

# INTERNET TRENDS 2015 – CODE CONFERENCE

Mary Meeker  
May 27, 2015

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

**KPCB**

KLEINER  
PERKINS  
CAUFIELD  
BYERS

# Outline

---

- 1) Internet – Two-Thirds of a Generation In...
- 2) Key Internet Trends
- 3) Re-Imagining Continues...
- 4) America's Evolving Work Environment...
- 5) Big Internet Markets = China / India
- 6) Public / Private Company Data
- 7) One More Thing...
- 8) Ran Outta Time Thoughts / Appendix

---

**INTERNET TRENDS –  
TWO-THIRDS OF A GENERATION IN...  
TWO-THIRDS OF NEXT GENERATION OUT...**

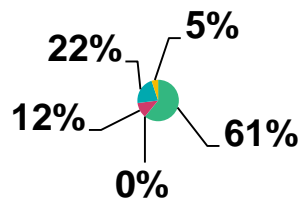
# Internet Users – 1995 → 2014...

## <1% to 39% Population Penetration Globally

**1995**

**35MM+ Internet Users**

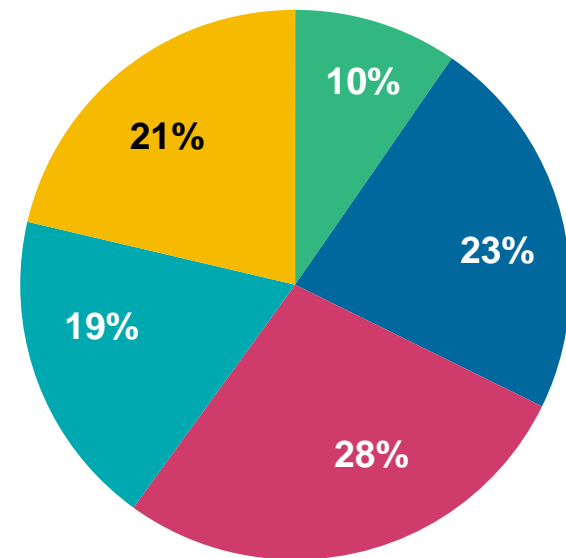
*0.6% Population Penetration*



**2014**

**2.8B Internet Users**

*39% Population Penetration*



■ USA ■ China ■ Asia (ex. China) ■ Europe ■ Rest of World

# Mobile Phone Users – 1995 → 2014...

## 1% to 73% Population Penetration Globally

**1995**

**80MM+ Mobile Phone Users**

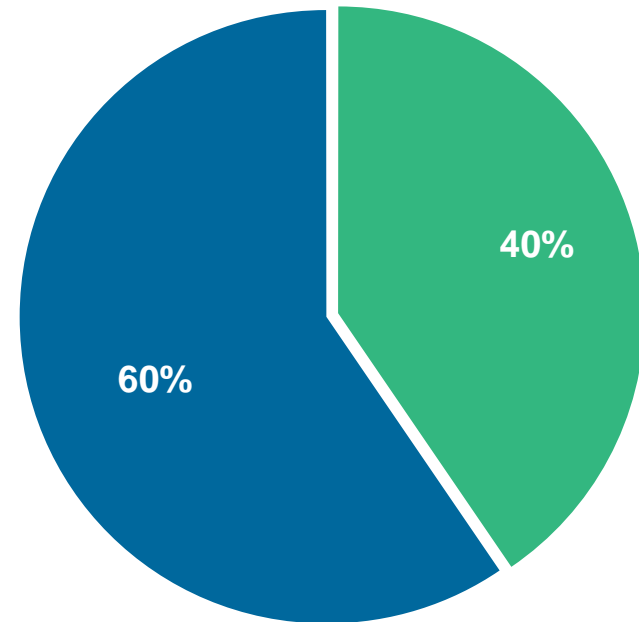
*1% Population Penetration*



**2014**

**5.2B Mobile Phone Users**

*73% Population Penetration*



■ Smartphone ■ Feature Phone

# Public Internet Company Market Capitalizations – 1995 → 2015...

Top 15 Companies by Market Capitalization = 1995 @ \$17 Billion → 2015 @ \$2.4 Trillion

## Global Public Internet Companies, Ranked by Market Capitalization

### As of December, 1995

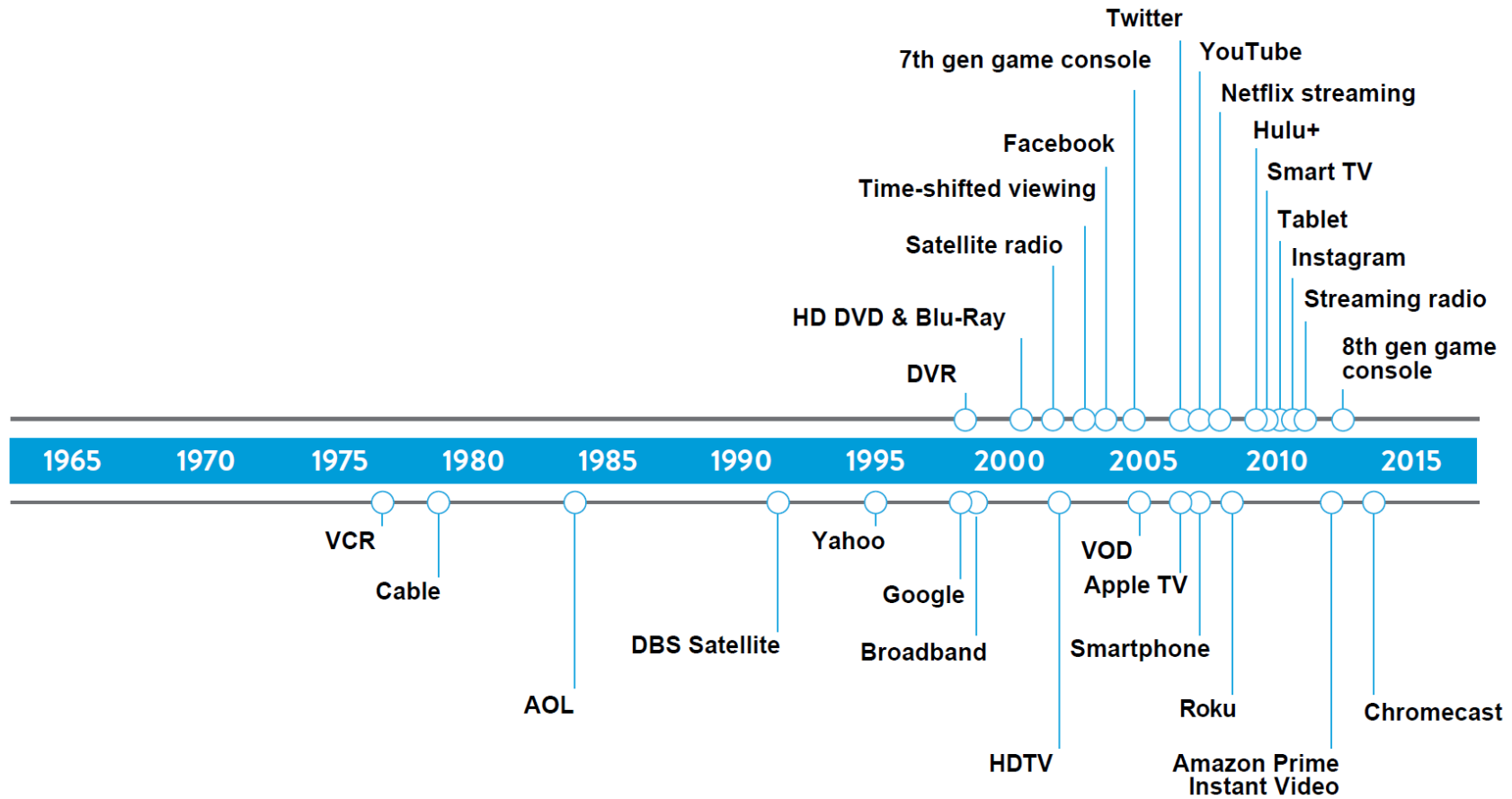
	Company	Home Country	Market Cap. (\$MM)
1	Netscape	USA	\$5,415
2	Apple	USA	3,918
3	Axel Springer	Germany	2,317
4	RentPath	USA	1,555
5	Web.com	USA	982
6	PSINet	USA	742
7	Netcom On-Line	USA	399
8	IAC / Interactive	USA	326
9	Copart	USA	325
10	Wavo Corporation	USA	203
11	iStar Internet	Canada	174
12	Firefox Communications	USA	158
13	Storage Computer Corp.	USA	95
14	Live Microsystems	USA	86
15	iLive	USA	57
Total Market Cap of Top 15			\$16,752

### As of May, 2015







	Company	Home Country	Market Cap. (\$MM)
1	Apple	USA	\$763,567
2	Google	USA	373,437
3	Alibaba	China	232,755
4	Facebook	USA	226,009
5	Amazon.com	USA	199,139
6	Tencent	China	190,110
7	eBay	USA	72,549
8	Baidu	China	71,581
9	Priceline Group	USA	62,645
10	Salesforce.com	USA	49,173
11	JD.com	China	47,711
12	Yahoo!	USA	40,808
13	Netflix	USA	37,700
14	LinkedIn	USA	24,718
15	Twitter	USA	23,965
Total Market Cap of Top 15			\$2,415,867

# User Control of Content Up Significantly – 1995 → 2015

## Evolution of Content Discovery, 1975 – 2015, per Nielsen



# Impact of Internet Has Been Extraordinary & Broad... But – in Many Ways – It's Just Beginning

Sector of Economy / Society, USA	Internet Impact, to Date
Consumer	
Business	
Security / Safety / Warfare	
Education	
Healthcare	
Government / Regulation / Policy Thinking	



---

# KEY INTERNET TRENDS

# Global Internet User + Smartphone Subscription Growth = Good, But Growth Rate Continues to Slow\*

- **Internet User Growth = Solid, But Slowing**

**@ 2.8B, +8% in 2014 vs. +10% in 2013, +11% in 2012**

Net New User Additions = ~Flat @ ~200MM in 2014 / 2013 / 2012

China Users = +7%, USA = +2%, India = +33%, Japan = Flat, Brazil = +4%

- **Smartphone Subscription Growth = Strong, But Slowing**

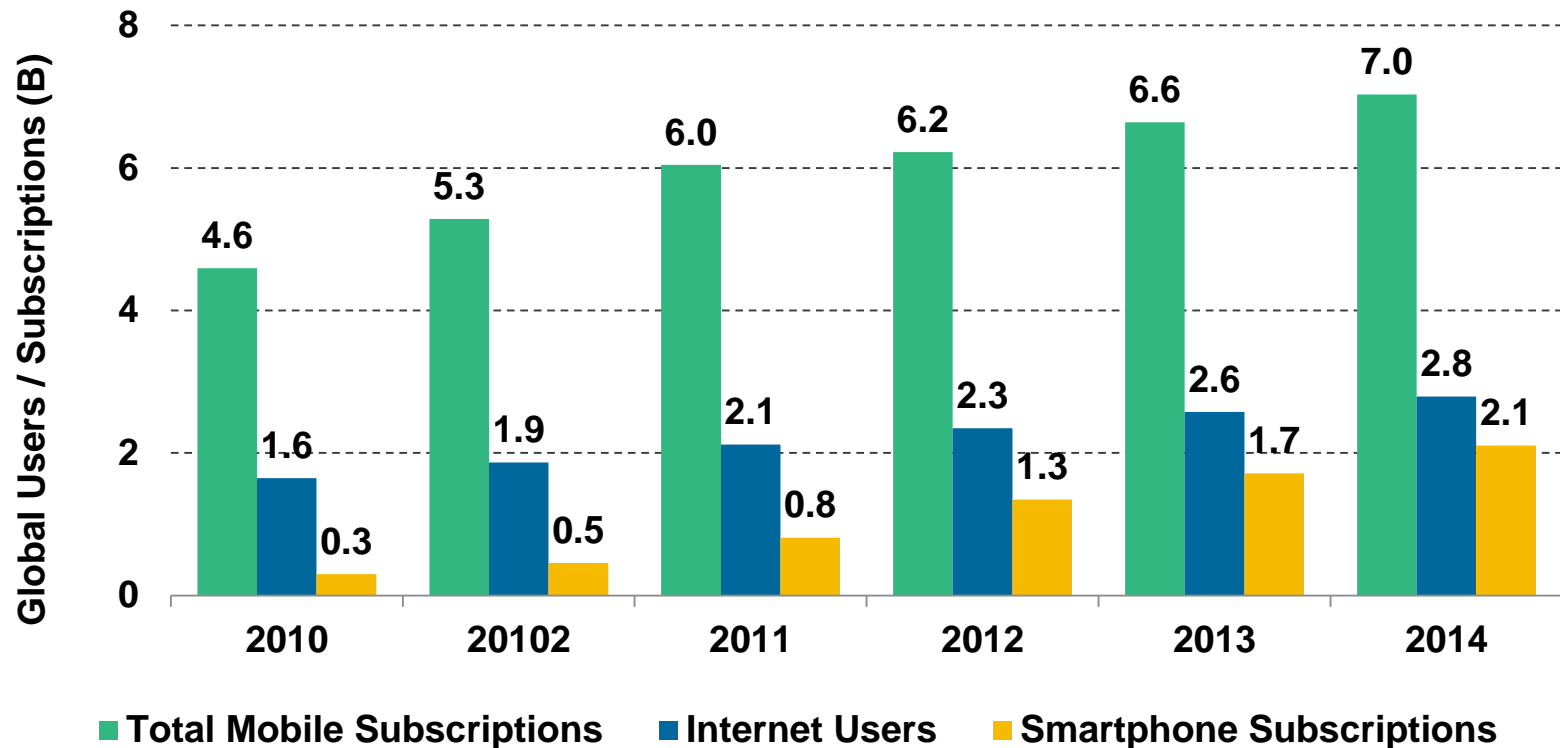
**@ 2.1B, +23% in 2014 vs. +27% in 2013, +65% in 2012**

Net New Sub Additions = ~Flat @ ~370MM+ in 2014 / 2013

China Subs = +21%, USA = +9%, India = +55%, Japan = +5%, Brazil = +28%

# Incremental Internet + Smartphone *Users* = Harder to Garner Owing to Phase in Adoption Cycles...

**Global Smartphone Subscriptions @**  
76% Penetration of Internet Users  
30% Penetration of Mobile Subscriptions



# ...Incremental Internet + Smartphone *Users* = Harder to Garner Owing to Dependence on Developing Markets

## ***Developing Markets Tend to Have Lower GDP per Capita / Spending Power / Infrastructure***

**\$44K = Average GDP Per Capita...**

**In 5 Countries with >50MM Population & ~ / >50% Smartphone Sub Penetration...**

USA / Japan / Germany / UK / France

**\$13K = Average GDP Per Capita...**

**In 16 Countries\* with >50MM Population & ~ / < 50% Smartphone Sub Penetration...**

China / India / Brazil / Indonesia / Russia / Mexico / Philippines / Thailand / Italy / Turkey /  
Nigeria / Vietnam / Egypt / Iran / Pakistan / Myanmar

# Global Internet *Usage* (Data Traffic) Growth Strong = +21% Y/Y Aided by Mobile + Video

## **Consumer Internet Traffic, Global =**

+21% in 2014 vs. +24% in 2013, +31% in 2012

## **Consumer Internet *Video* Traffic, Global =**

64% of consumer traffic in 2014 vs. 62% in 2013, 57% in 2012

## **Mobile Data Traffic, Global =**

+69% in 2014 vs. +81% in 2013, +70% in 2012

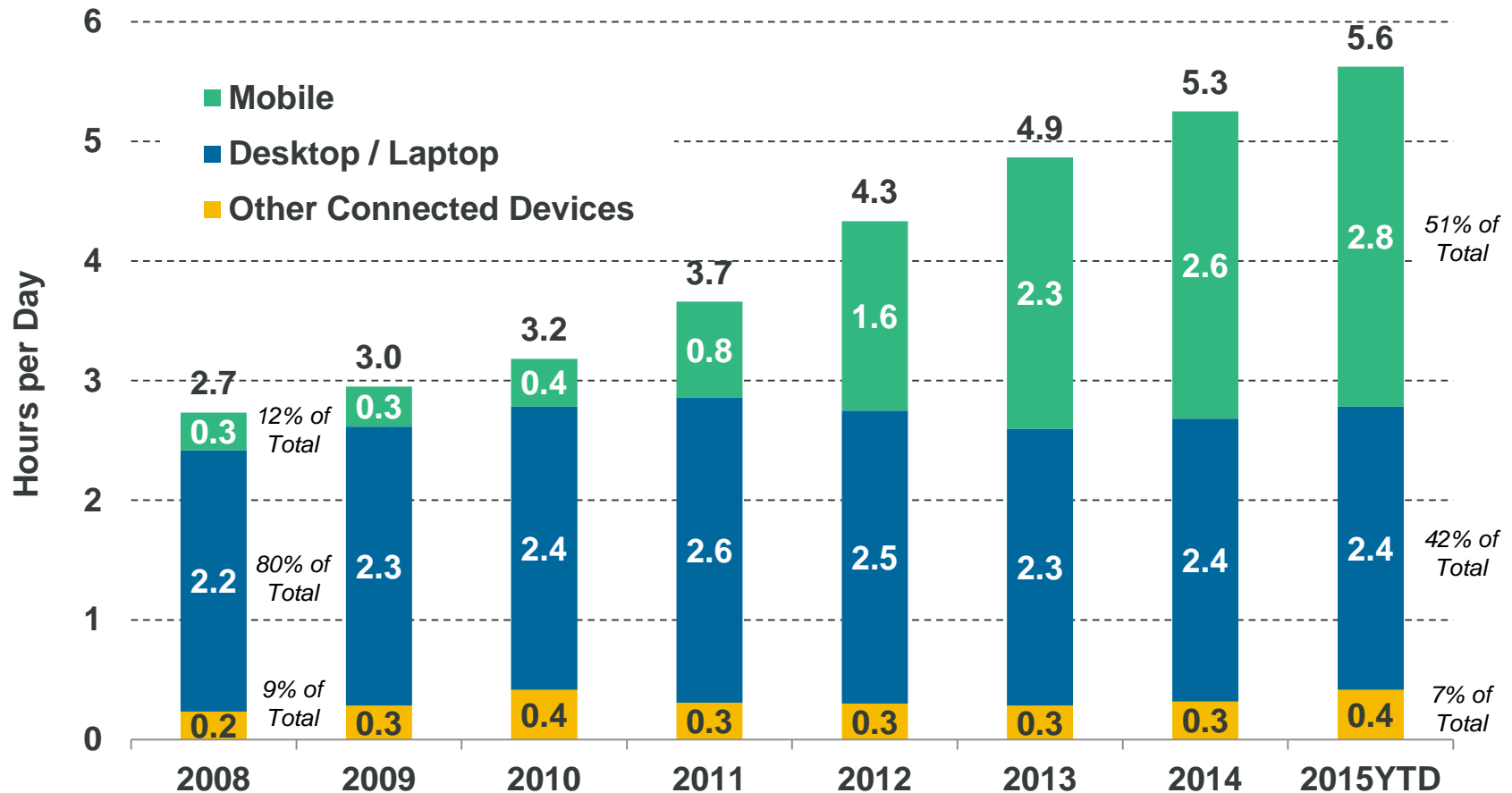
## **Mobile *Video* Traffic, Global =**

55% of mobile traffic vs. 52% in 2013, 50% in 2012

# Internet Usage (Engagement) Growth Solid

+11% Y/Y = Mobile @ 3 Hours / Day per User vs. <1 Five Years Ago, USA

## Time Spent per Adult User per Day with Digital Media, USA, 2008 – 2015YTD



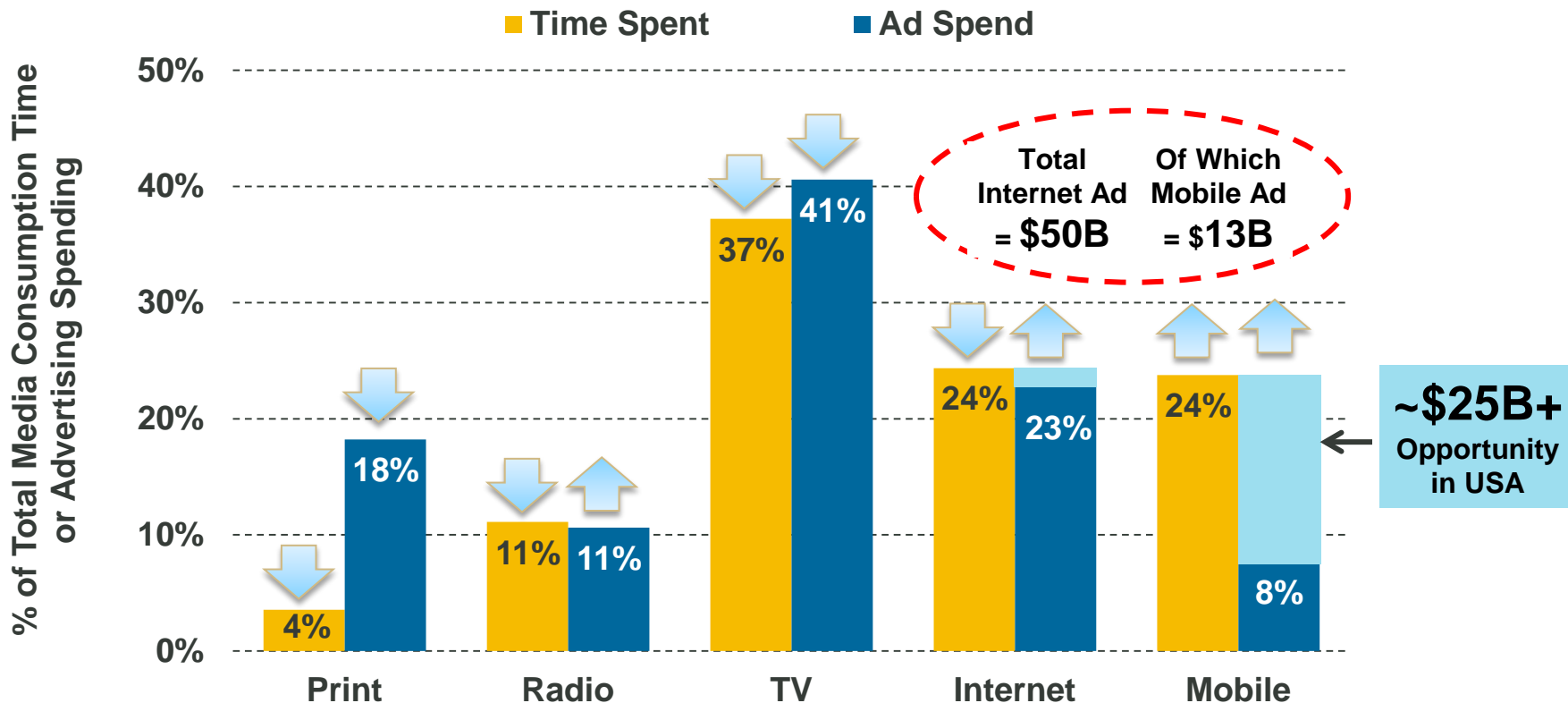
*Advertising & Monetization =*

*Mobile Remains Compelling...  
Growth Rates for Leaders  
Still High But Slowing*

