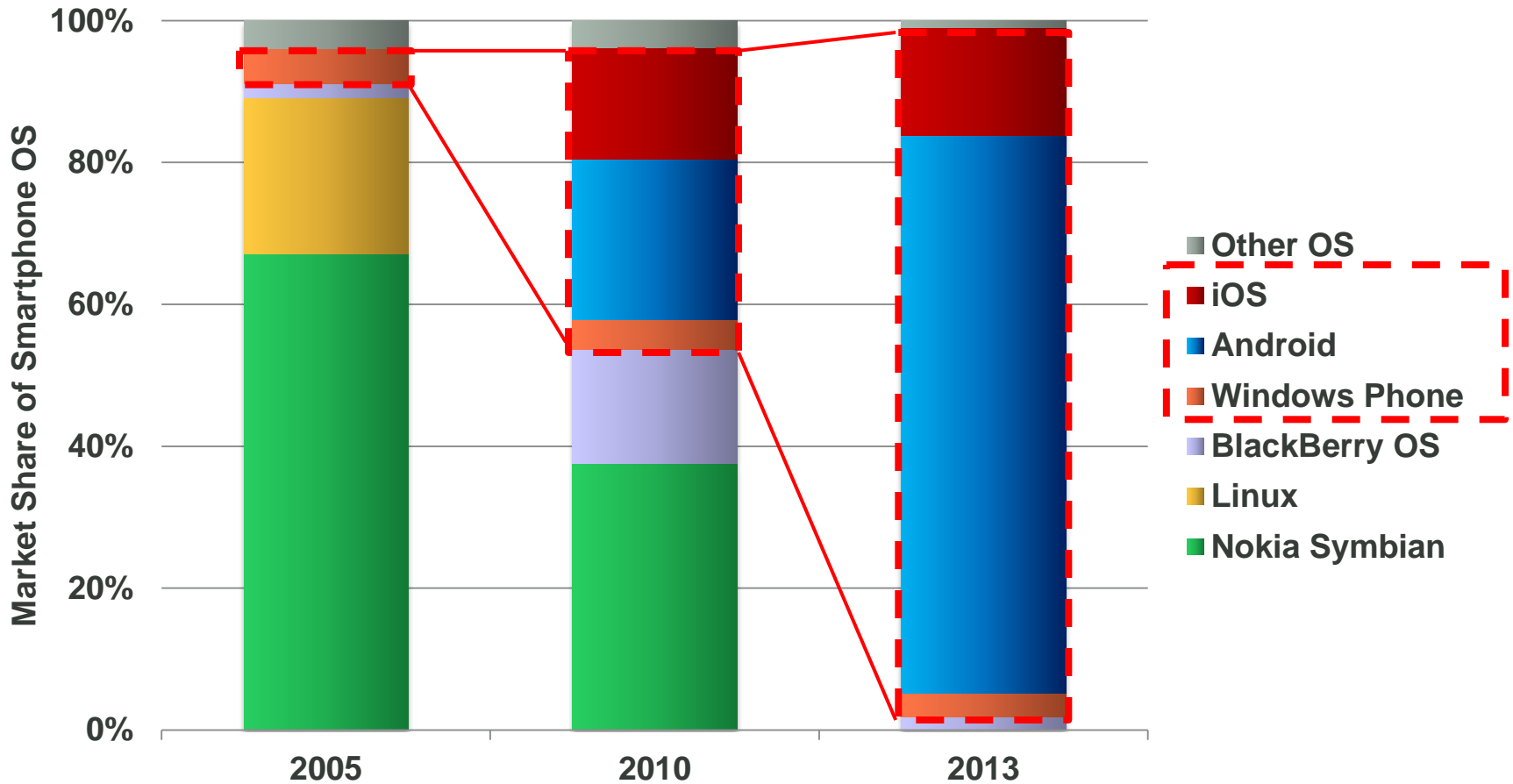
# Mobile Usage = Continues to Rise Rapidly... @ 25% of Total Web Usage vs. 14% Y/Y

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



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

## Global Smartphone Operating System Market Share (by Units Shipped), 2005 vs. 2010 vs. 2013

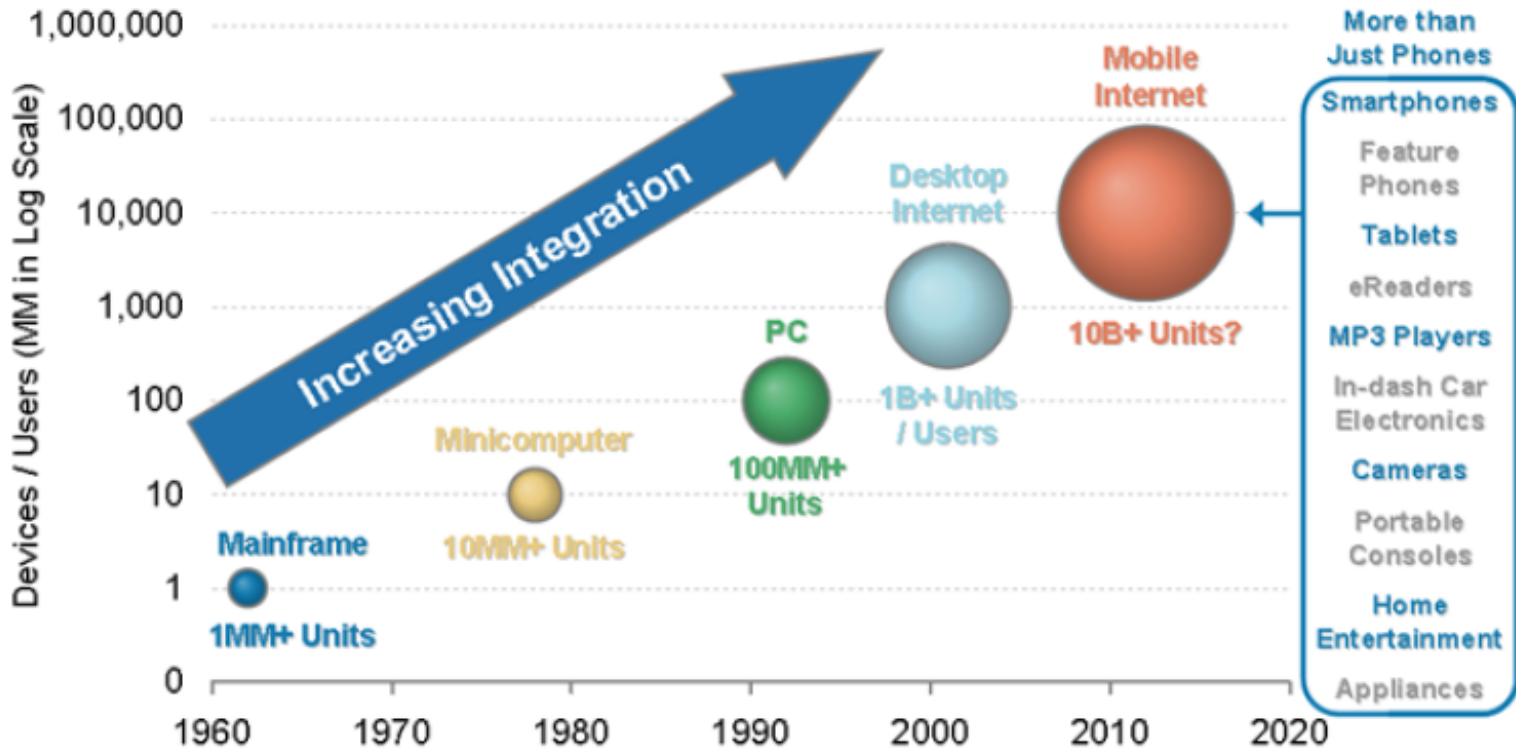


# Each New Computing Cycle = 10x > Installed Base than Previous Cycle

Exhibit 29

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

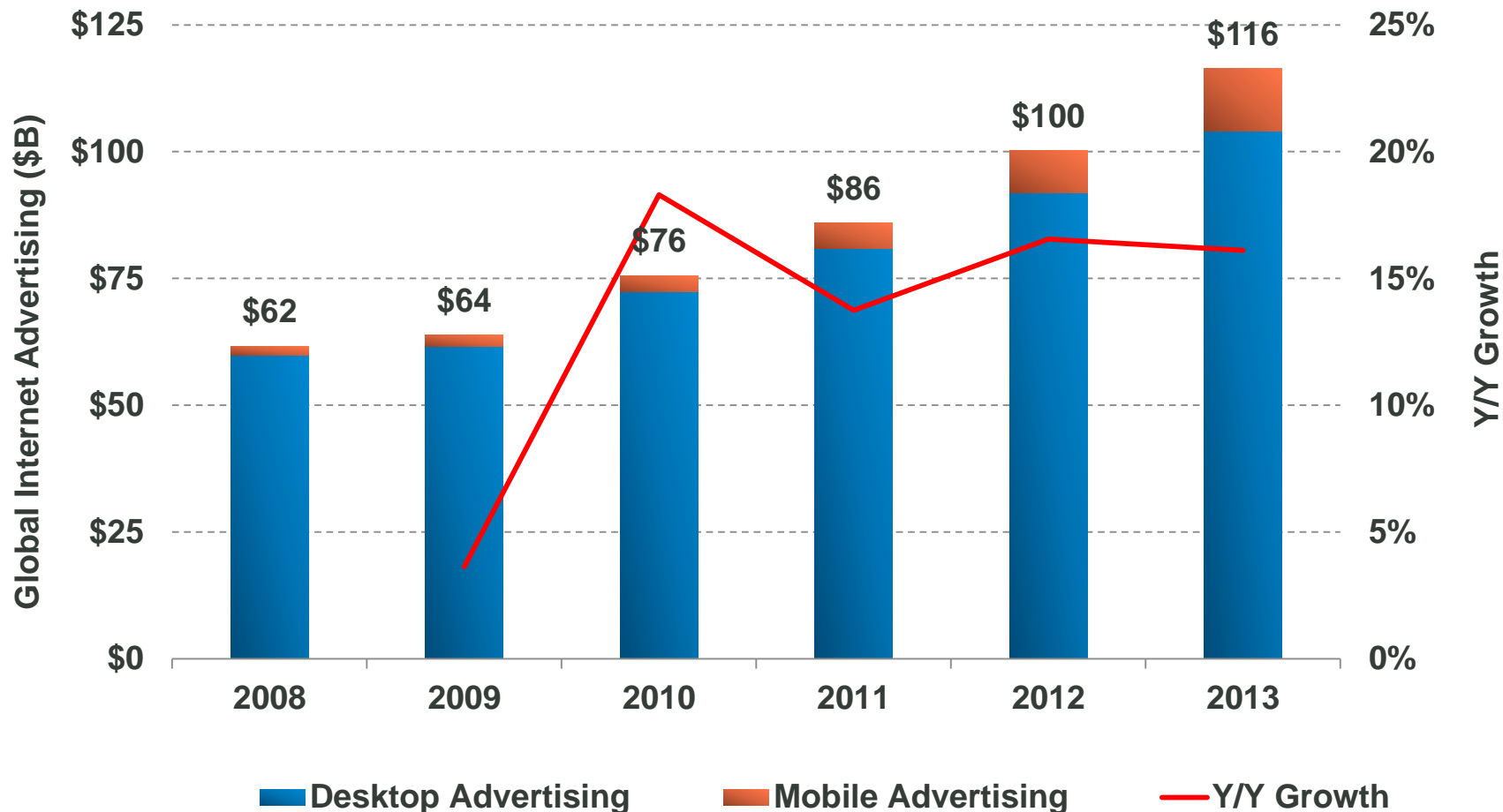
Devices or users in millions; logarithmic scale



*Advertising / Monetization =  
Mobile Especially Compelling*

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

## Global Internet Advertising, 2008 – 2013



# ARPU Upside for Facebook + Twitter...

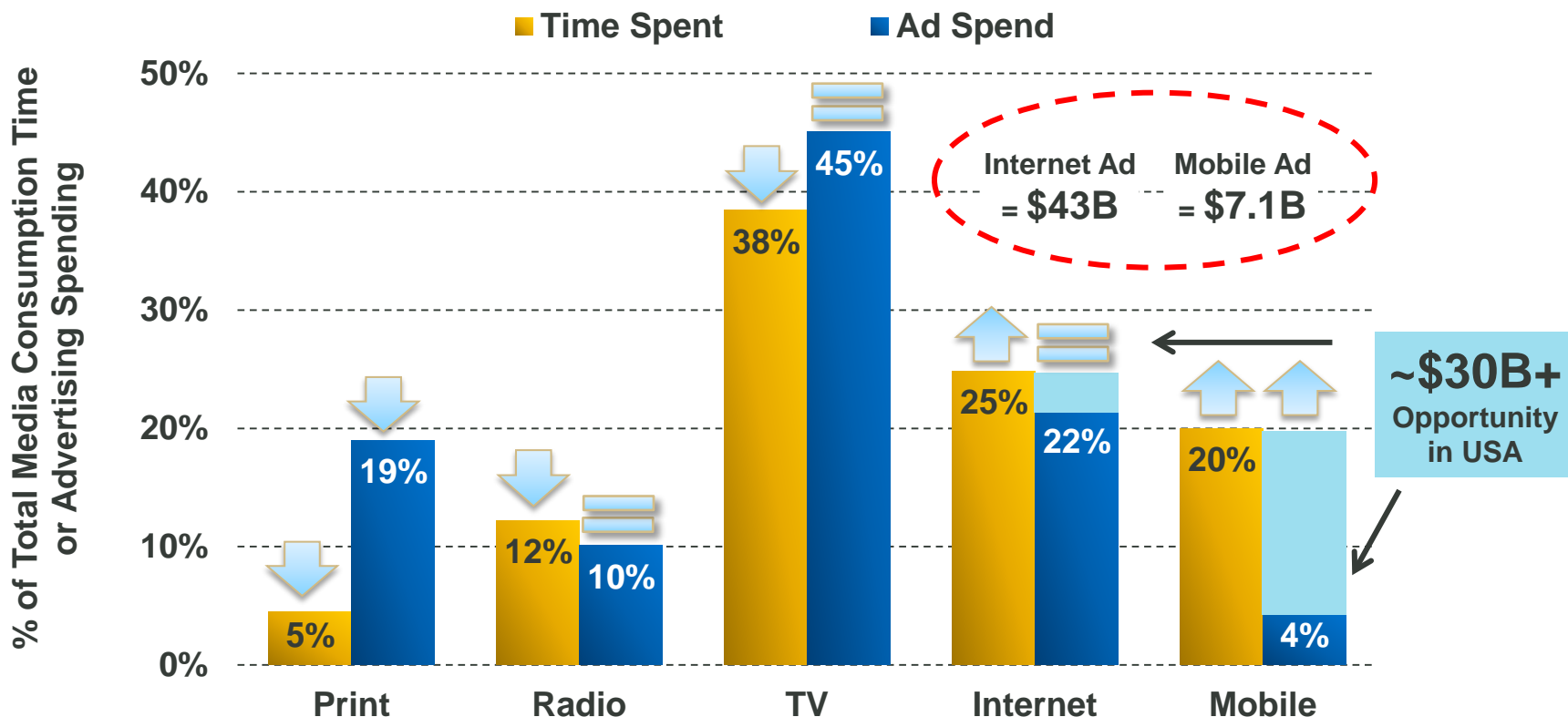
## Google ARPU = 6x Facebook...Facebook = 2x Twitter

### 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         |
|-------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Google (\$)</b>      | <b>\$37</b>   | <b>\$37</b>   | <b>\$38</b>   | <b>\$43</b>   | <b>\$42</b>   | <b>\$41</b>   | <b>\$41</b>   | <b>\$46</b>   | <b>\$45</b>   |
| <i>Y/Y Growth</i>       | 9%            | 6%            | 6%            | 14%           | 14%           | 11%           | 10%           | 8%            | 8%            |
| <b>Facebook (\$)</b>    | <b>\$4.00</b> | <b>\$4.28</b> | <b>\$4.43</b> | <b>\$5.15</b> | <b>\$4.60</b> | <b>\$5.65</b> | <b>\$6.14</b> | <b>\$7.76</b> | <b>\$7.24</b> |
| <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%           |
| <b>Twitter (\$)</b>     | <b>\$1.29</b> | <b>\$1.50</b> | <b>\$1.64</b> | <b>\$2.15</b> | <b>\$1.97</b> | <b>\$2.22</b> | <b>\$2.65</b> | <b>\$3.65</b> | <b>\$3.55</b> |
| <i>Y/Y Growth</i>       | 90%           | 134%          | 108%          | 93%           | 52%           | 48%           | 61%           | 69%           | 80%           |
| <i>Mobile % of MAU</i>  | --            | --            | --            | --            | --            | 75%           | 76%           | 76%           | 78%           |

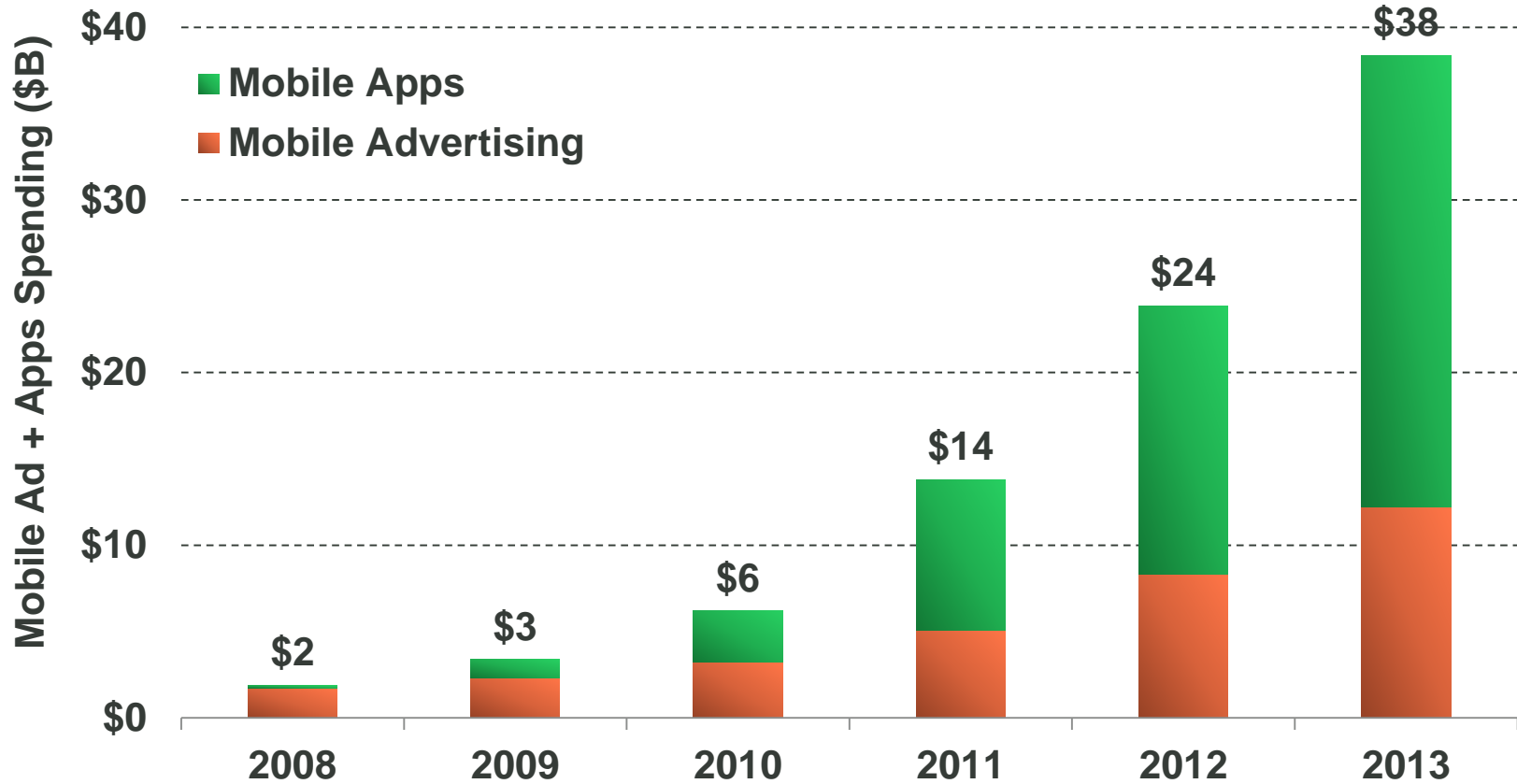
# Remain Optimistic About Mobile Ad Spend Growth... Print Remains Way Over-Indexed

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



# 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**

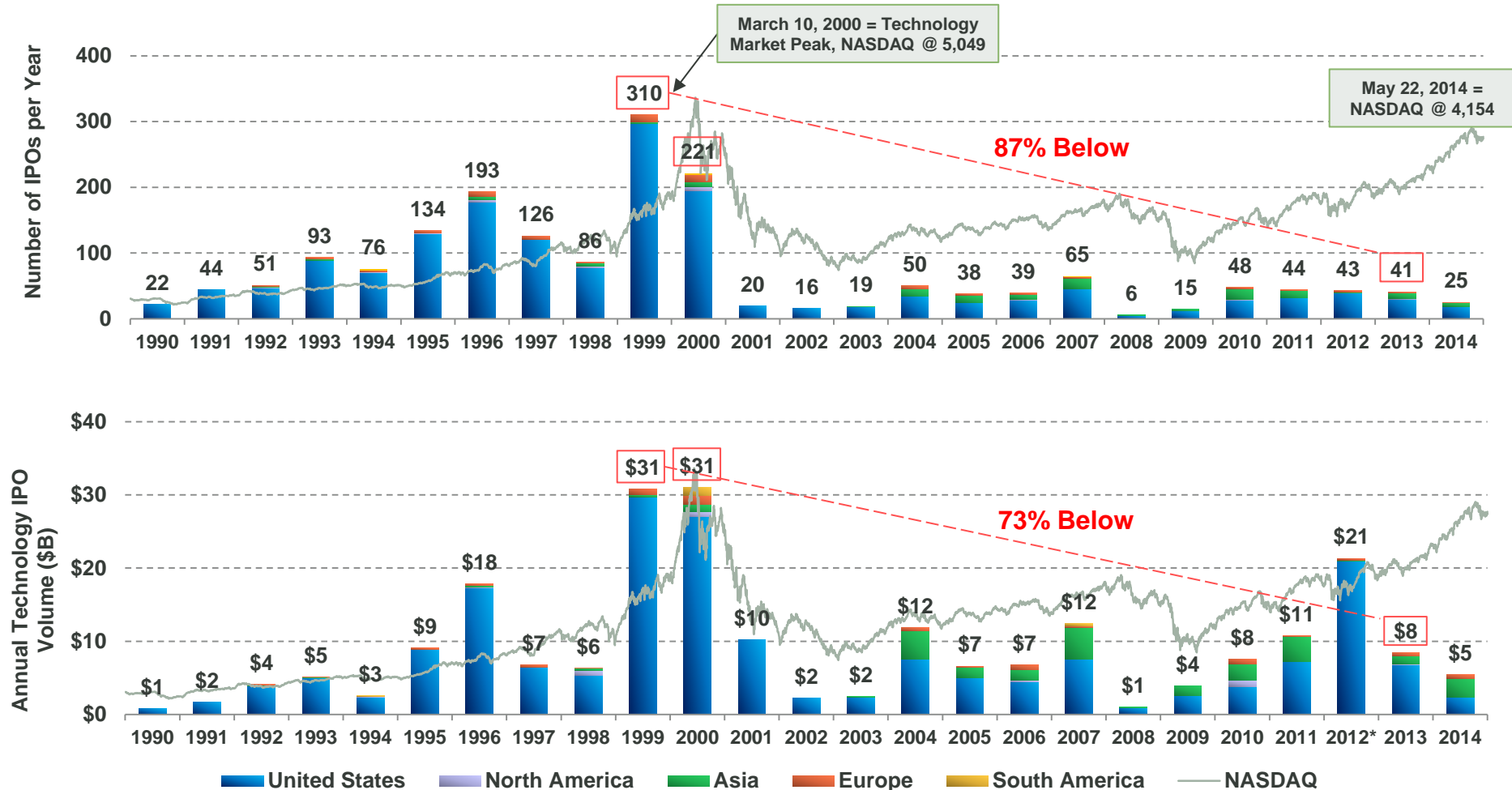
*Technology Company  
Valuation Excess?*

*Some? Yes...*

*But, Let's Look @ Patterns...*

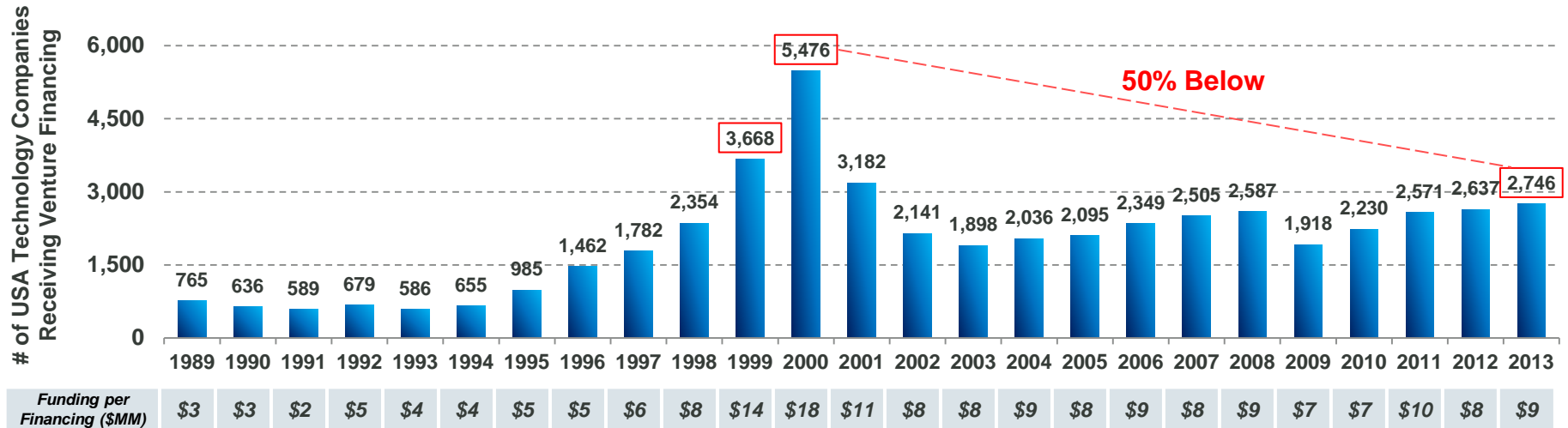
# 2013 Technology IPOs = \$ Volume 73% Below 1999 Peak Level... NASDAQ 18% Below March 2000 Peak

## Global Technology IPO Issuance, 1990 – 2014YTD

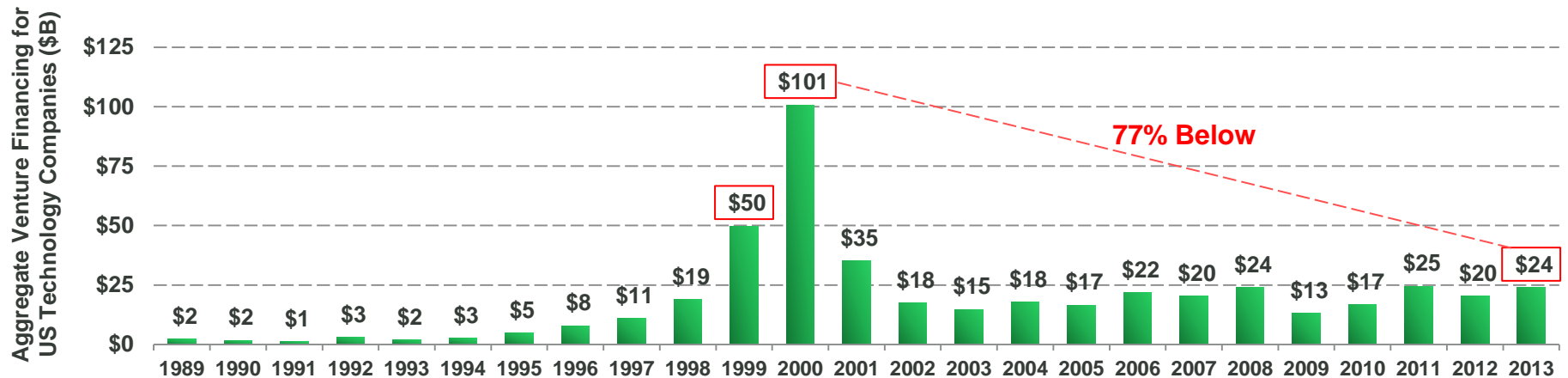


# 2013 Venture Financings = \$ Volume 77% Below 2000 Peak Level

## USA Technology Venture Capital Financing, 1989 – 2013

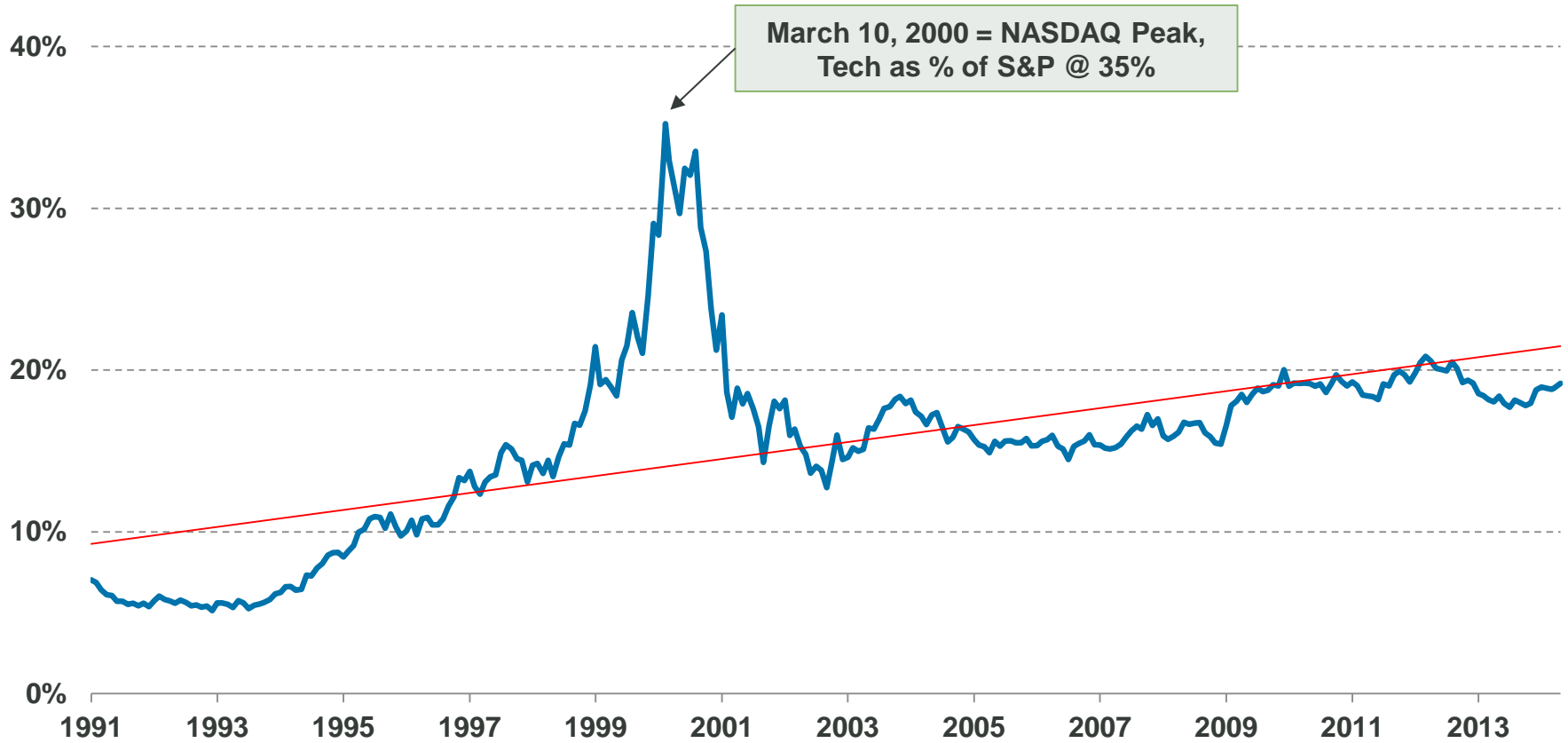


| Funding per Financing (\$MM) |
|------------------------------|
| \$3                          |
| \$3                          |
| \$2                          |
| \$5                          |
| \$4                          |
| \$4                          |
| \$5                          |
| \$5                          |
| \$6                          |
| \$8                          |
| \$14                         |
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| \$9                          |
| \$7                          |
| \$7                          |
| \$10                         |
| \$8                          |
| \$9                          |



# 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 4<sup>th</sup> 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 27<sup>th</sup> globally in math / 20<sup>th</sup> in science / 17<sup>th</sup> 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...