# Remain Optimistic About Mobile Ad Spend Growth...

## Print Remains Way Over-Indexed Relative to Time Spent

% of Time Spent in Media vs. % of Advertising Spending, USA, 2014





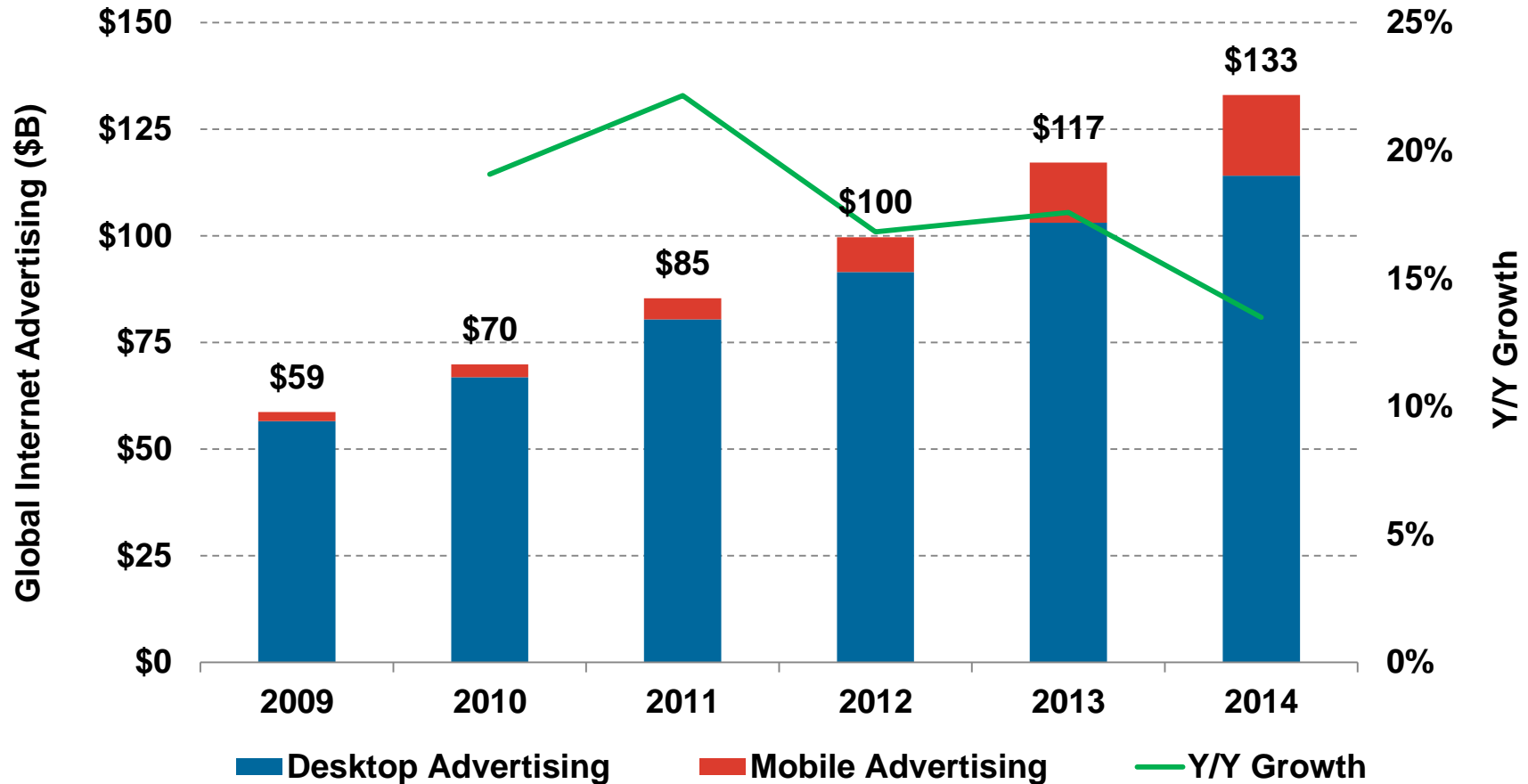
# ARPU (+ MAU) Growth Strong But Slowing for Internet Leaders

## Advertising ARPU, Annualized (\$), MAUs

Ad ARPU Annualized (\$)	Q1:13	Q2:13	Q3:13	Q4:13	Q1:14	Q2:14	Q3:14	Q4:14	Q1:15
<b>Facebook (\$)</b>	<b>\$4.60</b>	<b>\$5.65</b>	<b>\$6.14</b>	<b>\$7.76</b>	<b>\$7.24</b>	<b>\$8.26</b>	<b>\$8.87</b>	<b>\$10.47</b>	<b>\$9.36</b>
<i>Y/Y Growth</i>	15%	32%	39%	51%	57%	46%	44%	35%	29%
<b>MAU (MM)</b>	<b>1,110</b>	<b>1,155</b>	<b>1,189</b>	<b>1,228</b>	<b>1,276</b>	<b>1,317</b>	<b>1,350</b>	<b>1,393</b>	<b>1,441</b>
<i>Y/Y Growth</i>	23%	21%	18%	16%	15%	14%	14%	13%	13%
<b>Twitter (\$)</b>	<b>\$1.97</b>	<b>\$2.22</b>	<b>\$2.65</b>	<b>\$3.65</b>	<b>\$3.55</b>	<b>\$4.09</b>	<b>\$4.51</b>	<b>\$6.00</b>	<b>\$5.14</b>
<i>Y/Y Growth</i>	52%	48%	61%	69%	80%	85%	70%	65%	45%
<b>MAU (MM)</b>	<b>204</b>	<b>218</b>	<b>232</b>	<b>241</b>	<b>255</b>	<b>271</b>	<b>284</b>	<b>288</b>	<b>302</b>
<i>Y/Y Growth</i>	48%	44%	39%	30%	25%	24%	23%	20%	18%

# Internet Advertising = Mobile Growing Strongly (+34% Y/Y) = @ Just 14% of Total While Desktop Decelerating (+11%)

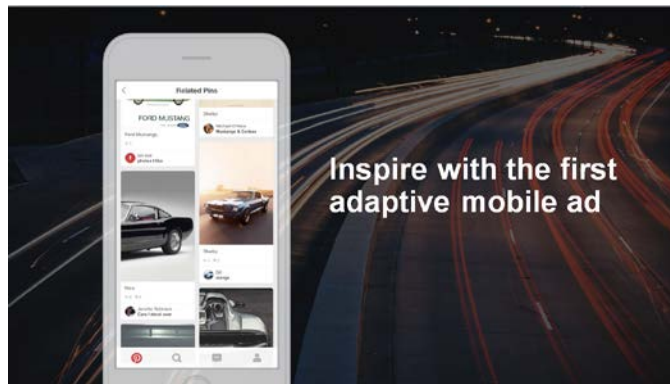
## Global Internet Advertising, 2009 – 2014



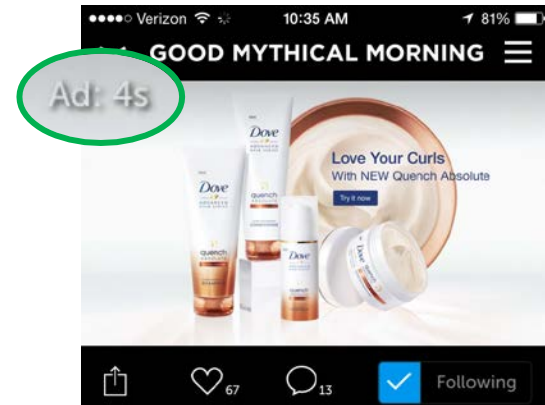
*New Things  
Vendors / Brands / Consumers  
Should Be Excited About...*

# ...Ad Formats = Optimized for Mobile... Often Fast / Interactive / Fun / Video...

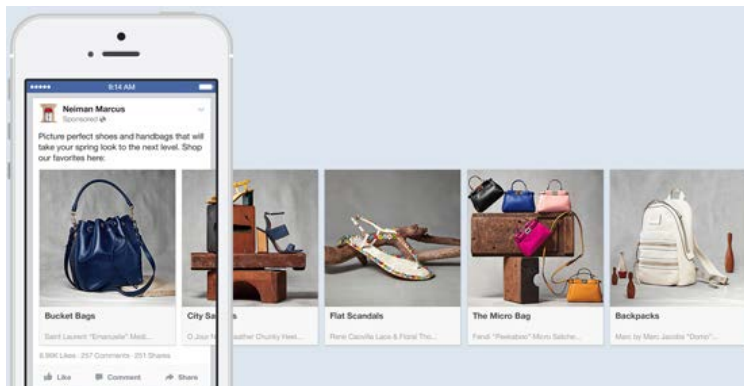
## Pinterest Cinematic Pin *Video Moves as User Scrolls*



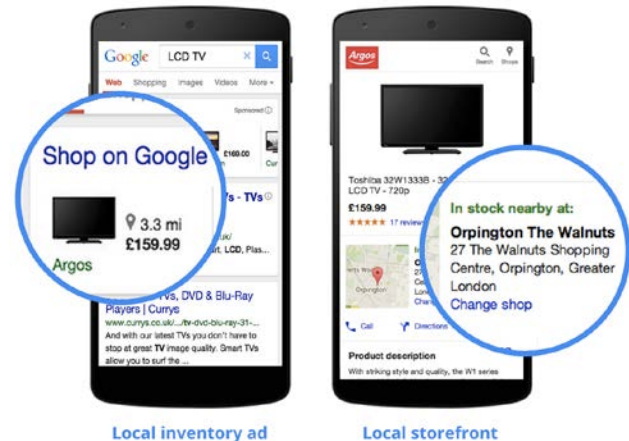
## Vessel 5-Second Ad *Short-Form Video*



## Facebook Carousel Ad *Scroll to Browse Multiple Images*

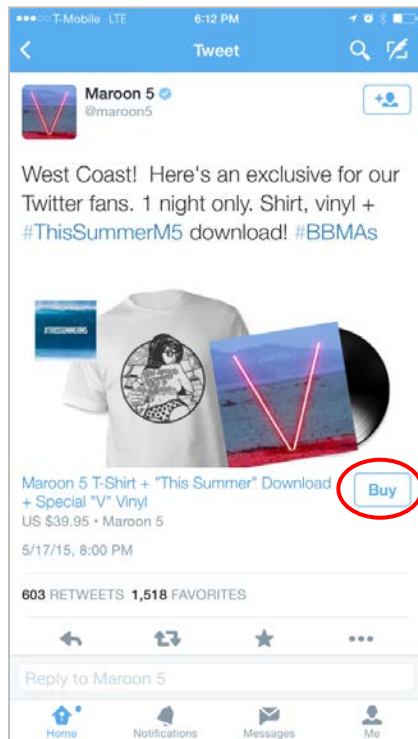


## Google Local Inventory Ad *Shows Products Available In-Store Nearby*

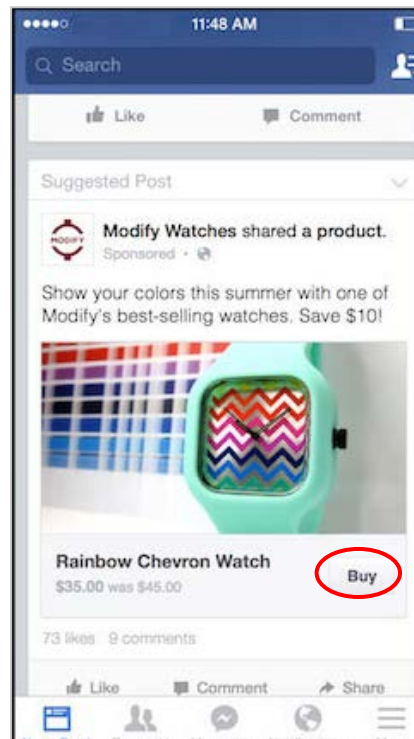


# ...Buy Buttons = Optimized for Mobile... Minimize Friction to Purchase @ Moment of Interest

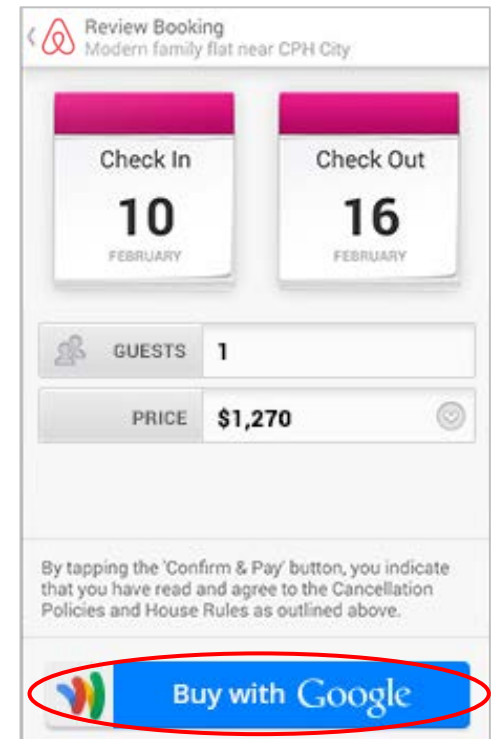
## Twitter



## Facebook



## Google



*...Something Funny  
Happened on the Way to the  
Small Screen...*

# ...Small Screen Vertical Viewing Became Big Deal...

**Video = Then**

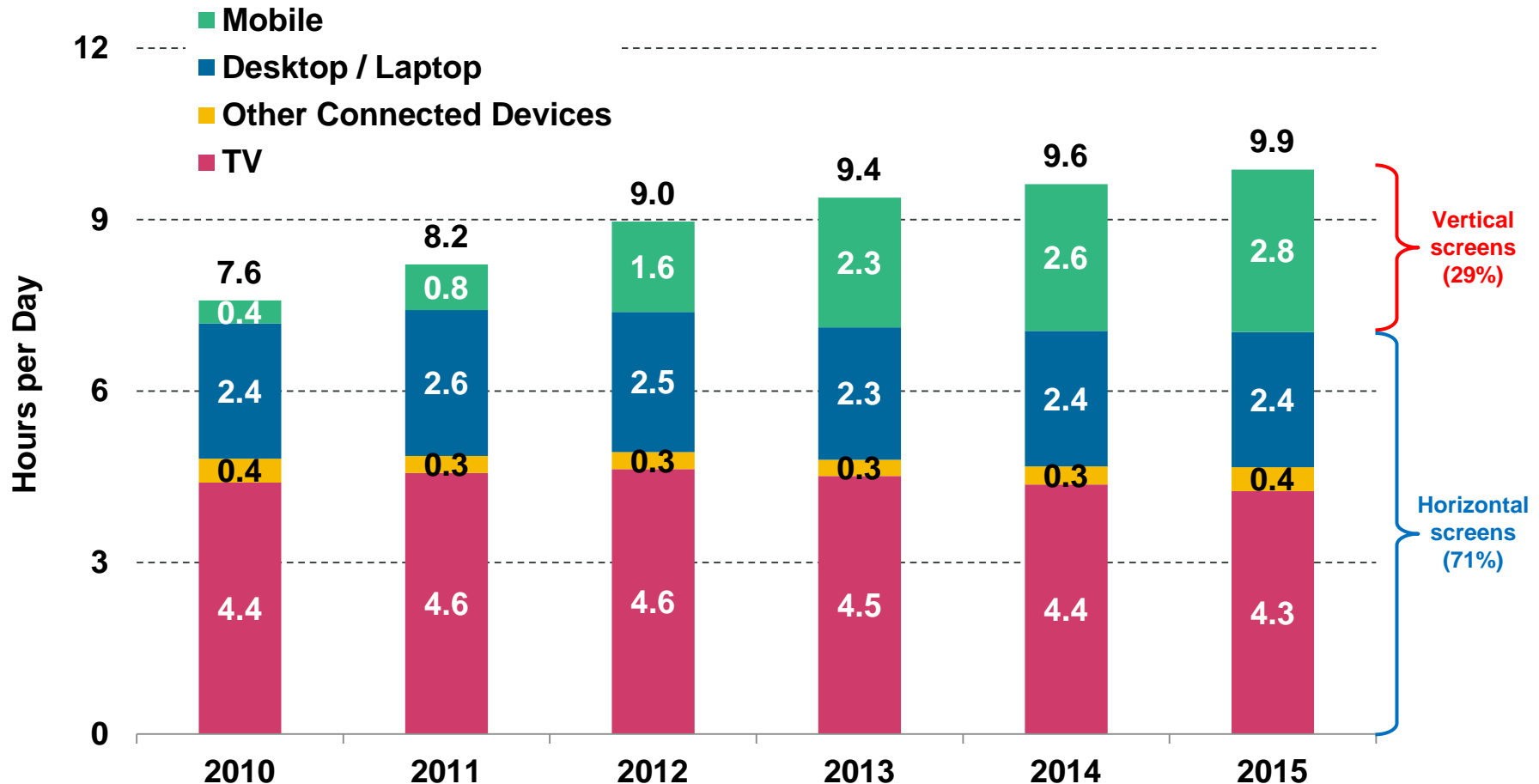


**Video = Now?**



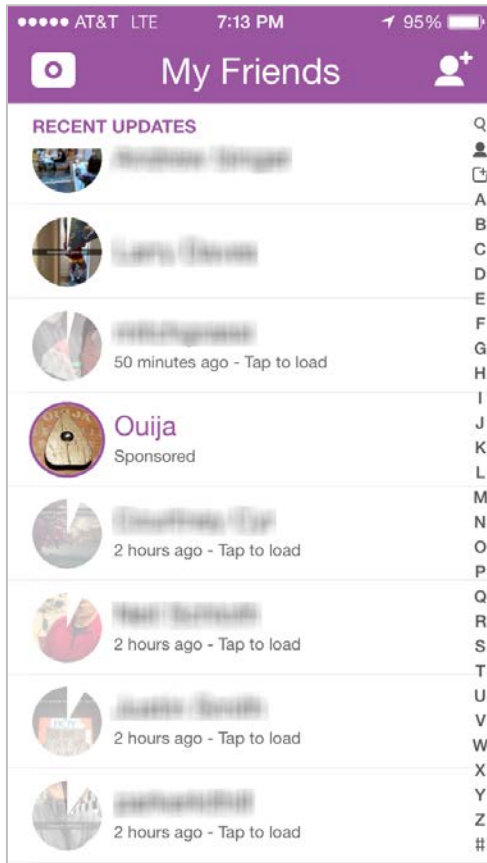
# ...Vertical Viewing = 29% of View Time (Multi-Platform) vs. 5% Five Years Ago, USA...

## Time Spent on Screens by Orientation (Hours / Day), USA, 2010 – 2015





# ...Full-Screen Vertical Video Ads on Snapchat = 9x Higher Completion Rate vs. Horizontal Mobile Video Ads



*Mobile Usage Evolved Rapidly...*

*Text → Images → Videos →  
All of Above...*

*Buy Buttons Likely to  
Appear Just as Seamlessly*

---

# RE-IMAGINING CONTINUES

***Re-Imagining***  
***Enterprise Computing =***

***Changing Business Process***  
***One Segment at a Time***

# Tweet from Aaron Levie...



**Aaron Levie** ✓

@levie



Following

Enterprise software used to be about making existing work more efficient. Now, the opportunity for software is to transform the work itself.



RETWEETS

252

FAVORITES

214



9:42 PM - 9 Apr 2015

*While Consumer Internet Entrepreneurs  
Often Pursue  
Personal Passion...*

*‘Enterprise’ Internet Entrepreneurs  
Often Pursue  
Prior Company Pain Points*

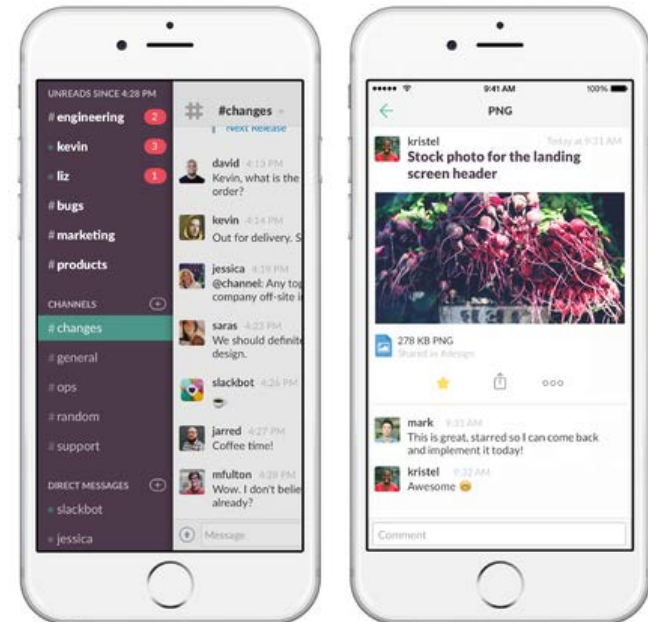
# Business Communications...

## Slack – Stewart Butterfield

**THEN**  
Email / Semi-Inflexible  
Messaging Tools



**NOW**  
Slack



Can reduce internal email traffic materially

# Offline Payments...

## Square – Jack Dorsey / Jim McKelvey

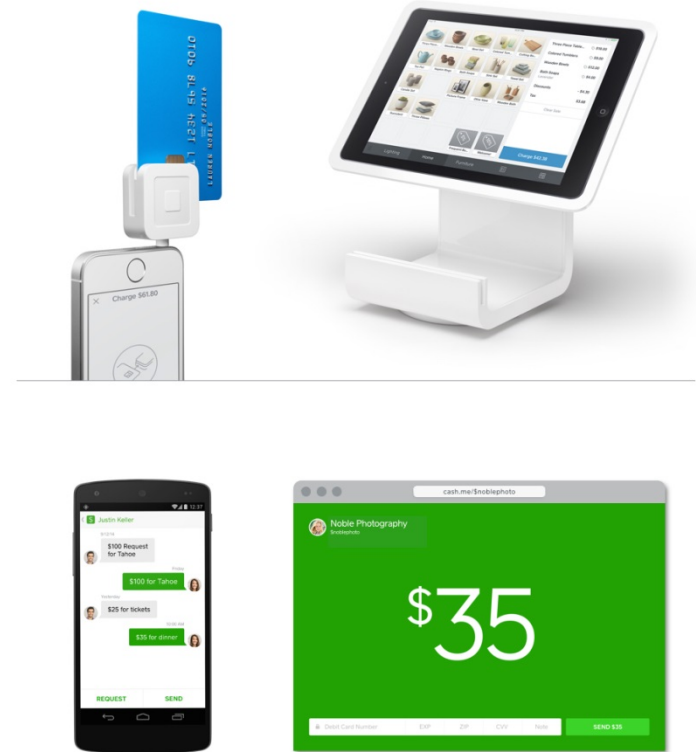
### THEN

Difficult to Set Up /  
Process Offline Payments



### NOW

Square



Allows merchants to accept credit card payments via their existing smartphone or tablet & run a sophisticated point of sale system

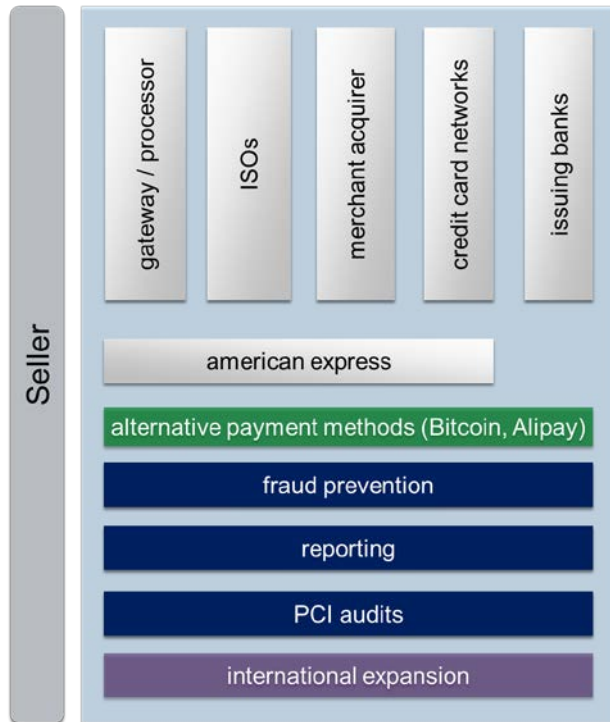


# Online Payments...

## Stripe – Patrick Collison / John Collison

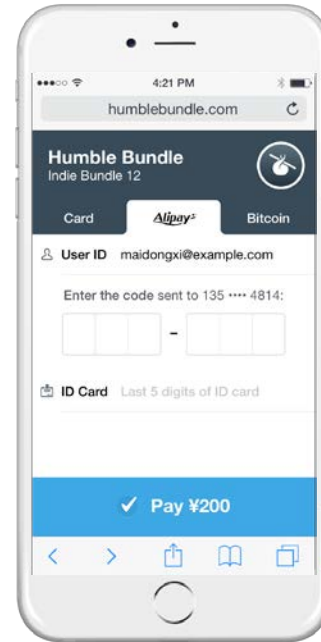
### THEN

Difficult to Set Up /  
Process Online Payments

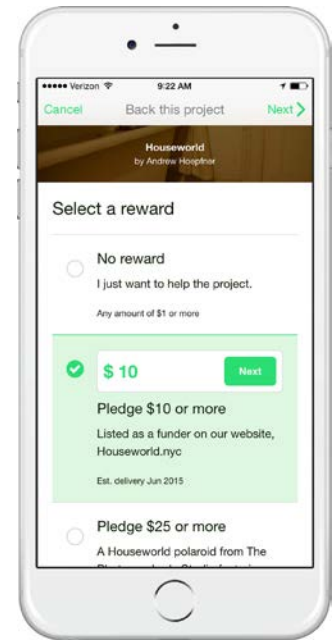


### NOW

Stripe



*Stripe  
Alipay flow*



*Kickstarter  
payment flow*

Can dramatically reduce payment integration time for developers and allow them to take advantage of modern APIs, compared with time required to deploy traditional merchant account

# Business Analytics...

## Domo – Josh James

### THEN

Data Overload Without  
Easy Access for Execs



### NOW

Domo



Improved access to real-time data can help users save time  
& improve decision making

# Document Signing / Transaction Management...

## DocuSign – Tom Gonser

**THEN**  
Paper-Based Signatures



**NOW**  
DocuSign



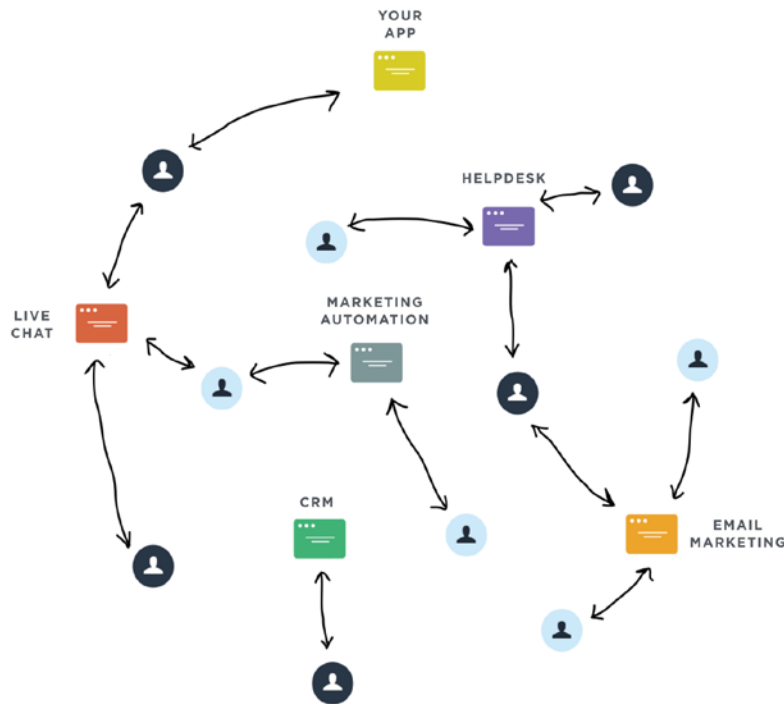
Can reduce transaction costs & improve transaction times

# Customer Communication...

## Intercom – Eoghan McCabe

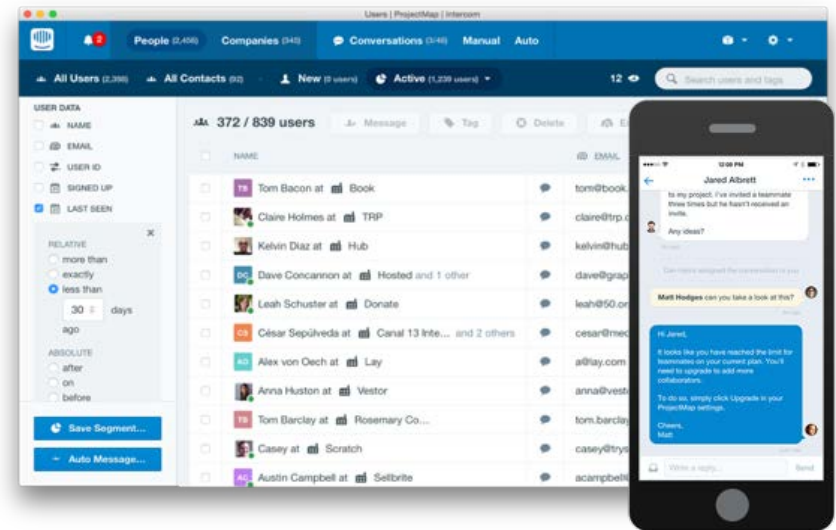
### THEN

Disconnected Point Solutions



### NOW

Intercom



In-app messages can be more engaging (based on reply rates)  
than traditional email marketing products

# Customer Success...

## Gainsight – Nick Mehta

### THEN

Transactional Sales  
Process with High Churn



### NOW

Gainsight



Typically improves net revenue retention

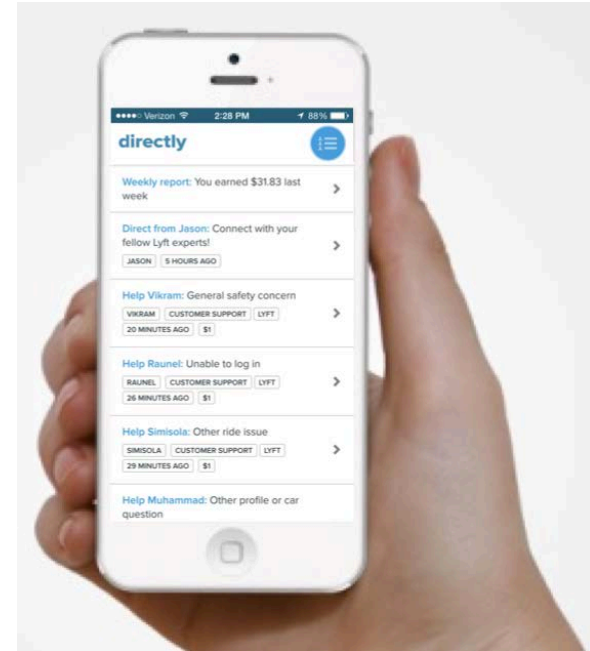


# Customer Service... Directly – Antony Brydon

## THEN In-House Support Center



## NOW Directly



Can reduce customer response times & improve customer satisfaction

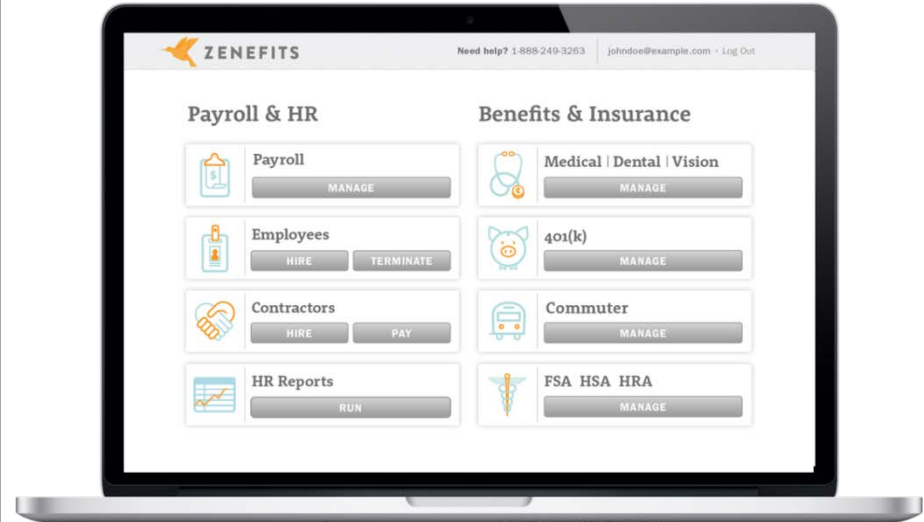
# Human Resources...

## Zenefits – Parker Conrad

**THEN**  
Paper Files &  
Insurance Brokers



**NOW**  
Zenefits

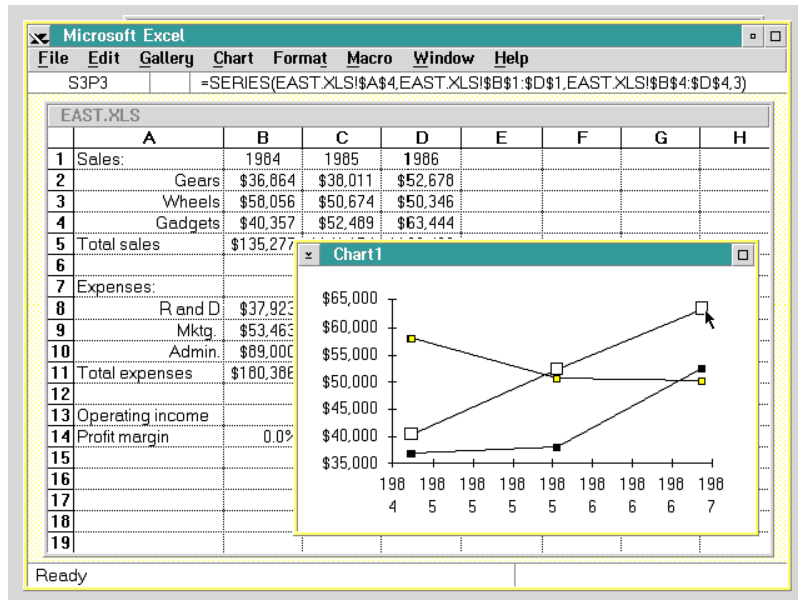


Manages \$700MM+ in annual benefits premiums across 10K customers in 48 states  
vs. traditional brokers which typically work within a single state

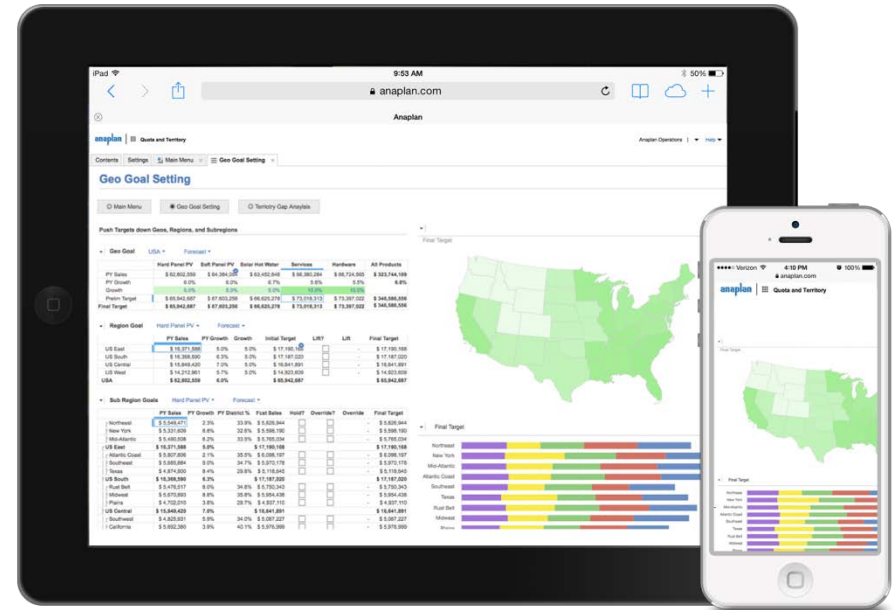
# Enterprise Planning & Performance Optimization...

## Anaplan – Frederic Laluyaux

**THEN**  
Microsoft Excel



**NOW**  
Anaplan

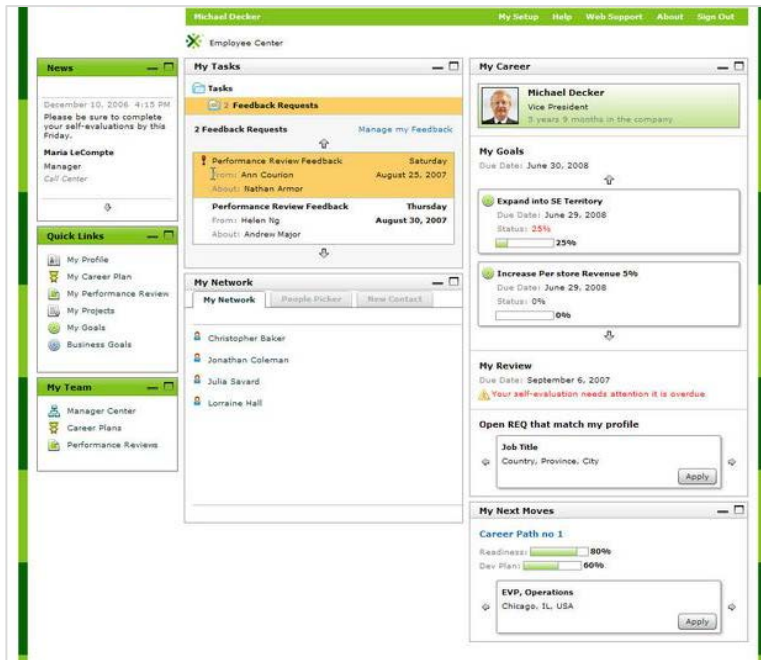


Can improve ROI for customers that have replaced legacy planning solutions & spreadsheet-based processes

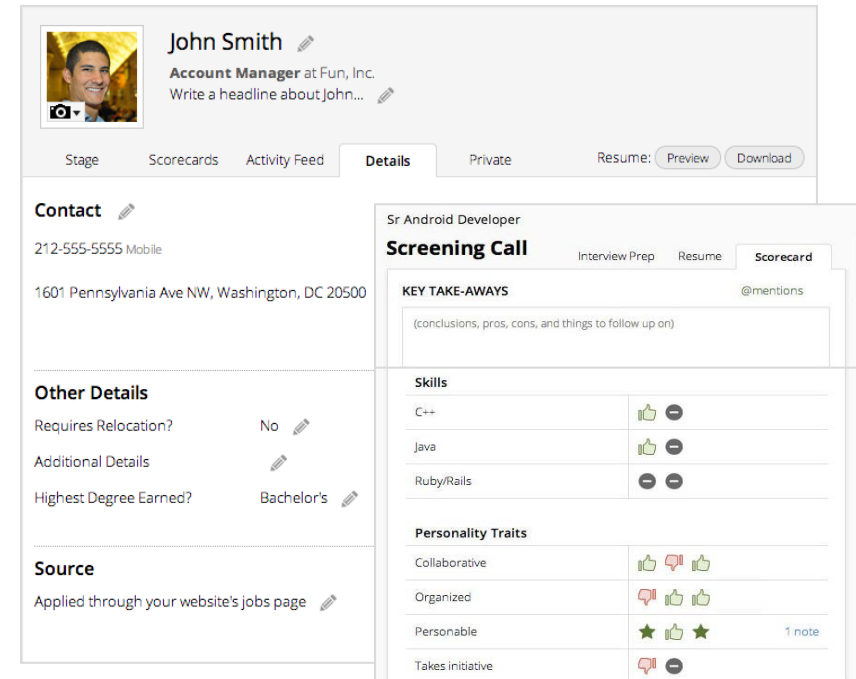


# Recruiting... Greenhouse – Daniel Chait

**THEN**  
Reactive / Complex...  
Only Used by Recruiters



**NOW**  
Greenhouse



Can improve time-to-hire & decrease overall hiring costs

# Background Checks... Checkr – Daniel Yanisse

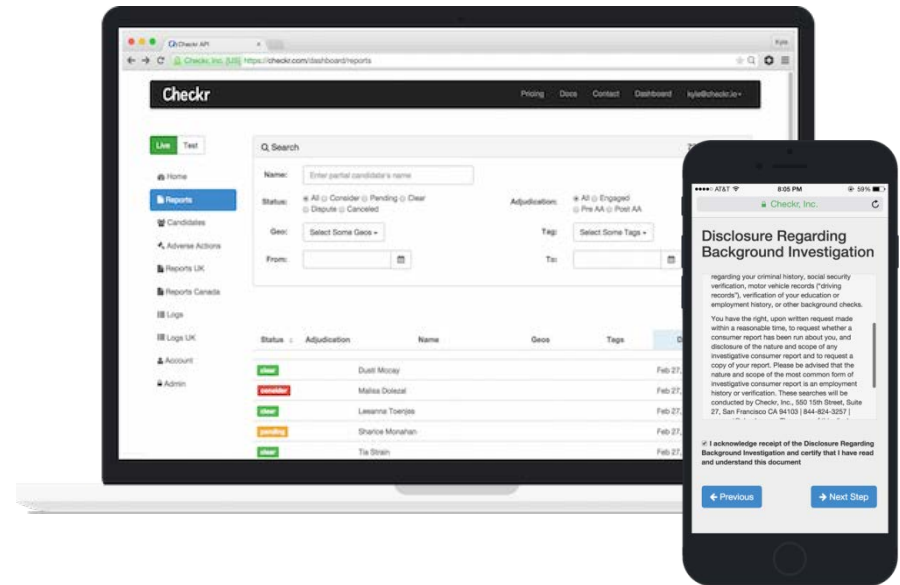
## THEN

Manual / Time Consuming Background Screenings



## NOW

Checkr



Typically reduces background check turnaround times

# Employee Knowledge / Training...

## GuideSpark – Keith Kitani

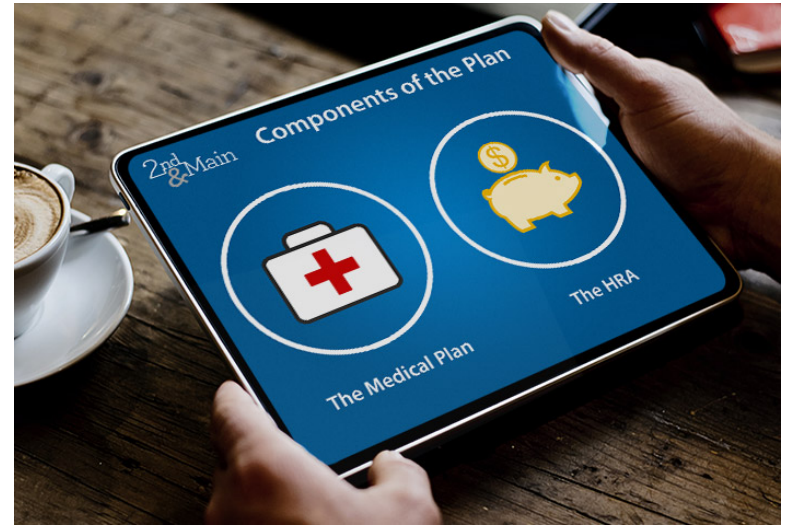
### THEN

Static Hardcopy Manuals



### NOW

GuideSpark



Can reduce Human Resource support time & increase employee benefits plan participation

# Visitor Management... Envoy – Larry Gadea

## THEN Sign-In Sheets



## NOW Envoy



Over 1MM visitors checked-in across 1,000 companies worldwide since May 2013

*Ten Years from Now,  
When We Look Back at  
How This Era of Big Data Evolved...*

*We Will Be Stunned at How  
Uninformed We Used to Be  
When We Made Decisions*

– Billy Bosworth, DataStax CEO (2015)











***Re-Imagining  
Messaging...***

***With Lots of  
Improvements / Change / Growth  
Ahead***











# Messaging Apps = Top Global Apps in Usage + Sessions

6+ of Top 10  
most used apps  
globally =  
Messaging Apps

## Top Apps by Usage

Rank	App
①	 Facebook
②	 WhatsApp
③	 Messenger
④	 Instagram
⑤	 LINE
⑥	 Viber
⑦	 KakaoTalk
⑧	 Clash of Clans
⑨	 WeChat
⑩	 Twitter

## Top Apps By Number of Sessions

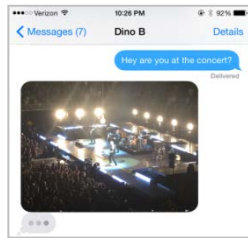
Rank	App	Sessions
①	 KakaoTalk	55
②	 WhatsApp	37
③	 WeChat	29
④	 VK	29
⑤	 LINE	26
⑥	 Viber	20
⑦	 Facebook	20
⑧	 Clash of Clans	16
⑨	 Instagram	12
⑩	 Messenger	8