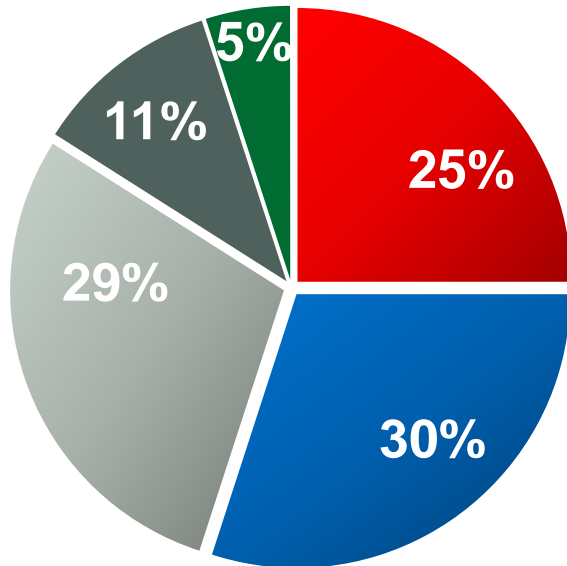
- **People Care About Education** – 8 in 10 Americans say education issue is extremely / very important to them
- **Personalized Education Ramping** – People learn in different ways and Internet offers many options – on own terms and at low cost – to many, with real-time feedback
- **Distribution Expanding & 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

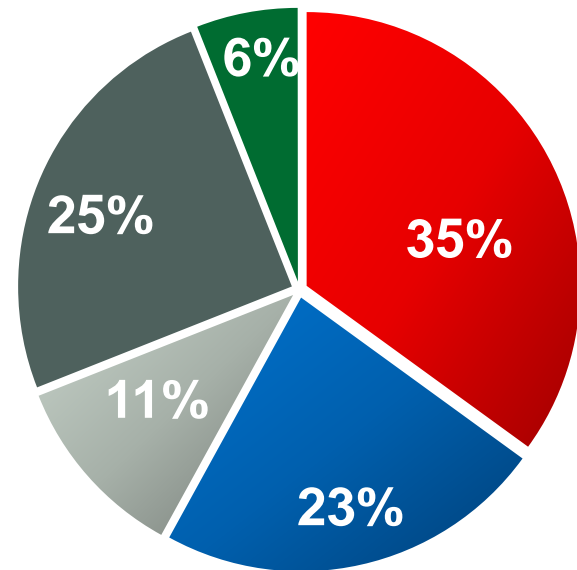
# Online Education = It's a Global Thing

**Duolingo (25MM Users)**  
Traffic Distribution, 4/14



- North America
- Europe
- Latin America
- Asia
- Africa / Oceania

**Coursera (7MM Users)**  
Student Distribution, 3/14



- North America
- Europe
- Latin America
- Asia
- Africa / Oceania

*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



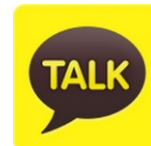
**Tencent WeChat (China), 3+ Years**

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**

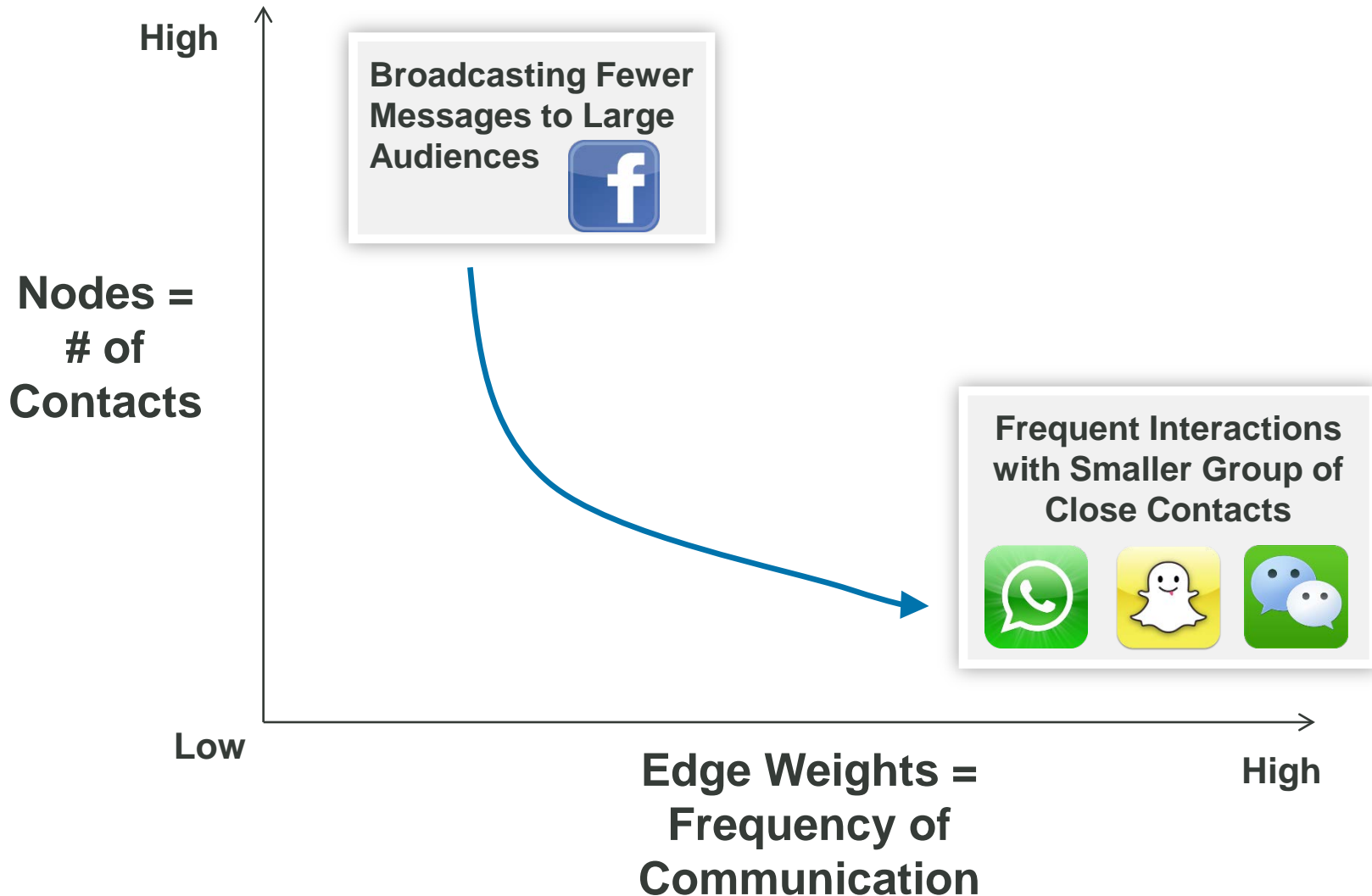


**Viber (Israel), 3+ Years**

MAUs = **100MM**

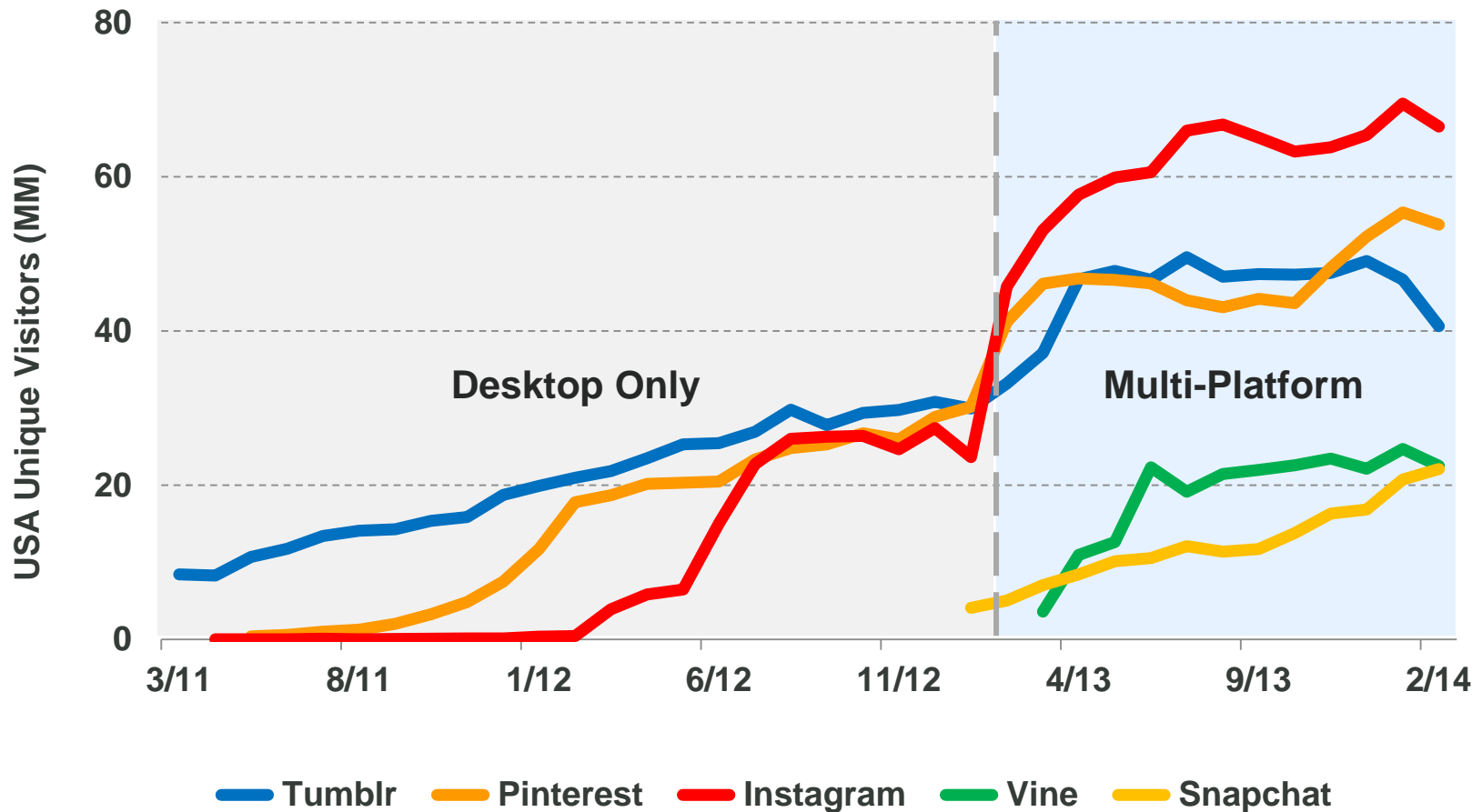
# Evolution of Messaging → New Social Graphs...

## 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

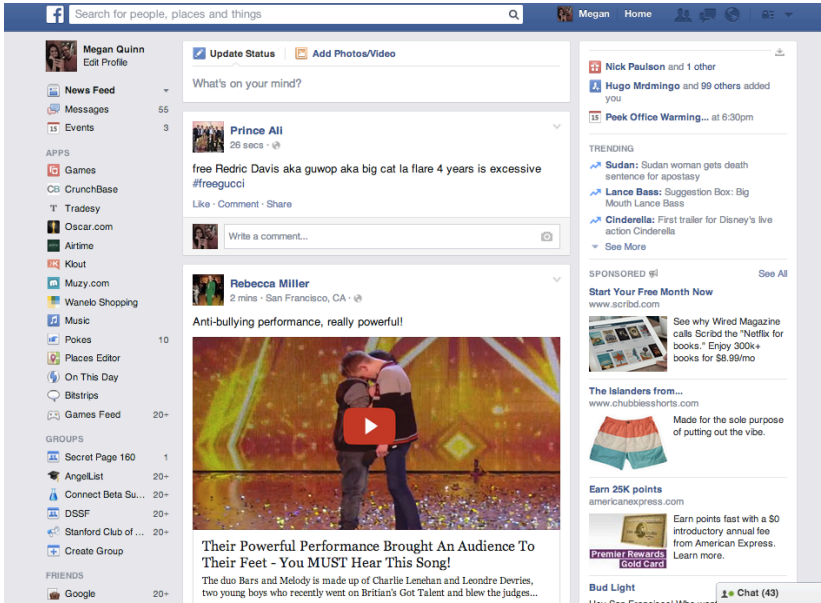


# *Re-Imagining Apps*

# 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

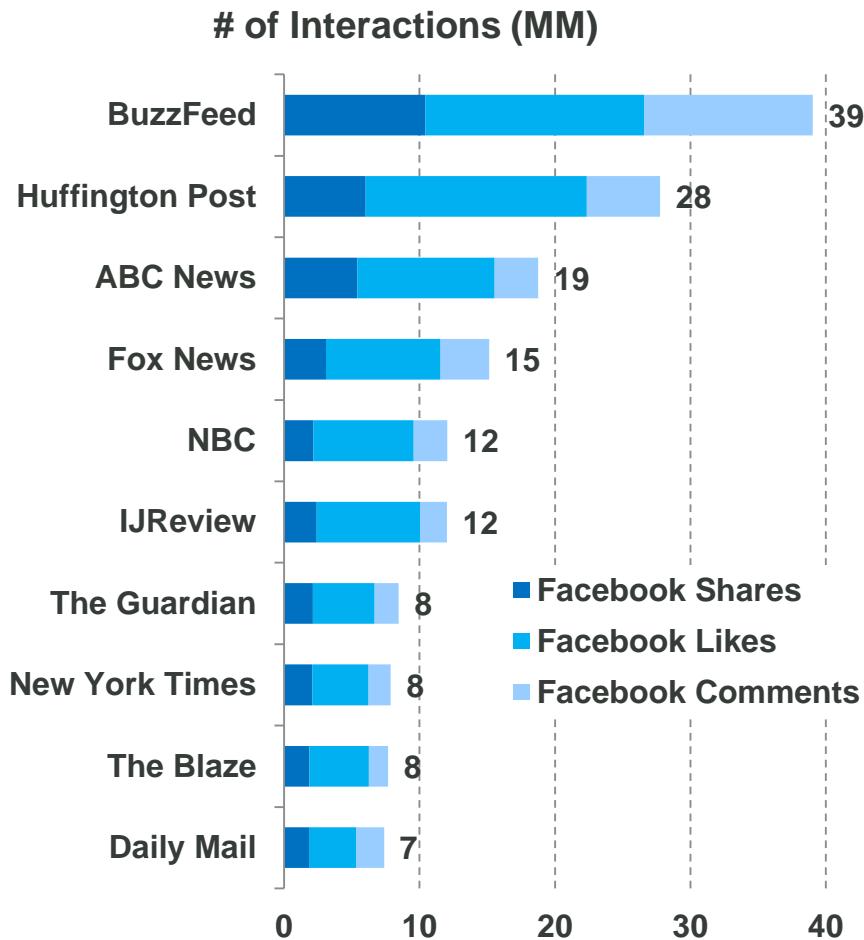
*Re-Imagining  
Distribution Channels  
& Content*

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

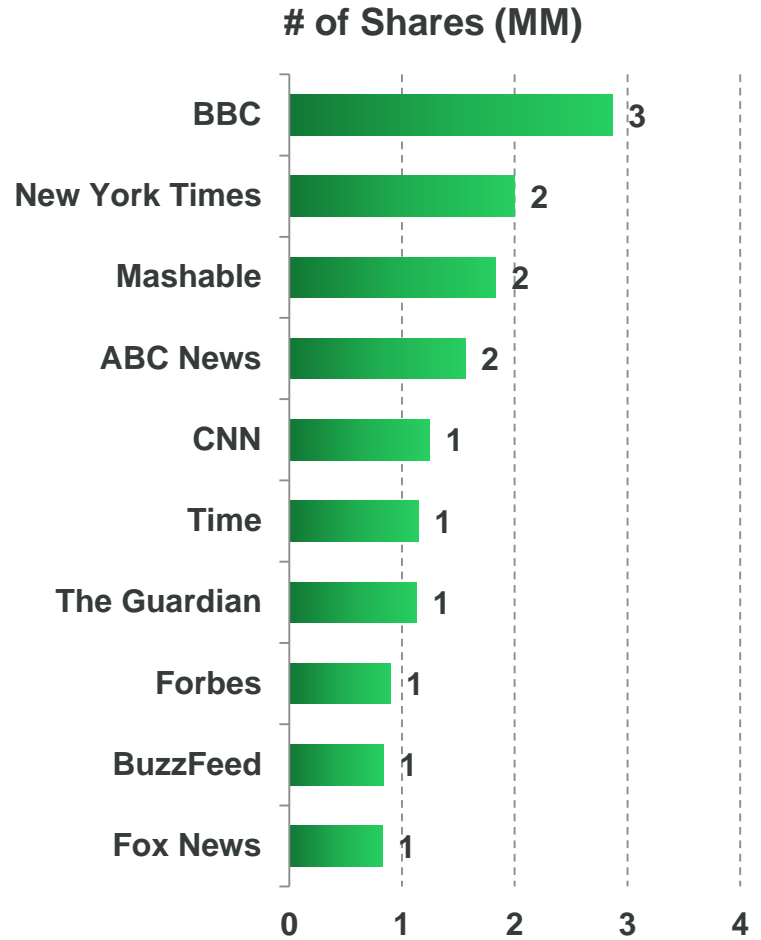
- **Social Media Traffic Referral Leaders =** Facebook / Pinterest / Twitter with estimated 21%, 7%, 1% of global referrals, per Shareaholic, 3/14.
- **Social Distribution Happens Quickly =** Average article reaches *half* total social referrals in 6.5 hours on Twitter, 9 hours on Facebook, per SimpleReach,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

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

## Top Facebook News Publishers, 4/14



## Top Twitter News Publishers, 4/14



# 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*

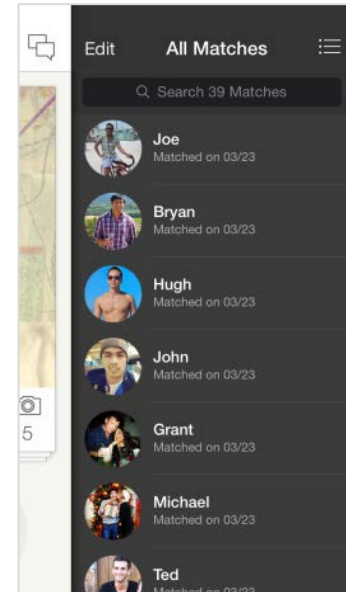
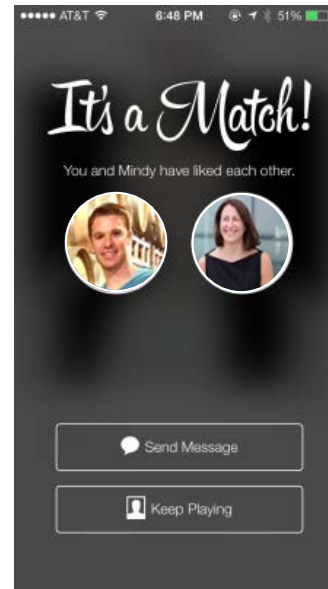
# Re-Imagining How People Meet

~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**

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**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

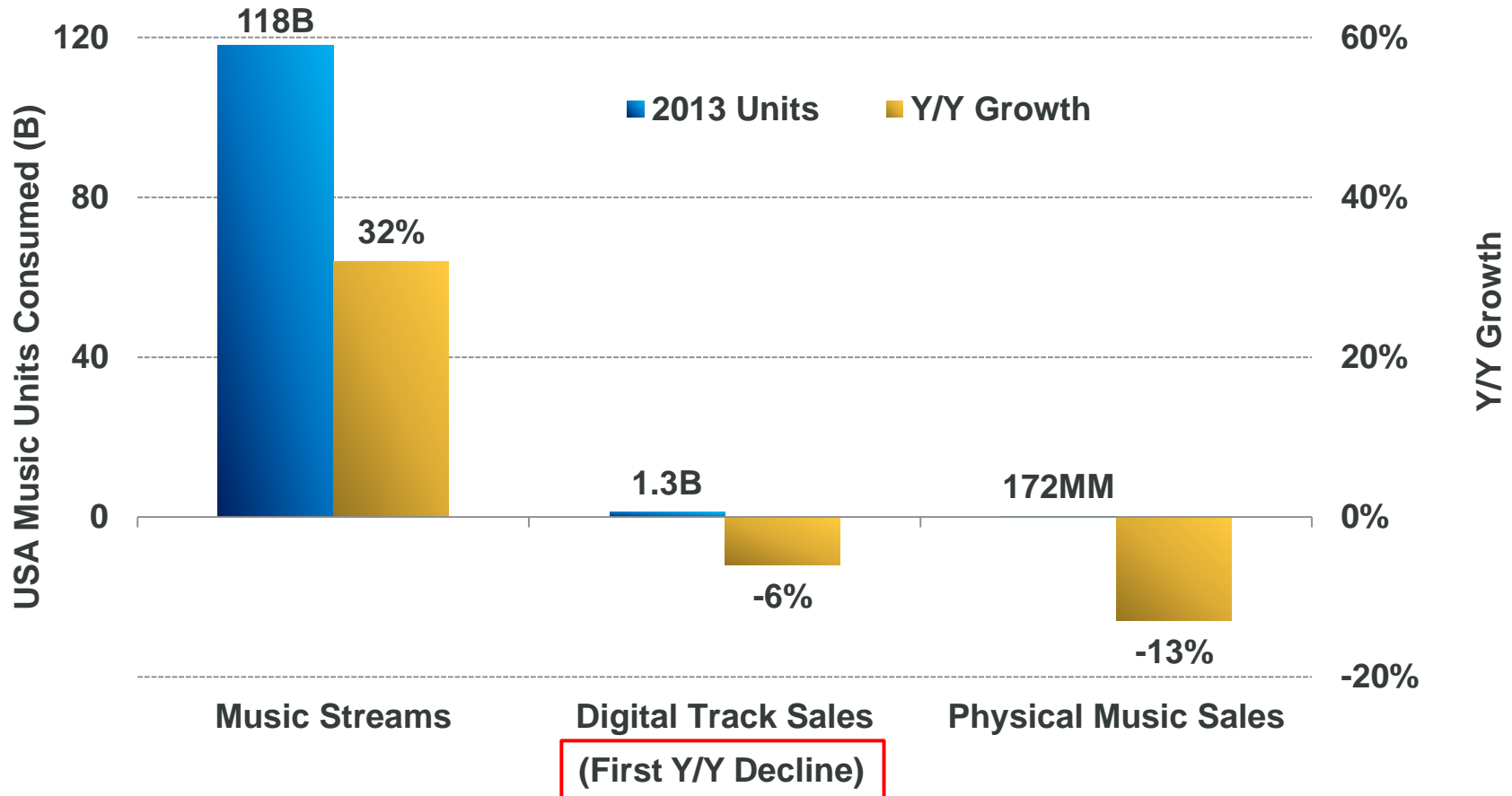


Amazon Fresh



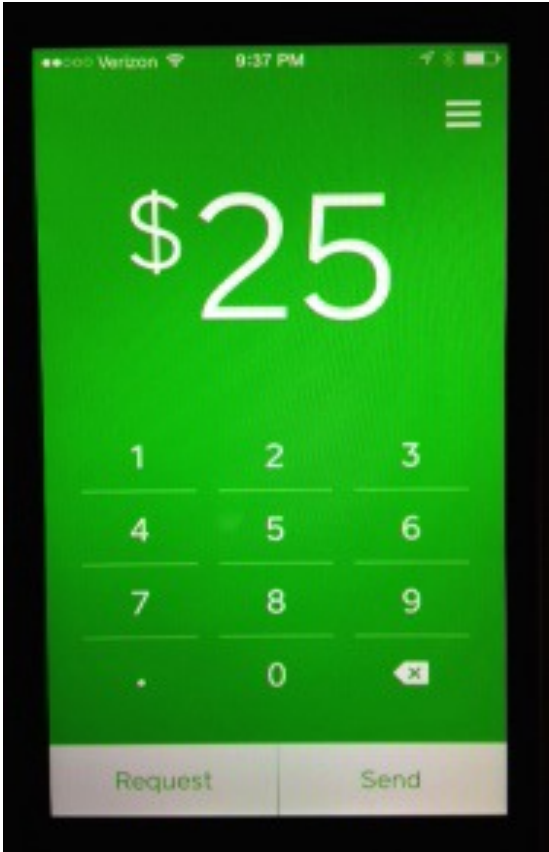
# Re-Imagining Media (Music) Consumption = Streaming +32%, Digital Track Sales -6%