Messaging  
Apps →  
significant app  
sessions

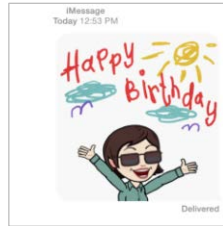


# Communicating via Mobile Messaging = A Beautiful Thing

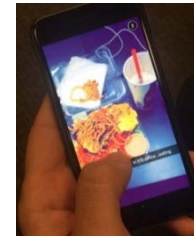
**Asynchronous yet  
Instant**



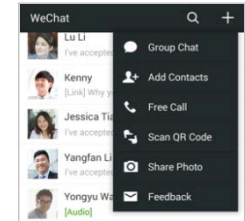
**Expressive yet  
Fast**



**Engaging yet  
User Controlled**



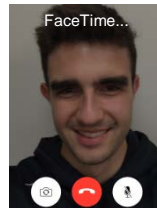
**Casual yet  
Professional**



**Easy yet  
Productive**



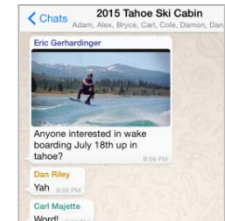
**Personal yet  
Mainstream**



**Mobile yet  
Distributed**



**Instant yet  
Secure**



**Real-Time yet  
Replayable\***



**Current yet  
Evergreen**



**Accessible yet  
Global**



**Simple yet  
24x7**





# Messaging Leaders = Growing Fast... Building Expansive Platforms + Moats

## Selected Global Messaging Leaders



**WhatsApp** (launched 2009)

- *Fast messaging*
- MAU = **800MM**, +60% Y/Y, Q1:15
- Messages Sent / Day = **30B**



**Facebook Messenger** (launched 2011)

- *Messaging platform*
- MAU = **600MM**, +200% Y/Y, Q1:15



**Snapchat** (launched 2011)

- *Ephemeral messages, pictures and videos*
- DAU = **100MM**, 5/15
- Story Views / Day = **2B**



**WeChat** (launched 2011, China)

- *Messaging platform*
- MAU = **549MM**, Q1:15, +39% Y/Y



**LINE** (launched 2011, Japan)




- *Messaging platform*
- MAU = **205MM**, Q1:15
- Messages Sent / Day = **13B**, +30% Y/Y
- Revenue = **\$922MM**, +70% Y/Y





**KakaoTalk** (launched 2010, Korea)

- *Messaging platform*
- MAU = **48MM**, Q1:15
- Messages Sent / Day = **5.2B**
- Revenue\* = **\$853MM**, +19% Y/Y

# Messaging Platforms – Asia In-Country Leaders = Developing Evolving Playbooks...

			
<b>Name</b>	<b>KakaoTalk</b>	<b>WeChat</b>	<b>LINE</b>
<b>Launch</b>	<b>March 2010</b>	<b>January 2011</b>	<b>June 2011</b>
<b>Primary Country</b>	<b>Korea</b>	<b>China</b>	<b>Japan</b>
<b>Messaging</b>	✓	✓	✓
<b>Group Messaging</b>	✓	✓	✓
<b>Voice Calls</b>	Free VoIP calls (2012)	WeChat Phonebook (2014)	✓
<b>Video Calls / Chat</b>	✗	✓	Video call update (2013)
<b>Payments</b>	KakaoPay (2014)	(2013)	Line Pay (2014)
<b>Stickers</b>	(2012)	Sticker shop (2013)	(2011)
<b>Games</b>	Game Center (2012)	(2014)	(2011)
<b>Commerce</b>	Kakao Page (2013)	Delivery support w / Yixun (2013)	Line Mall (2013)
<b>Media</b>	Kakao Topic (2014)	✓	✓
<b>QR Codes</b>	✓	QR code identity (2012)	✓
<b>Food Delivery</b>	✗	Partnership with Foodpanda (2014)	Launched beta in Thailand (2015)
<b>Taxi Services</b>	Kakao Taxi (2015)	Taxi services w/ Didi Dache (2014)	Launched taxi service in Tokyo (2015)
<b>User Stories / Moments</b>	Kakao Story (2012)	WeChat Moments	Line Home (2012)
<b>Developer Platform</b>	KakaoDevelopers	WeChat API	Line Partner (2012)

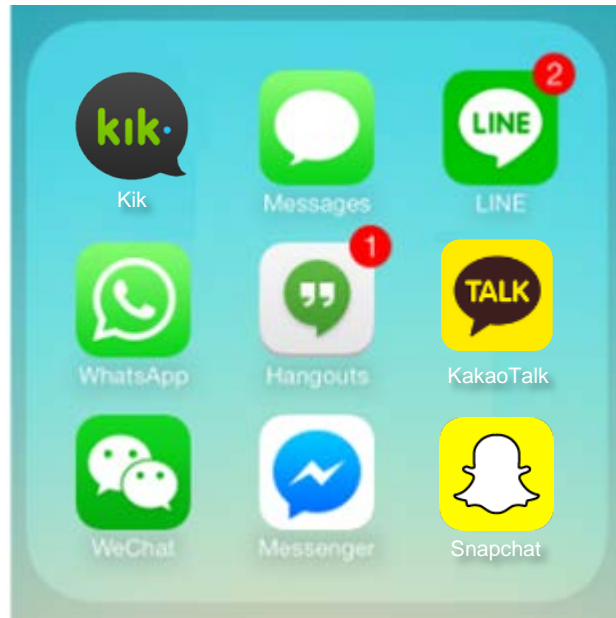
# ...Messaging Platforms – Global Leaders = Implementing Playbooks & More

		
<b>Name</b>	<b>Facebook Messenger</b>	<b>Snapchat</b>
<b>Launch</b>	<b>August 2011</b>	<b>September 2011</b>
<b>Primary Country</b>	<b>Global</b>	<b>Global</b>
<b>Messaging</b>	Separate messaging app (2014)	Chat (2014)
<b>Group Messaging</b>	✓	✗
<b>Voice Calls</b>	VoIP voice calls in US (2013)	✗
<b>Video Calls / Chat</b>	Free VoIP video calls (2015)	Video Chat (2014)
<b>Payments</b>	Messenger Payments (2015)	Snapcash (2014)
<b>Stickers</b>	Sticker support (2013)	✗
<b>Games</b>	✗	✗
<b>Commerce</b>	Businesses on Messenger (2015)	✗
<b>Media</b>	✗	Discover (2015)
<b>QR Codes</b>	✗	QR Codes to add friends (2015)
<b>Food Delivery</b>	✗	✗
<b>Taxi Services</b>	✗	✗
<b>User Stories / Moments</b>	✗	Shared Stories (2013)
<b>Developer Platform</b>	Messenger Platform (2015)	✗

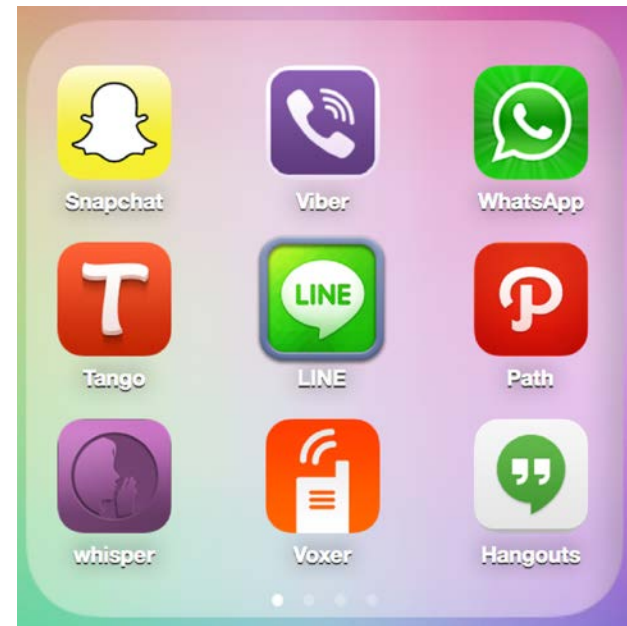
# In Messaging, Not One-Size-Fits-All, For Now...

## Many People Use Different Messaging Apps for Various Purposes

### One User... (Illustrative)



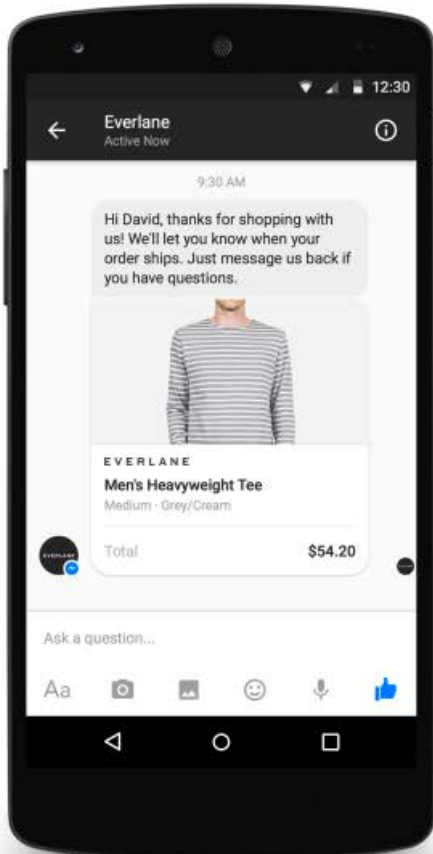
### ...Another User (Illustrative)



# If WeChat Trend Continues to Play Out Globally... Mobile Messaging Leaders May Evolve into Central Communications Hubs

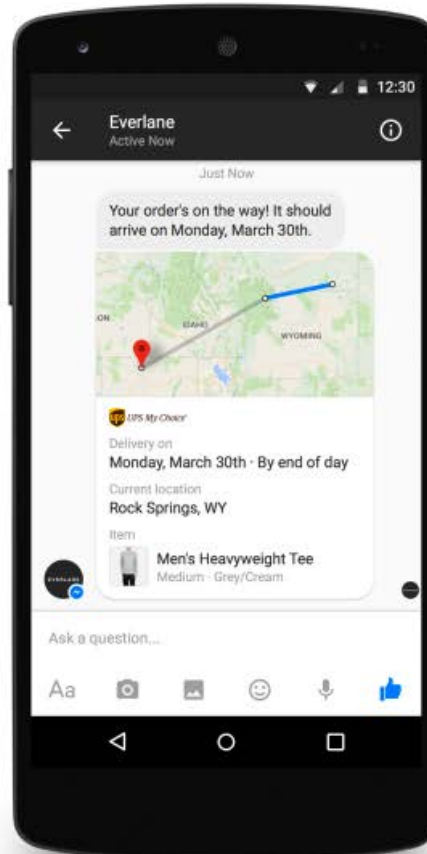
## Context

e.g. purchase(s) made:  
**Order shirt – from Everlane –  
via Facebook Messenger**



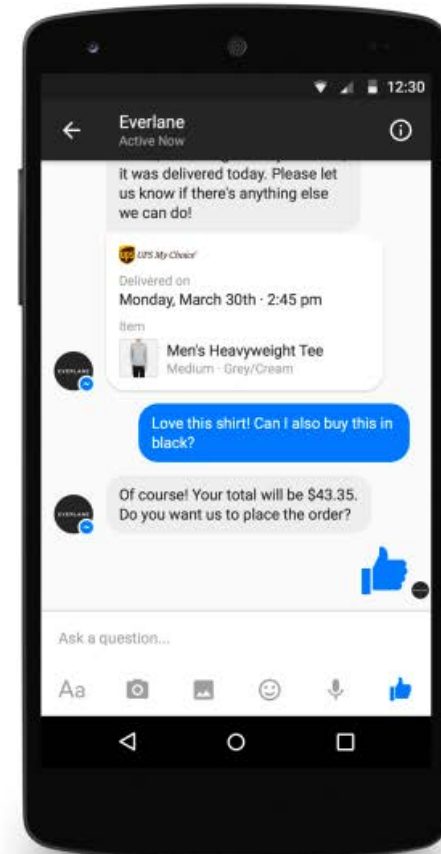
## Identity

Location, Age, Name,  
Interests



## Context-Persistent Conversation

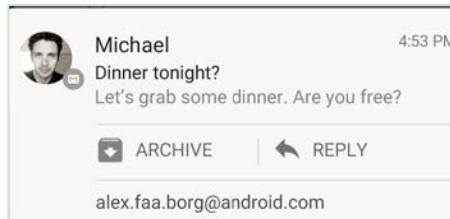
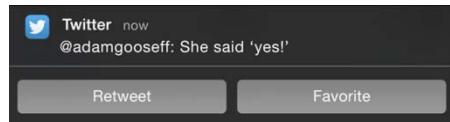
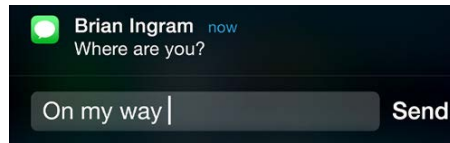
Context-driven actions and  
engagement



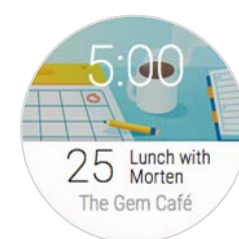
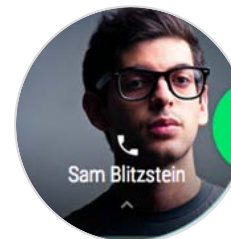
# Notifications = Growing Rapidly & Increasingly Interactive...

## Driving New Touch Points with Messaging Platforms + Other Apps

**Direct Interaction  
on Notification Panel –**  
without users interrupting  
what they're doing...



**...More Up Close & Personal –**  
as notifications appear on more  
& more mobile devices



# Next New Internet Users Likely Already Non-Smartphone Mobile Users &... Most Likely to Onboard via Messaging Platforms

## Selected Top Countries for Mobile Subscriptions, 2014

<i>Ranked by Total Mobile Subscriptions:</i>	<b>Total Population (MM)</b>	<b>Mobile Subscriptions (MM)</b>	<b>Smartphone % of Mobile Subscriptions</b>
<b>China</b>	1,356	1,301	39%
<b>India</b>	1,236	907	15
<b>Indonesia</b>	254	343	19
<b>Brazil</b>	203	274	35
<b>Russia</b>	142	253	23
<b>Pakistan</b>	196	144	6
<b>Nigeria</b>	177	143	16
<b>Vietnam</b>	93	124	17
<b>Philippines</b>	108	113	26
<b>Mexico</b>	120	110	27
<b>Egypt</b>	87	103	19
<b>Iran</b>	81	99	10
<b>Thailand</b>	68	99	29
<b>South Africa</b>	48	73	31
<b>Turkey</b>	82	70	33
<b>Total Mobile Subscriptions (MM)</b>		<b>4,153MM</b>	<b>—</b>
<b>Weighted-Avg. of Smartphone as % of Mobile Subs</b>			<b>26%</b>

*Messaging + Notifications =  
Key Layers of Every  
Meaningful Mobile App*

*Messaging Leaders Aiming to Create  
Cross-Platform Operating Systems that  
Are Context-Persistent  
Communications Hubs for  
More & More Services*



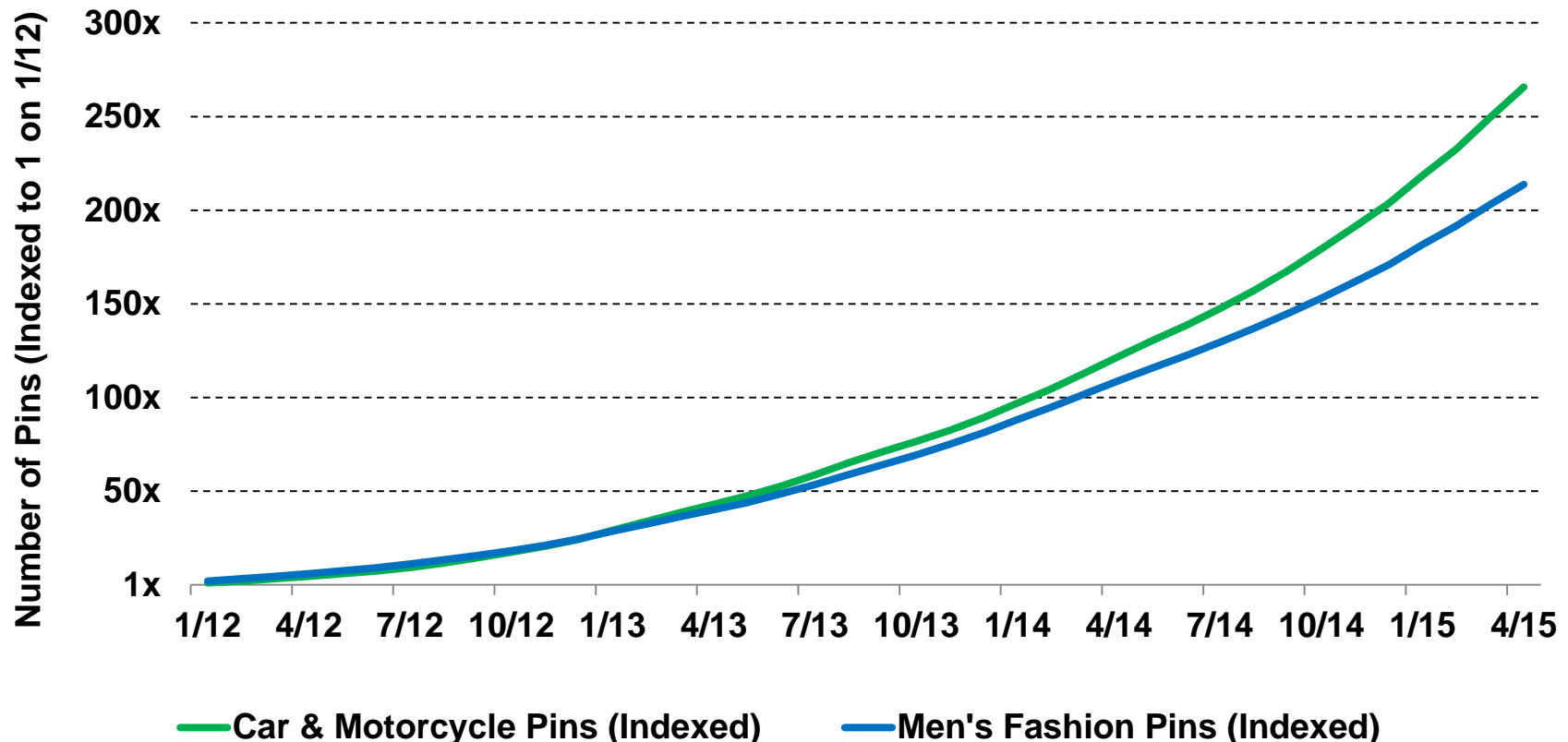
***Re-Imagining Content...***

***It's Increasingly  
User-Generated / Curated &  
Surprising***

# User-Generated / Tagged / Curated / Indexed &... Searchable Images +75% Y/Y to >50B Pins on Pinterest

## Pinterest Content Growth Strong Across Board... Especially Strong in 'Non-Core' Categories...

Car & Motorcycle Pins +118% Y/Y...Men's Fashion +96%, 4/15



# User-Generated Video from Millions of Creators... Curated by Snapchat = Growing Rapidly with Live Stories

## Music



**Coachella**  
**4/15**

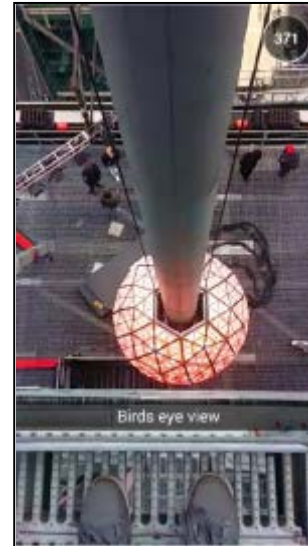
**40MM**  
Viewers Over 3 Days

## Holidays



**New Year's Eve**  
**12/14**

**37MM**  
Viewers in 24 Hours



## Sports

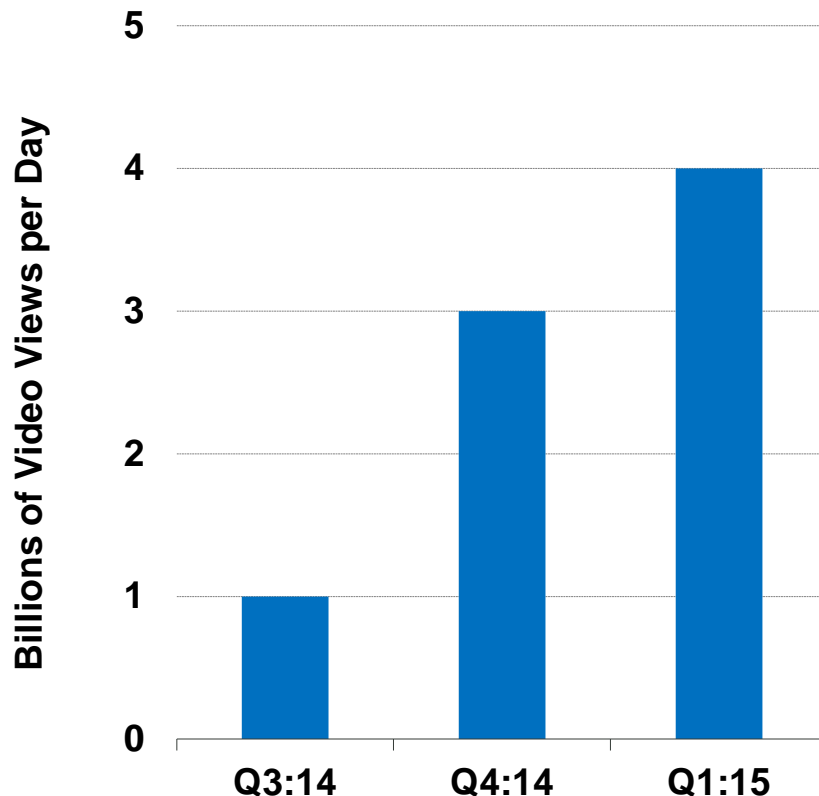


**Winter X-Games**  
**1/15**

**30MM**  
Viewers in 24 Hours

# User-Shared / Curated Video Rising Rapidly = @ 4B Video Views per Day, Up 4x in 6 Months on Facebook

**Video Views per Day for Facebook,  
Global, Q3:14 – Q1:15**



## Facebook Video Stats

- **50%+ Facebook DAUs =** Watch 1 or More Videos Daily, USA
- **53% of Views =** from Shares
- **75% =** on Mobiles

# User-Generated Live Gaming / Streaming = Growing +122% Y/Y to 100MM MAUs on Twitch

**16B Minutes Watched per Month**  
+33% Y/Y

**100MM MAUs**  
+122% Y/Y

**1.5MM Unique Broadcasters per Month,**  
+67% Y/Y



**11MM Videos Broadcast per Month,**  
+83% Y/Y

Expanded offerings beyond Gaming to Music and Movies in 2014, from exclusive live concerts to video game documentaries

**1MM Peak Concurrent Views**

# User-Generated / Curated Audio Content (including Remixes) = @ 10MM Creators (+2x) Over 2 Years on SoundCloud

**100MM Tracks**  
**+33% Y/Y**

Majority of content comes  
from creators not  
associated with known  
rights-holders

Hear the tracks you've liked



♥ Turn Down for Wha...  
Lil Jon



♥ Yellow Claw - Amsterd...  
Yellow Claw



♥ Twonk Team Mixtape V...  
ItsBrillz



♥ Wasted ft. Matthew Ko...  
Tiesto



♥ Zedd - Clarity feat. Fox...  
Zedd



♥ Kaskadee Atmosphere L...  
Kaskadee



♥ Skrillex and Diplo - Wh...  
Jack Ü



♥ Jack Ü - Take Ü There ...  
diplo



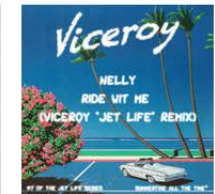
♥ Carnage presents: Incr...  
Dj Carnage



♥ Infinite Daps - Baaue...  
RL Grime



♥ Avicii 'Levels' Skrillex ...  
Skrillex



♥ Nelly - Ride Wit Me (Vi...  
VICEROY



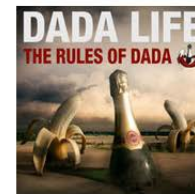
♥ Dirty Vibe with Diplo, G...  
Skrillex



♥ KANYE ft. SirenXX  
The Chainsmokers



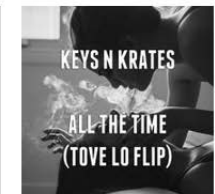
♥ Calvin Harris - Summer...  
Calvinharris



♥ Dada Life - Rolling Sto...  
Dada Life



♥ Gold Ft. Yuna  
Adventure Club



♥ ALL THE TIME (TOVE ...  
Keys N Krates



# User-Generated Written Content / Stories = +140% Y/Y to 125MM Cumulative Stories on Wattpad

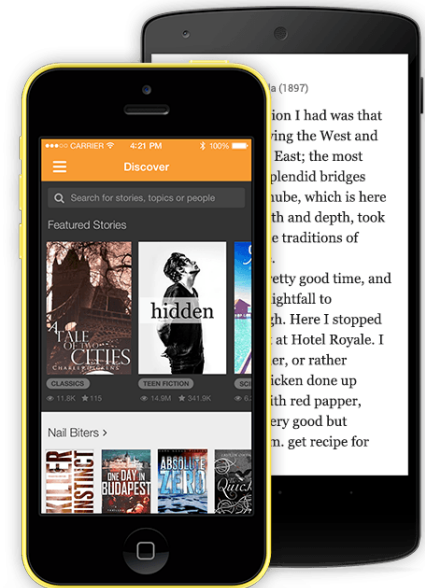
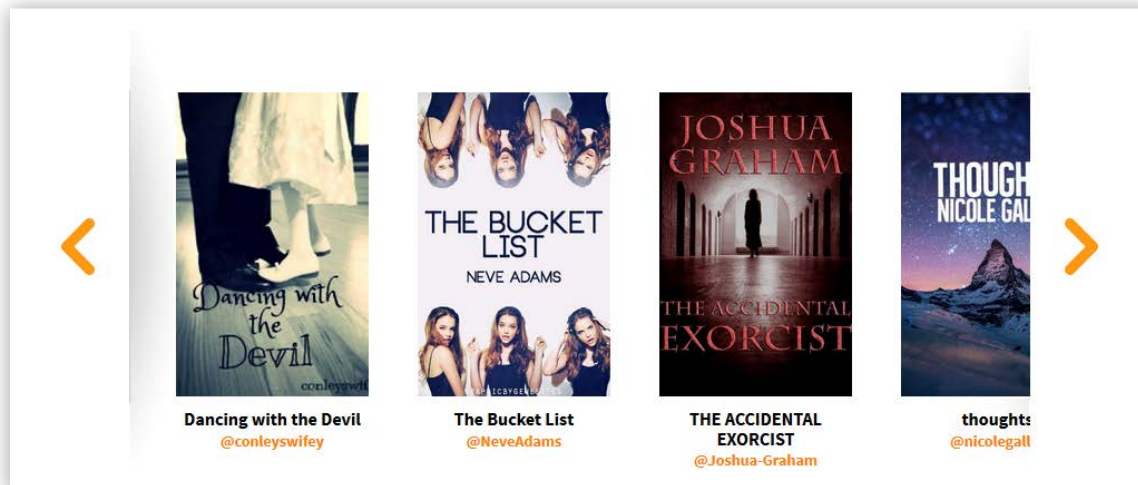
**40MM Monthly Unique Visitors**  
+48% Y/Y

**11B Minutes Spent per Month**  
+83% Y/Y

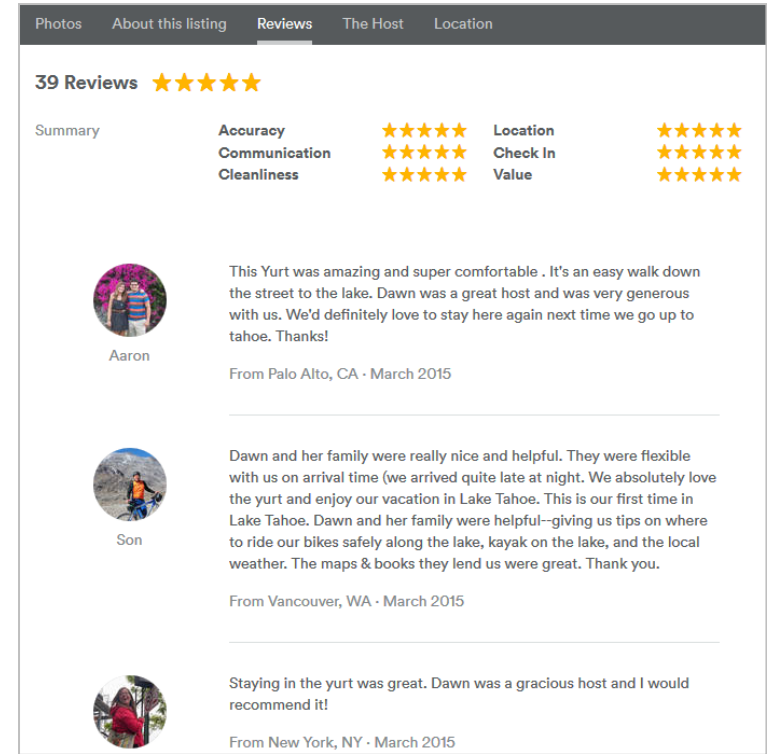
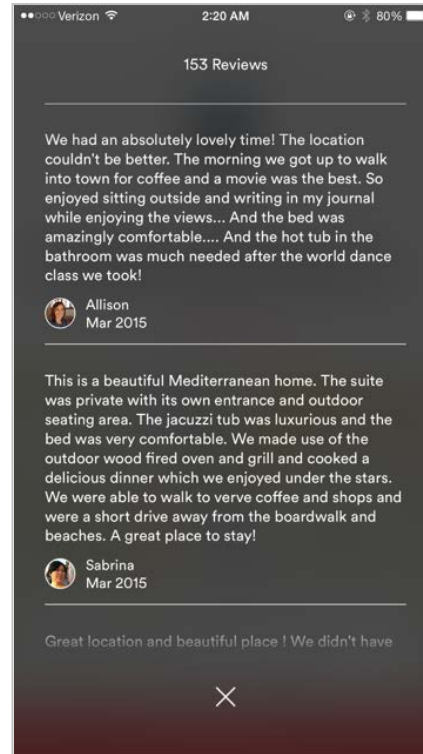
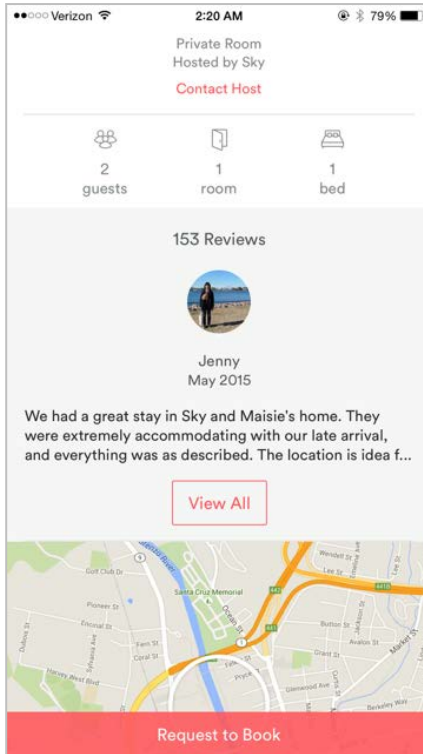
Average engagement time =  
30 minutes / user / session

**90% Mobile Traffic**

Every minute, >24 hours  
of reading material is  
posted on Wattpad

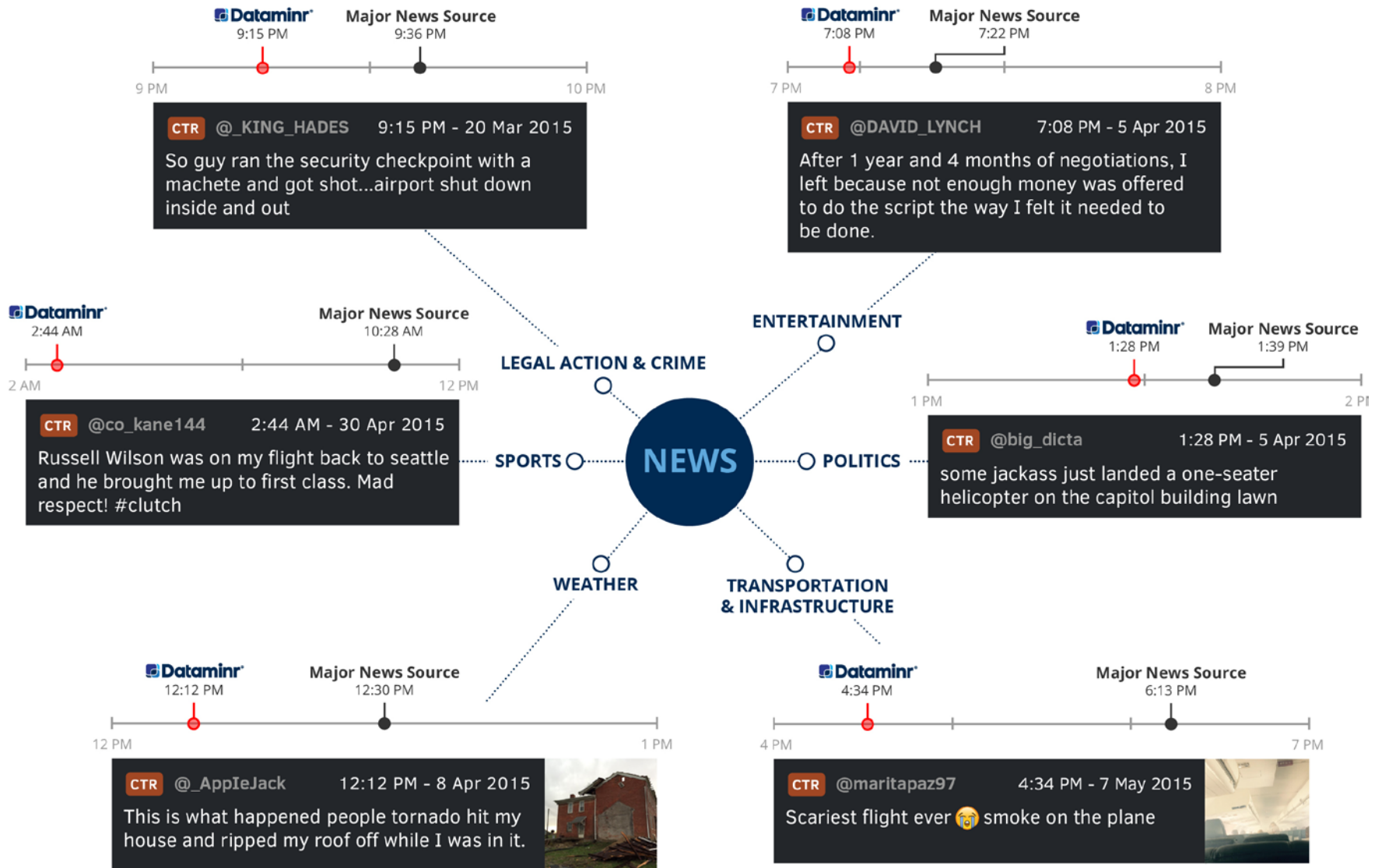


# User-Generated Reviews / Feedback (Reputation) = +140% Y/Y @ 14MM New Reviews on Airbnb, Last 12 Months





# Users Increasingly First Source for News via Twitter / Dataminr



*Imagine That...*

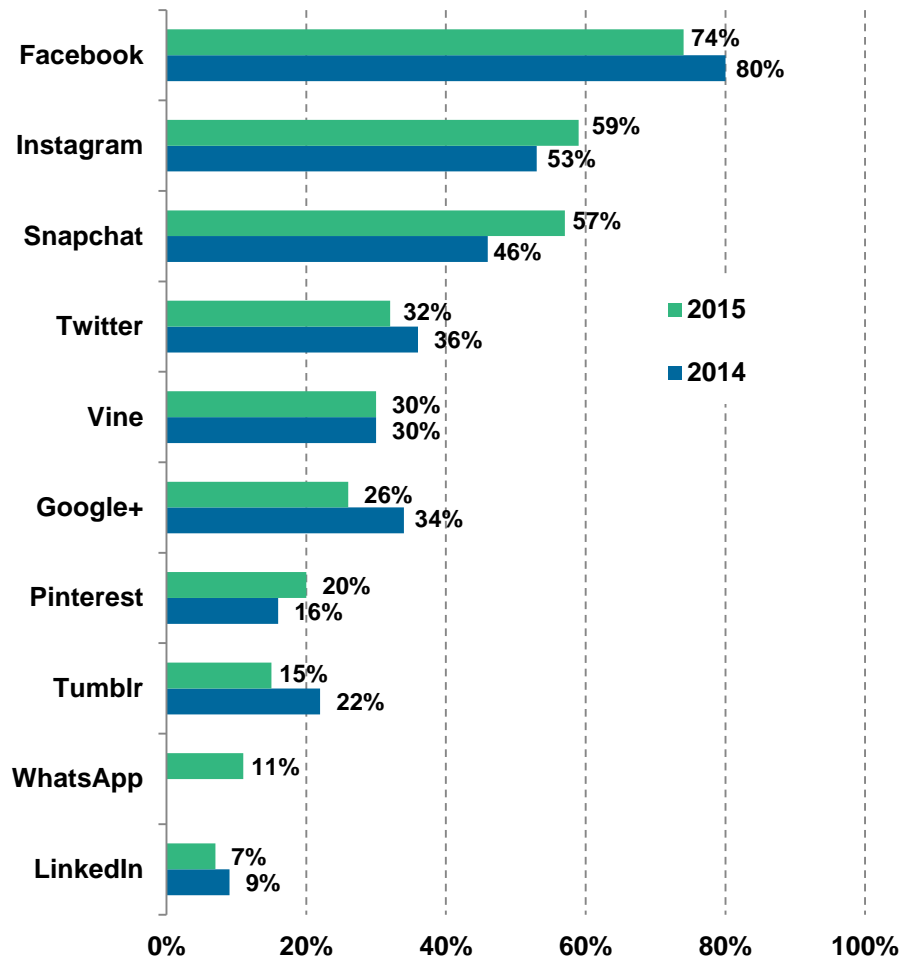
*Users Generating Their Content  
Are  
Recreating Their Internet*

# ***Re-Imagining Internet Usage...***

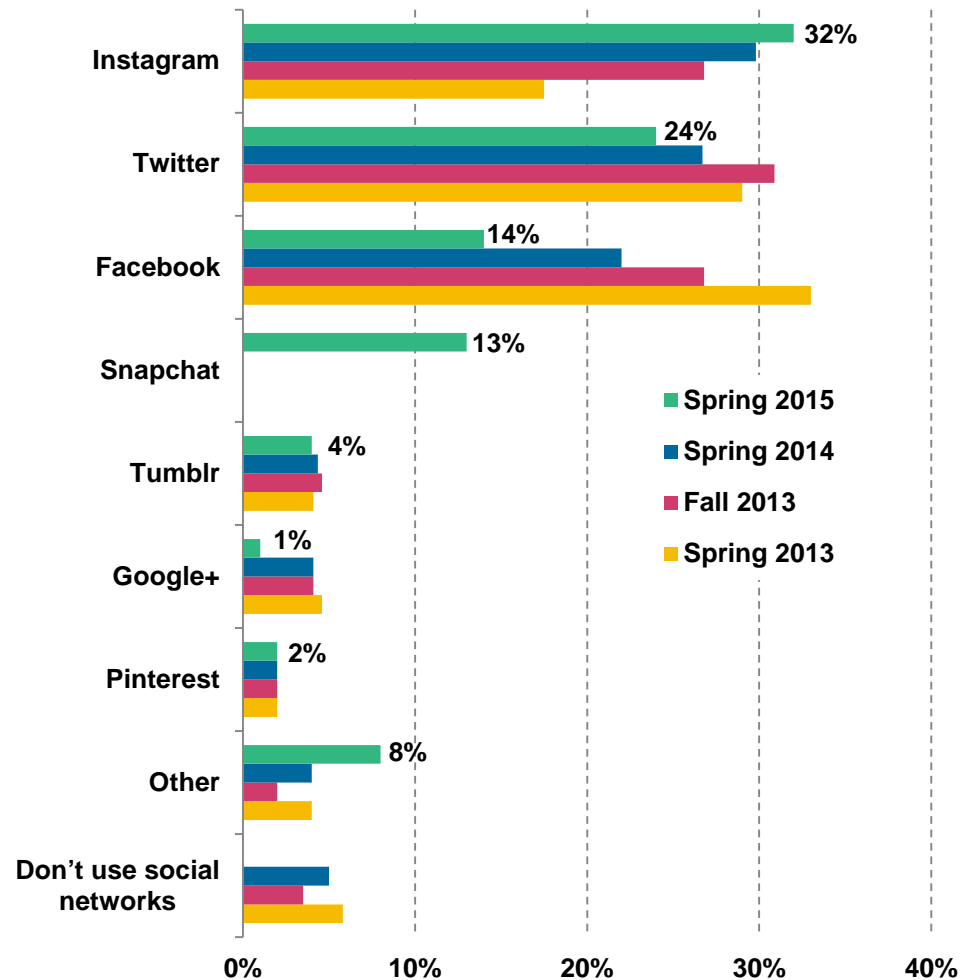
## ***12-24+ Year Olds Remain Trendsetters***

# 12-24 Year Olds Internet Usage = Visual Stuff (In & Out) Rules... Instagram + Snapchat + Pinterest = Continue to Rise

**Social Media Usage Among American Youth  
(Age 12-24)<sup>1</sup>, USA, 3/15**



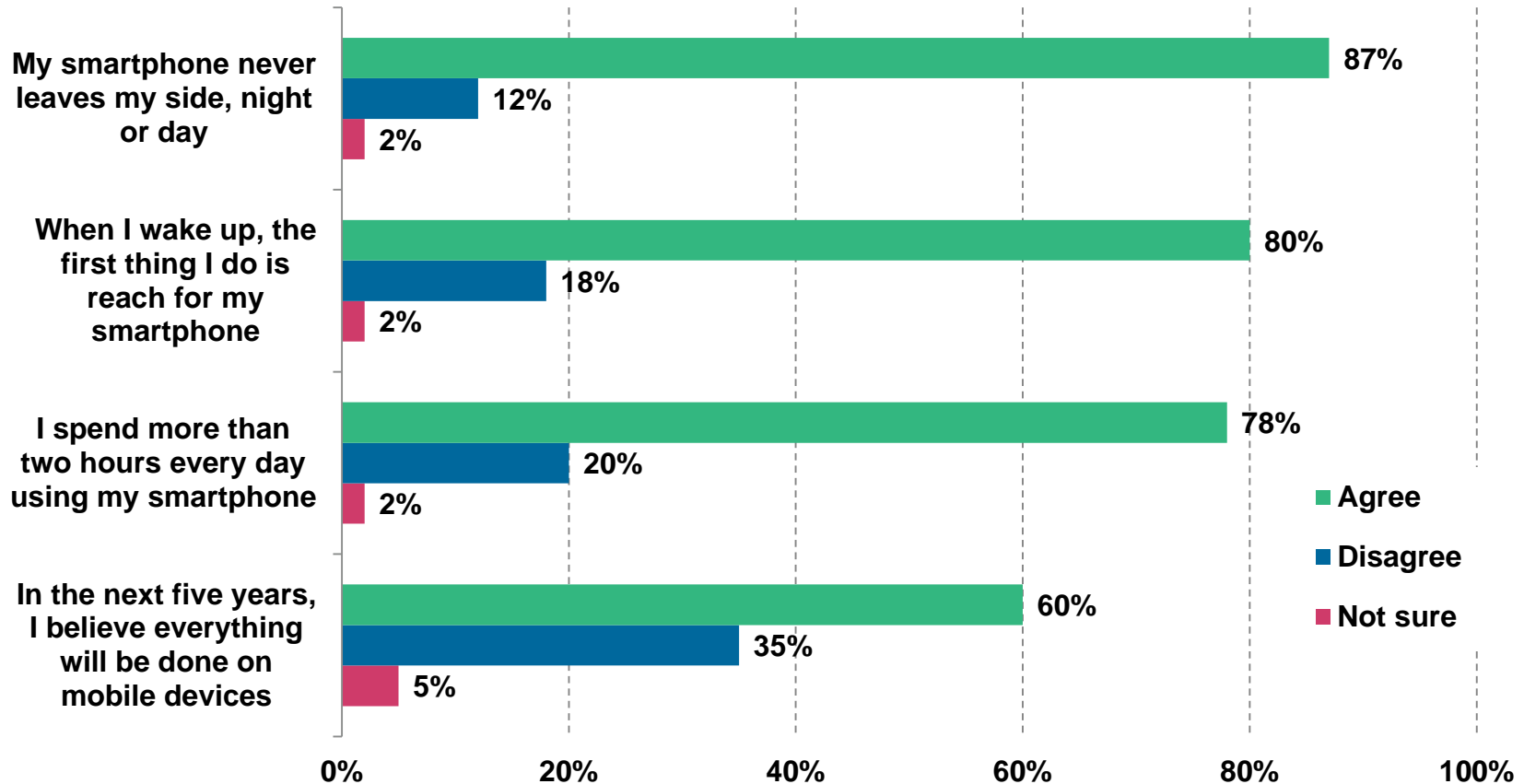
**Teens' Most Important Social Network<sup>2</sup>, USA, 4/15**