## USA Music Consumption, 2013



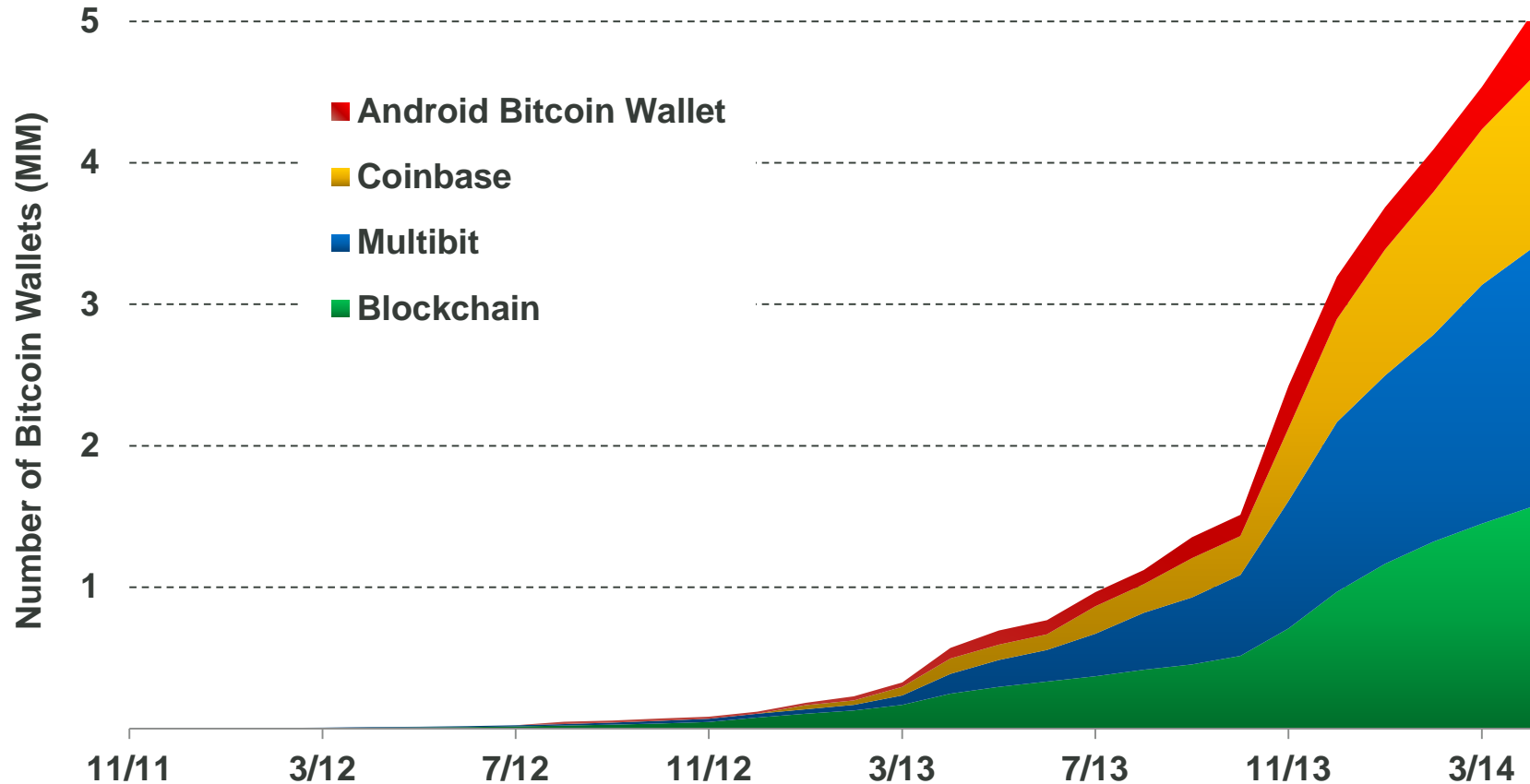
# *Re-Imagining Money*

# Re-Imagining Money



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

## Number of Bitcoin Wallets by Wallet Provider, 4/14



***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

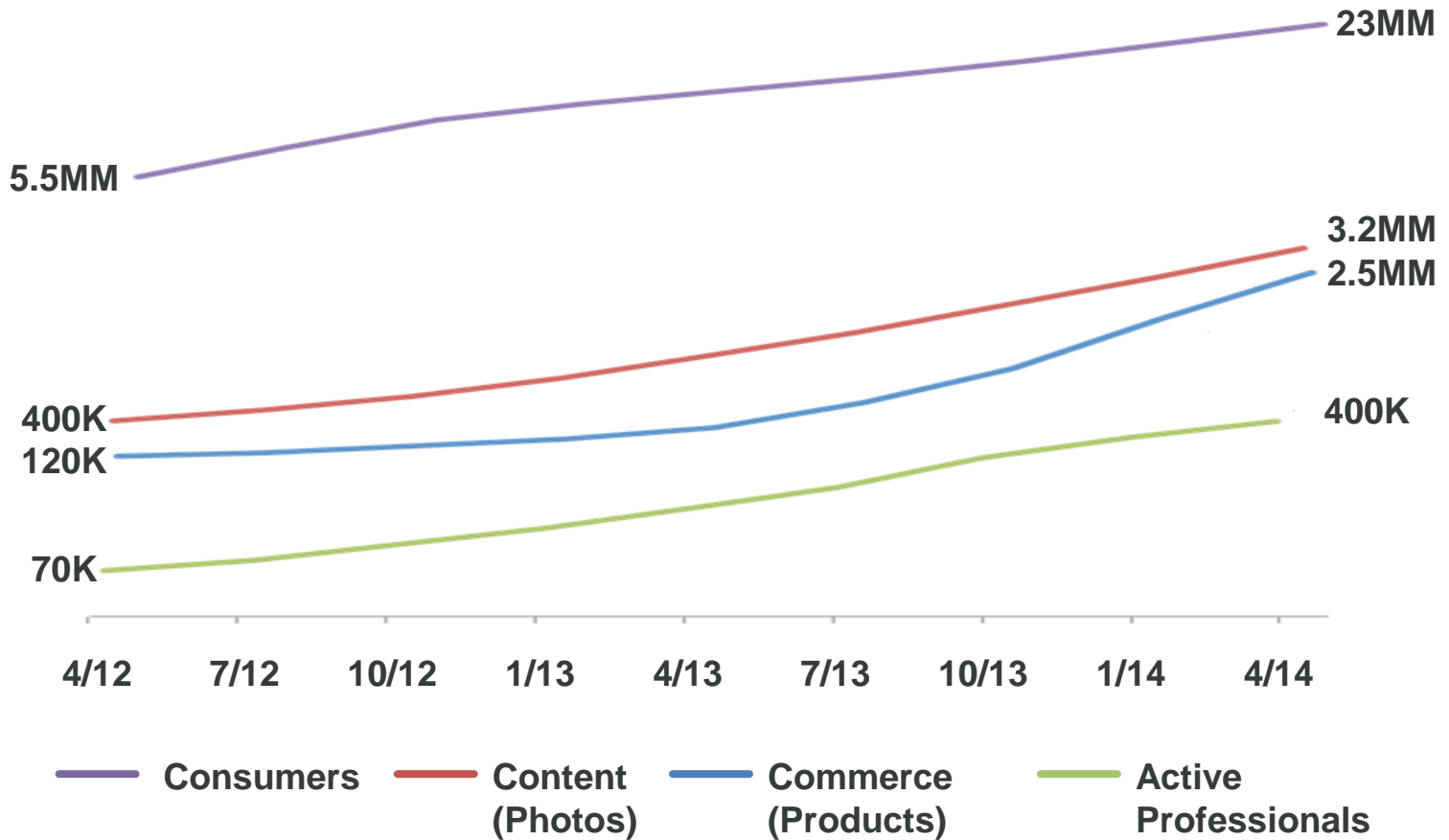
## 3) **Commerce** =

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





# ...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



**Homeowner's Workbook: How to Remodel Your Kitchen**

9 steps to a kitchen remodel, from gathering design ideas through construction and final reveal

**Rabekah Zaveloff**  
Interior Designer & Homeowner (10/10/14) at Kitchen, Bath, & More

**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 household's needs. Get ideas from every resource possible, including Houzz guides and photos, showrooms, books, magazines and blogs.

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

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 flat with custom, unorganized images. I actually prefer the latter, because I like to randomly stuff images into my folders and notebooks and go back to them later on for ideas.

**How to Organize Your Ideas**

## Community



### Services – Professionals

400K (+198%)  
Portfolios & reviews

**Wilson Kitchen and Bath**

Interior Designers (10/10/14) at Kitchen, Bath, & More

Wilson Kitchen and Bath is a full-service interior design firm specializing in residential and commercial projects. Our team of experienced designers and project managers will work closely with you to create a custom design that meets your needs and budget.

Services include: Kitchen and Bath Remodeling, Whole Home Renovation, Commercial Design, and Space Planning.



### Discussions

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

**Really struggling with this small dining room!**

Barbara  
March 9, 2014 in Design Ideas

I am starting a new thread with updated pictures for more advice. I wish I could re-trick in my home. I want the dining room to be generous and serene. Just beautiful but I have to stick to the floor. Pretty much everything in this room is new so it can be returned outside of the chamber. The table doesn't have much time if it returns. I think maybe a new light and possibly the rug. Can you help me?

3,428  
1,428  
1,428

**ADMINISTRATIVE CONTROLS**  
Favorite | Reply | Feature | Hide blocked comments

Show 2028 more comments

**LE Interiors**  
March 9, 2014 at 3:55pm | Like | 1

**MBRQWINTERGARDEN**  
Thank, color picture of your bath's party looks like they had a taste.

**LEWIS**  
March 9, 2014 at 3:55pm | Like | 1

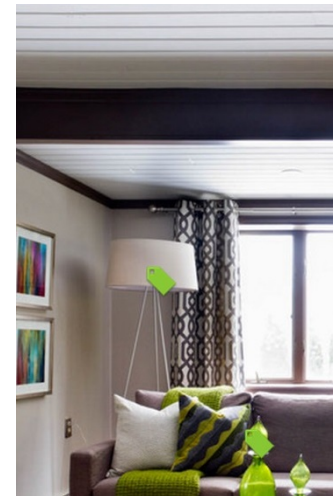
LE, go I want to be brave to the color change in the results, I think that mirror is probably more chunky than what Karen had in mind but I just think it's gorgeous x

## Commerce



### Products

2.5MM (+590%)  
Discover & purchase



***Biggest  
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...

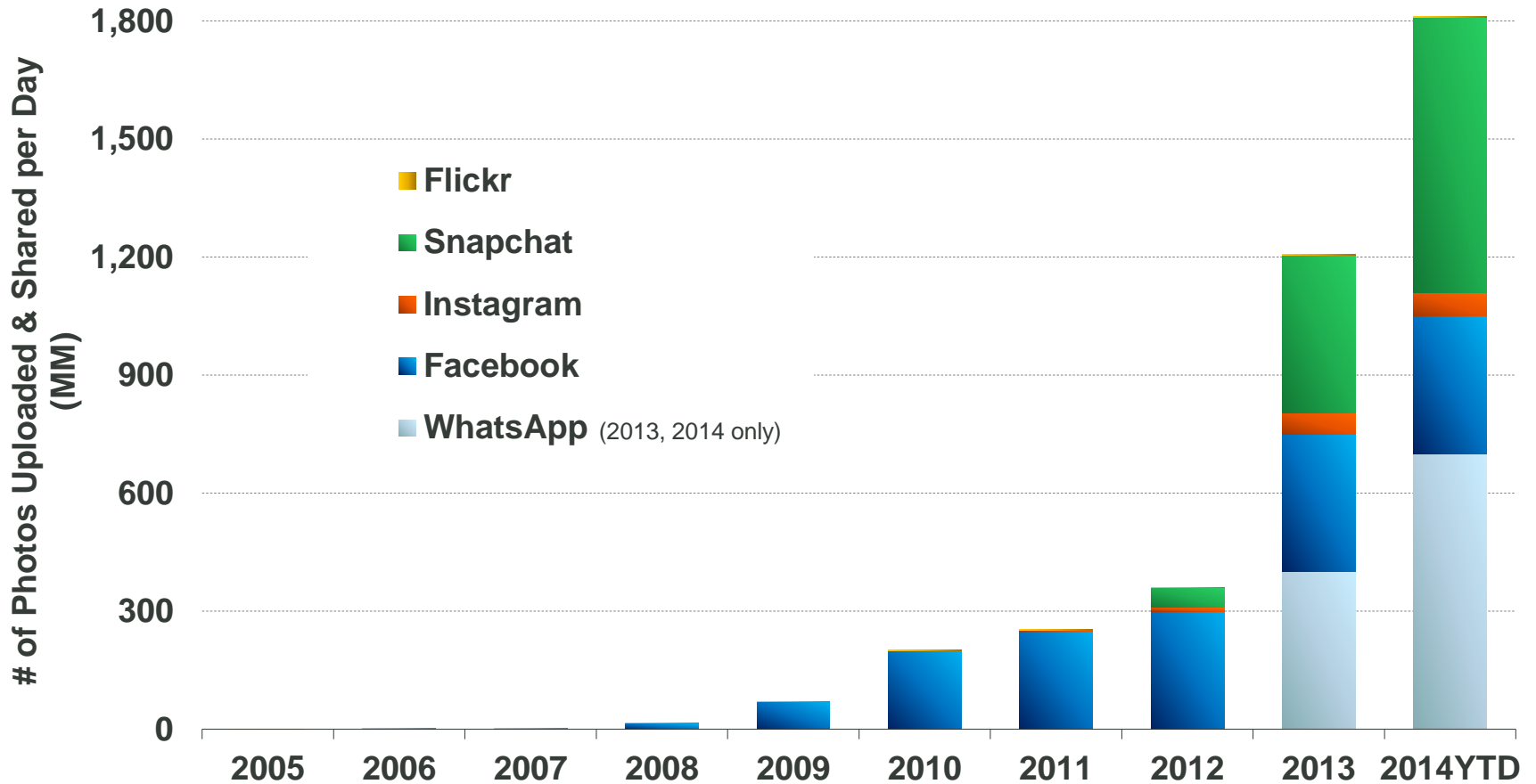
# Big Data Trends

- 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

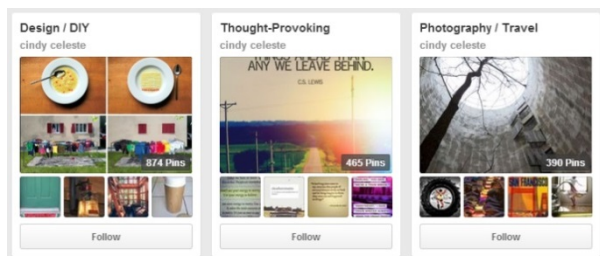
## Daily Number of Photos Uploaded & Shared on Select Platforms, 2005 – 2014YTD



# Uploadable / Sharable / Findable – Mojo Update

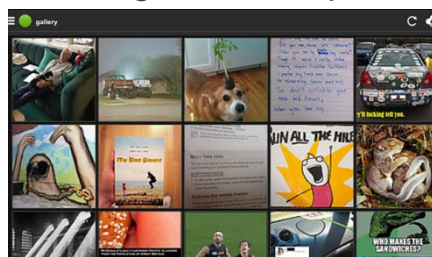
## Pinterest

- 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



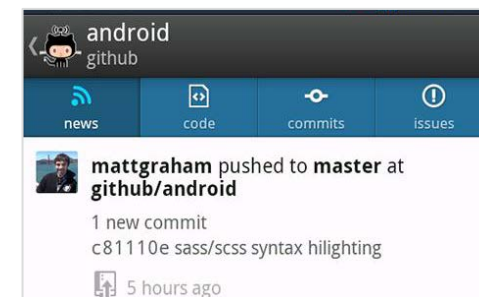
## Eventbrite

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



## Github

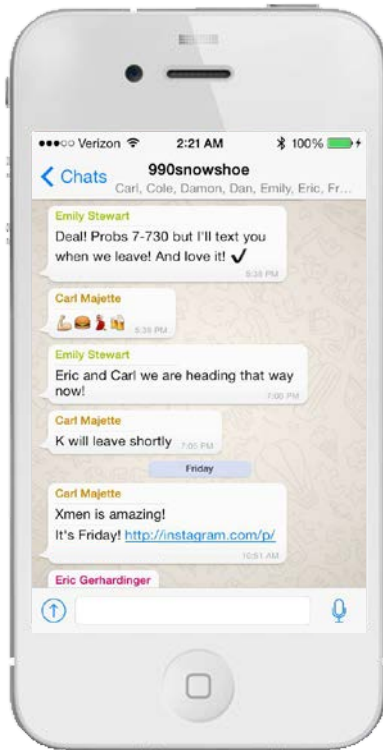
- 13MM repositories in 2013 (+100% Y/Y)
- 10K users added per weekday



# Uploadable / Sharable / Not Findable\* – Mojo Update

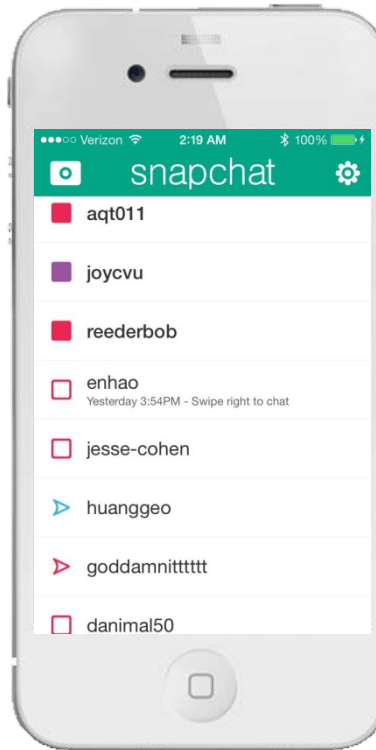
## WhatsApp

- 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

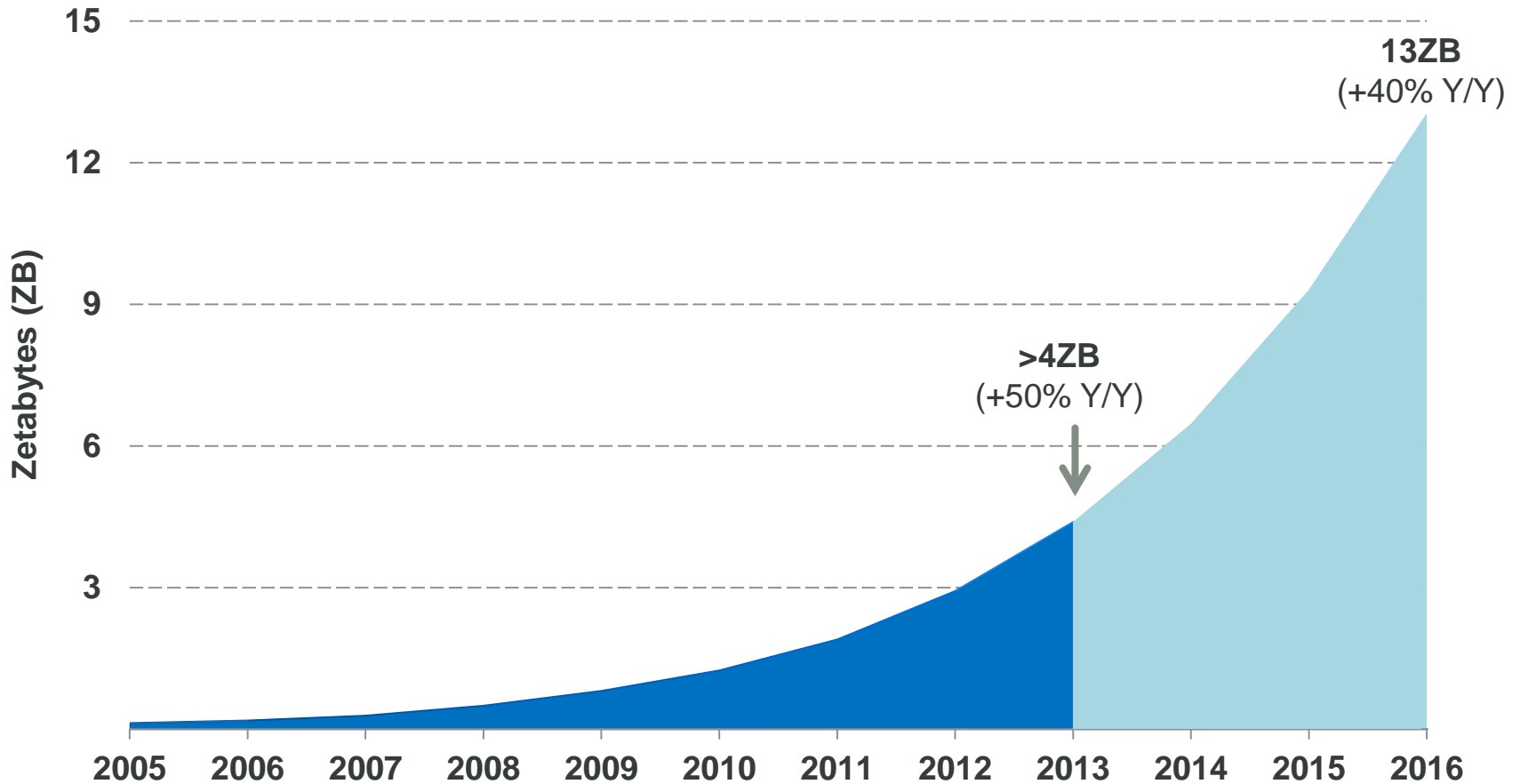
- 800MM swipes per day (+21x Y/Y, 5/14)
- 11MM matches per day (+21x Y/Y)