# Millennials = Love Their Smartphones...

## 87% = 'Smartphone Never Leaves My Side'

### Millennial Smartphone Behavior, USA, 2014

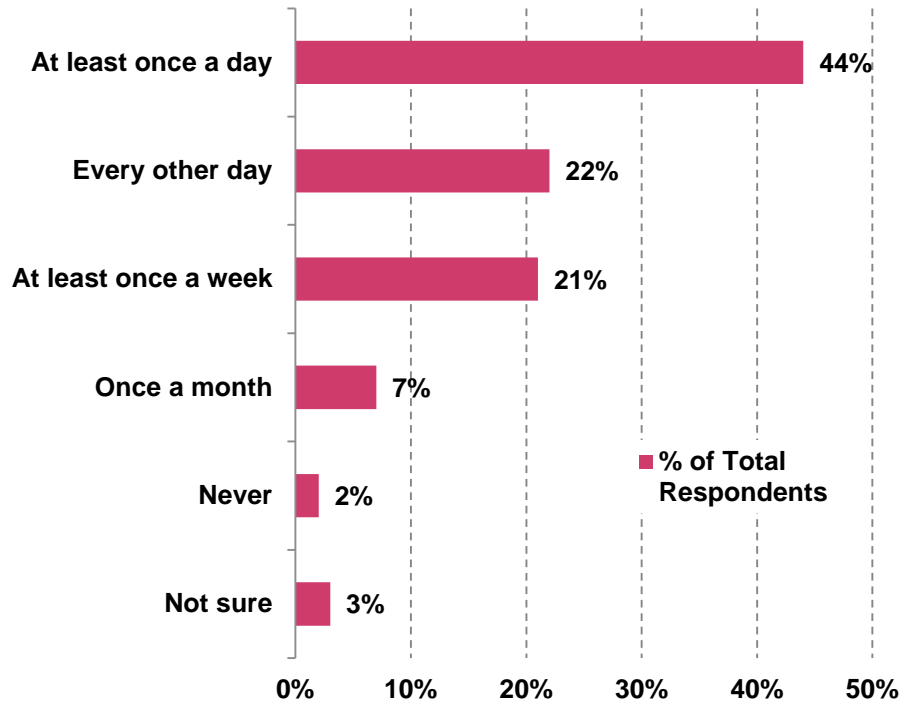


# Millennials Love Their Smartphone Cameras...

## 44% Use Camera / Video Function Daily...76% Post on Social Media

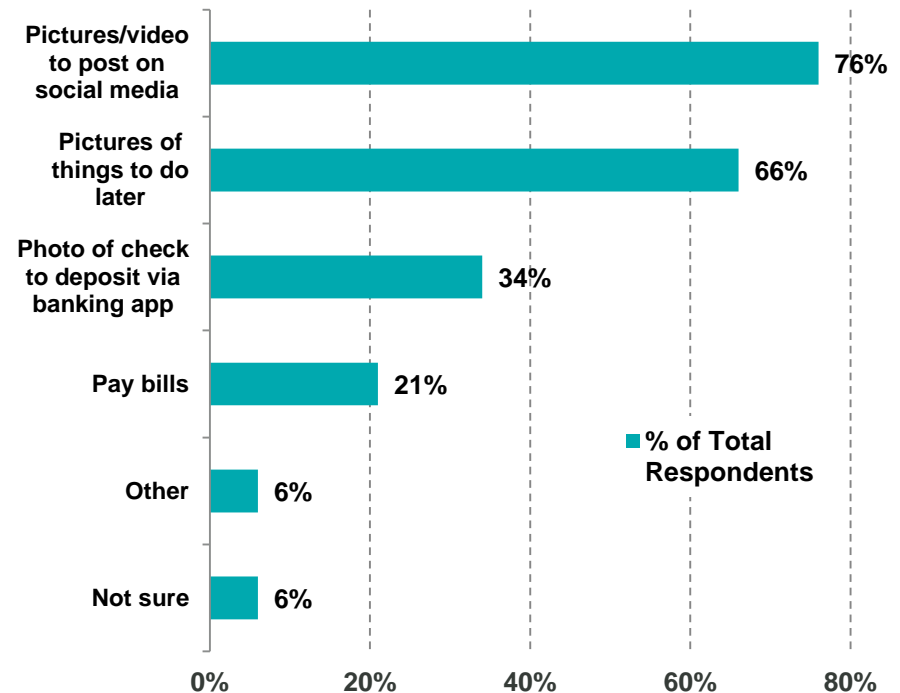
**Millennial Smartphone Camera Usage\*,  
USA, 2014**

How often do you use your device's  
camera/video function?



**Millennial Smartphone Camera Use Cases,  
USA, 2014**

For what things do you use your  
smartphone camera?



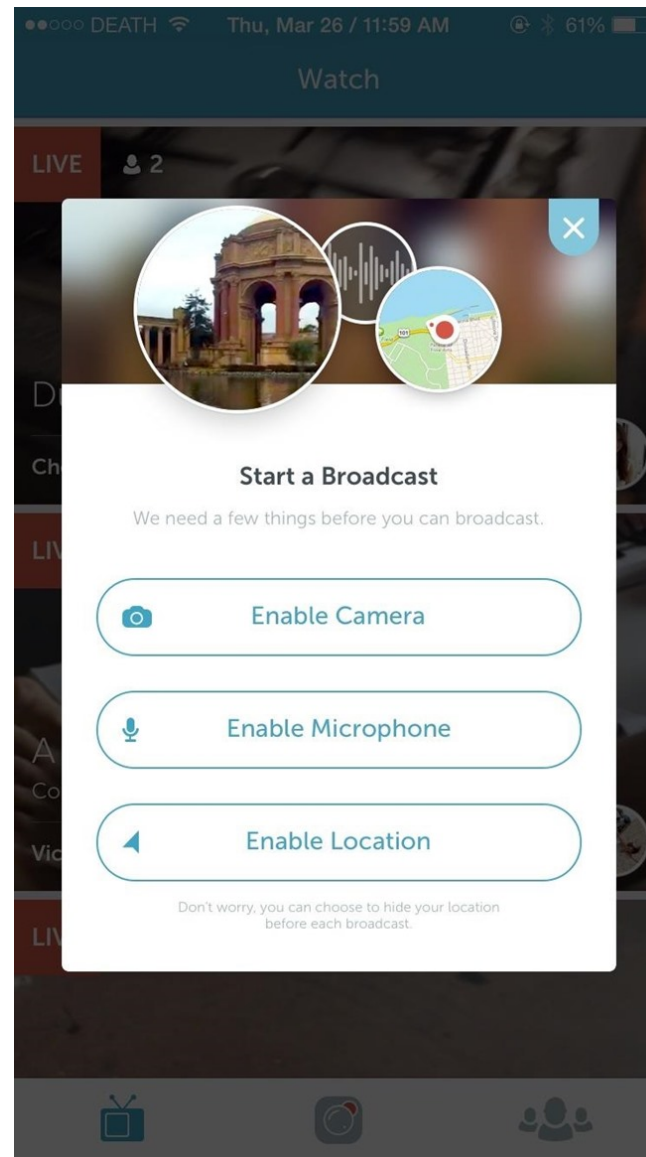
Source: Zogby Analytics.

\*18-24 year olds.

Note: Zogby Analytics was commissioned by Mitek Systems, Inc. to conduct an online survey of 1,019 millennials who have a smartphone. For the purposes of this survey, "millennials" are defined as adults between the ages of 18-34. All interviews were completed May 30 through June 6, 2014.

# Smartphone → A Very Smart Phone...

## Re-Imagining Presence = All Visual...All the Time

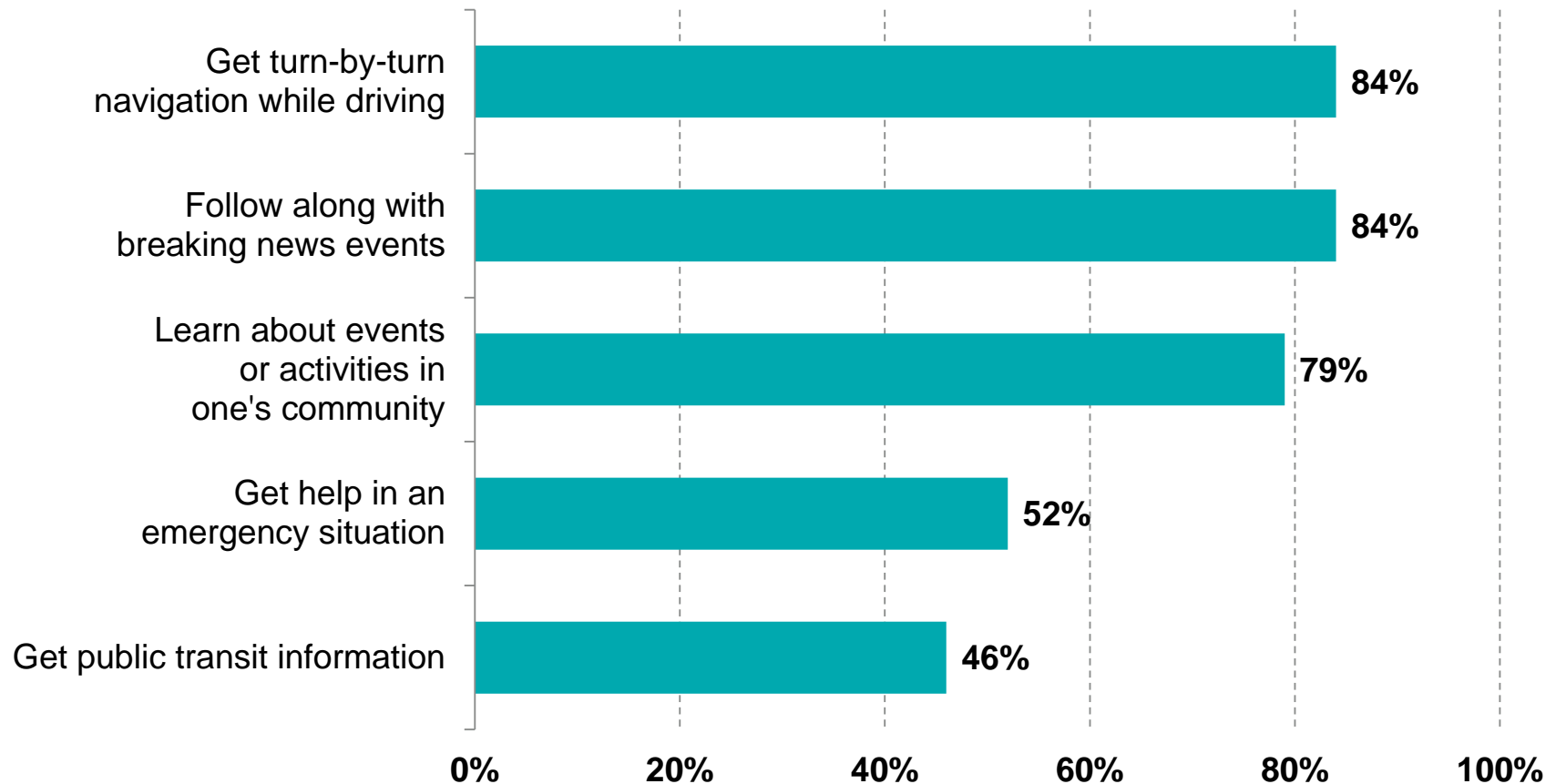


***Re-Imagining  
Getting What You Want...  
When You Want It***

















# 'Just in Time' Information = Enabled by Mobiles + Sensors + Humans...

## % of Cell Phone Owners Who Used Phones to Perform At Least One of Following Activities, USA



# ...‘Just in Time’ Products + Services = Enabled by Mobiles + Sensors + Humans

## Selected On-Demand Company Fulfillment Time Estimates

Transportation		Food		Delivery	
	~10 min		<20 min	 POSTMATES	Typically within 1 hour
	Within minutes		Typically within 1 hour		~20 min
 UBER	Within minutes		Typically within 20-40 minutes	<b>Travel</b>	
Dining					Instant booking
	Instant booking				Instant booking
Entertainment		Groceries			
	Instant booking	Typically within 1-2 hours			

# ***Re-Imagining Consumer Spending***

# Consumer Spending Category Rankings =

1) Housing 2) Transportation 3) Food 4) Insurance / Pensions 5) Healthcare...

## Average Annual Expenditure of USA Household, 2013 – 2014

Spend Category	Total (\$)		% of Total		Y/Y
	2013	2014	2013	2014	Growth (%)
Housing	\$17,041	\$17,377	33%	33%	2%
Transportation	8,999	9,104	18%	18%	1%
Food	7,047	7,115	14%	14%	1%
Personal Insurance / Pensions	5,573	5,551	11%	11%	(0%)
Healthcare	3,520	3,919	7%	8%	11%
Entertainment	2,586	2,560	5%	5%	(1%)
Cash Contributions	1,949	1,790	4%	3%	(8%)
Apparel and Services	1,706	1,674	3%	3%	(2%)
Education	1,212	1,143	2%	2%	(6%)
Miscellaneous / Other	1,776	1,701	3%	3%	(4%)
<b>Total</b>	<b>\$51,409</b>	<b>\$51,934</b>	<b>100%</b>	<b>100%</b>	<b>1%</b>

Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Survey.

Survey results based on mid-year 2014 and 2013 data.

Pension / Personal Insurance includes deductions for private retirement accounts, social security, and life insurance.

Healthcare costs include healthcare insurance, drugs, out-of-pocket medical expenses, etc.

*Lots of Innovation in Biggest  
Consumer Spending Categories...*

*Especially in Top 3 Areas*

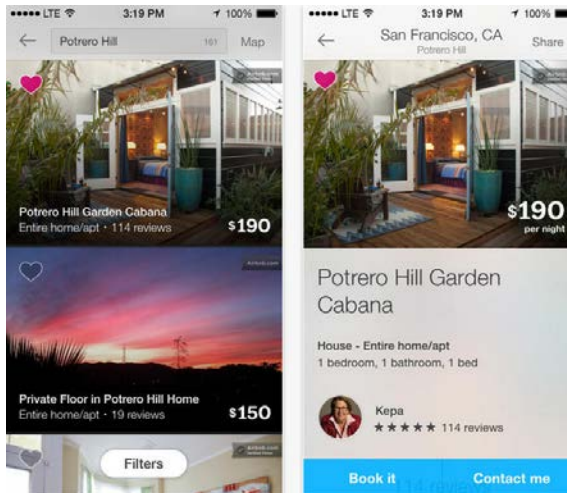
- 1) Housing*
- 2) Transportation*
- 3) Food*

# Innovation in *High Spend* Markets...

## Average Annual USA Household Spending...

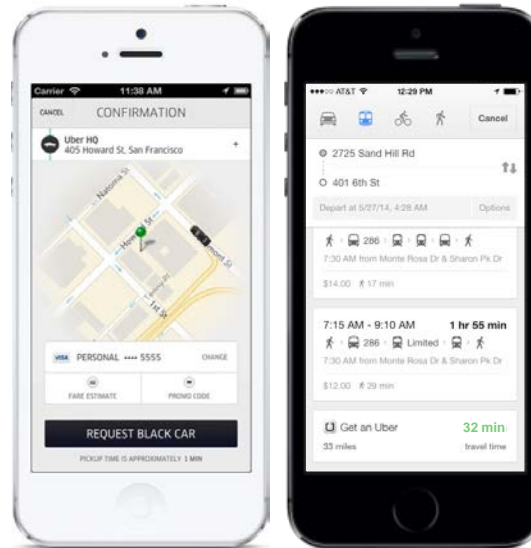
**Housing = \$17K**

33% of total spend



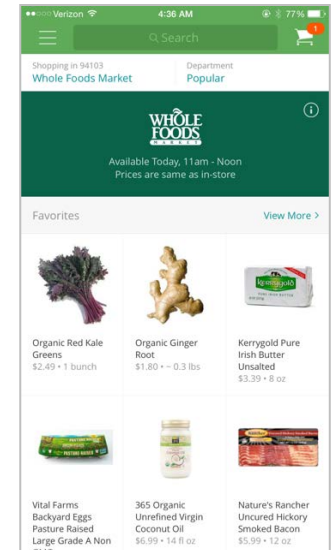
**Transportation = \$9K**

18% of total spend



**Food = \$7K**

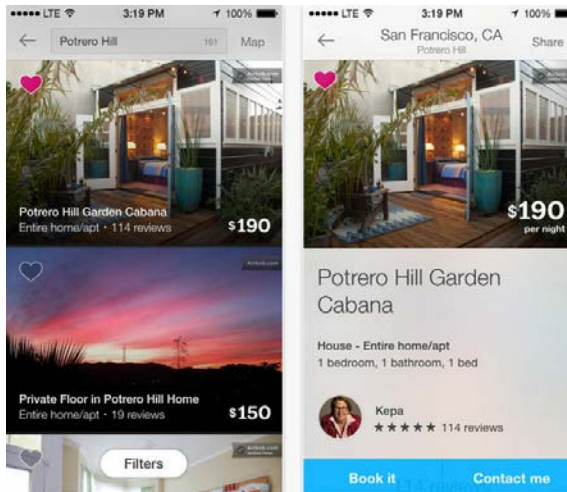
14% of total spend  
\$4K on food consumed in home...  
8% of spend



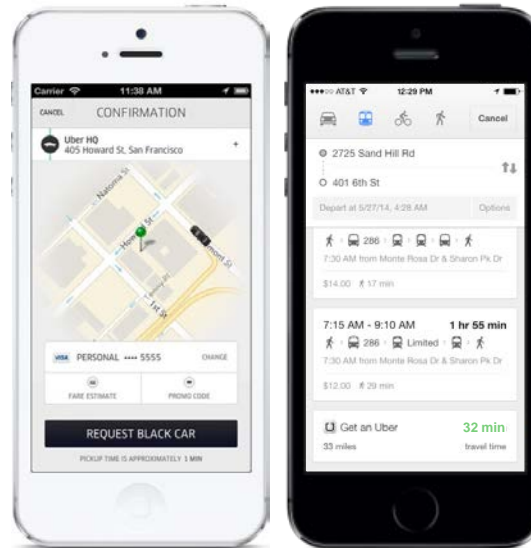
# ...Innovation in *High Engagement* Markets...

## Average USA Individual...

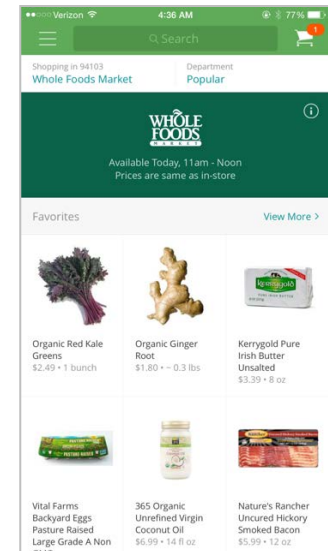
**Needs Shelter  
Every Day**



**Drives ~37 Miles  
per Day**



**Visits Grocery Store  
2x / Week...  
41 minutes each trip**





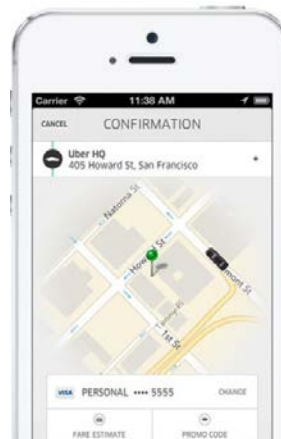
# ...Innovation in *Weak User Experience* Markets



 **airbnb**



 **U B E R**



*Instacart*





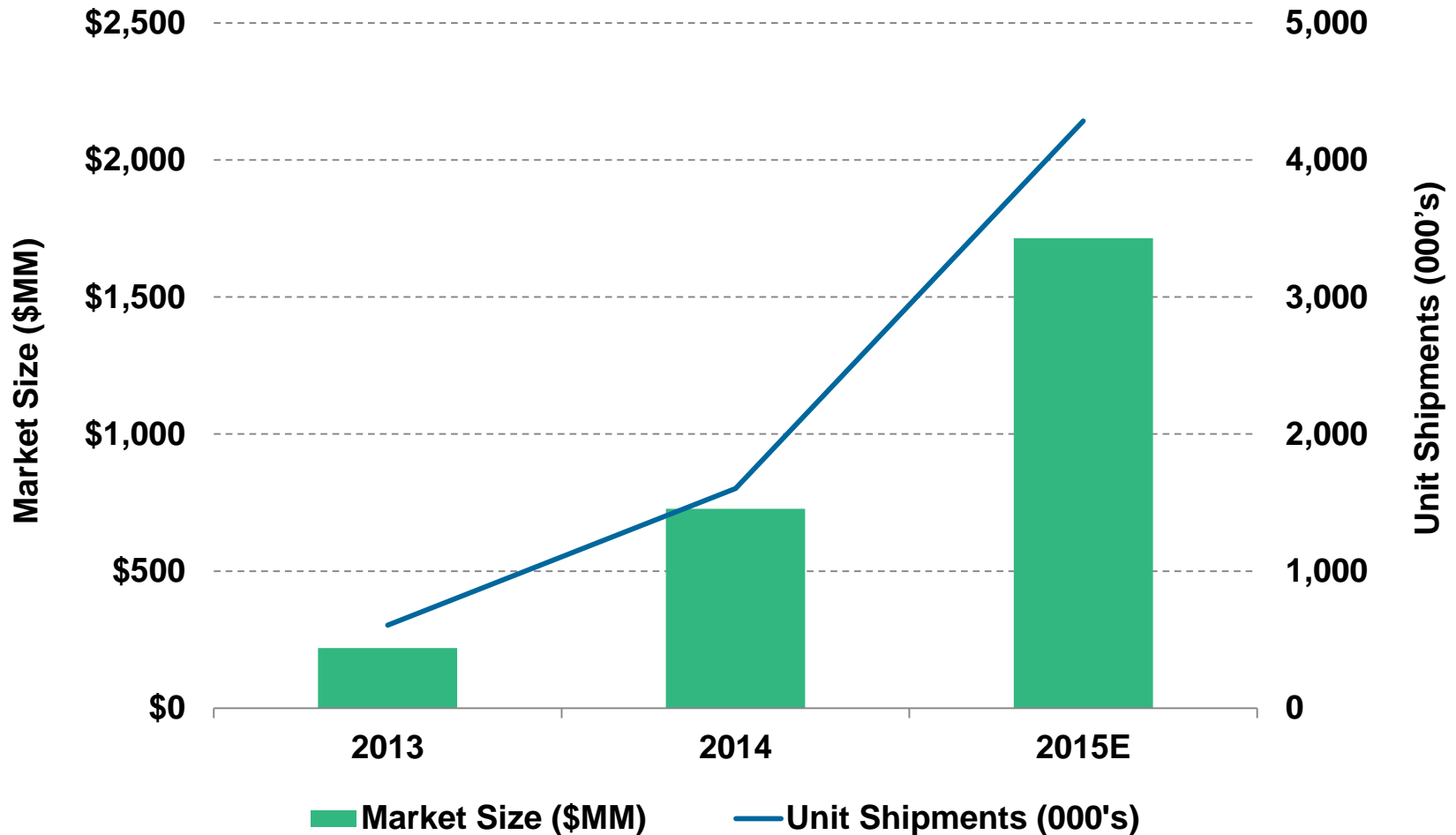
# ***Re-Imagining Birds-Eye View...***

***Drone Growth =  
Uniquely  
Fast / Global...  
Consumer / Commercial...  
& Regulators Engaged***

# Consumer Drone Shipments = Rising Rapidly...

@ 4.3MM Units in 2015E, + 167% Y/Y, Revenue to \$1.7B

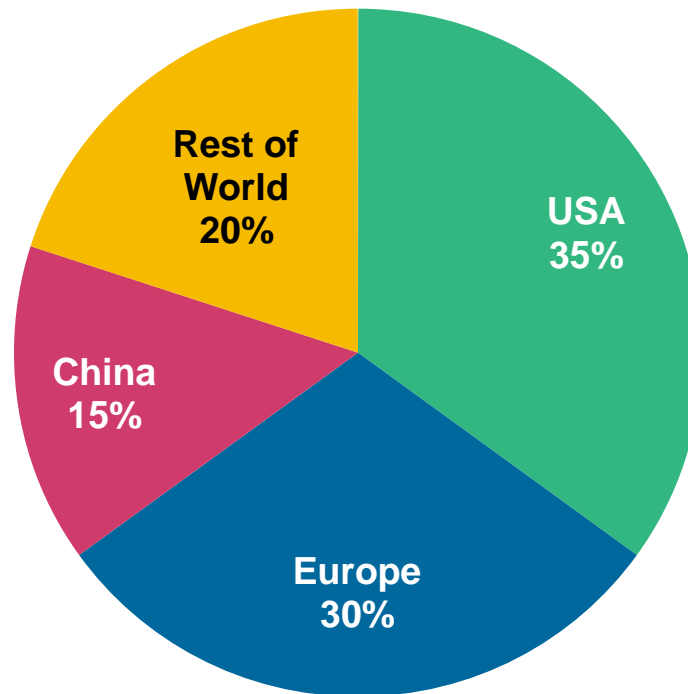
## Global Consumer Drones – Revenue & Unit Shipments, 2013 – 2015E



Consumer Drone Use = Global...