# '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...

## Apple

**iPhone (2007)**  
**3 Sensors**



**iPhone 5s (2013)**  
**5 Sensors**



- Accelerometer / proximity / ambient light

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

## Samsung

**Galaxy S (2010)**  
**3 Sensors**



**Galaxy S5 (2014)**  
**10 Sensors**

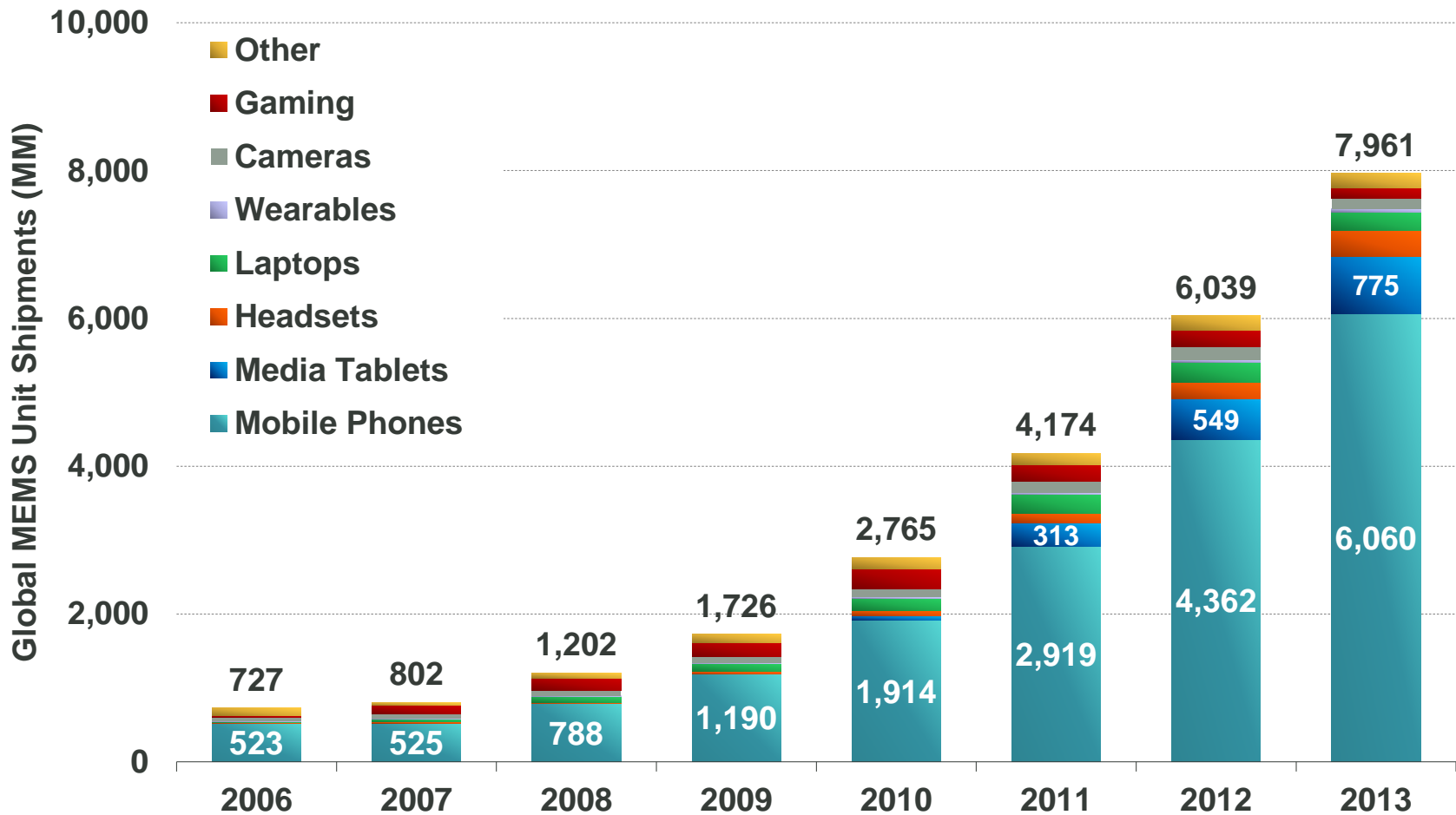


- Accelerometer / proximity / compass

- 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

Global MEMS Unit Shipments by Consumer Electronics Device, 2006 – 2013

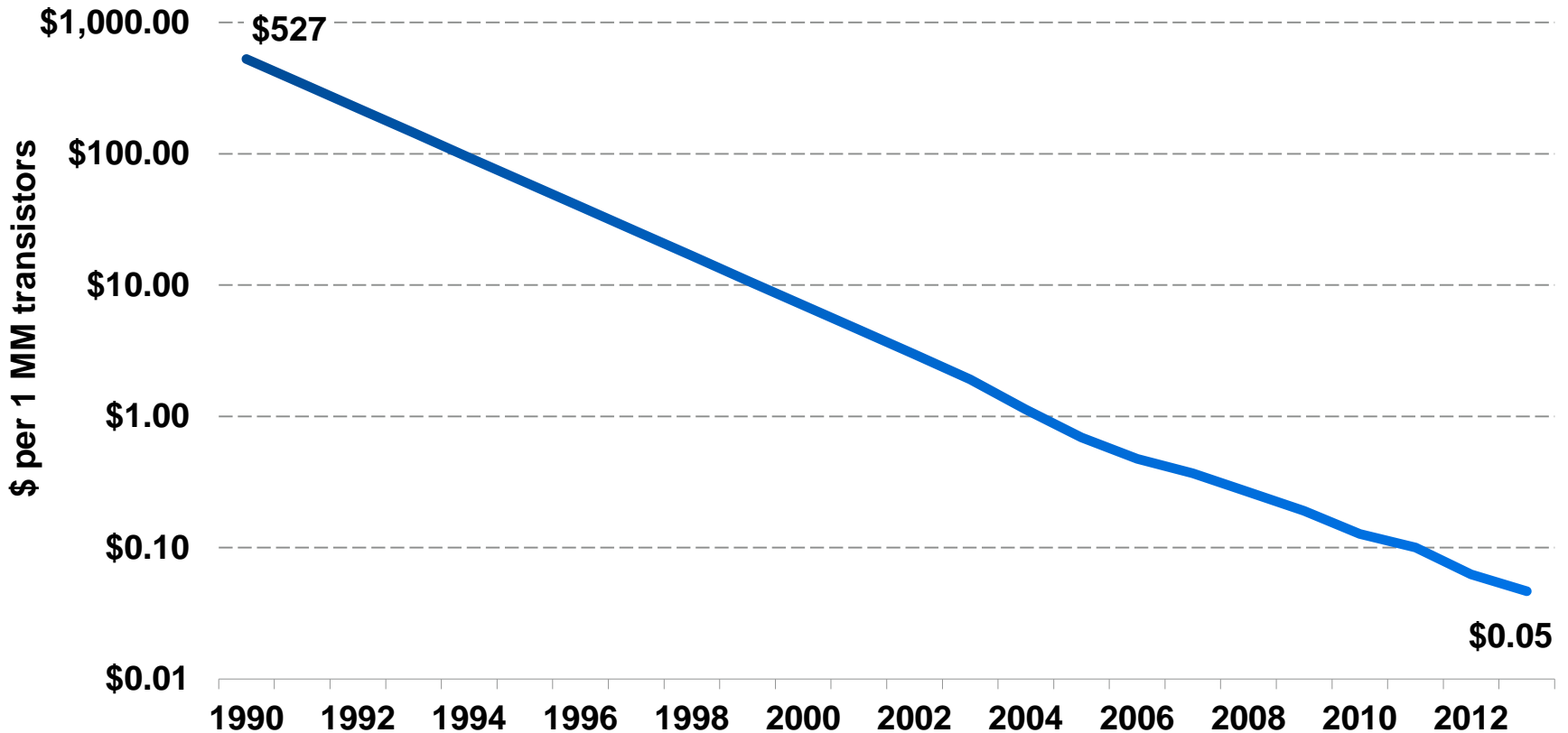


*Processing Costs Falling Rapidly...  
While The Cloud + Accessibility Rise*

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

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

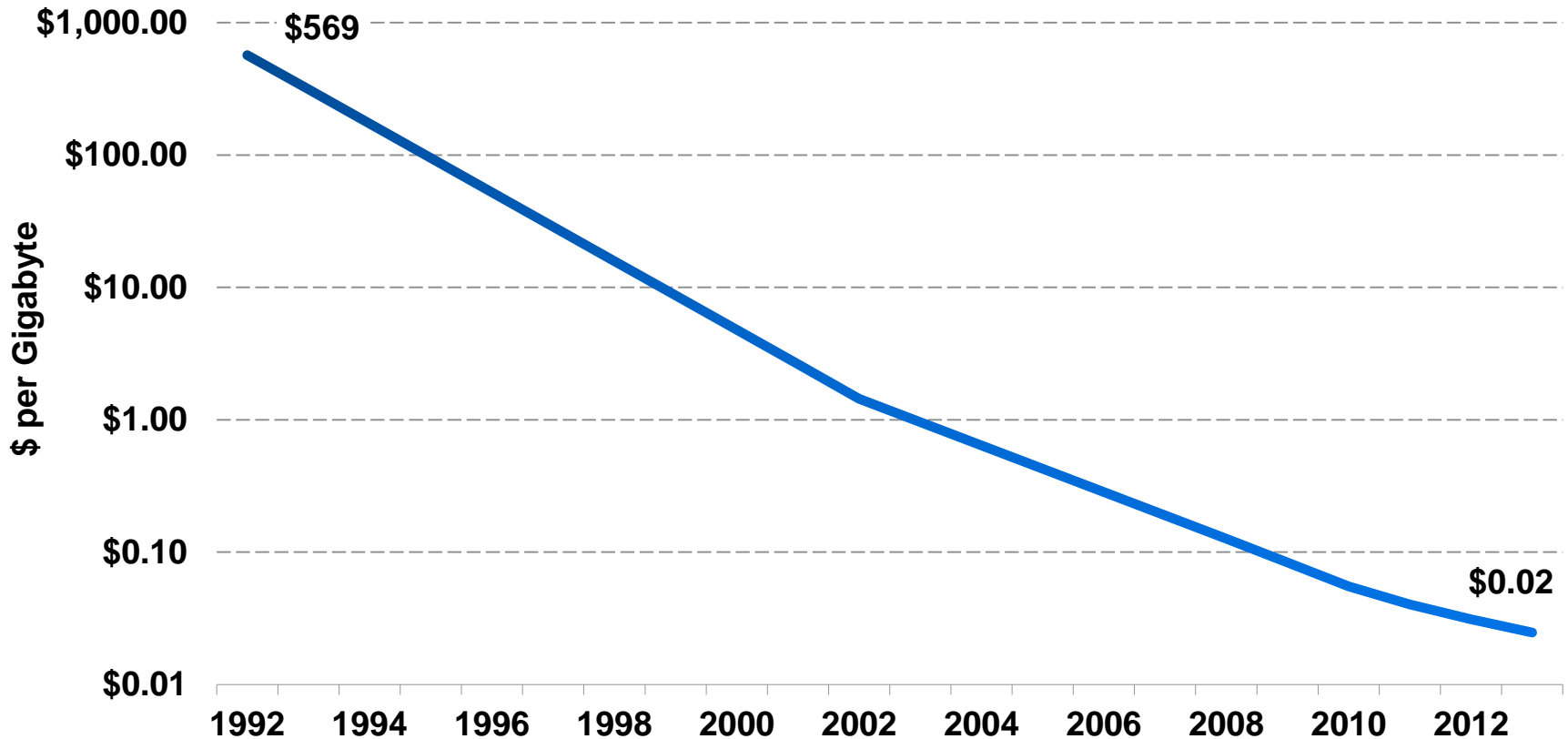
## Global Compute Cost Trends



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

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

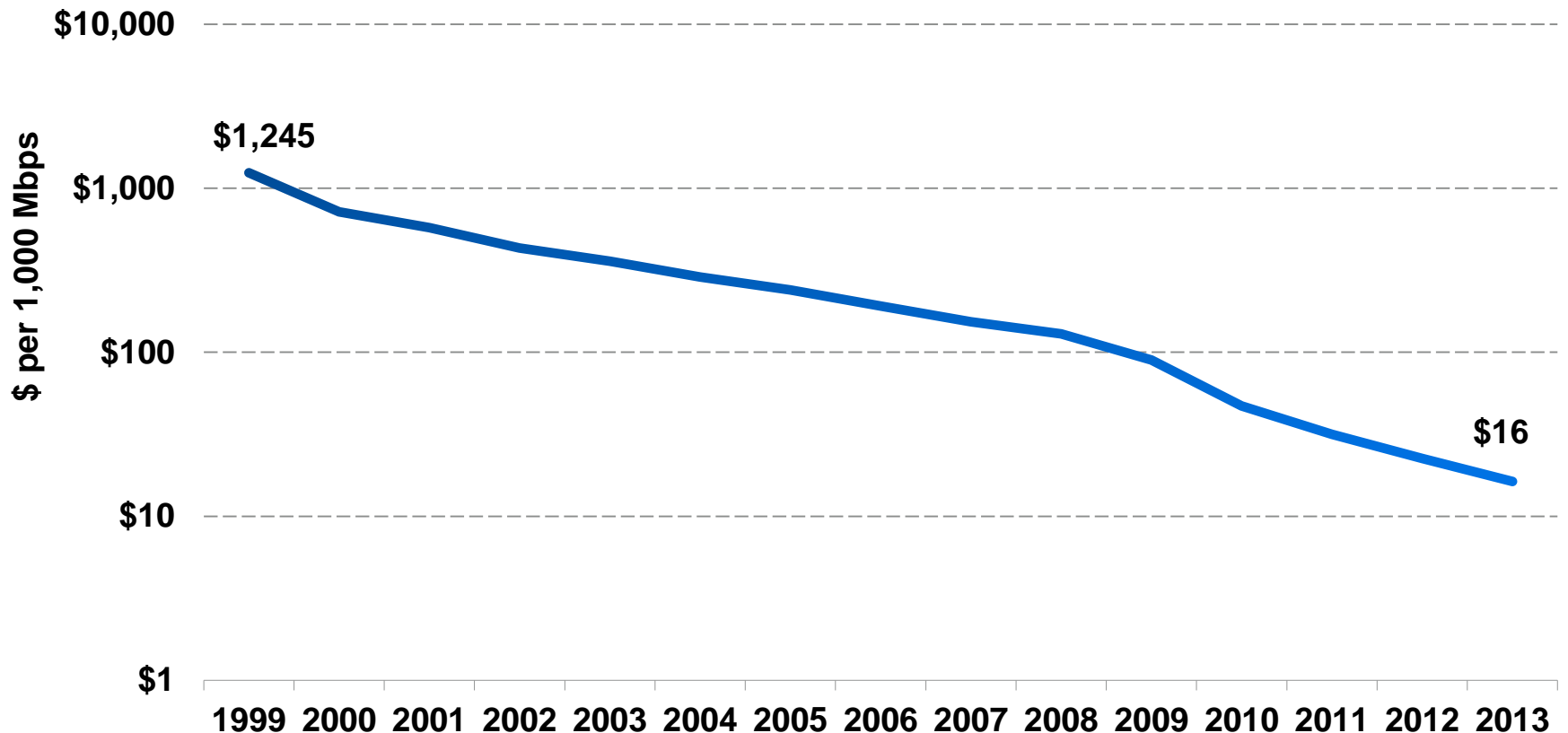
## Global Storage Cost Trends



# ...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

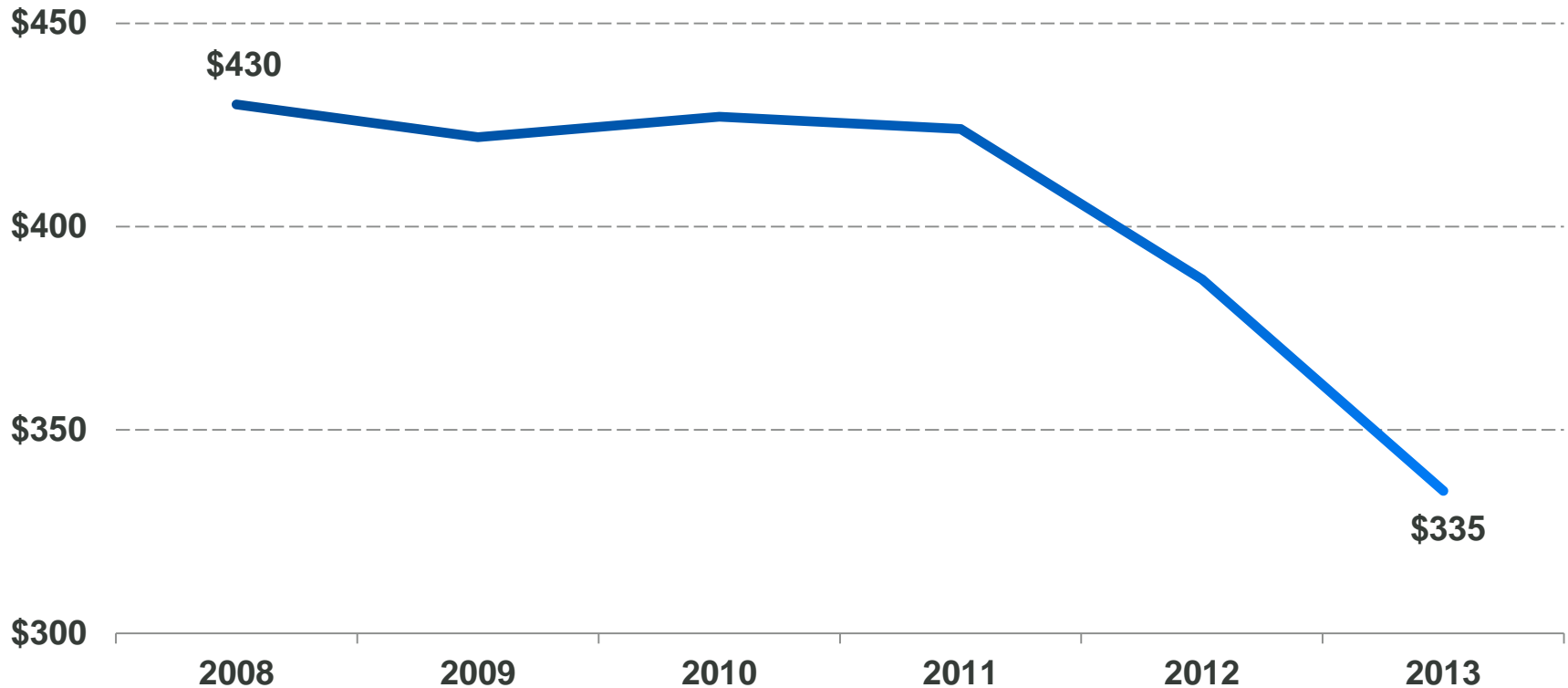




# ...Smartphone Costs Declining = 5% Annually, 2008-2013

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

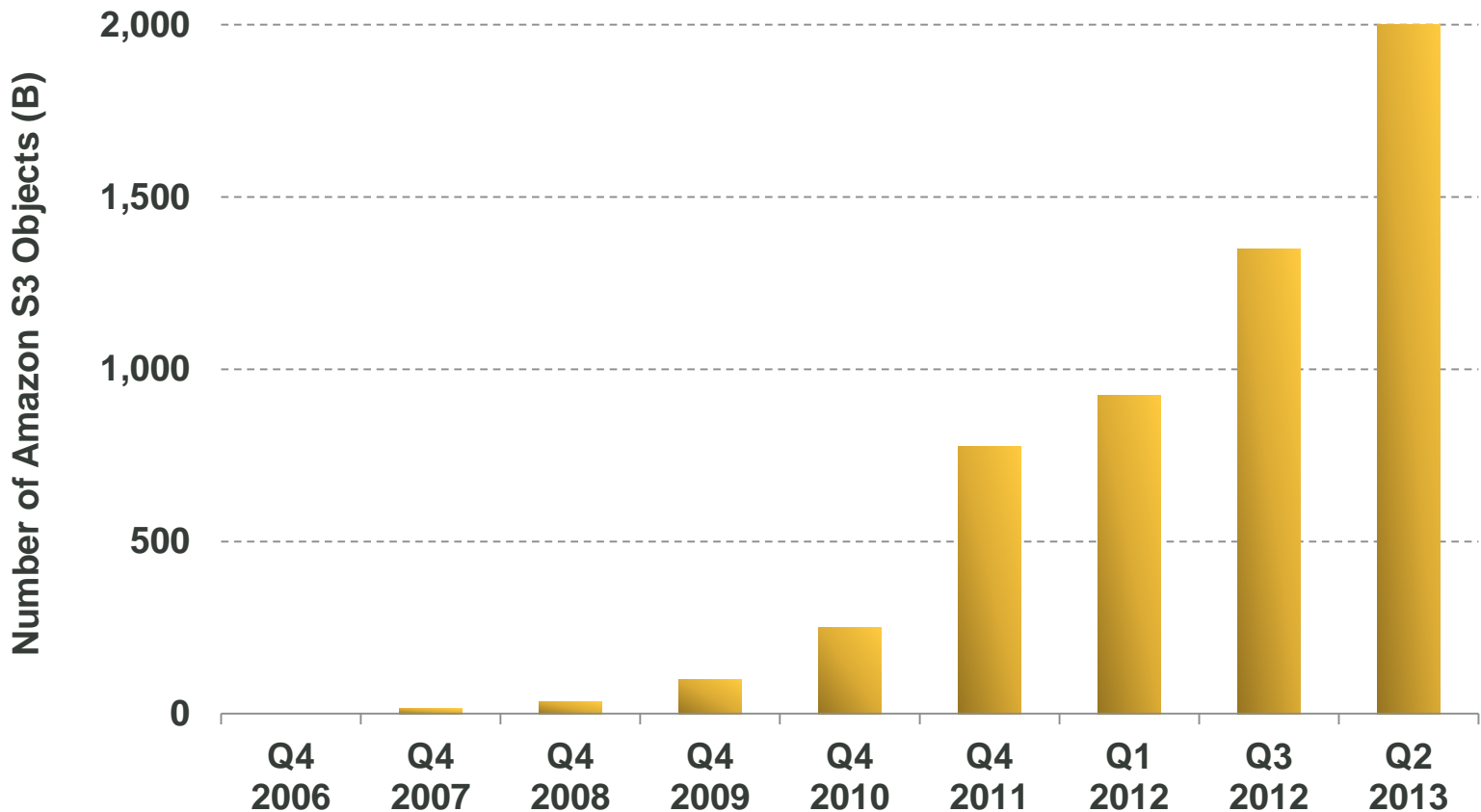
## Average Global Smartphone Pricing Trends



# ...While The Cloud Rises

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

### Objects Stored in Amazon S3\* (B)



*Beautiful New User Interfaces*  
– *Aided by Data-Generating Consumers* –  
*Helping Make Data Usable / Useful...*

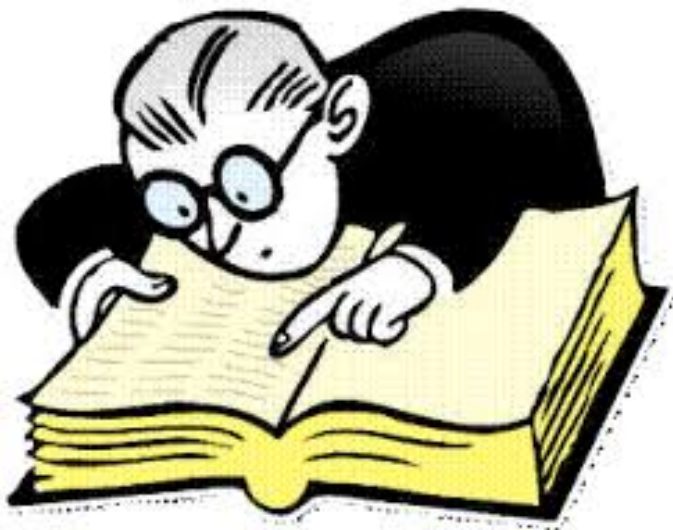
# *...Challenging Non-Cloud Business Models*

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

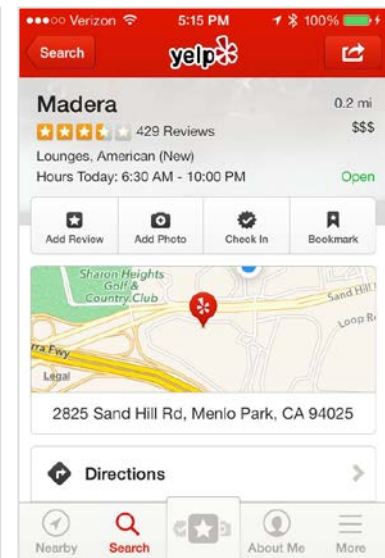
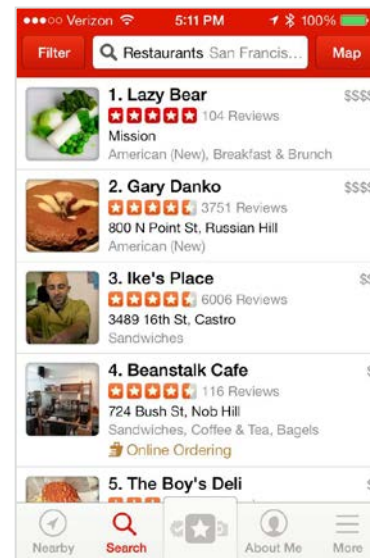
*New Companies  
– With New Data from New Device Types –  
Doing Old Things in New Ways &  
Growing Super Fast*

# Re-Imagining User Interfaces – Finding a Local Business

## Yellow Pages



## Yelp

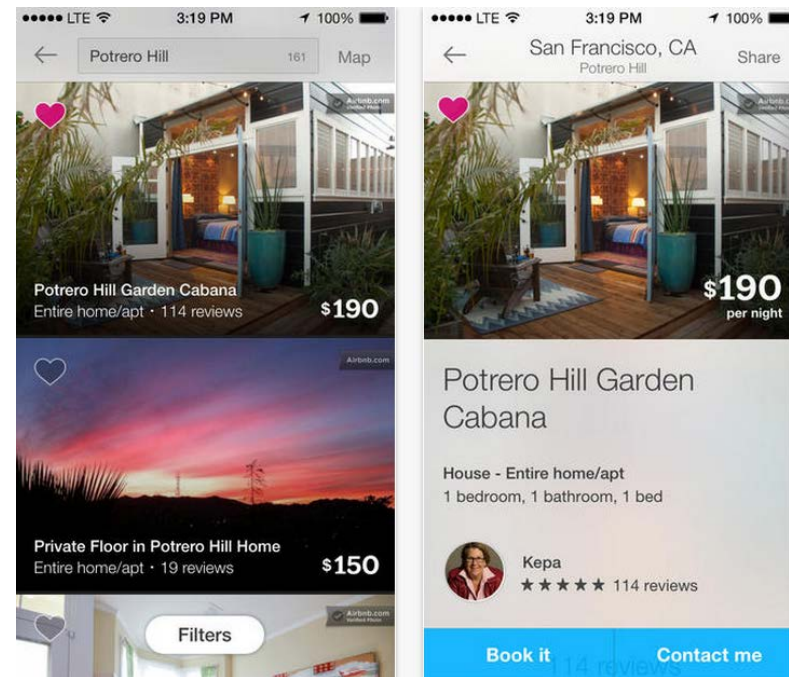


# Re-Imagining User Interfaces – Finding a Place to Stay

## Booking Hotel Room



## Airbnb

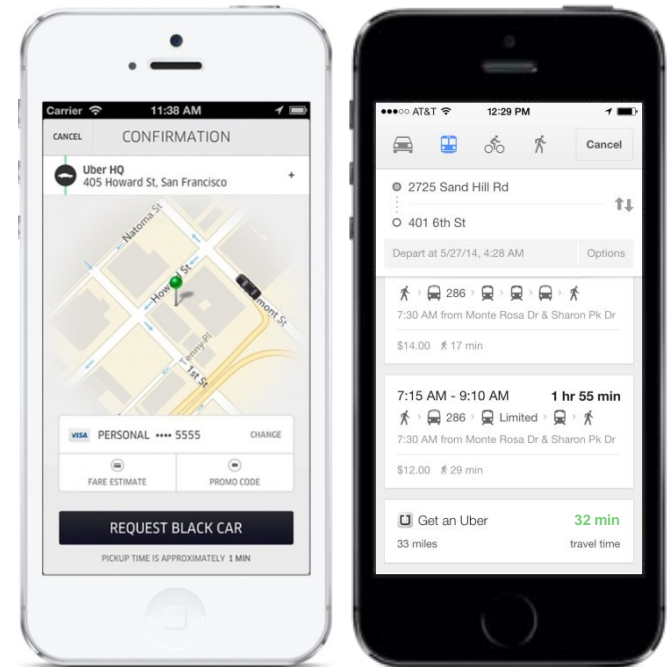


# Re-Imagining User Interfaces – Organized Logistics / People Moving

## Hailing Cab



## Uber



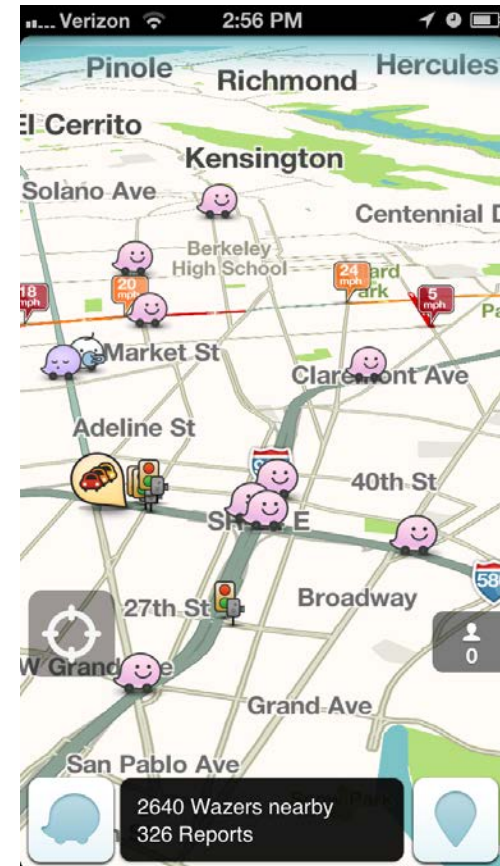


# Re-Imagining User Interfaces – Managing Traffic With Crowdsourcing

## Driving in Traffic



## Waze



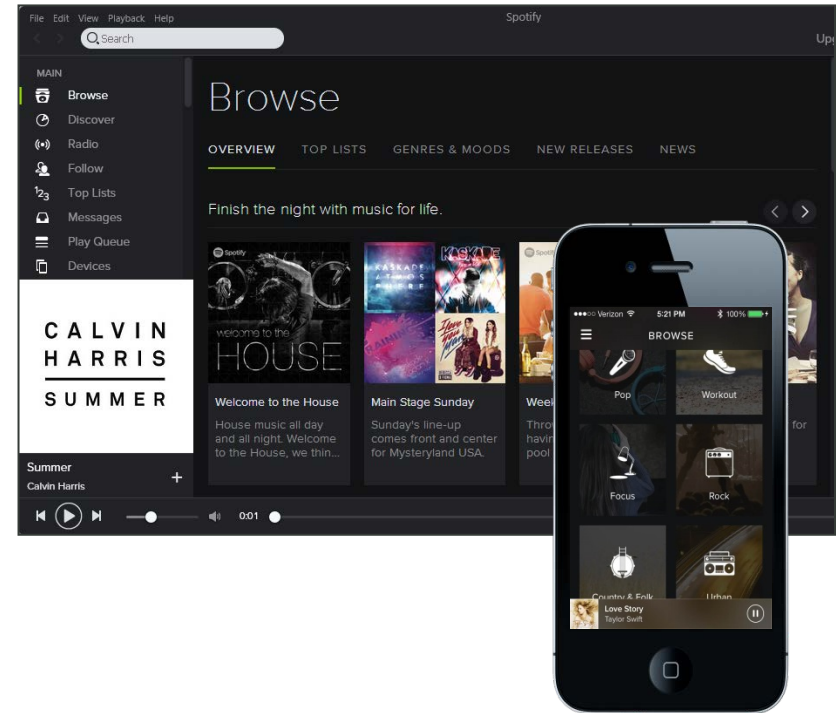


# Re-Imagining User Interfaces – Finding Music

## Satellite Radio



## Spotify



# Re-Imagining User Interfaces – Finding Video With Voice

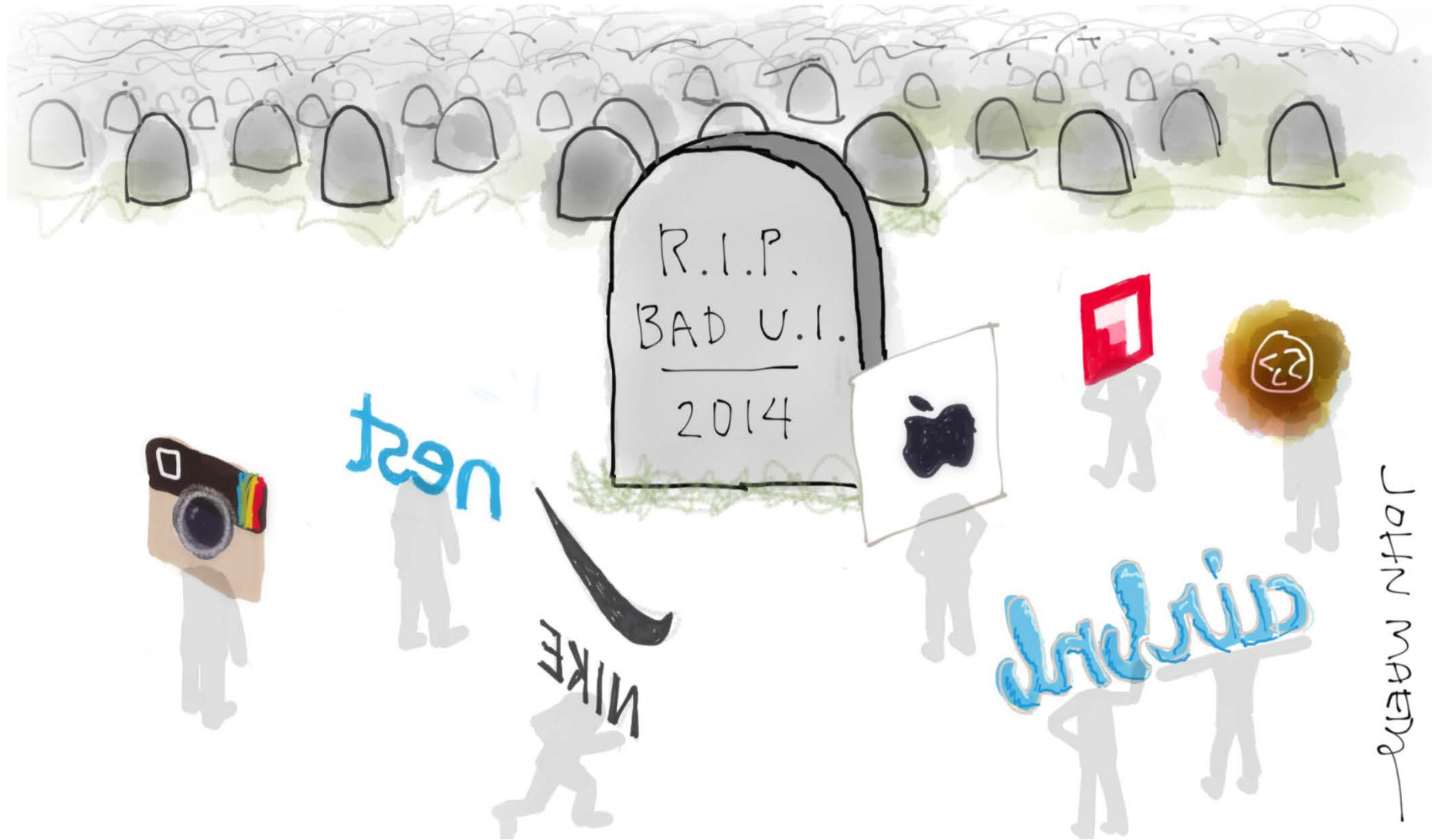
## TV Remote Control



## 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



## Dropcam

### Home Monitoring

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



## Netflix

### Media Personalization / Discovery

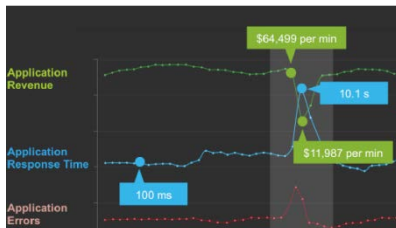
- Terabytes of user data analyzed to generate personalized media recommendations
- 44MM subscribers (+25% Y/Y, 2013)



## AppDynamics

### App Performance Monitoring

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



## SnapLogic

### Cloud Integration / Data Transmission

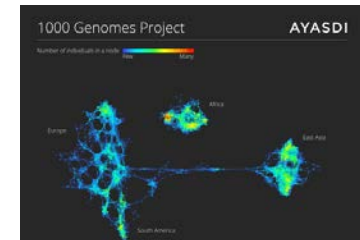
- 500MM+ machine / device scans integrated per day
- 160+ data / cloud connectors on SnapStore
- +128% Y/Y subscription revenue, 2013



## 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



## 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



## Zephyr Health

### Healthcare & Life Sciences

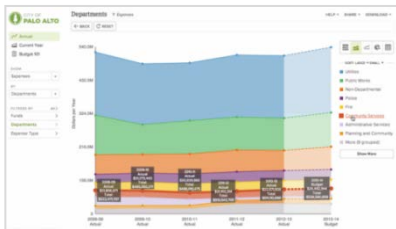
- Hundreds of millions healthcare data points ingested / organized (+192% Q/Q, Q3:13)
- 3,500+ independent life sciences sources used daily (+159% Q/Q & accelerating), spanning all major disease areas
- +111% Y/Y contracted revenue growth, 2013



## 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)



## 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



## 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

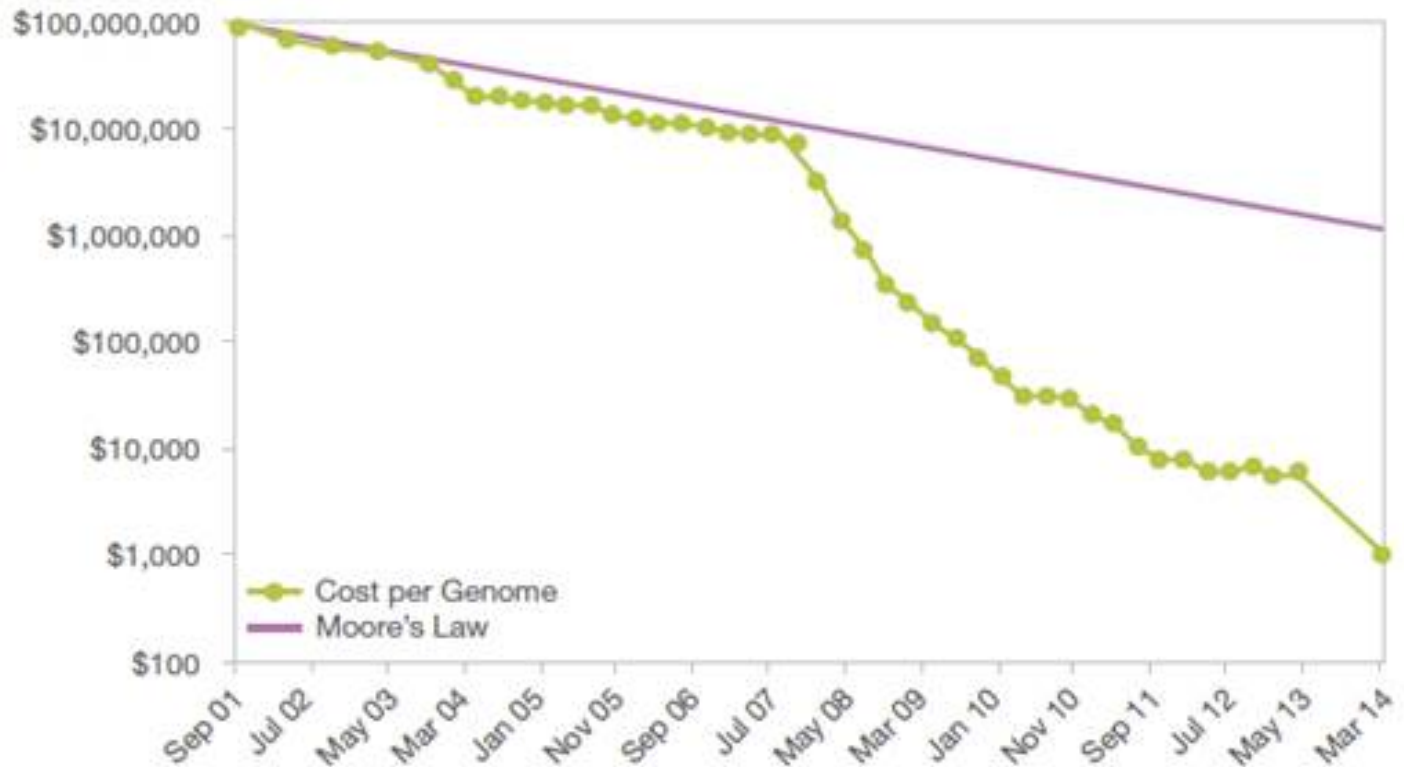




# Cost / Time to Sequence Genome Down to \$1,000 / 24 Hours – Treasure Trove of Patterns Will Rise Rapidly

*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\*\**



***Biggest  
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*

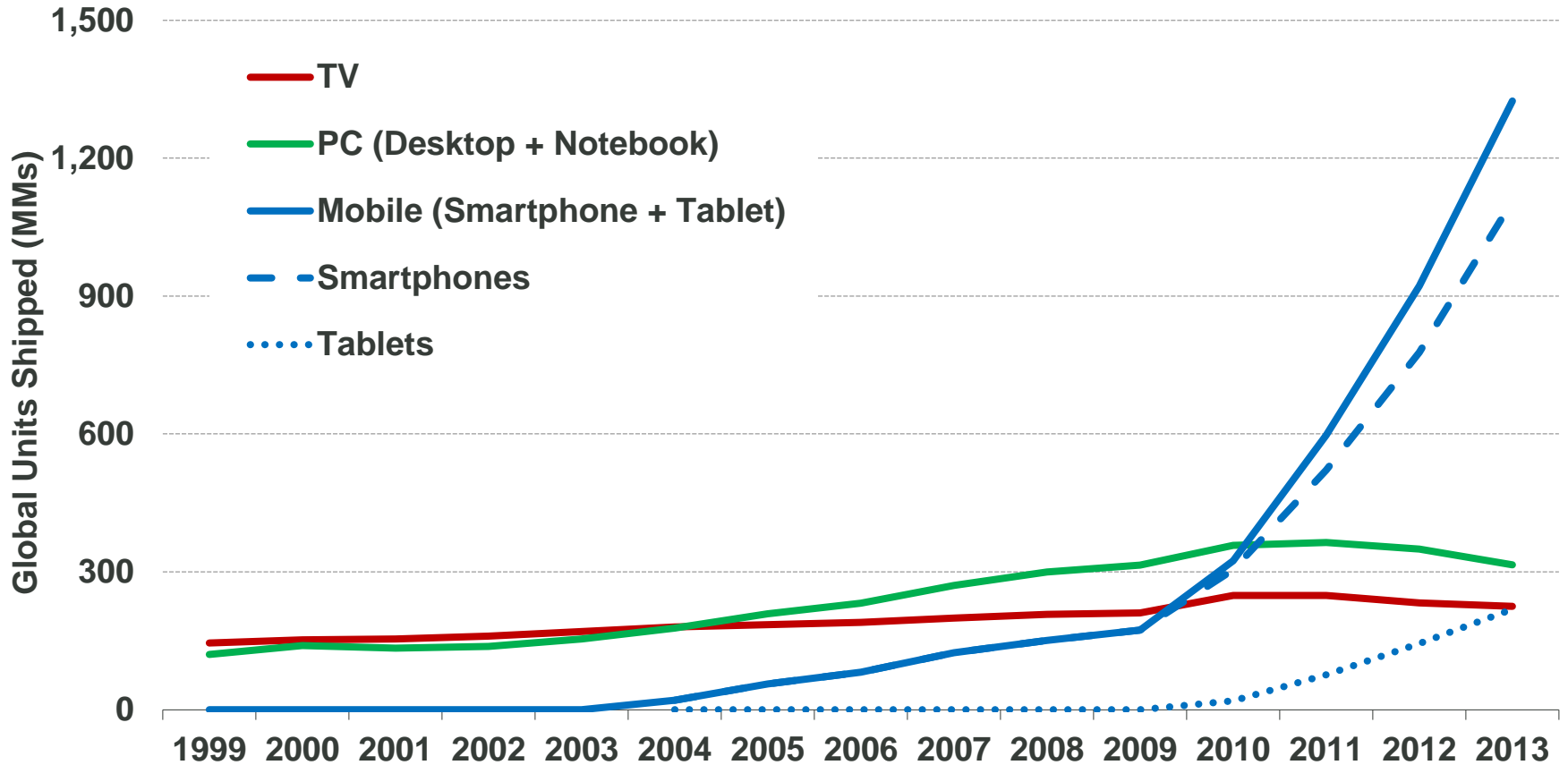
# *Screens Proliferating*

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



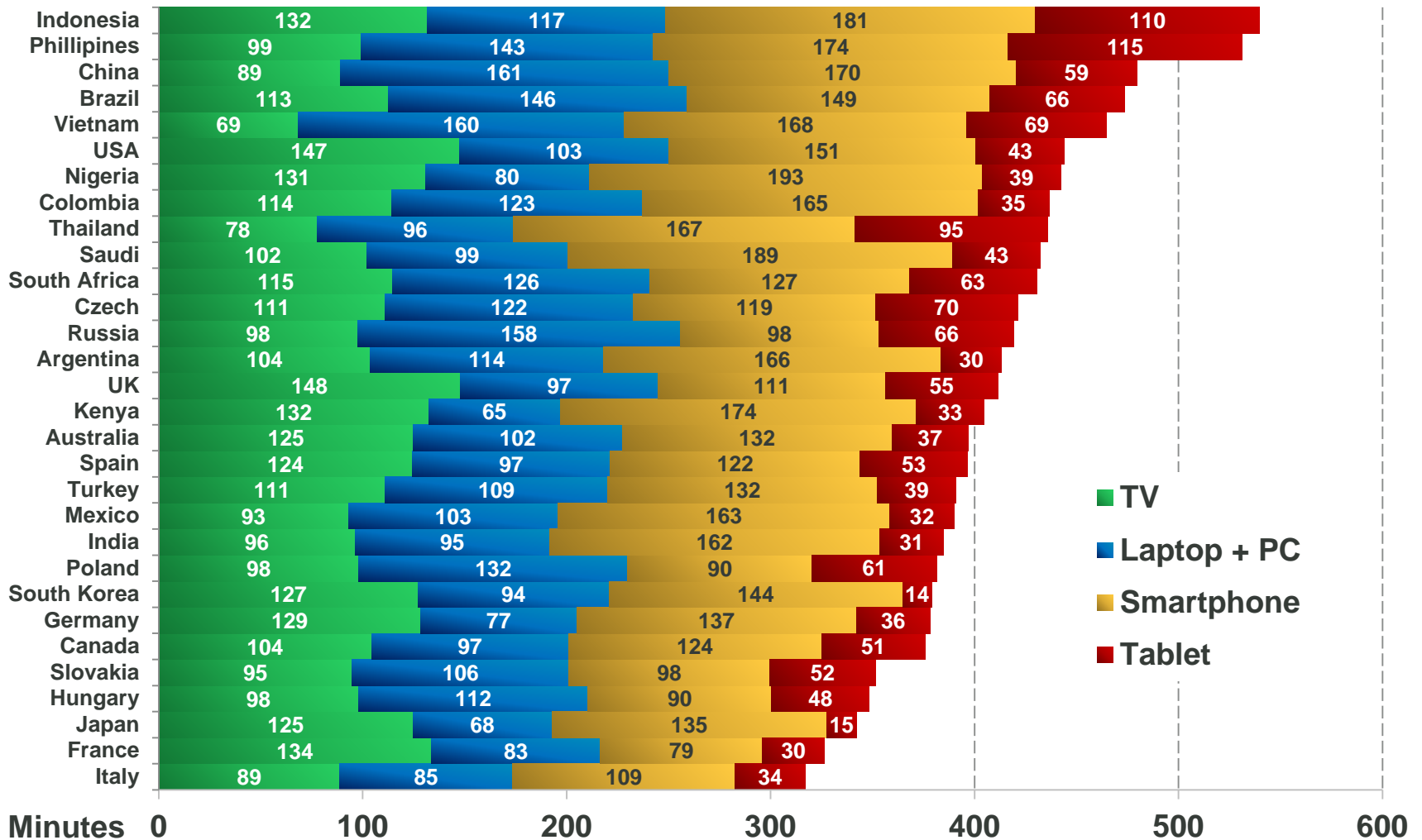
# Mobile (Smartphone + Tablet) Shipments = 4-5x Unit Volume of TV & PC...Just 10 Years Since Inception

## Global TV vs. PC (Desktop + Notebook) vs. Mobile (Smartphone + Tablet) Shipments, 1999 – 2013



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

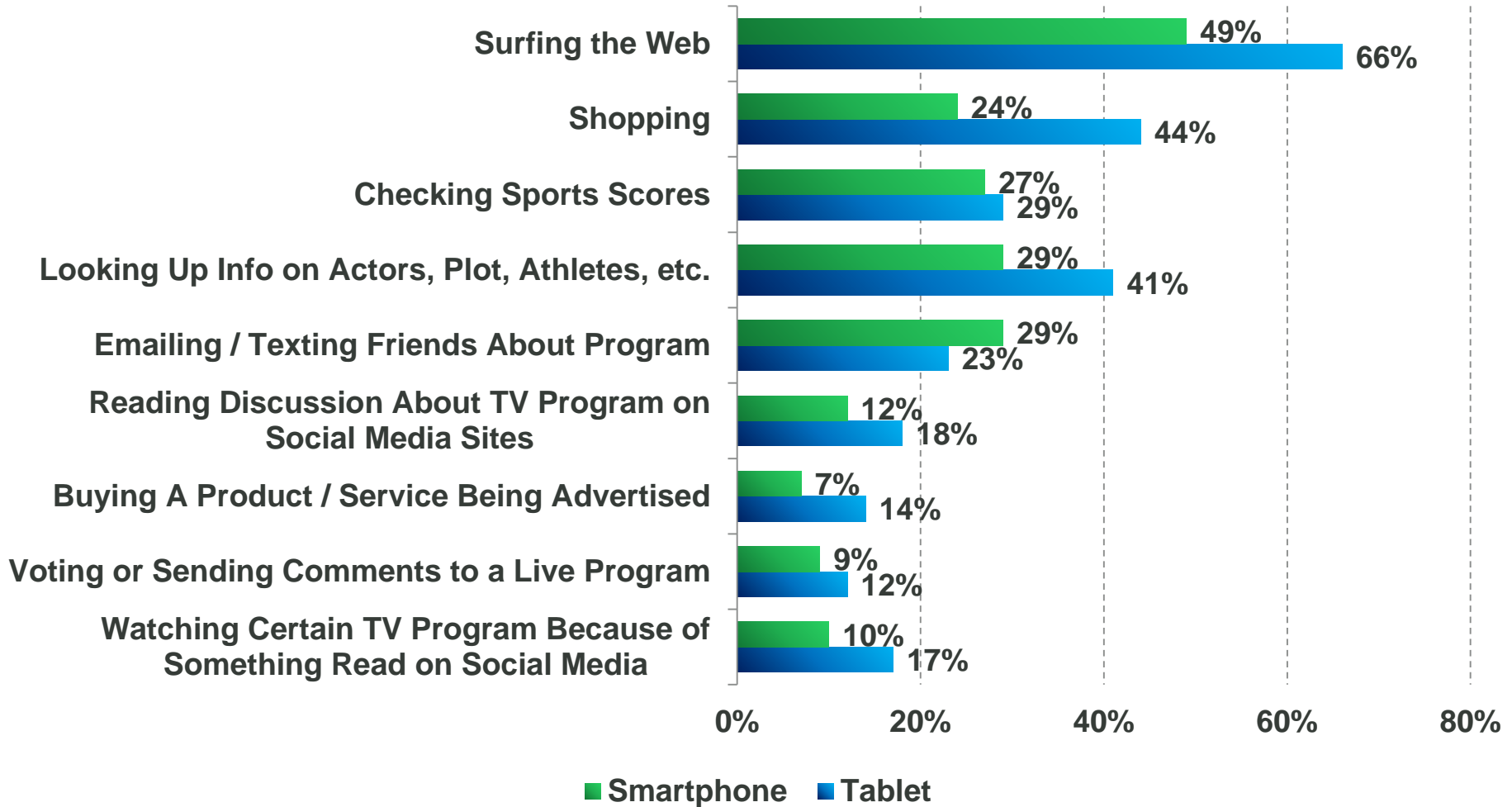
## Daily Distribution of Screen Minutes Across Countries (Mins)





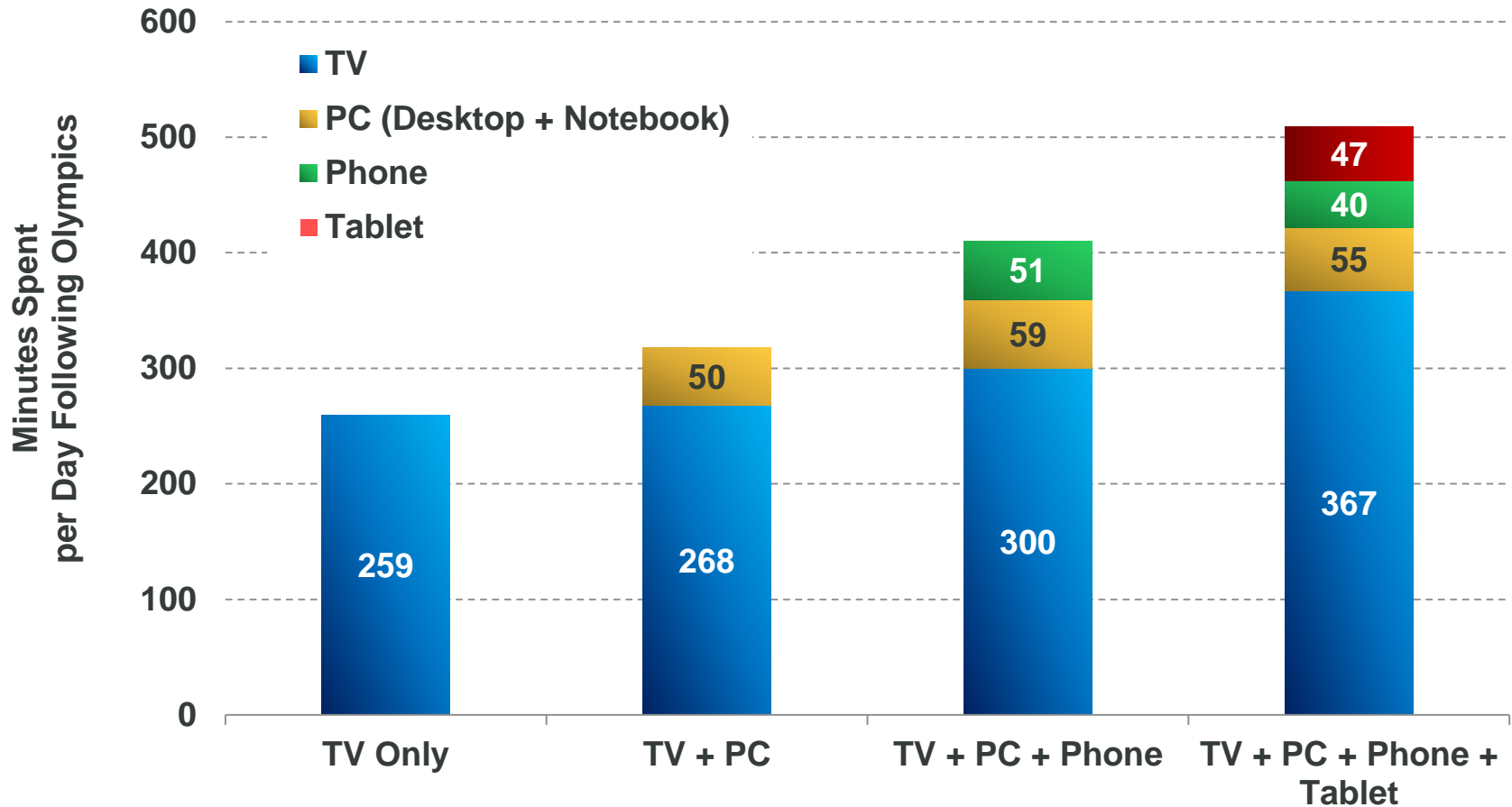
# Mobile Owners (84%) Use Devices While Watching TV... ~2x Higher Over 2 Years

## 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



# 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?**

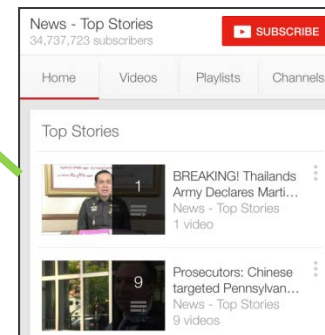
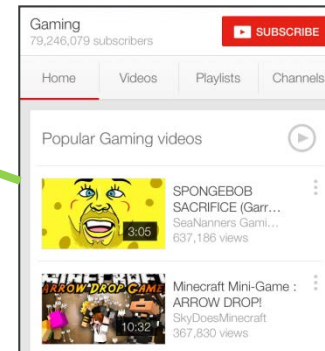
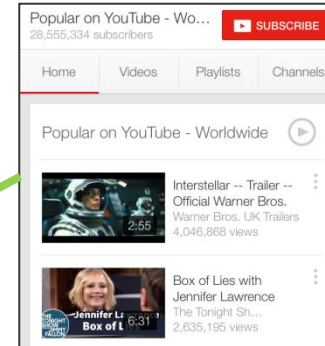
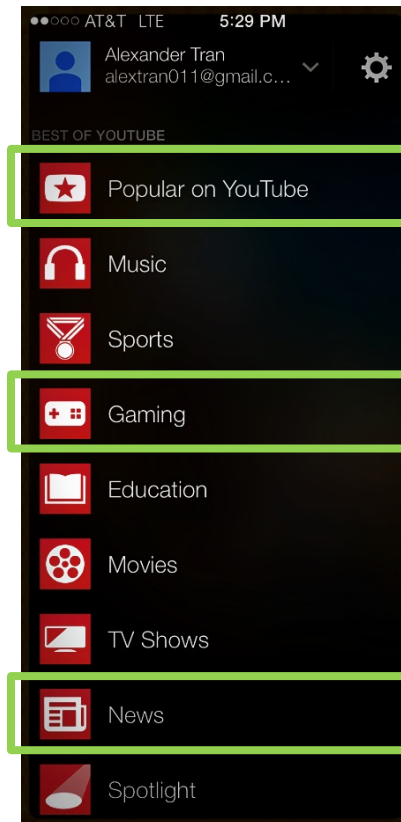
# ***[Traditional] Remote Controls Disappearing***

# 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)*

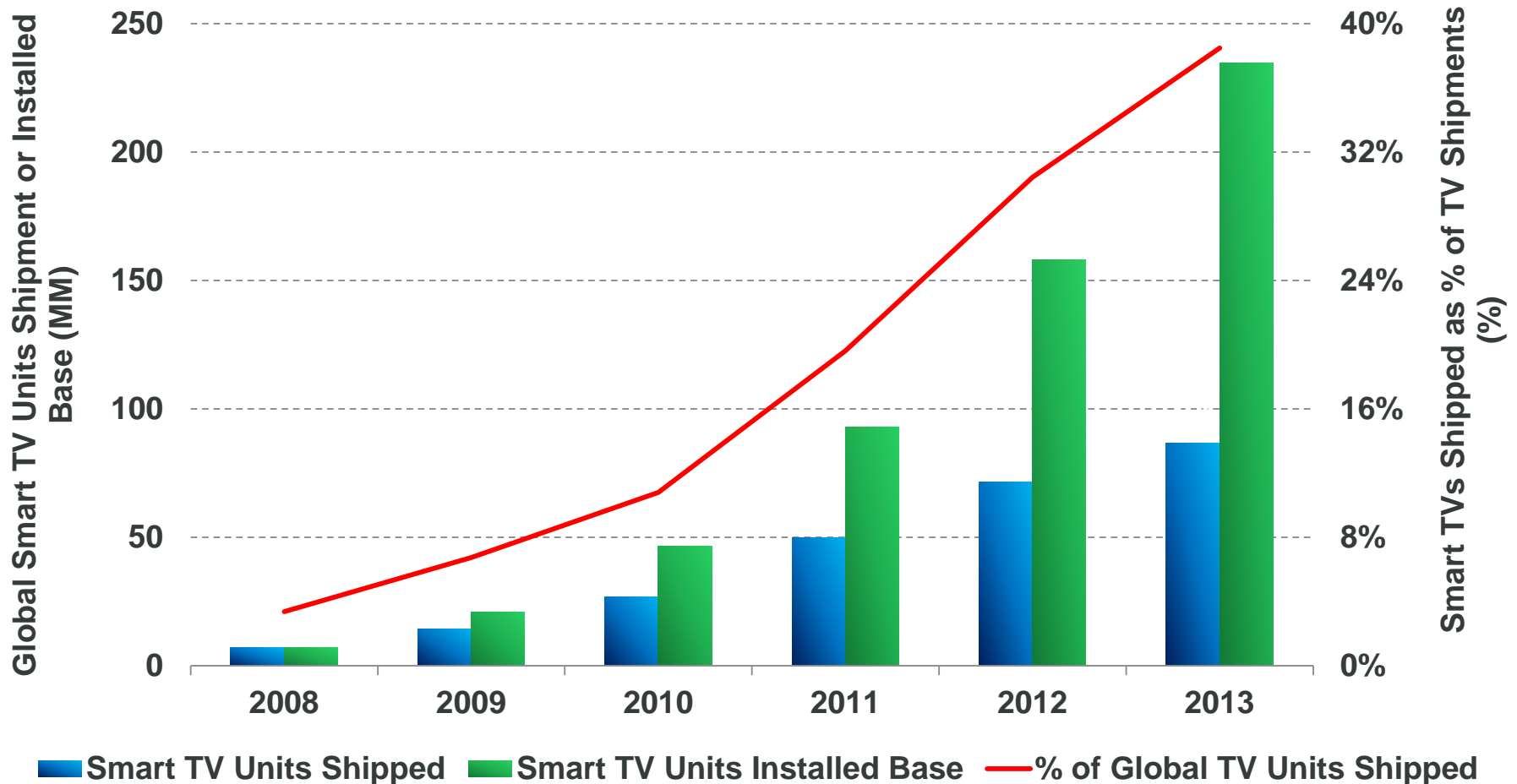
# Smart TV Adapters = Tens of Millions of Users

## 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<br>Nintendo Wii U           | 12/06       |
|     | Sony PlayStation 3<br>Sony PlayStation 4 | 11/06       |
|     | Microsoft Xbox 360<br>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





# ***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



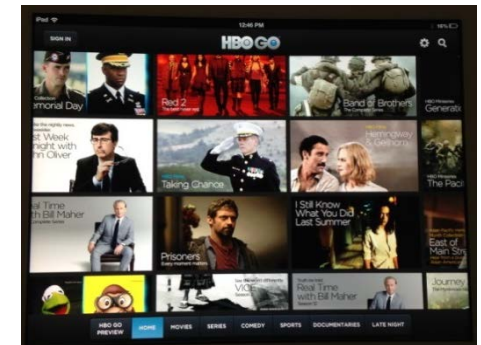
## BBC

- 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



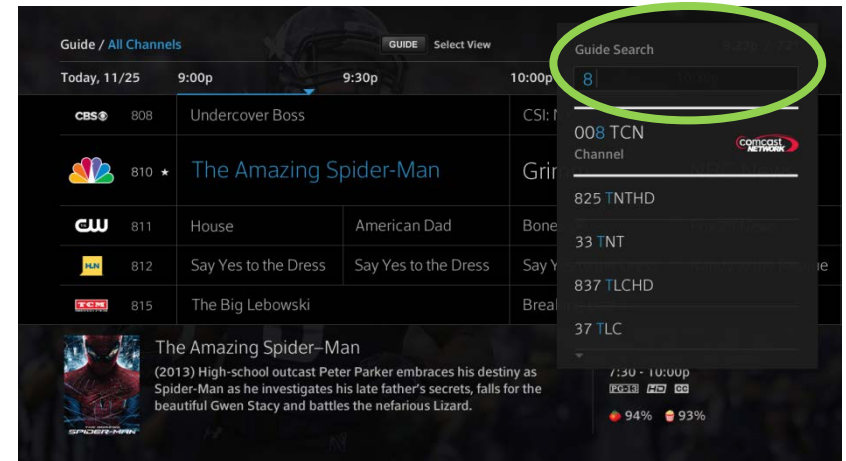
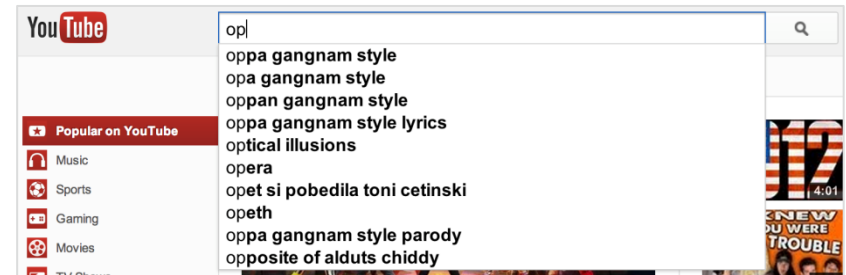
# Internet = Evolved from Directory to Search / Apps...