USA = 35%... Europe = 30%... China = 15%... ASP = \$700

### Global Consumer Drones – Revenue by Region, 2014



# Commercial Drone Use = Very Broad...

## Operational Improvements / Resource Management / Public Safety

### Precision Agriculture

*Golden Prairie uses drones to capture soil & growth information on 10K+ acres of organic millet crops in high plains of eastern Colorado, USA*



### Mining & Quarrying

*Barrick Gold / Imerys / Rio Tinto using drones for pit surveys / stockpile management / road analysis*



### Infrastructure Inspection

*San Diego Gas & Electric testing drones for electric & gas line inspections*



### Disaster Response

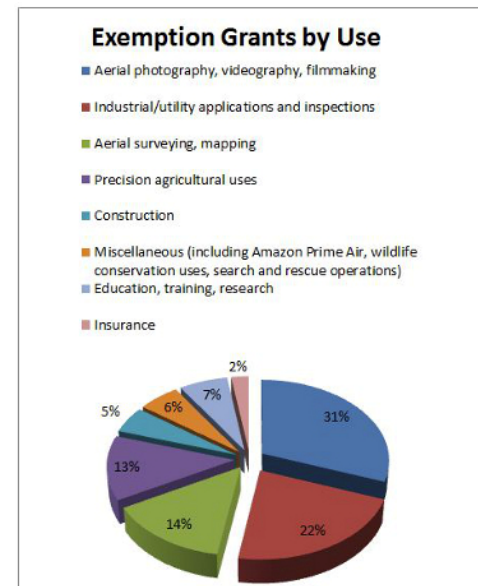
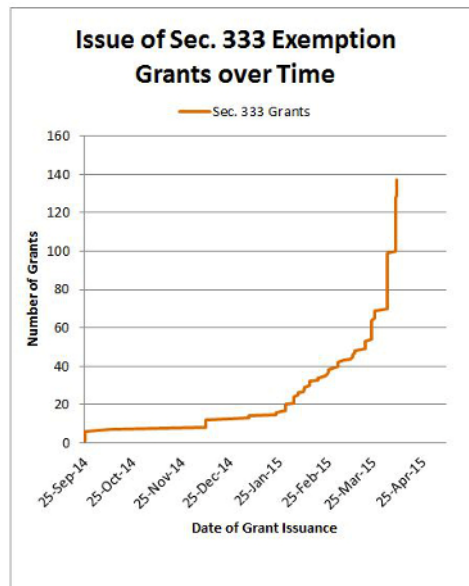
*Drones used to assess damage & for relief efforts in Nepal & Haiti after earthquakes*



# USA = Previously Held Back by Regulation...Opening for Business = >400 American Companies Approved to Commercially Operate Drones

## Countries Ranked by Government Accommodation for Drones

- 1) France & United Kingdom
- 2) Canada
- 3) Australia
- 4) Japan
- 5) USA
- 6) China



### Transportation



### Oil & Gas



### Construction



### Precision Farming



### Electric Grid



### Insurance



Source: KPCB assessment for rankings, Thompson Coburn LLP for Sec 333 exemptions (<http://www.thompsoncoburn.com/news-and-information/publications/publication/15-04-17/section-333-at-200-days-where-are-we-now.aspx>), Airware for companies with public domain licenses.

Note: Per the FAA, Section 333 of the FAA Modernization and Reform Act of 2012 (FMRA) (PDF) grants the Secretary of Transportation the authority to determine whether an airworthiness certificate is required for a UAS to operate safely in the National Airspace System (NAS). This authority is being leveraged to grant case-by-case authorization for certain unmanned aircraft to perform commercial operations prior to the finalization of the Small UAS Rule, which will be the primary method for authorizing small UAS operations once it is complete.



# Commercial Drone Market Future Potential = Bigger + More Constructive than Many Believe, Though With Risks



***Cyber Attacks =  
Growing in Size /  
Complexity / Risk***

# Cyber Attacks = Growing Bigger / Faster...

- **Insider Misuse = Significant Cause of Breaches**

>20% of breaches come directly from insiders with malicious intent. In most breaches, attackers have foothold within internal networks & spread / steal data through privilege abuse / credential misuse.

- **Mobile Devices = Increasingly Used to Harvest Data**

Adware grew 136% to 410,000 apps between 2013 and first three quarters of 2014, giving attackers access to personal information such as contacts, which can subsequently be used to launch phishing attacks.

- **Mobile Device Management = Critical in Preventing Breaches**

22% of breaches reported by network security decision makers involve lost / stolen devices.



# ...Cyber Attacks = Growing Bigger / Faster

- **Human Focus = Critical in Preventing / Remediating Attacks**

Despite abundance of security products, breach response typically takes months. ~4 of 5 organizations don't update their breach response plans to account for changing threat landscape and corporate processes. With proper technology, threat intelligence & expertise, detection to response times has been reduced by >90%.

- **Security Skills = Biggest Gap in Enterprise Security Programs**

Despite large investments in security technologies, lack of skilled experts continues to result in breaches. At least 30% of organizations cite a 'problematic shortage' of each of following: 1) cloud computing and server virtualization security skills; 2) endpoint security skills; 3) network security skills; 4) data security skills; 5) security analytics / forensic skills.

- **Disclosures of Breaches = Coming from Outside Sources**

In 69% of breaches, victim did not detect attack on own – they were notified by third party (like the press, law enforcement, etc.). This is forcing victims to disclose breaches outside their preferred terms / timing.

---

# AMERICA'S EVOLVING WORK ENVIRONMENT...

*THIS IS NOT A COMPREHENSIVE OVERVIEW OF WORK IN AMERICA, BUT IS INTENDED TO PROVIDE A COLLECTION OF TRENDS OBSERVED IN THE MARKETPLACE IN AN EFFORT TO HELP ENCOURAGE DATA-DRIVEN DISCUSSIONS ABOUT SOME EVOLVING CHANGES RELATED TO WORK.*

*Globalization / Structural Changes +  
Mobile Connectivity +  
Generational Shifts =*

*Changing Ways Many Work*

# What We're Going to Cover Here

- 1) Jobs (+ Work) Have Evolved**
- 2) People Have Changed**
- 3) Connectivity Has Changed**
- 4) New Forms of Commerce Transforming How People Can Get Products + Services**
- 5) Changes in Connectivity + Commerce = Impact Consumption & Ways People Can Work...Still Early Innings**
- 6) Online Marketplace / Platforms = Regulatory Focus Evolving**
- 7) People + Systems + Regulations / Policies = Need to Evolve / Adapt Together to More Connected Society**

---

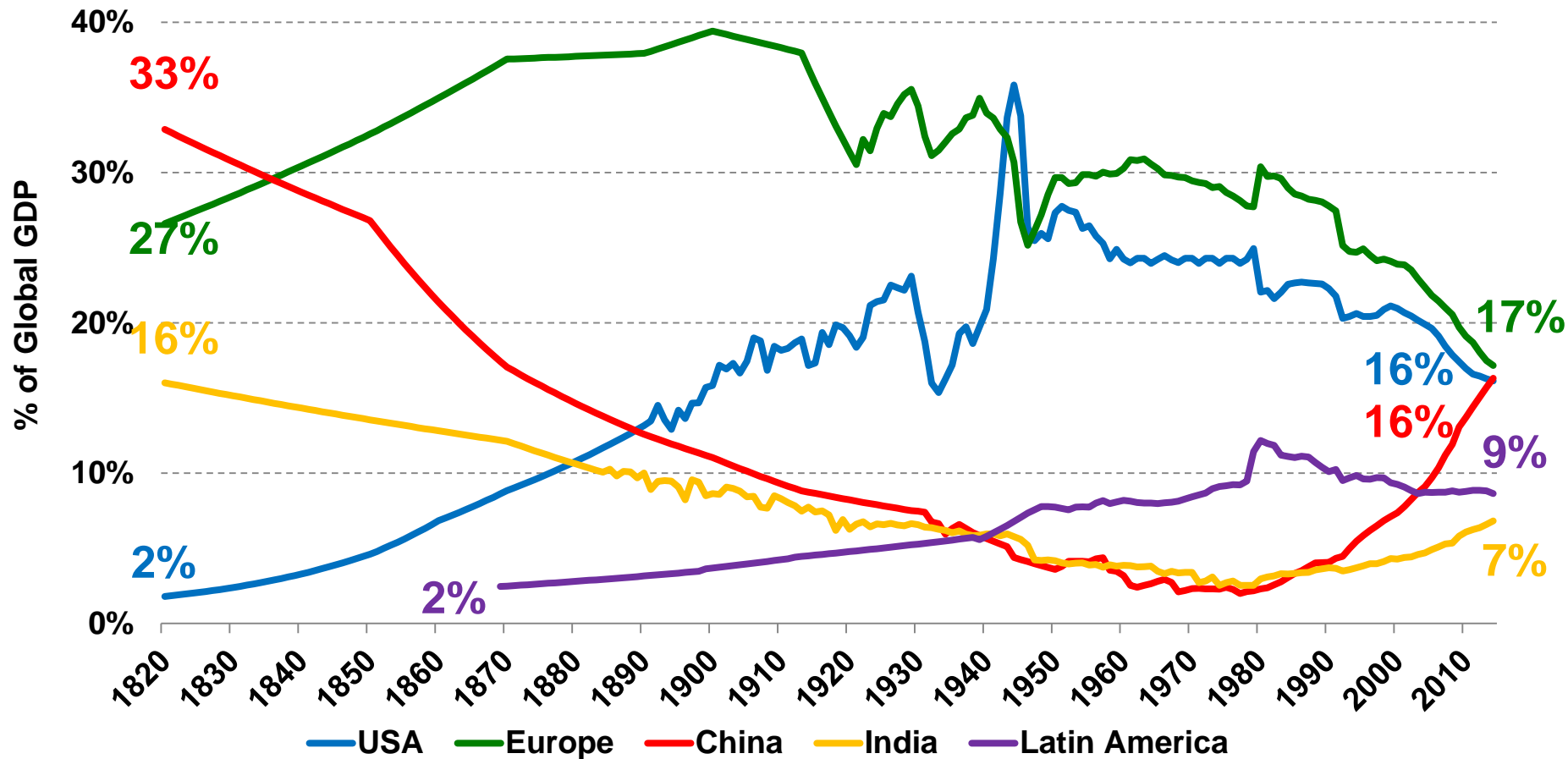
# **JOBS (+ WORK) HAVE EVOLVED**

*Jobs =*

*Many Reshaped by  
Globalization &  
Structural Changes*

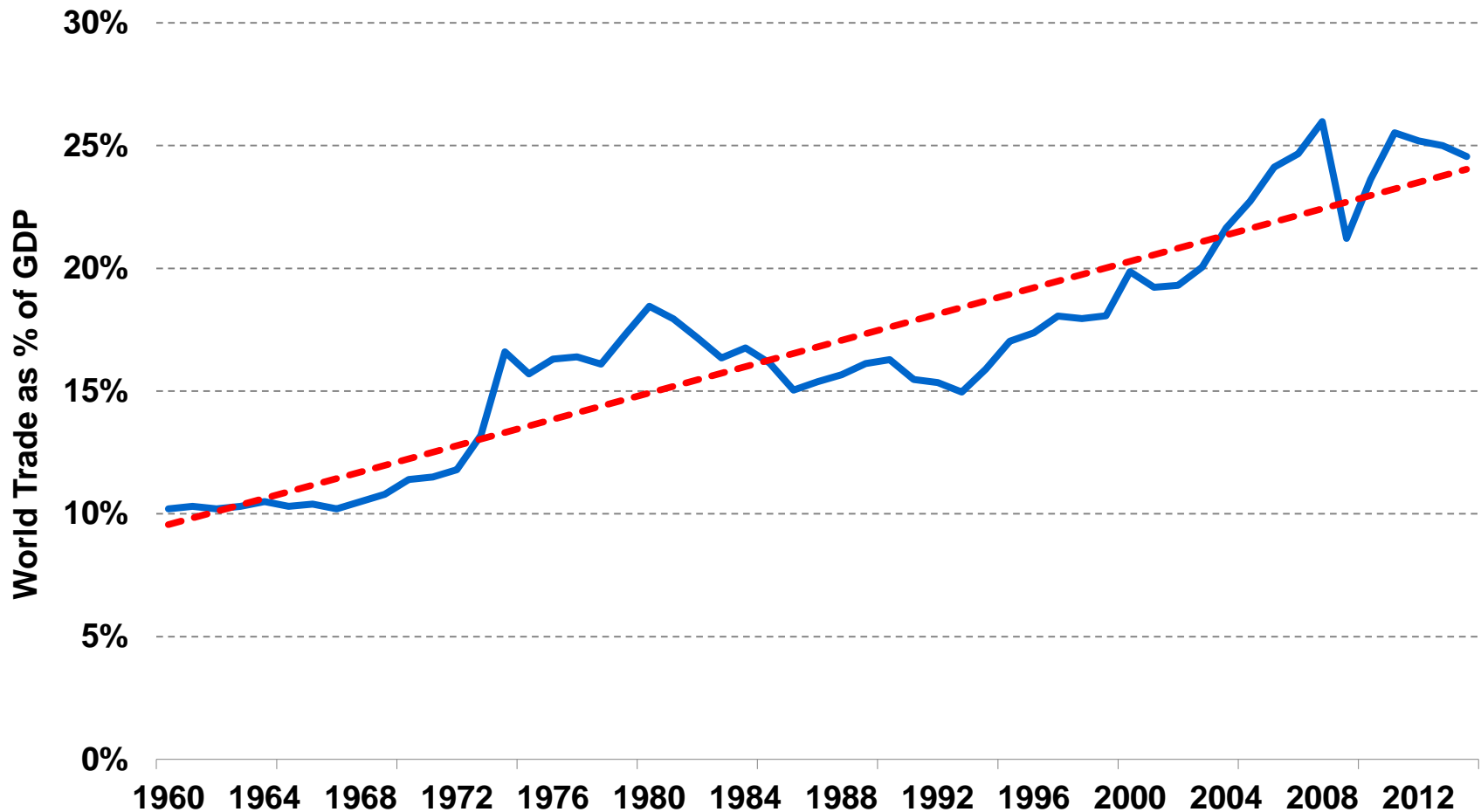
# USA as % of Global GDP Declining = @ 16% vs. 36% Peak During WWII

Percent of Global GDP, 1820 – 2014,  
USA vs. Europe vs. China vs. India vs. Latin America



# World Trade Rising as % of GDP = @ 25%, Up ~3x Over Past ~50 Years

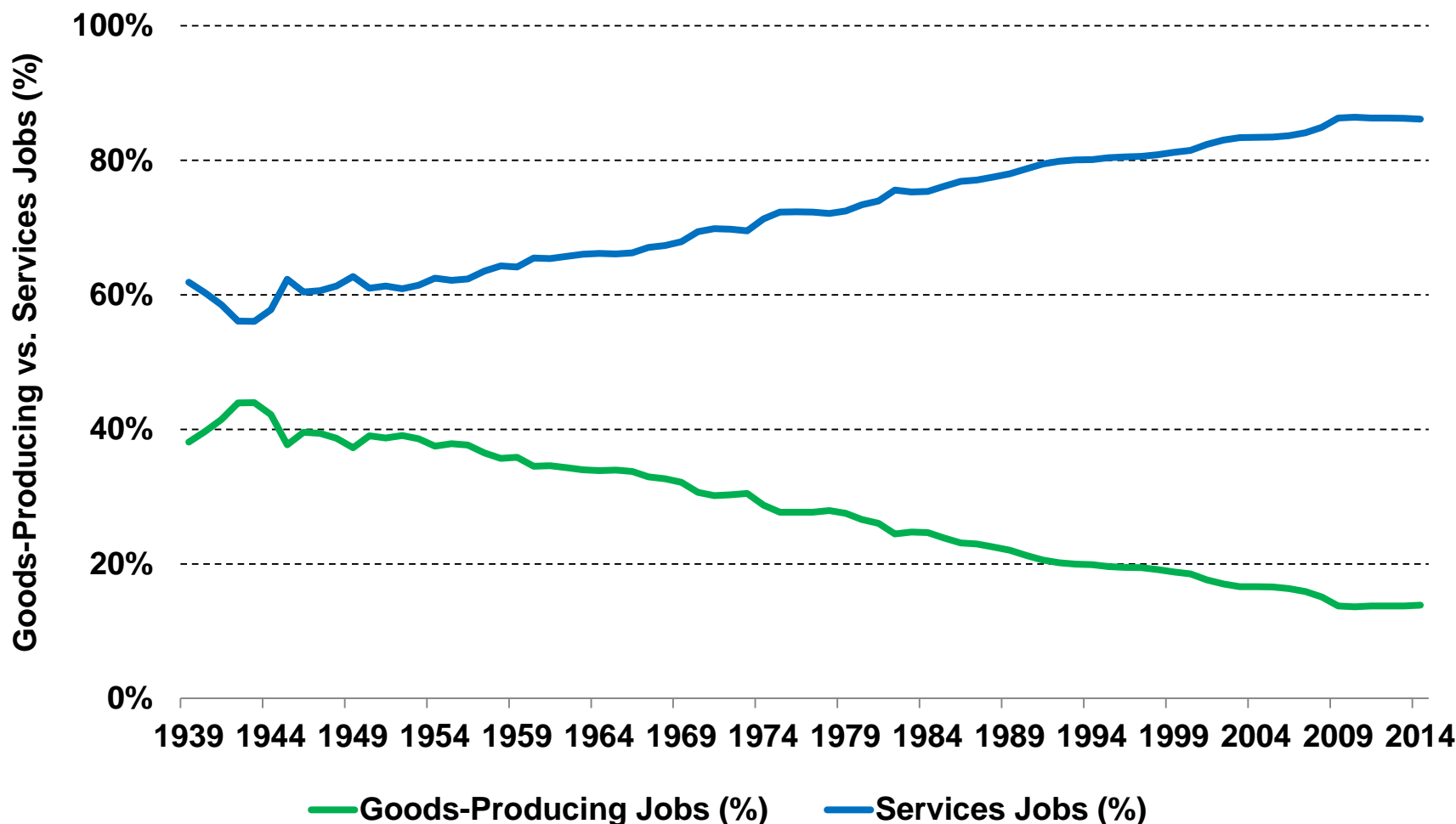
**World Trade as % of World GDP, 1960 – 2014**





**‘Goods Producing’ Jobs Falling, Though Stable Recently =  
@ 14% of Jobs vs. 44% Peak in 1943...Services Jobs @ 86% vs. 56%**