# TV = Evolving from Directory to Apps / Search

## TV Guide

## YouTube - Search Bar Comcast - X1 Guide

| Tonight's Highlights |  | PRIME TIME   |  | Tuesday 9/18   |  |  |
|----------------------|--|--|--|--|--|--|
| Eastern Central      | 8:00pm<br>7:00pm   | 8:30pm<br>7:30pm   | 9:00pm<br>8:00pm   | 9:30pm<br>8:30pm   | 10:00pm<br>9:00pm  | 10:30pm<br>9:30pm  |
| GSN                  | Minute to Win It <b>NEW</b>  | Minute to Win It <b>NEW</b>  | Minute to Win It <b>NEW</b>  | Minute to Win It <b>NEW</b>  | Minute to Win It <b>NEW</b>  | Minute to Win It <b>NEW</b>  |
| Hallmark HD          | Little House on the Prairie: Part 1 of two <b>NEW</b>  | Little House on the Prairie: Conclusion <b>NEW</b>   | Little House on the Prairie: Conclusion <b>NEW</b>   | Little House on the Prairie: Conclusion <b>NEW</b>   | Little House on the Prairie: Conclusion <b>NEW</b>   | Little House on the Prairie: Conclusion <b>NEW</b>   |
| HBO                  | <b>MOVIE</b> Rise of the Planet of the Apes (2011): Gentle giant engineer Chim Chim (Andy Serkis) uses his mighty intellect to lead an ape uprising against all of humankind. PG-13                                | <b>MOVIE</b> Rise of the Planet of the Apes (2011): Gentle giant engineer Chim Chim (Andy Serkis) uses his mighty intellect to lead an ape uprising against all of humankind. PG-13                                | <b>MOVIE</b> Rise of the Planet of the Apes (2011): Gentle giant engineer Chim Chim (Andy Serkis) uses his mighty intellect to lead an ape uprising against all of humankind. PG-13                                | <b>MOVIE</b> Rise of the Planet of the Apes (2011): Gentle giant engineer Chim Chim (Andy Serkis) uses his mighty intellect to lead an ape uprising against all of humankind. PG-13                                | <b>MOVIE</b> Rise of the Planet of the Apes (2011): Gentle giant engineer Chim Chim (Andy Serkis) uses his mighty intellect to lead an ape uprising against all of humankind. PG-13                                | <b>MOVIE</b> Rise of the Planet of the Apes (2011): Gentle giant engineer Chim Chim (Andy Serkis) uses his mighty intellect to lead an ape uprising against all of humankind. PG-13                                |
| HBO Family           | <b>MOVIE</b> (7:00) Star Trek: Generations (1994): A time-traveling alien invades the Enterprise, and the Star Trek crew must save the world.  | <b>MOVIE</b> (7:00) Star Trek: Generations (1994): A time-traveling alien invades the Enterprise, and the Star Trek crew must save the world.  | <b>MOVIE</b> (7:00) Star Trek: Generations (1994): A time-traveling alien invades the Enterprise, and the Star Trek crew must save the world.  | <b>MOVIE</b> (7:00) Star Trek: Generations (1994): A time-traveling alien invades the Enterprise, and the Star Trek crew must save the world.  | <b>MOVIE</b> (7:00) Star Trek: Generations (1994): A time-traveling alien invades the Enterprise, and the Star Trek crew must save the world.  | <b>MOVIE</b> (7:00) Star Trek: Generations (1994): A time-traveling alien invades the Enterprise, and the Star Trek crew must save the world.  |
| HBO Signature        | <b>MOVIE</b> Boardwalk Empire: Nucky's New Year's resolution at the end of 1922 <b>NEW</b>   | <b>MOVIE</b> Boardwalk Empire: Nucky's New Year's resolution at the end of 1922 <b>NEW</b>   | <b>MOVIE</b> Boardwalk Empire: Nucky's New Year's resolution at the end of 1922 <b>NEW</b>   | <b>MOVIE</b> Boardwalk Empire: Nucky's New Year's resolution at the end of 1922 <b>NEW</b>   | <b>MOVIE</b> Boardwalk Empire: Nucky's New Year's resolution at the end of 1922 <b>NEW</b>   | <b>MOVIE</b> Boardwalk Empire: Nucky's New Year's resolution at the end of 1922 <b>NEW</b>   |
| HBO2                 | <b>MOVIE</b> Love and Other Drugs (2010): A free-spirited young woman (Anne Hathaway) falls for a pharmaceutical salesman (Jake Gyllenhaal). R   | <b>MOVIE</b> Love and Other Drugs (2010): A free-spirited young woman (Anne Hathaway) falls for a pharmaceutical salesman (Jake Gyllenhaal). R   | <b>MOVIE</b> Love and Other Drugs (2010): A free-spirited young woman (Anne Hathaway) falls for a pharmaceutical salesman (Jake Gyllenhaal). R   | <b>MOVIE</b> Love and Other Drugs (2010): A free-spirited young woman (Anne Hathaway) falls for a pharmaceutical salesman (Jake Gyllenhaal). R   | <b>MOVIE</b> Love and Other Drugs (2010): A free-spirited young woman (Anne Hathaway) falls for a pharmaceutical salesman (Jake Gyllenhaal). R   | <b>MOVIE</b> 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. <b>NEW</b>   | Love It or List It: A family need more space. <b>NEW</b>   | Love It or List It: A family need more space. <b>NEW</b>   | Love It or List It: A family need more space. <b>NEW</b>   | Love It or List It: A family need more space. <b>NEW</b>   | Love It or List It: A family need more space. <b>NEW</b>   |
| History              | Pawn Stars: An 18th-century musket. <b>NEW</b>   | Pawn Stars: An 18th-century musket. <b>NEW</b>   | Pawn Stars: An 18th-century musket. <b>NEW</b>   | Pawn Stars: An 18th-century musket. <b>NEW</b>   | Pawn Stars: An 18th-century musket. <b>NEW</b>   | Pawn Stars: An 18th-century musket. <b>NEW</b>   |
| HLN                  | Nancy Grace <b>NEW</b>   | Nancy Grace <b>NEW</b>   | Nancy Grace <b>NEW</b>   | Nancy Grace <b>NEW</b>   | Nancy Grace <b>NEW</b>   | Nancy Grace <b>NEW</b>   |
| IFC                  | <b>MOVIE</b> Fight Club (1999): Brad Pitt and Edward Norton star in David Fincher's violent social satire about a brutal club whose members relieve their frustrations by beating each other to a pulp. <b>NEW</b> | <b>MOVIE</b> Fight Club (1999): Brad Pitt and Edward Norton star in David Fincher's violent social satire about a brutal club whose members relieve their frustrations by beating each other to a pulp. <b>NEW</b> | <b>MOVIE</b> Fight Club (1999): Brad Pitt and Edward Norton star in David Fincher's violent social satire about a brutal club whose members relieve their frustrations by beating each other to a pulp. <b>NEW</b> | <b>MOVIE</b> Fight Club (1999): Brad Pitt and Edward Norton star in David Fincher's violent social satire about a brutal club whose members relieve their frustrations by beating each other to a pulp. <b>NEW</b> | <b>MOVIE</b> Fight Club (1999): Brad Pitt and Edward Norton star in David Fincher's violent social satire about a brutal club whose members relieve their frustrations by beating each other to a pulp. <b>NEW</b> | <b>MOVIE</b> Fight Club (1999): Brad Pitt and Edward Norton star in David Fincher's violent social satire about a brutal club whose members relieve their frustrations by beating each other to a pulp. <b>NEW</b> |
| Inves. Disc.         | Dateline on ID: Part 1 of 2. <b>NEW</b>  | Dateline on ID: Part 1 of 2. <b>NEW</b>  | Dateline on ID: Part 1 of 2. <b>NEW</b>  | Dateline on ID: Part 1 of 2. <b>NEW</b>  | Dateline on ID: Part 1 of 2. <b>NEW</b>  | Dateline on ID: Part 1 of 2. <b>NEW</b>  |
| Lifetime             | Dance Moms: A national title competition in Beverly Hills takes place. <b>NEW</b>  | Dance Moms: A national title competition in Beverly Hills takes place. <b>NEW</b>  | Dance Moms: A national title competition in Beverly Hills takes place. <b>NEW</b>  | Dance Moms: A national title competition in Beverly Hills takes place. <b>NEW</b>  | Dance Moms: A national title competition in Beverly Hills takes place. <b>NEW</b>  | Dance Moms: A national title competition in Beverly Hills takes place. <b>NEW</b>  |
| LMN                  | <b>MOVIE</b> Murder in the Hamptons (2005): An engrossing account of the death of Ted Ammon (David Sutchiff), a millionaire who was found murdered just as he was finalizing an ugly divorce. <b>NEW</b>           | <b>MOVIE</b> Murder in the Hamptons (2005): An engrossing account of the death of Ted Ammon (David Sutchiff), a millionaire who was found murdered just as he was finalizing an ugly divorce. <b>NEW</b>           | <b>MOVIE</b> Murder in the Hamptons (2005): An engrossing account of the death of Ted Ammon (David Sutchiff), a millionaire who was found murdered just as he was finalizing an ugly divorce. <b>NEW</b>           | <b>MOVIE</b> Murder in the Hamptons (2005): An engrossing account of the death of Ted Ammon (David Sutchiff), a millionaire who was found murdered just as he was finalizing an ugly divorce. <b>NEW</b>           | <b>MOVIE</b> Murder in the Hamptons (2005): An engrossing account of the death of Ted Ammon (David Sutchiff), a millionaire who was found murdered just as he was finalizing an ugly divorce. <b>NEW</b>           | <b>MOVIE</b> Murder in the Hamptons (2005): An engrossing account of the death of Ted Ammon (David Sutchiff), a millionaire who was found murdered just as he was finalizing an ugly divorce. <b>NEW</b>           |
| More Max             | <b>MOVIE</b> (7:00) ** 28 Days Later (2002): A zombie virus spreads across London. <b>NEW</b>  | <b>MOVIE</b> (7:00) ** 28 Days Later (2002): A zombie virus spreads across London. <b>NEW</b>  | <b>MOVIE</b> (7:00) ** 28 Days Later (2002): A zombie virus spreads across London. <b>NEW</b>  | <b>MOVIE</b> (7:00) ** 28 Days Later (2002): A zombie virus spreads across London. <b>NEW</b>  | <b>MOVIE</b> (7:00) ** 28 Days Later (2002): A zombie virus spreads across London. <b>NEW</b>  | <b>MOVIE</b> (7:00) ** 28 Days Later (2002): A zombie virus spreads across London. <b>NEW</b>  |
| MSNBC                | The Ed Show <b>NEW</b>   | The Ed Show <b>NEW</b>   | The Ed Show <b>NEW</b>   | The Ed Show <b>NEW</b>   | The Ed Show <b>NEW</b>   | The Ed Show <b>NEW</b>   |
| MTV                  | Teen Mom <b>NEW</b>  | Teen Mom <b>NEW</b>  | Teen Mom <b>NEW</b>  | Teen Mom <b>NEW</b>  | Teen Mom <b>NEW</b>  | Teen Mom <b>NEW</b>  |
| National Geographic  | Edged a Gull: Former cult members open up. <b>NEW</b>  | Edged a Gull: Former cult members open up. <b>NEW</b>  | Edged a Gull: Former cult members open up. <b>NEW</b>  | Edged a Gull: Former cult members open up. <b>NEW</b>  | Edged a Gull: Former cult members open up. <b>NEW</b>  | Edged a Gull: Former cult members open up. <b>NEW</b>  |
| NatGeoWild           | Clash/Calmans: Black calman are examined. <b>NEW</b>   | Clash/Calmans: Black calman are examined. <b>NEW</b>   | Clash/Calmans: Black calman are examined. <b>NEW</b>   | Clash/Calmans: Black calman are examined. <b>NEW</b>   | Clash/Calmans: Black calman are examined. <b>NEW</b>   | Clash/Calmans: Black calman are examined. <b>NEW</b>   |
| NBC Sports           | International League Baseball Playoff: <b>NEW</b>  | International League Baseball Playoff: <b>NEW</b>  | International League Baseball Playoff: <b>NEW</b>  | International League Baseball Playoff: <b>NEW</b>  | International League Baseball Playoff: <b>NEW</b>  | International League Baseball Playoff: <b>NEW</b>  |
| Nickelodeon          | Victorious <b>NEW</b>  | Victorious <b>NEW</b>  | Victorious <b>NEW</b>  | Victorious <b>NEW</b>  | Victorious <b>NEW</b>  | Victorious <b>NEW</b>  |
| OWN                  | TV Guide Magazine's Top 25 Best Oprah Show Moments: Moments 17-14. <b>NEW</b>  | TV Guide Magazine's Top 25 Best Oprah Show Moments: Moments 17-14. <b>NEW</b>  | TV Guide Magazine's Top 25 Best Oprah Show Moments: Moments 17-14. <b>NEW</b>  | TV Guide Magazine's Top 25 Best Oprah Show Moments: Moments 17-14. <b>NEW</b>  | TV Guide Magazine's Top 25 Best Oprah Show Moments: Moments 17-14. <b>NEW</b>  | TV Guide Magazine's Top 25 Best Oprah Show Moments: Moments 17-14. <b>NEW</b>  |
| Oxygen               | <b>MOVIE</b> ** The Sweetest Thing (2002): A party girl (Cameron Diaz) takes a road trip to find Mr. Right. Unlucky, gross-out comedy with Christina Applegate and Selma Blair. <b>NEW</b>                         | <b>MOVIE</b> ** The Sweetest Thing (2002): A party girl (Cameron Diaz) takes a road trip to find Mr. Right. Unlucky, gross-out comedy with Christina Applegate and Selma Blair. <b>NEW</b>                         | <b>MOVIE</b> ** The Sweetest Thing (2002): A party girl (Cameron Diaz) takes a road trip to find Mr. Right. Unlucky, gross-out comedy with Christina Applegate and Selma Blair. <b>NEW</b>                         | <b>MOVIE</b> ** The Sweetest Thing (2002): A party girl (Cameron Diaz) takes a road trip to find Mr. Right. Unlucky, gross-out comedy with Christina Applegate and Selma Blair. <b>NEW</b>                         | <b>MOVIE</b> ** The Sweetest Thing (2002): A party girl (Cameron Diaz) takes a road trip to find Mr. Right. Unlucky, gross-out comedy with Christina Applegate and Selma Blair. <b>NEW</b>                         | <b>MOVIE</b> ** The Sweetest Thing (2002): A party girl (Cameron Diaz) takes a road trip to find Mr. Right. Unlucky, gross-out comedy with Christina Applegate and Selma Blair. <b>NEW</b>                         |
| Science              | Survivorman: A week in the Sonoran Desert. <b>NEW</b>  | Survivorman: A week in the Sonoran Desert. <b>NEW</b>  | Survivorman: A week in the Sonoran Desert. <b>NEW</b>  | Survivorman: A week in the Sonoran Desert. <b>NEW</b>  | Survivorman: A week in the Sonoran Desert. <b>NEW</b>  | Survivorman: A week in the Sonoran Desert. <b>NEW</b>  |
| Showtime             | Weeds <b>NEW</b>   | Weeds <b>NEW</b>   | Weeds <b>NEW</b>   | Weeds <b>NEW</b>   | Weeds <b>NEW</b>   | Weeds <b>NEW</b>   |
| Showtime 2           | <b>MOVIE</b> (7:30) Shakespeare High: Director: Alex Rotaru. <b>NEW</b>  | <b>MOVIE</b> (7:30) Shakespeare High: Director: Alex Rotaru. <b>NEW</b>  | <b>MOVIE</b> (7:30) Shakespeare High: Director: Alex Rotaru. <b>NEW</b>  | <b>MOVIE</b> (7:30) Shakespeare High: Director: Alex Rotaru. <b>NEW</b>  | <b>MOVIE</b> (7:30) Shakespeare High: Director: Alex Rotaru. <b>NEW</b>  | <b>MOVIE</b> (7:30) Shakespeare High: Director: Alex Rotaru. <b>NEW</b>  |
| SoapNet              | Days of Our Lives <b>NEW</b>   | Days of Our Lives <b>NEW</b>   | Days of Our Lives <b>NEW</b>   | Days of Our Lives <b>NEW</b>   | Days of Our Lives <b>NEW</b>   | Days of Our Lives <b>NEW</b>   |
| Speed                | Dumbest Stuff <b>NEW</b>   | Dumbest Stuff <b>NEW</b>   | Dumbest Stuff <b>NEW</b>   | Dumbest Stuff <b>NEW</b>   | Dumbest Stuff <b>NEW</b>   | Dumbest Stuff <b>NEW</b>   |
| Spoke                | (7:40) Bar Rescue: A troubled fish pub. <b>NEW</b>   | (7:40) Bar Rescue: A troubled fish pub. <b>NEW</b>   | (7:40) Bar Rescue: A troubled fish pub. <b>NEW</b>   | (7:40) Bar Rescue: A troubled fish pub. <b>NEW</b>   | (7:40) Bar Rescue: A troubled fish pub. <b>NEW</b>   | (7:40) Bar Rescue: A troubled fish pub. <b>NEW</b>   |
| Starz                | <b>MOVIE</b> (7:30) Cars 2 (2011): Mater travels the globe and gets involved in espionage. G   | <b>MOVIE</b> (7:30) Cars 2 (2011): Mater travels the globe and gets involved in espionage. G   | <b>MOVIE</b> (7:30) Cars 2 (2011): Mater travels the globe and gets involved in espionage. G   | <b>MOVIE</b> (7:30) Cars 2 (2011): Mater travels the globe and gets involved in espionage. G   | <b>MOVIE</b> (7:30) Cars 2 (2011): Mater travels the globe and gets involved in espionage. G   | <b>MOVIE</b> (7:30) Cars 2 (2011): Mater travels the globe and gets involved in espionage. G   |
| Style                | Sex and the City <b>NEW</b>  | Sex and the City <b>NEW</b>  | Sex and the City <b>NEW</b>  | Sex and the City <b>NEW</b>  | Sex and the City <b>NEW</b>  | Sex and the City <b>NEW</b>  |
| Sundance             | Pal/Scam <b>NEW</b>  | Pal/Scam <b>NEW</b>  | Pal/Scam <b>NEW</b>  | Pal/Scam <b>NEW</b>  | Pal/Scam <b>NEW</b>  | Pal/Scam <b>NEW</b>  |
| Syfy                 | Face Off: Zombie makeup for characters from "Alice's Adventures in Wonderland." <b>NEW</b>   | Face Off: Zombie makeup for characters from "Alice's Adventures in Wonderland." <b>NEW</b>   | Face Off: Zombie makeup for characters from "Alice's Adventures in Wonderland." <b>NEW</b>   | Face Off: Zombie makeup for characters from "Alice's Adventures in Wonderland." <b>NEW</b>   | Face Off: Zombie makeup for characters from "Alice's Adventures in Wonderland." <b>NEW</b>   | Face Off: Zombie makeup for characters from "Alice's Adventures in Wonderland." <b>NEW</b>   |
| TBS                  | Big Bang Theory: Penny Leonard asks Penny out. <b>NEW</b>  | Big Bang Theory: Penny Leonard asks Penny out. <b>NEW</b>  | Big Bang Theory: Penny Leonard asks Penny out. <b>NEW</b>  | Big Bang Theory: Penny Leonard asks Penny out. <b>NEW</b>  | Big Bang Theory: Penny Leonard asks Penny out. <b>NEW</b>  | Big Bang Theory: Penny Leonard asks Penny out. <b>NEW</b>  |
| TCM                  | <b>MOVIE</b> ** 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. <b>NEW</b>               | <b>MOVIE</b> ** 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. <b>NEW</b>               | <b>MOVIE</b> ** 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. <b>NEW</b>               | <b>MOVIE</b> ** 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. <b>NEW</b>               | <b>MOVIE</b> ** 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. <b>NEW</b>               | <b>MOVIE</b> ** 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. <b>NEW</b>               |
| TLC                  | High School Moms <b>NEW</b>  | High School Moms <b>NEW</b>  | High School Moms <b>NEW</b>  | High School Moms <b>NEW</b>  | High School Moms <b>NEW</b>  | High School Moms <b>NEW</b>  |
| TMC                  | <b>MOVIE</b> Southern Gothic (2007): A bouncer tries to protect a stripper and her daughter from a rampaging preacher. <b>NEW</b>  | <b>MOVIE</b> Southern Gothic (2007): A bouncer tries to protect a stripper and her daughter from a rampaging preacher. <b>NEW</b>  | <b>MOVIE</b> Southern Gothic (2007): A bouncer tries to protect a stripper and her daughter from a rampaging preacher. <b>NEW</b>  | <b>MOVIE</b> Southern Gothic (2007): A bouncer tries to protect a stripper and her daughter from a rampaging preacher. <b>NEW</b>  | <b>MOVIE</b> Southern Gothic (2007): A bouncer tries to protect a stripper and her daughter from a rampaging preacher. <b>NEW</b>  | <b>MOVIE</b> Southern Gothic (2007): A bouncer tries to protect a stripper and her daughter from a rampaging preacher. <b>NEW</b>  |
| TNT                  | Bones: Possible copcat murders that mimic the ones in Brennan's latest book. <b>NEW</b>  | Bones: Possible copcat murders that mimic the ones in Brennan's latest book. <b>NEW</b>  | Bones: Possible copcat murders that mimic the ones in Brennan's latest book. <b>NEW</b>  | Bones: Possible copcat murders that mimic the ones in Brennan's latest book. <b>NEW</b>  | Bones: Possible copcat murders that mimic the ones in Brennan's latest book. <b>NEW</b>  | Bones: Possible copcat murders that mimic the ones in Brennan's latest book. <b>NEW</b>  |
| Travel               | Myster. Museum: The host investigates a fire. <b>NEW</b>   | Myster. Museum: The host investigates a fire. <b>NEW</b>   | Myster. Museum: The host investigates a fire. <b>NEW</b>   | Myster. Museum: The host investigates a fire. <b>NEW</b>   | Myster. Museum: The host investigates a fire. <b>NEW</b>   | Myster. Museum: The host investigates a fire. <b>NEW</b>   |
| TruTV                | Hardcore Pawn <b>NEW</b>   | Hardcore Pawn <b>NEW</b>   | Hardcore Pawn <b>NEW</b>   | Hardcore Pawn <b>NEW</b>   | Hardcore Pawn <b>NEW</b>   | Hardcore Pawn <b>NEW</b>   |
| TV GUIDE             | To Be Announced  | To Be Announced  | To Be Announced  | To Be Announced  | To Be Announced  | To Be Announced  |
| TV Land              | The Cosby Show <b>NEW</b>  | The Cosby Show <b>NEW</b>  | The Cosby Show <b>NEW</b>  | The Cosby Show <b>NEW</b>  | The Cosby Show <b>NEW</b>  | The Cosby Show <b>NEW</b>  |
| USA                  | Law & Order: Special Victims Unit: Detectives question the validity of a rape accusation. <b>NEW</b>   | Law & Order: Special Victims Unit: Detectives question the validity of a rape accusation. <b>NEW</b>   | Law & Order: Special Victims Unit: Detectives question the validity of a rape accusation. <b>NEW</b>   | Law & Order: Special Victims Unit: Detectives question the validity of a rape accusation. <b>NEW</b>   | Law & Order: Special Victims Unit: Detectives question the validity of a rape accusation. <b>NEW</b>   | Law & Order: Special Victims Unit: Detectives question the validity of a rape accusation. <b>NEW</b>   |
| VH1                  | 48 Breakers: Conclusion. Celebrity quits. <b>NEW</b>   | 48 Breakers: Conclusion. Celebrity quits. <b>NEW</b>   | 48 Breakers: Conclusion. Celebrity quits. <b>NEW</b>   | 48 Breakers: Conclusion. Celebrity quits. <b>NEW</b>   | 48 Breakers: Conclusion. Celebrity quits. <b>NEW</b>   | 48 Breakers: Conclusion. Celebrity quits. <b>NEW</b>   |
| WE tv                | CSI: Miami: Part 1 of 2. Julia has Horatio arrested for murder and extradited to Brazil. <b>NEW</b>  | CSI: Miami: Part 1 of 2. Julia has Horatio arrested for murder and extradited to Brazil. <b>NEW</b>  | CSI: Miami: Part 1 of 2. Julia has Horatio arrested for murder and extradited to Brazil. <b>NEW</b>  | CSI: Miami: Part 1 of 2. Julia has Horatio arrested for murder and extradited to Brazil. <b>NEW</b>  | CSI: Miami: Part 1 of 2. Julia has Horatio arrested for murder and extradited to Brazil. <b>NEW</b>  | CSI: Miami: Part 1 of 2. Julia has Horatio arrested for murder and extradited to Brazil. <b>NEW</b>  |




*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 loomin...**  
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

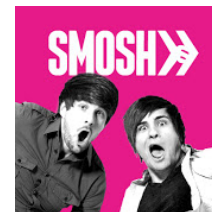
## Video Game Commentator PewDiePie

26MM+ subscribers,  
+230% Y/Y



## Comedy Duo Smosh

17MM+ subscribers,  
+81% Y/Y



## Spanish Comedian HolaSoyGerman

17MM+ subscribers,  
+157% Y/Y



## Comedian nigahiga

12MM+ subscribers,  
+50% Y/Y



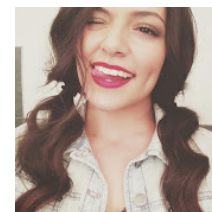
## Make-Up Artist Michelle Phan

6MM+ subscribers,  
+70% Y/Y



## Style and Beauty Blogger Bethany Mota

6MM+ subscribers,  
+180% Y/Y



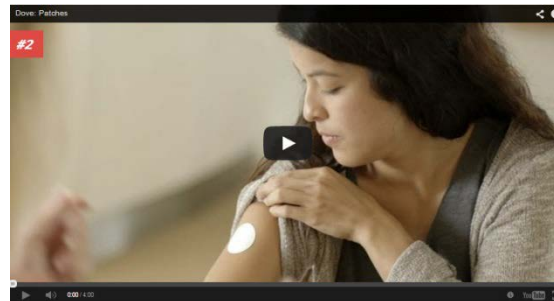


# Consumers Loving Best Ads = The Art of Short-Form

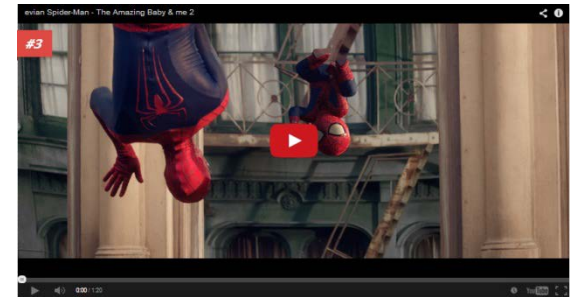
#1 = Nike Football  
@ 49MM+ Views



#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

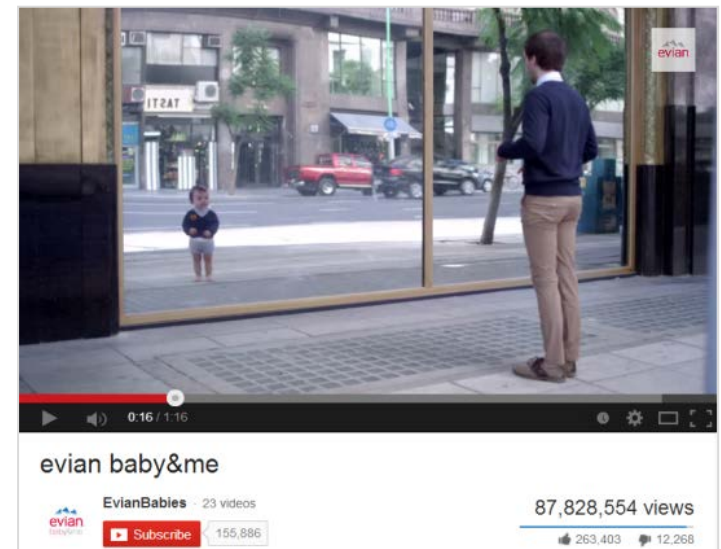
### *YouTube's TrueView Ads = 'Cost-per View' Video Marketing*

*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...*

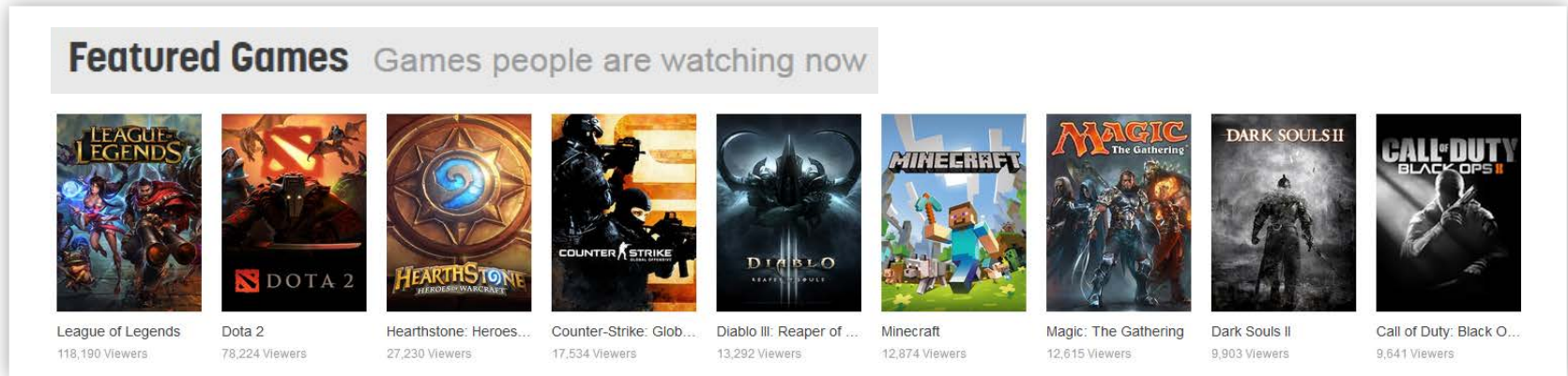
*...A fanbase shares, comments, curates, creates...*

*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



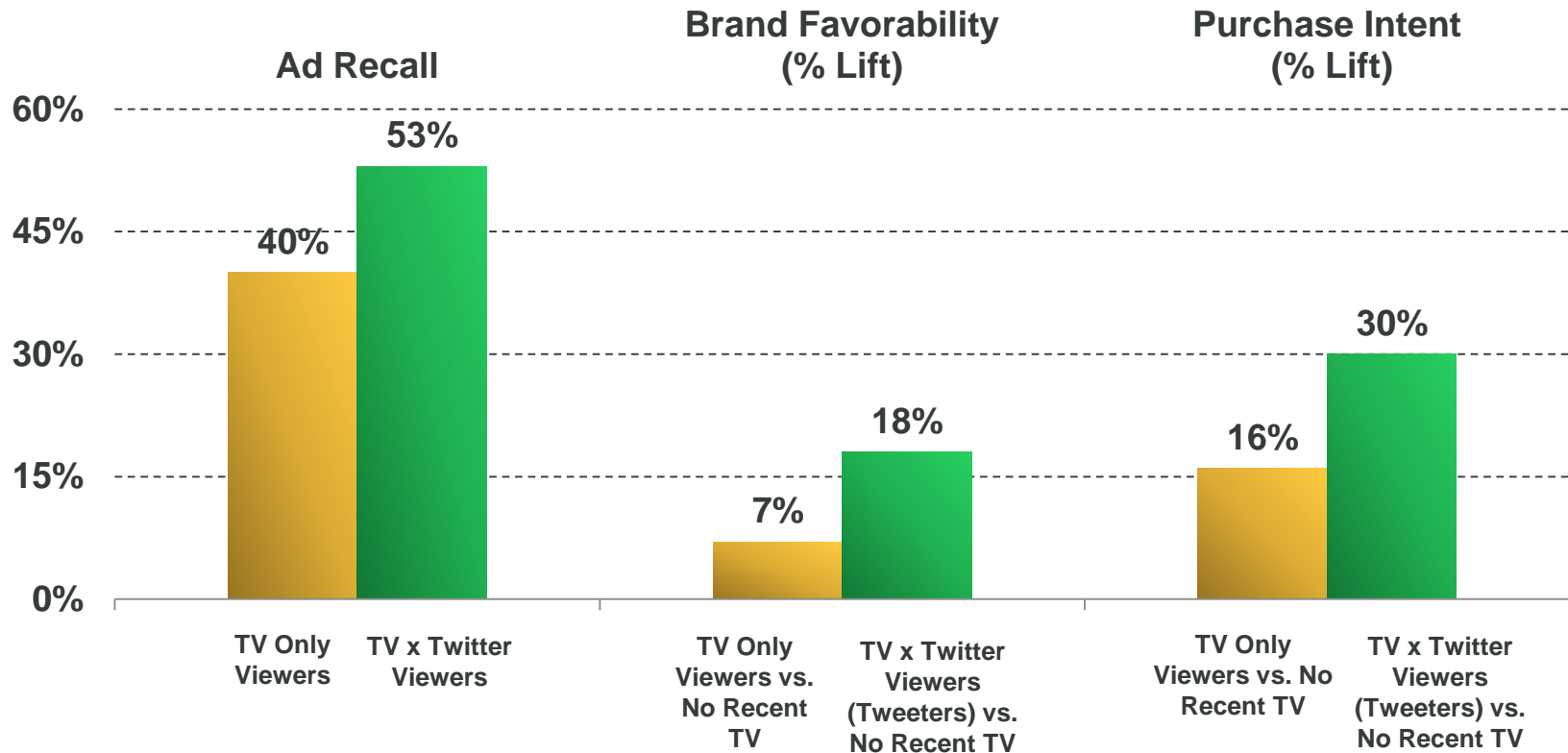
## Twitch = Top Live Video Streaming Site by Volume, USA, 4/14

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

*Social TV =  
Can Provide Advertiser Lift*

# TV + Twitter = Boosts Ad Impact

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

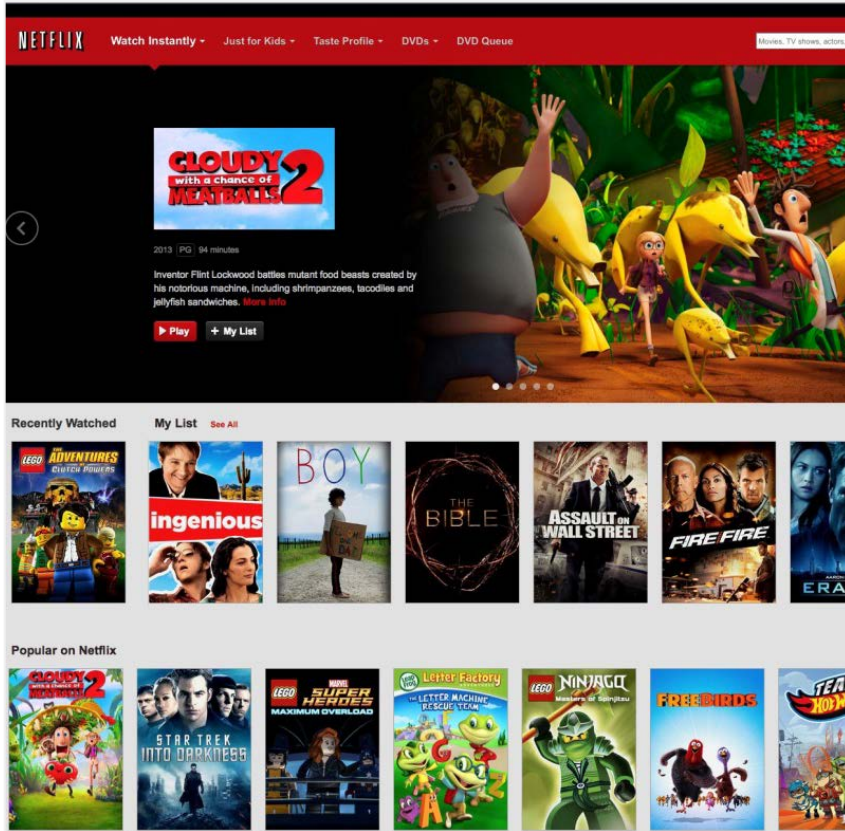


# *Consumers Voting for Personalization*

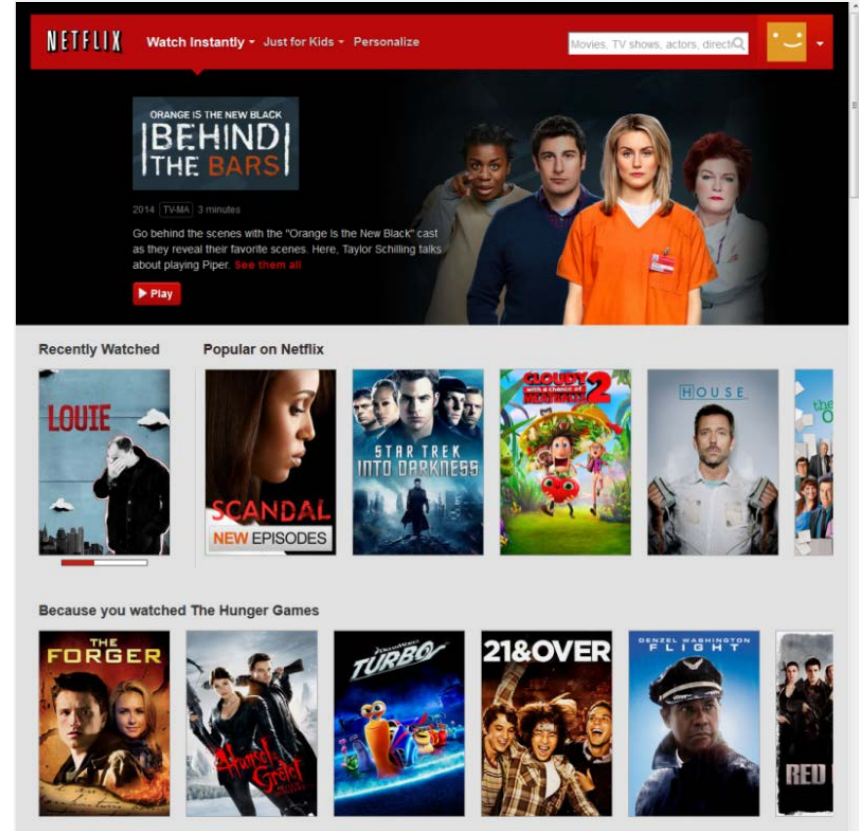


# Netflix = Personalization...

## A Father of Two



## A Female Millennial

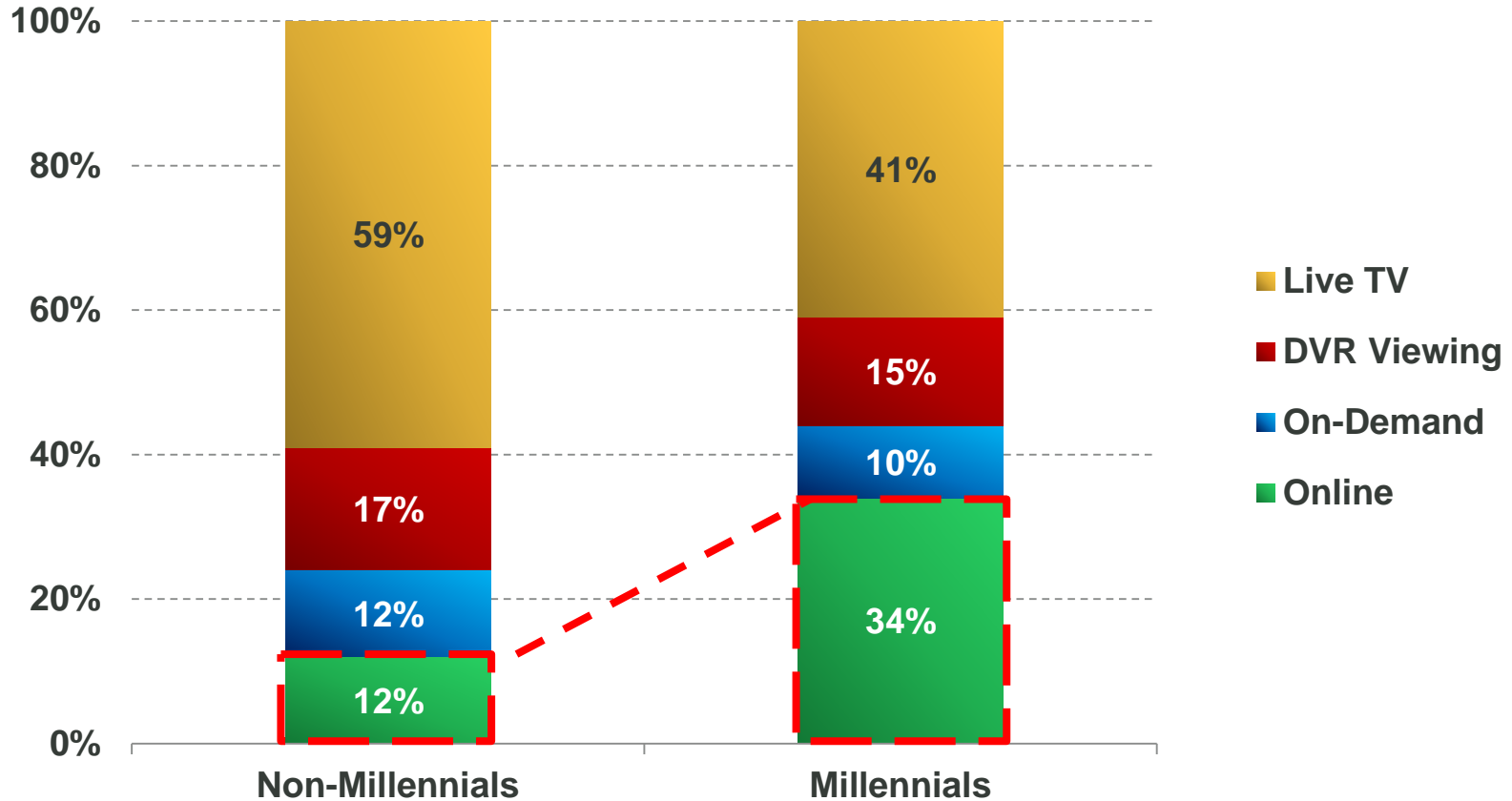




*Younger Consumers  
Voting for On-Demand Video*

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

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



***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

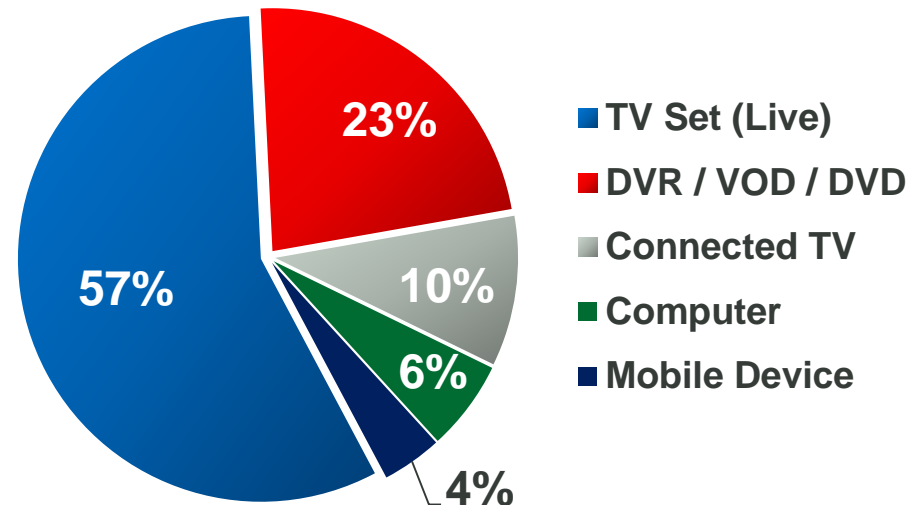
## Device Share of TV Content, USA, 1/14

Circa 1950

TV Set (Live) =  
100% of viewing

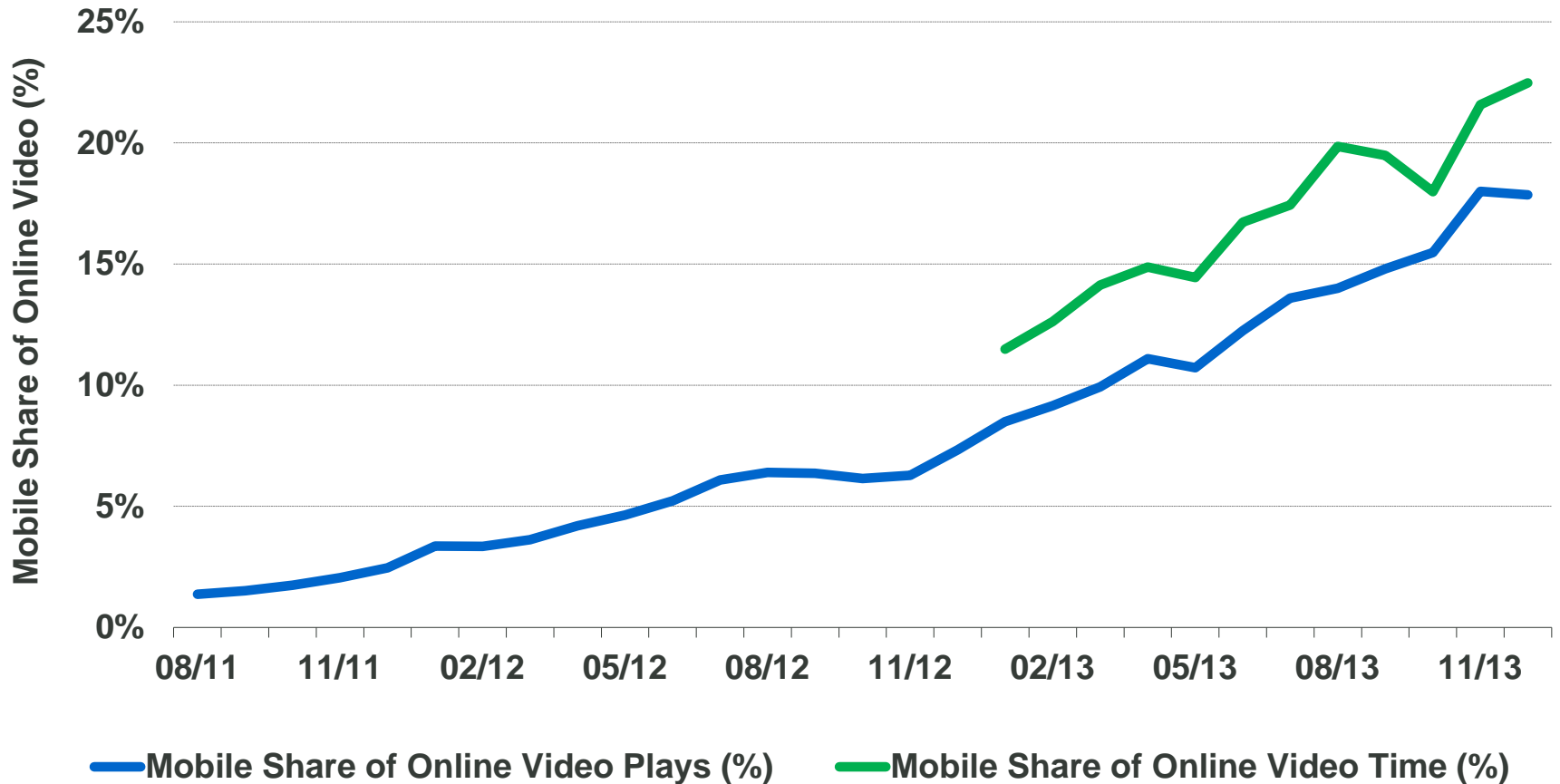


Circa 2014



# 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



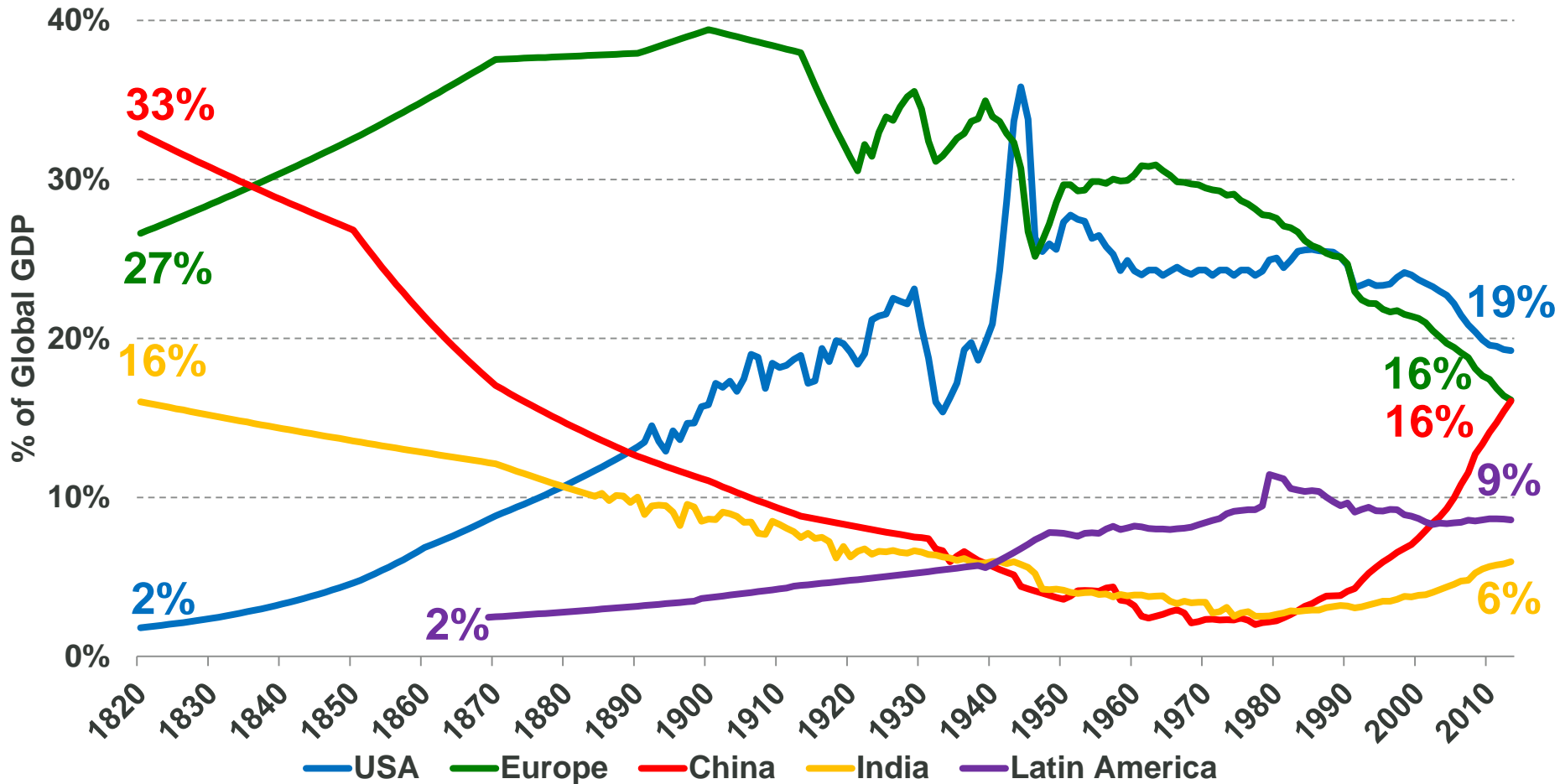
# Future of TV – Reed Hastings (Netflix CEO / Founder)

- 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

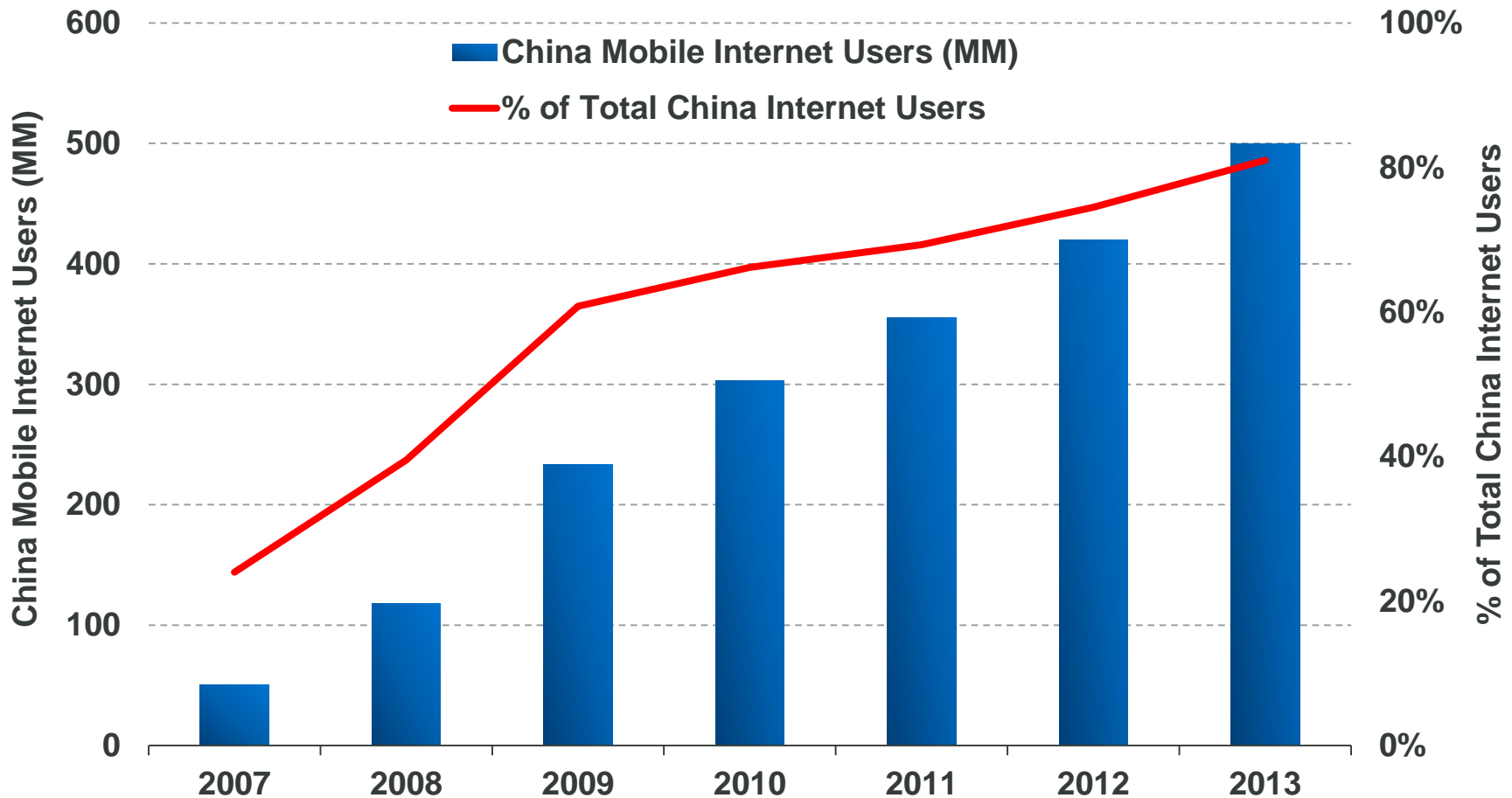
Percent of Global GDP, 1820 – 2013,  
USA vs. Europe vs. China vs. India vs. Latin America





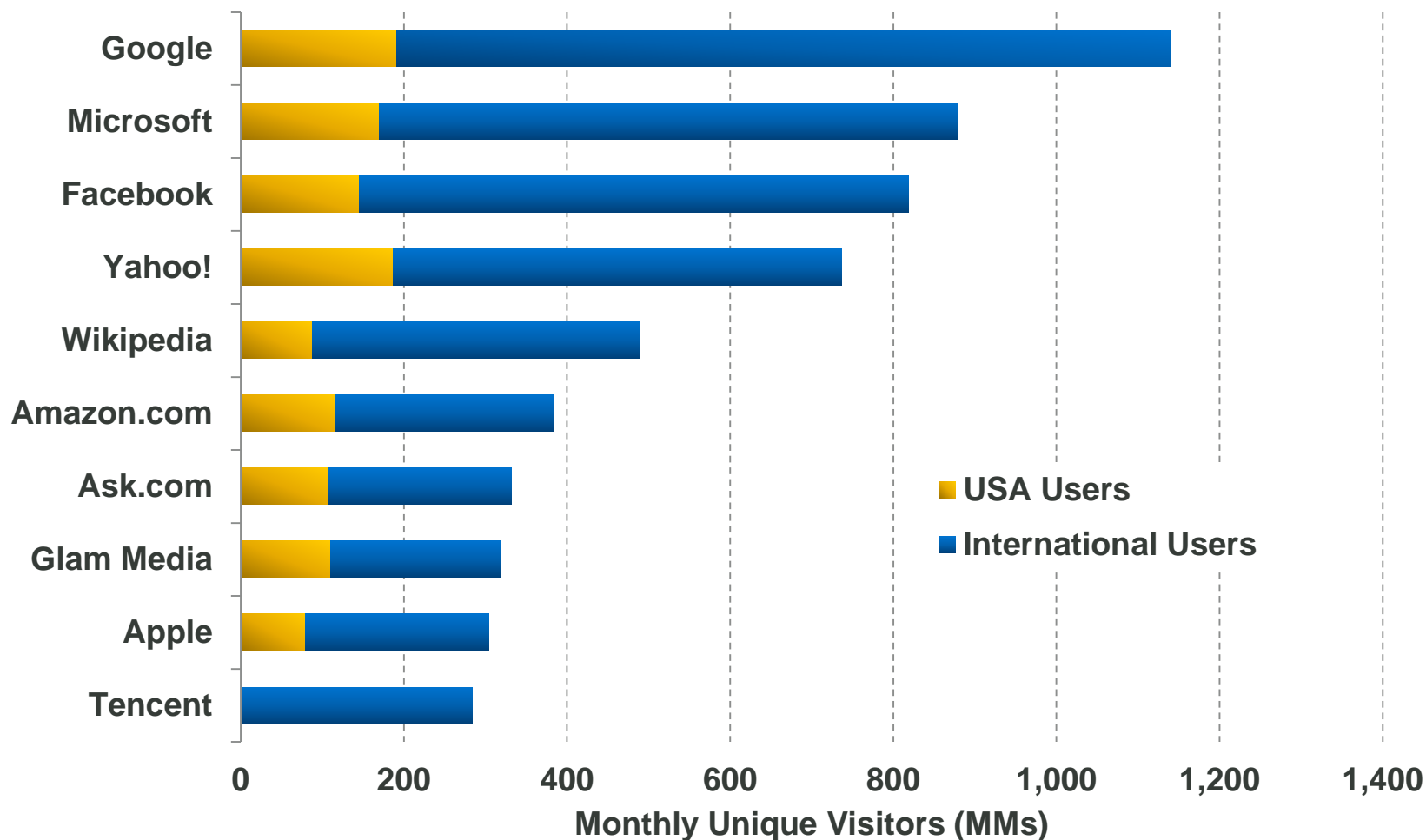
# 500MM (80%) of China Internet Users = Mobile... More Critical Mass than Any Place in World

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



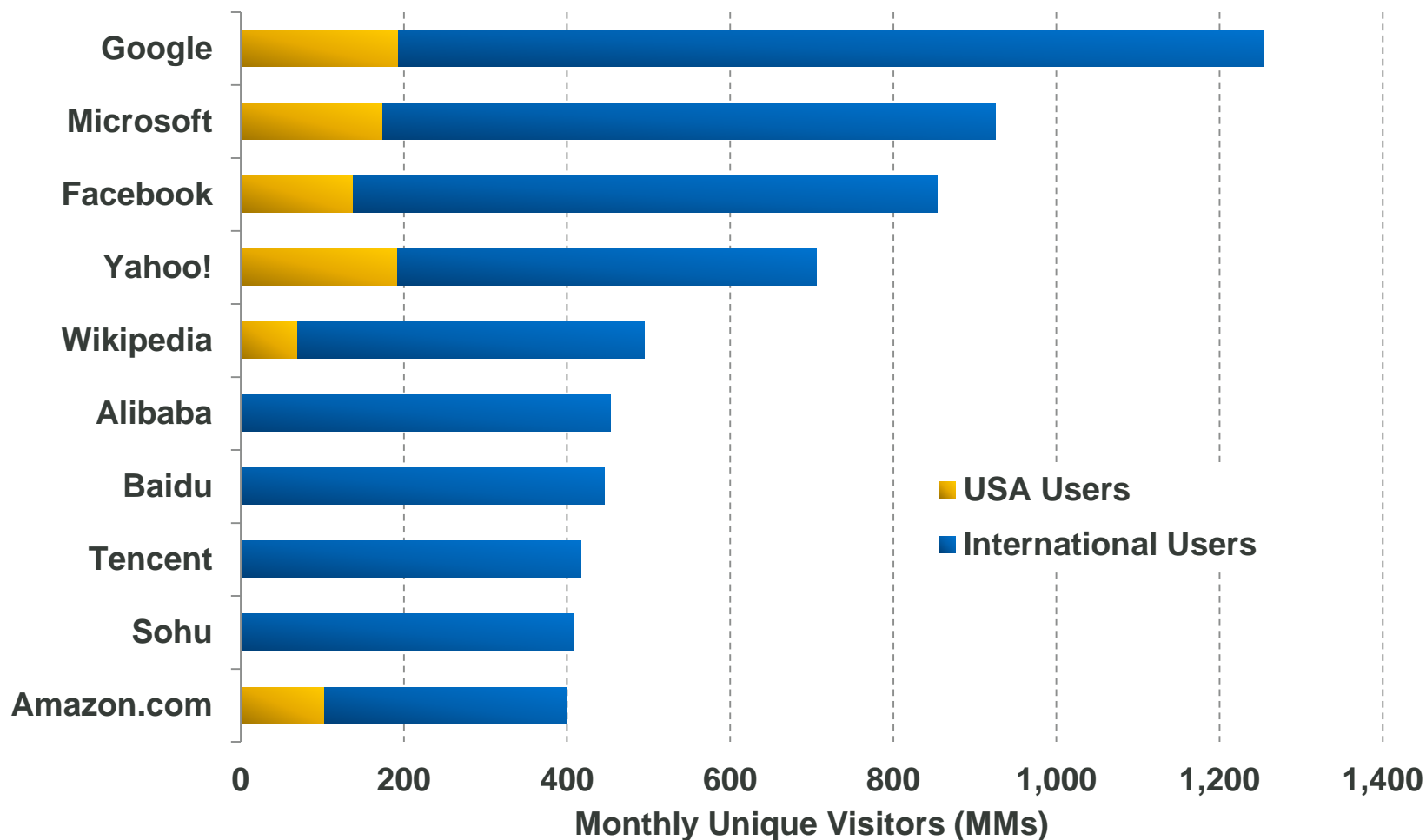
# 1/13 – 9 of Top 10 Global Internet Properties ‘Made in USA’... 79% of Their Users Outside America

## 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



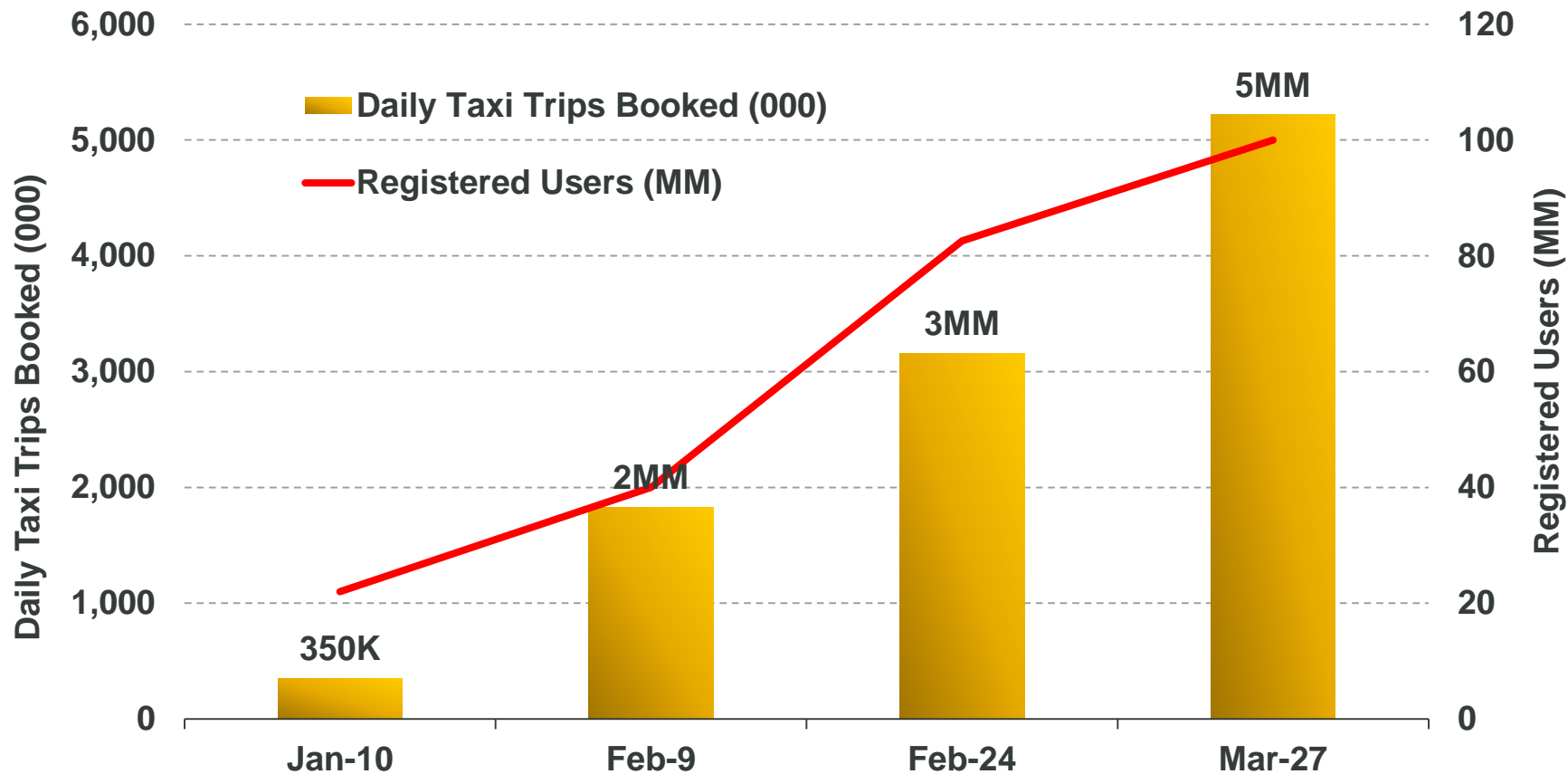
### Grocery Getter

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



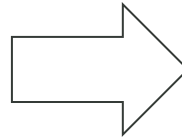
# Didi Taxi – 100MM+ Users = 5MM+ Daily Rides, +15x in 77 Days... Driven by WeChat Payment Integration & Subsidy\*

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



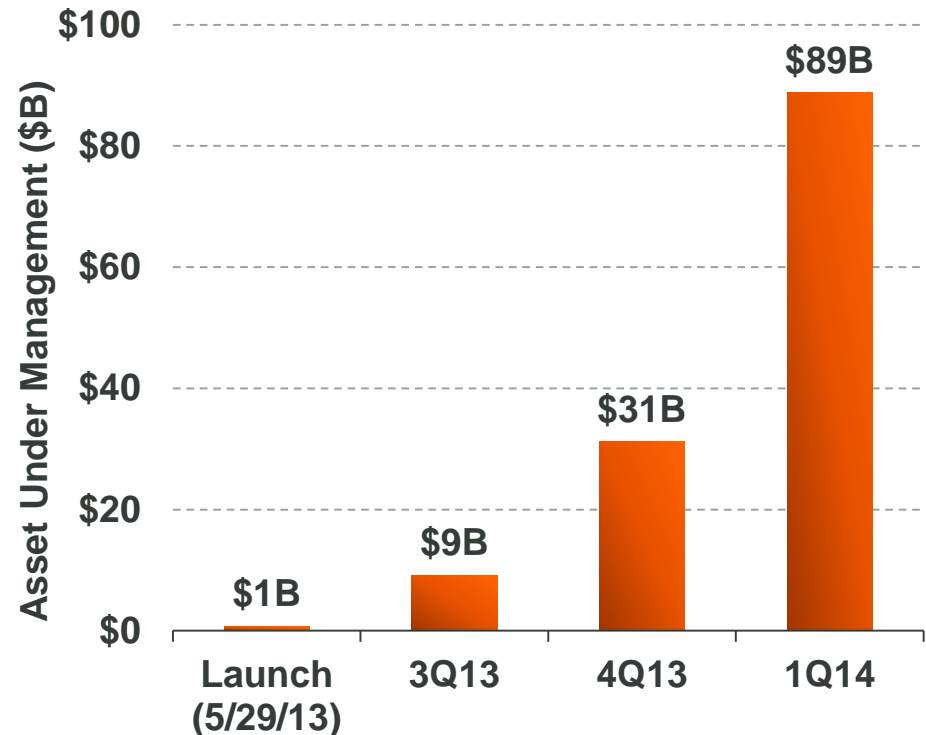
# Alipay Yu'E Bao – Mobile Money Market Fund Launch... Drove \$89B AUM\* in 10 Months

- 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                 |
| <b>Total</b> |                     |        | <b>\$1,787</b>          | <b>\$404,644</b>    |

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

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



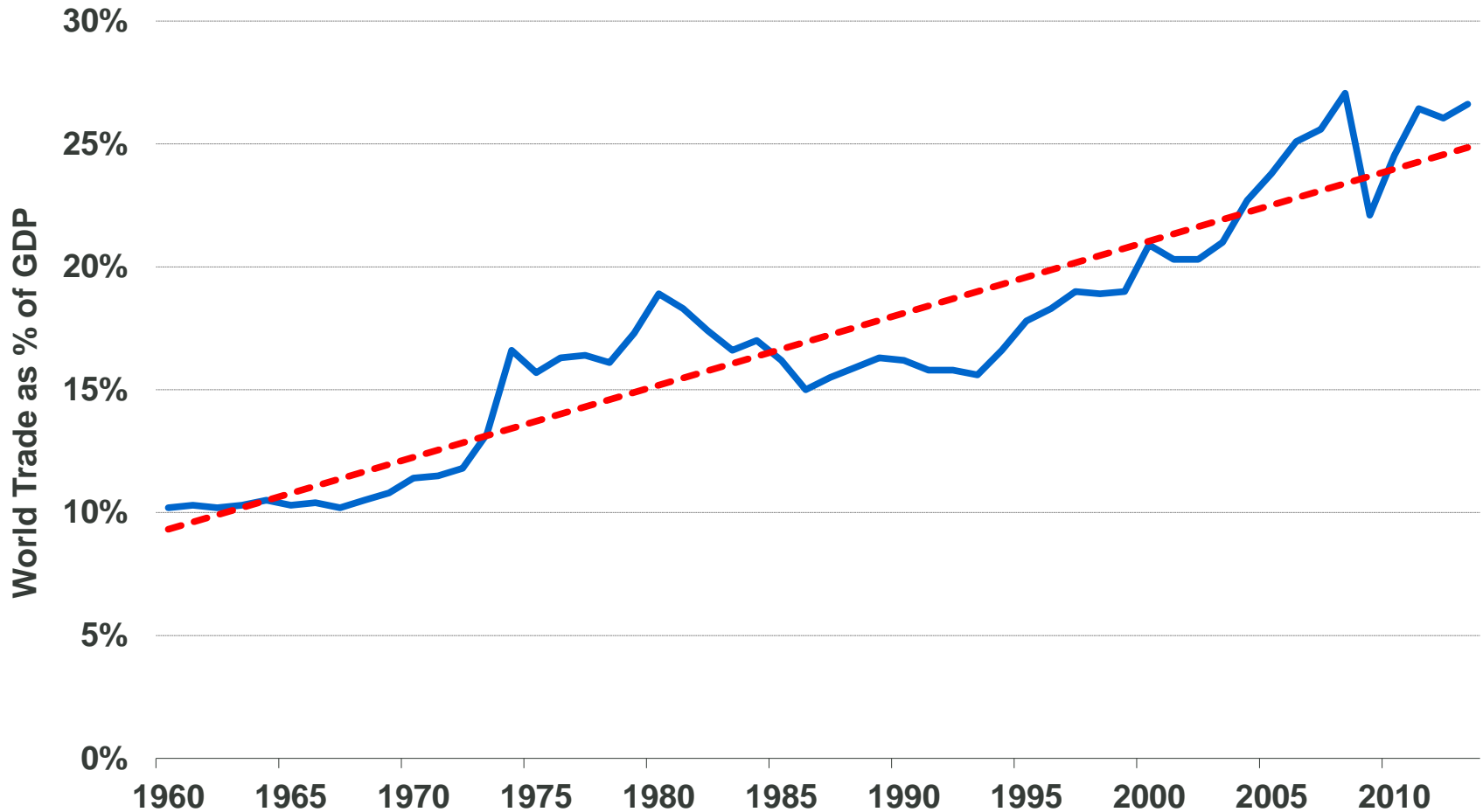
# RAN OUTTA TIME THOUGHTS / APPENDIX

# 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



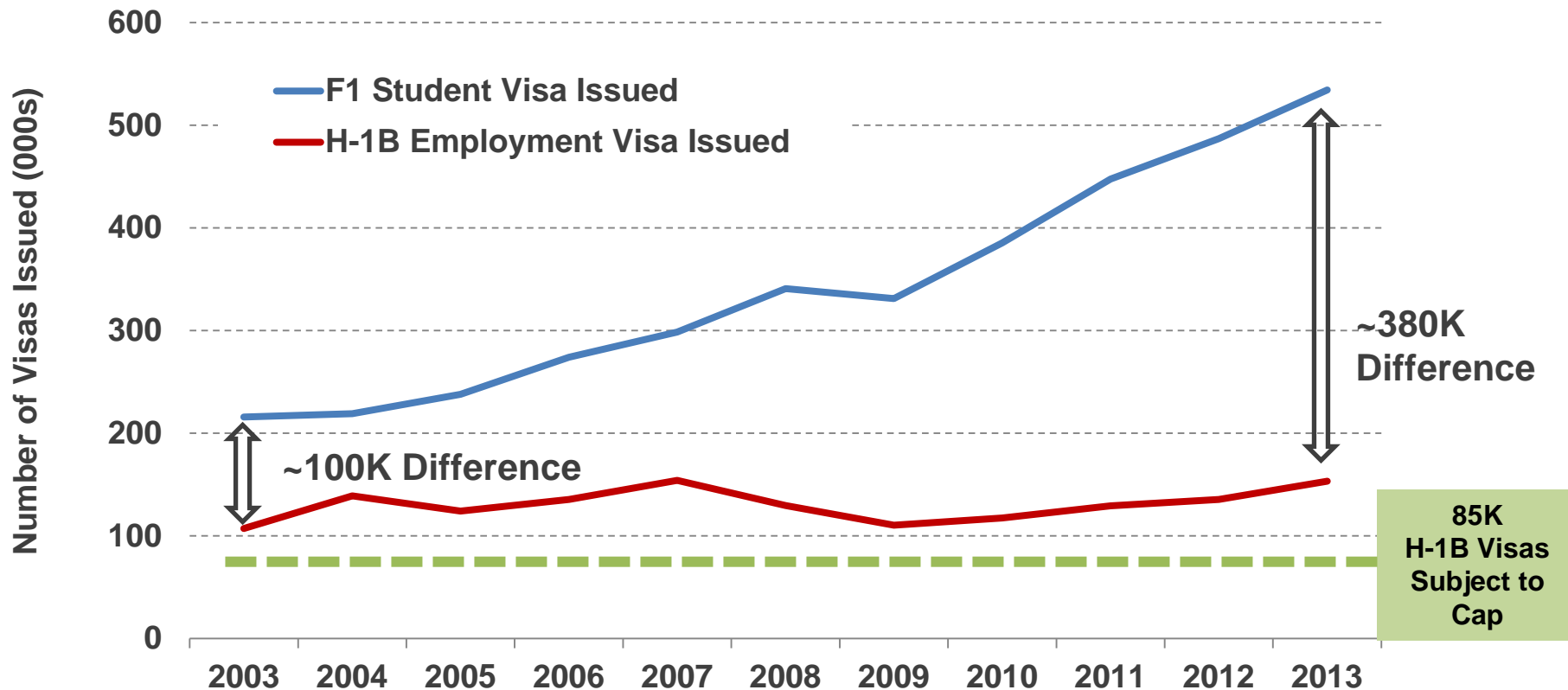
# 60% of Top 25 Tech Companies Founded by 1st and 2nd Generation Americans = 1.2MM Employees, 2013

## 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                       |
| <b>Total Founded by 1st or 2nd Gen Immigrants</b> |                           | <b>\$2,053,676</b> | <b>\$577,580</b> | <b>1,226,873</b> |   |                                       |

# 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](http://www.kpcb.com/usainc/USA_Inc.pdf)

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

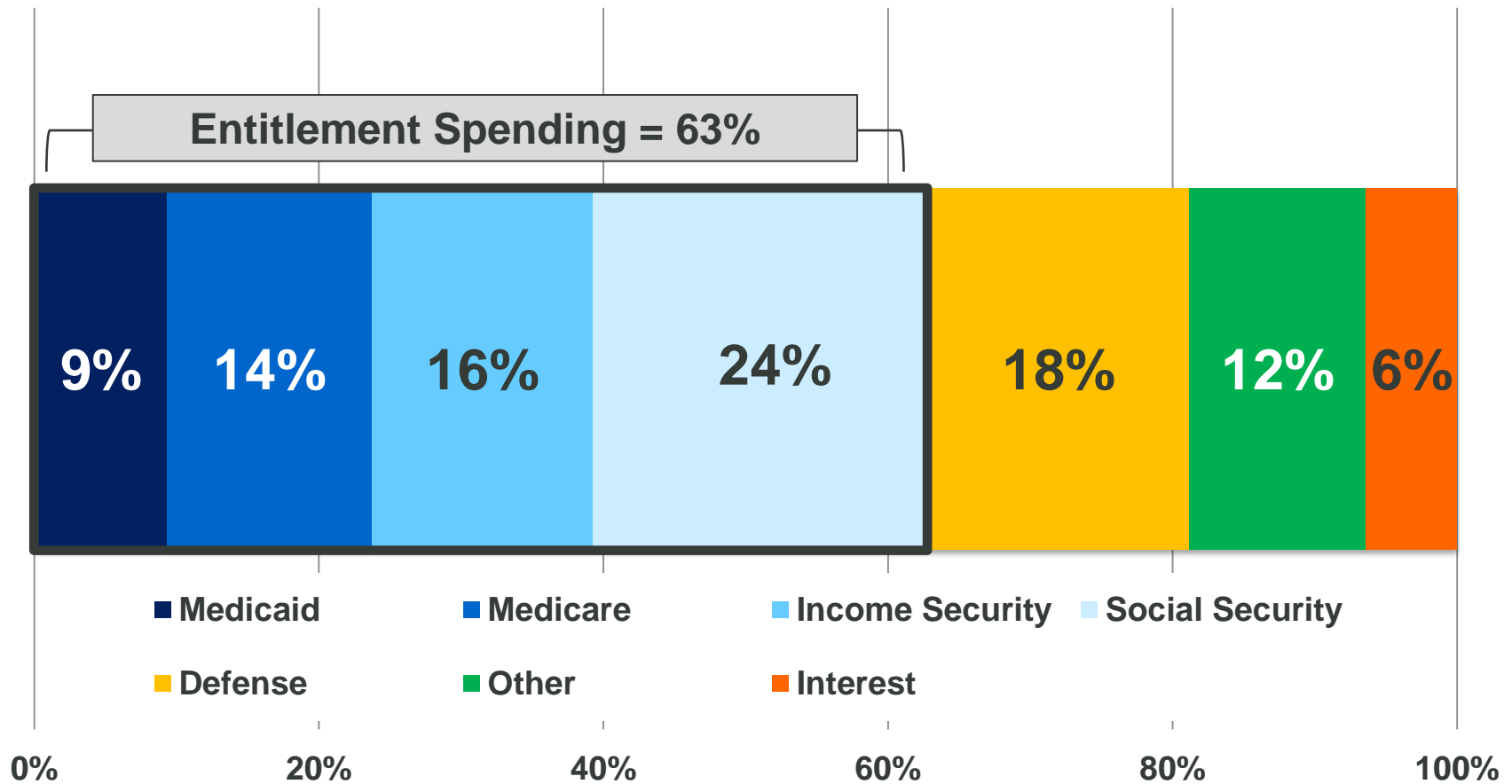
# USA Inc. Income Statement, F2013 – Revenue (Taxes) +13%...Expenses -2%...-24% Net Margin

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

|                                | F1998          | F2003          | F2008          | F2013          | Comments   |
|--------------------------------|----------------|----------------|----------------|----------------|--|
| <b>Revenue (\$B)</b>           | <b>\$1,722</b> | <b>\$1,783</b> | <b>\$2,524</b> | <b>\$2,775</b> | <b>On average, revenue grew 3% Y/Y over the past 15 years</b>              |
| <b>Y/Y Growth</b>              | <b>9%</b>      | <b>-4%</b>     | <b>-2%</b>     | <b>13%</b>     |  |
| 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%             |  |
| <b>Expense (\$B)</b>           | <b>\$1,652</b> | <b>\$2,160</b> | <b>\$2,983</b> | <b>\$3,455</b> | <b>On average, expense grew 5% Y/Y over the past 15 years</b>              |
| <b>Y/Y Growth</b>              | <b>3%</b>      | <b>7%</b>      | <b>9%</b>      | <b>-2%</b>     |  |
| 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%             |  |
| <b>Surplus / Deficit (\$B)</b> | <b>\$69</b>    | <b>-\$377</b>  | <b>-\$459</b>  | <b>-\$680</b>  | <b>USA Inc. median net margin between 1998 &amp; 2013 = -16%</b>           |
| <b>Net Margin (%)</b>          | <b>4%</b>      | <b>-21%</b>    | <b>-18%</b>    | <b>-24%</b>    |  |

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

**% of USA Federal Government Spending, 2013**

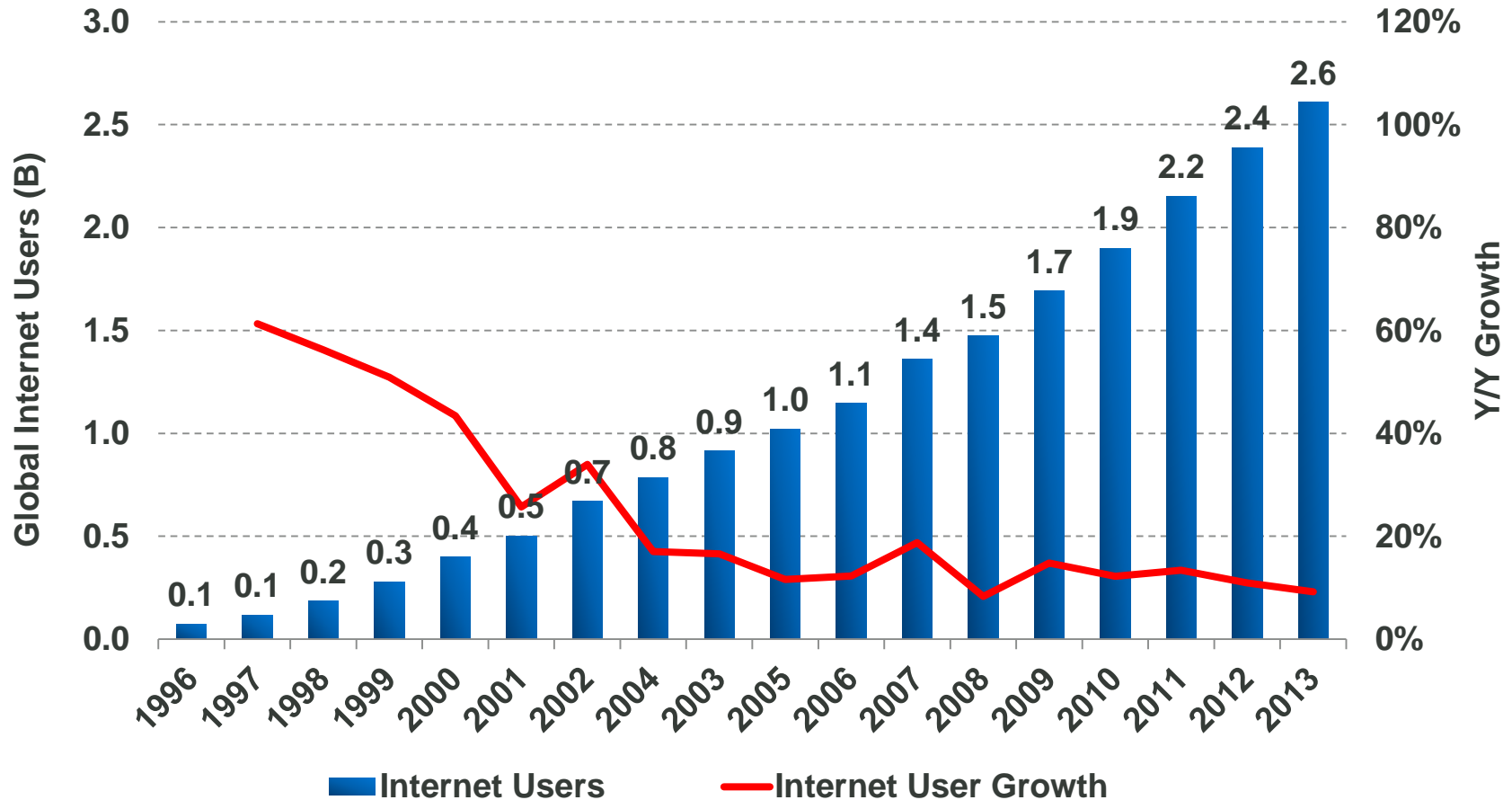




# ...KEY INTERNET TRENDS

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

## Global Internet Users, 1996 – 2013 (B)



# 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                     |
| <b>Top 15</b> |                | <b>1,583</b>              | <b>6%</b>                 | <b>7%</b>                 | <b>58%</b>             | <b>2,739</b>           |
| <b>World</b>  |                | <b>2,609</b>              | <b>9%</b>                 | <b>11%</b>                | <b>37%</b>             | <b>7,098</b>           |

# '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                     |
| <b>Top 15</b> |              | <b>560</b>                | <b>18%</b>                | <b>24%</b>                | <b>22%</b>             | <b>2,532</b>           |
| <b>World</b>  |              | <b>2,609</b>              | <b>9%</b>                 | <b>11%</b>                | <b>37%</b>             | <b>7,098</b>           |

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

## Markets with >45% Penetration

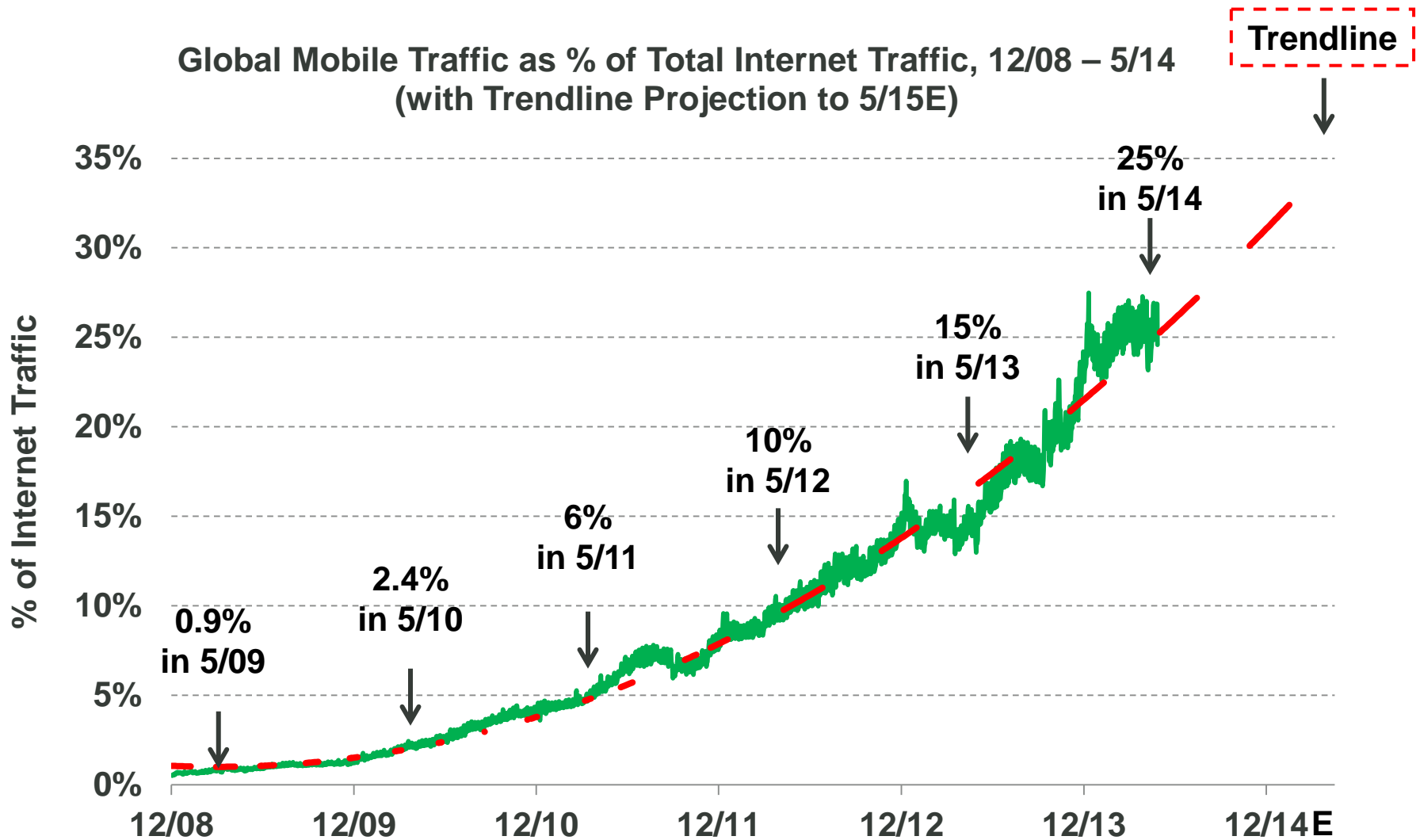
| Rank   | Country      | 2013 Smartphone Subs (MMs) | 2013 Smartphone Sub Growth | Population Penetration | Total Population (MMs) | 2014E Smartphone Sub Growth |
|--------|--------------|----------------------------|----------------------------|------------------------|------------------------|-----------------------------|
| 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<br>ALTRIA             |
| CONS. DISC.   | 13%    | MOTORS LIQUIDATION<br>FORD      |
| INDUSTRIALS   | 13%    | GENERAL ELECTRIC<br>3M          |
| FINANCIALS    | 11%    | AIG<br>FANNIE MAE               |
| TECHNOLOGY    | 11%    | IBM<br>MICROSOFT                |
| HEALTHCARE    | 10%    | MERCK<br>JOHNSON & JOHNSON      |
| ENERGY        | 9%     | EXXON<br>MOBIL                  |
| TELECOM       | 8%     | SOUTHWESTERN BELL<br>GTE        |
| MATERIALS     | 7%     | DUPONT<br>DOW CHEMICAL          |
| UTILITIES     | 4%     | SOUTHERN COMPANY<br>DUKE ENERGY |

## Peak of NASDAQ:

Mar 2000 – S&P500 = \$11.7T

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

## Today:

May 2014 – S&P500 = \$17.4T

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

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