## Goods-Producing vs. Services Jobs as % of Total, USA, 1939 – 2014

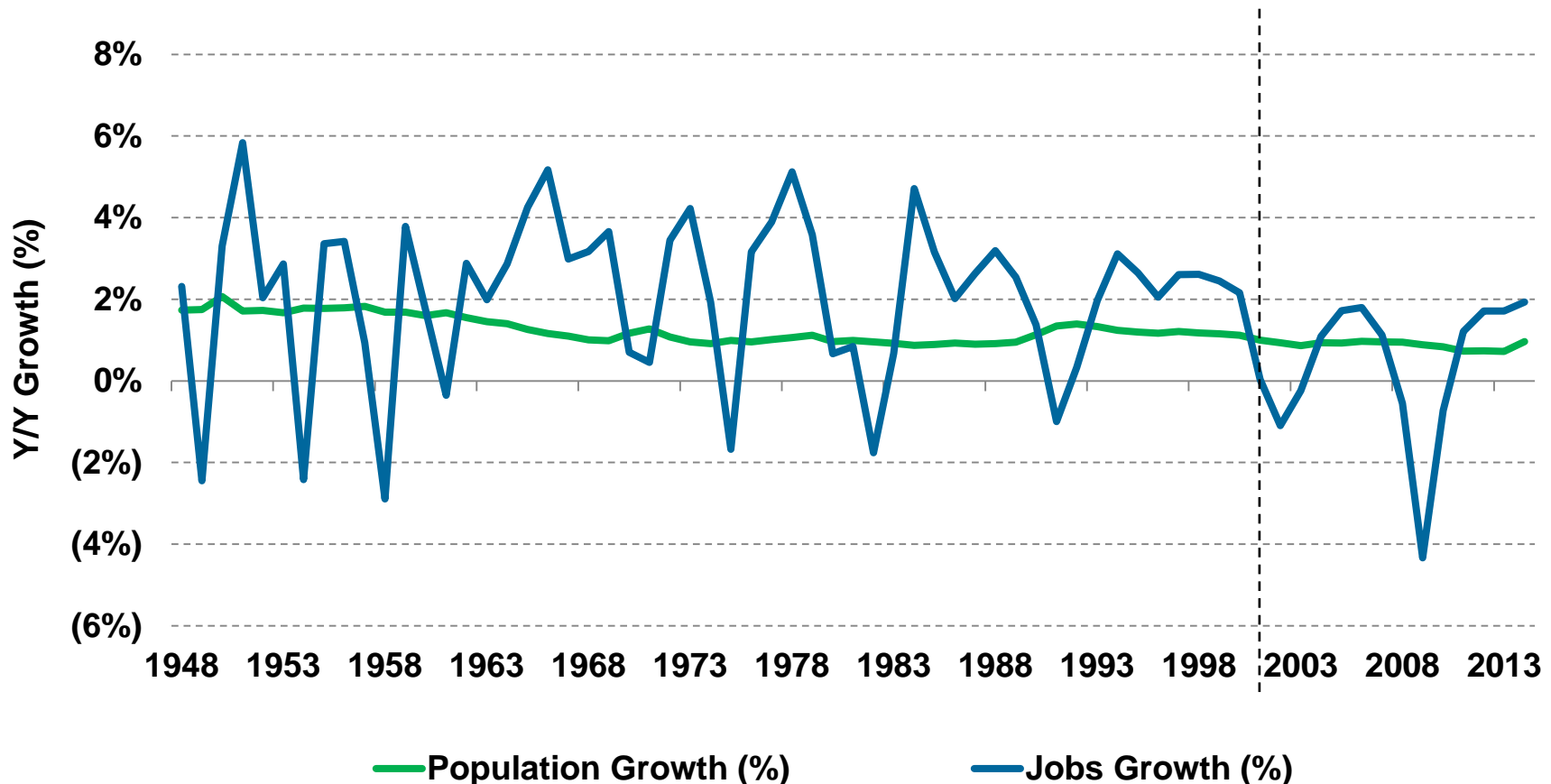


# Since 2000 = Population Grew 2.4x Faster than Jobs... 1948 – 2000 = Jobs Grew 1.7x Faster than Population

**1948 – 2000 Annual Averages = Jobs @ +2.1%...Population @ +1.3%**

**2000 – 2014 Annual Averages = Jobs @ +0.4%...Population @ +0.9%**

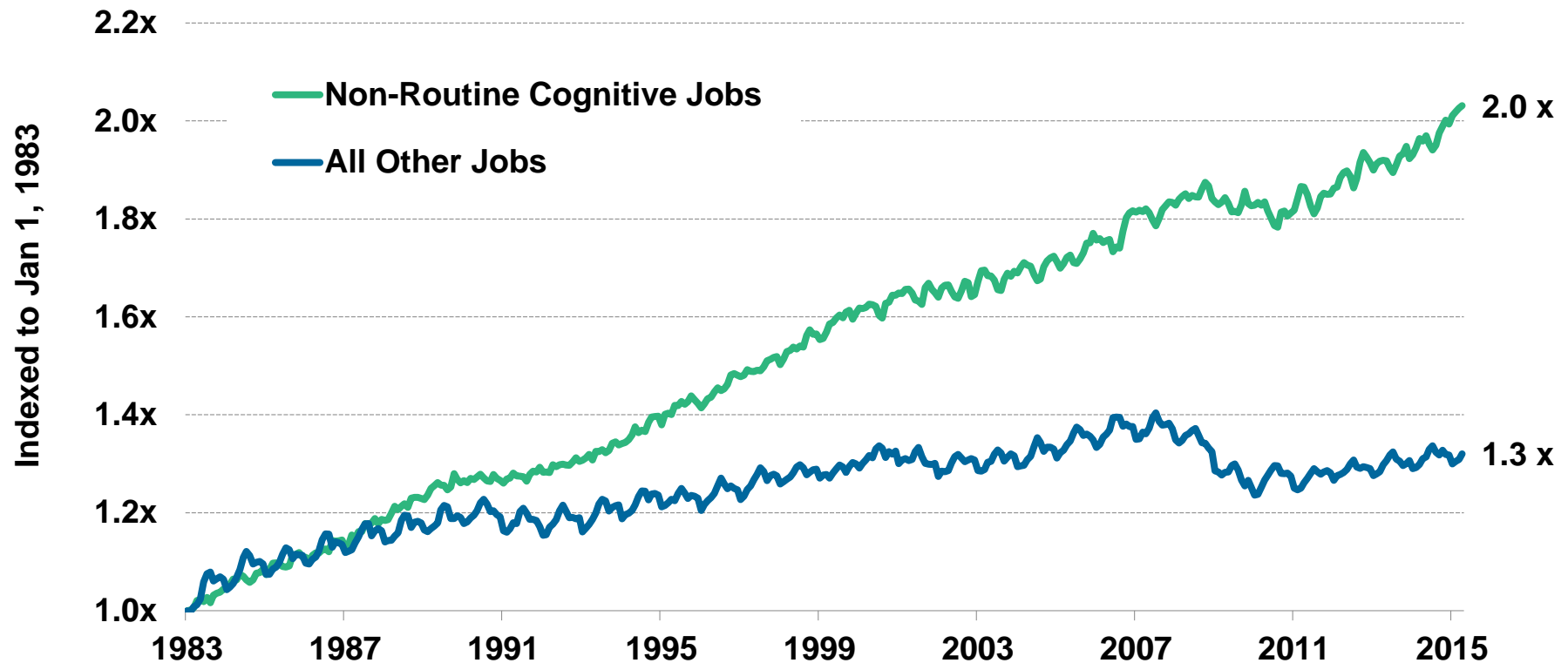
**Y/Y Population vs. Jobs Growth, USA, 1948 – 2014**



# High-Skilled / Knowledge-Based Jobs Grew 2x Since 1983... While Other Jobs Grew Just 1.3x

*Non-Routine Cognitive Jobs = High-Skilled and Requires Flexibility, Creativity, Problem Solving*

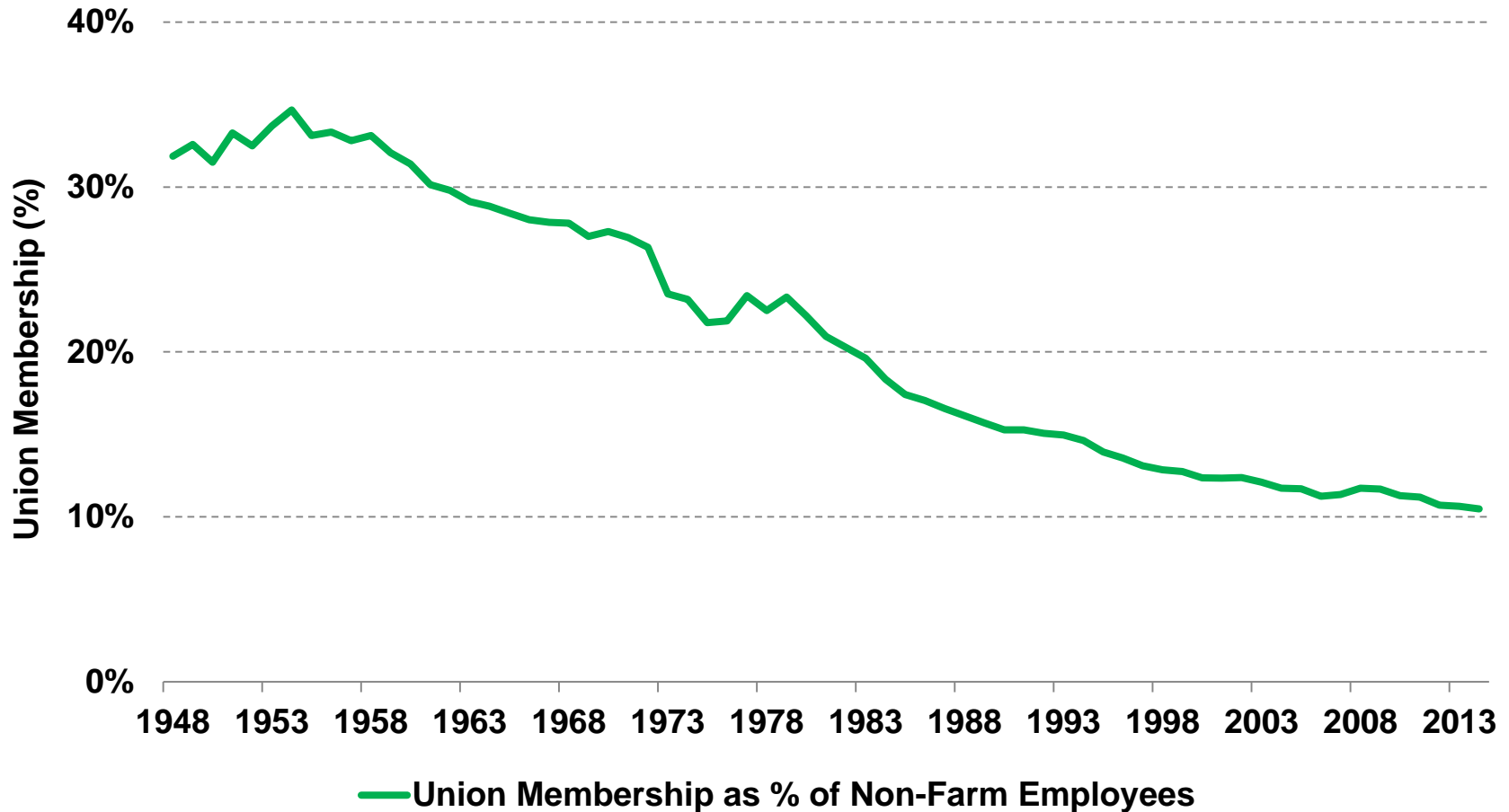
**Non-Routine Cognitive Jobs vs. All Other Jobs Growth,  
USA, 1983 – 2015 (Indexed to Jan 1, 1983)**



Source: US Census Bureau, Federal Reserve Bank of St. Louis, 4/15. Based on methods from Jaimovich and Siu, 2012. Stephen Roach, Senior Fellow and Economist at Yale University, 2015.  
Note: Non-routine cognitive jobs include jobs like computer and mathematical, architecture and engineering, education and training, and healthcare occupations.  
All other jobs (referred to as routine cognitive and manual occupations) include jobs like production, construction, administrative, and various other occupations.  
Non-routine cognitive jobs require creativity, flexibility, problem solving, and are generally high-skilled. Non-routine cognitive jobs comprise ~55MM+ jobs today, or ~40% of the USA workforce.

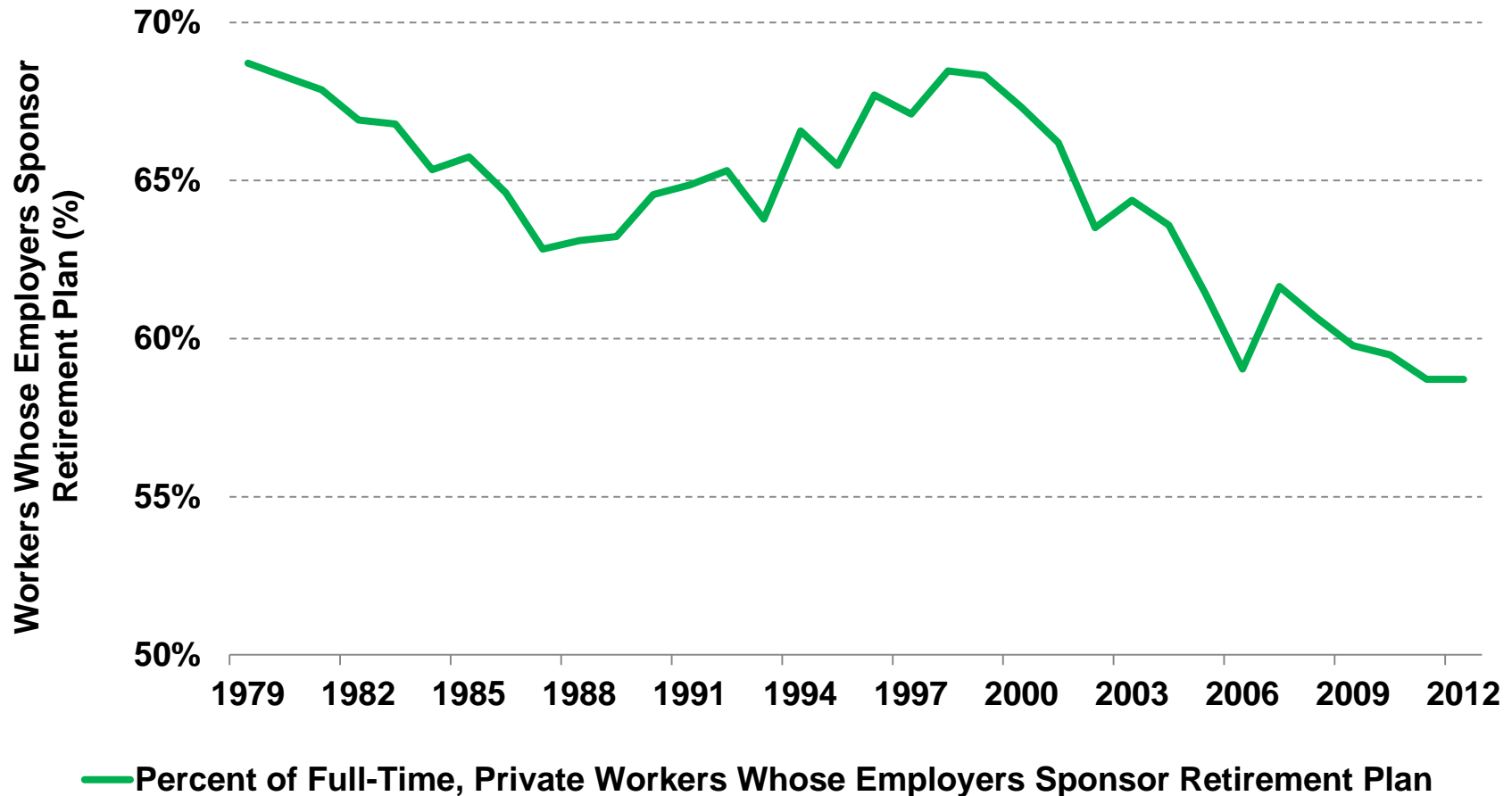
# Union Participation Declining = @ 10% of Workforce vs. 35% Peak in 1954

## Union Membership (% of Total Non-Farm Employed Workers), USA, 1948 – 2014



# Employer Retirement Plan Sponsorship Falling = @ 59% in 2012 vs. 69% in 1979

## Private, Full-Time Workers Whose Employers Sponsor a Retirement Plan, USA, 1979 – 2012

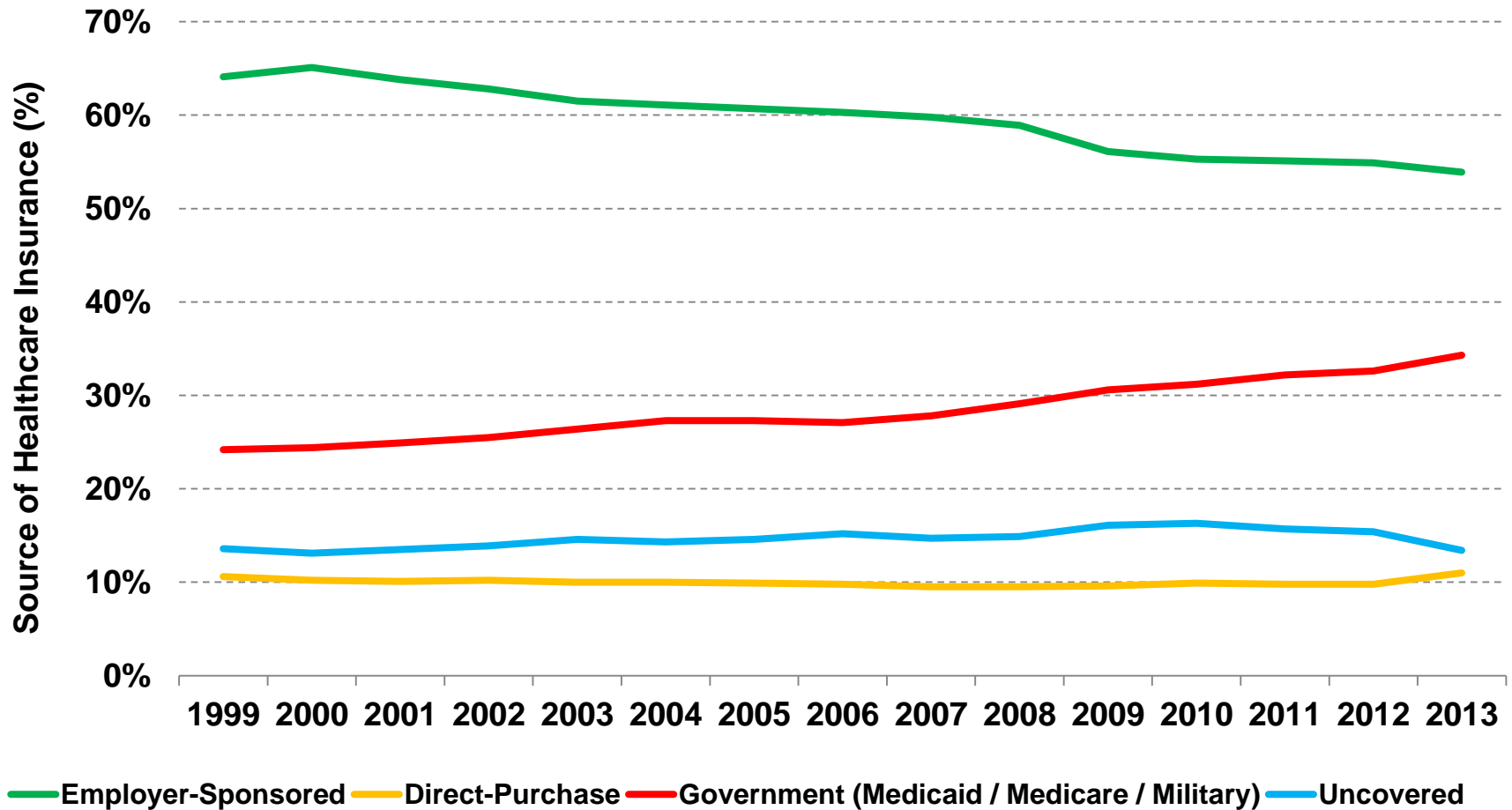


Source: Center for Retirement Research at Boston College, 5/13.

Note: Population is restricted to private, civilian, nonfarm wage and salary earners. Full-time workers are those working 50 or more weeks a year and 35 or more hours a week. Data are limited to private-sector, full-time workers ages 25-64. Retirement plans include defined contribution plans, defined benefit plans, or both. Data are based on respondents who said the employer they work for has a pension or other type of retirement plan for any of its employees.

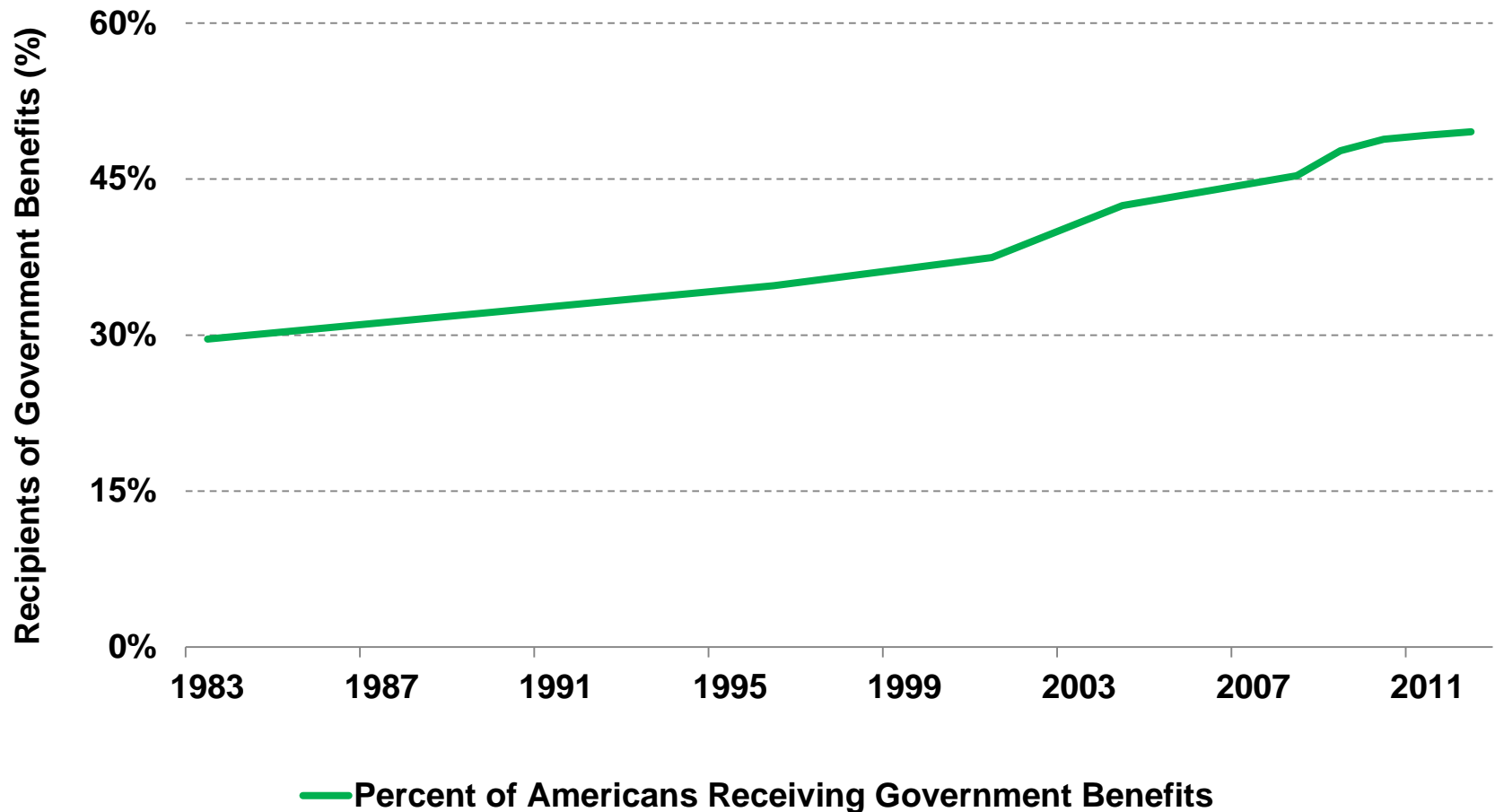
# Source of Healthcare Insurance Shifting Away from Employers = @ 54% vs. 64% in 1999

## Sources of Healthcare Insurance, USA, 1999 - 2013



# Government Benefit Recipients Rising = @ 50% of Population vs. 30% in 1983

**Percent of Americans Receiving Some Form of Government Benefit,  
1983 – 2012**



Source: U.S. Census Bureau, Survey of Income and Program Participation.

Government benefits include Social Insurance Programs such as Department of Veterans' Affairs Compensation, Pensions, Educational Assistance, Medicare, Social Security, Unemployment Compensation Insurance, Workers' Compensation, Railroad Retirement; and Social Welfare Programs, such as Food Stamps, Free/Reduced-Price Meals, Housing Assistance, Federal and State Supplemental Security Income, Medicaid, etc.

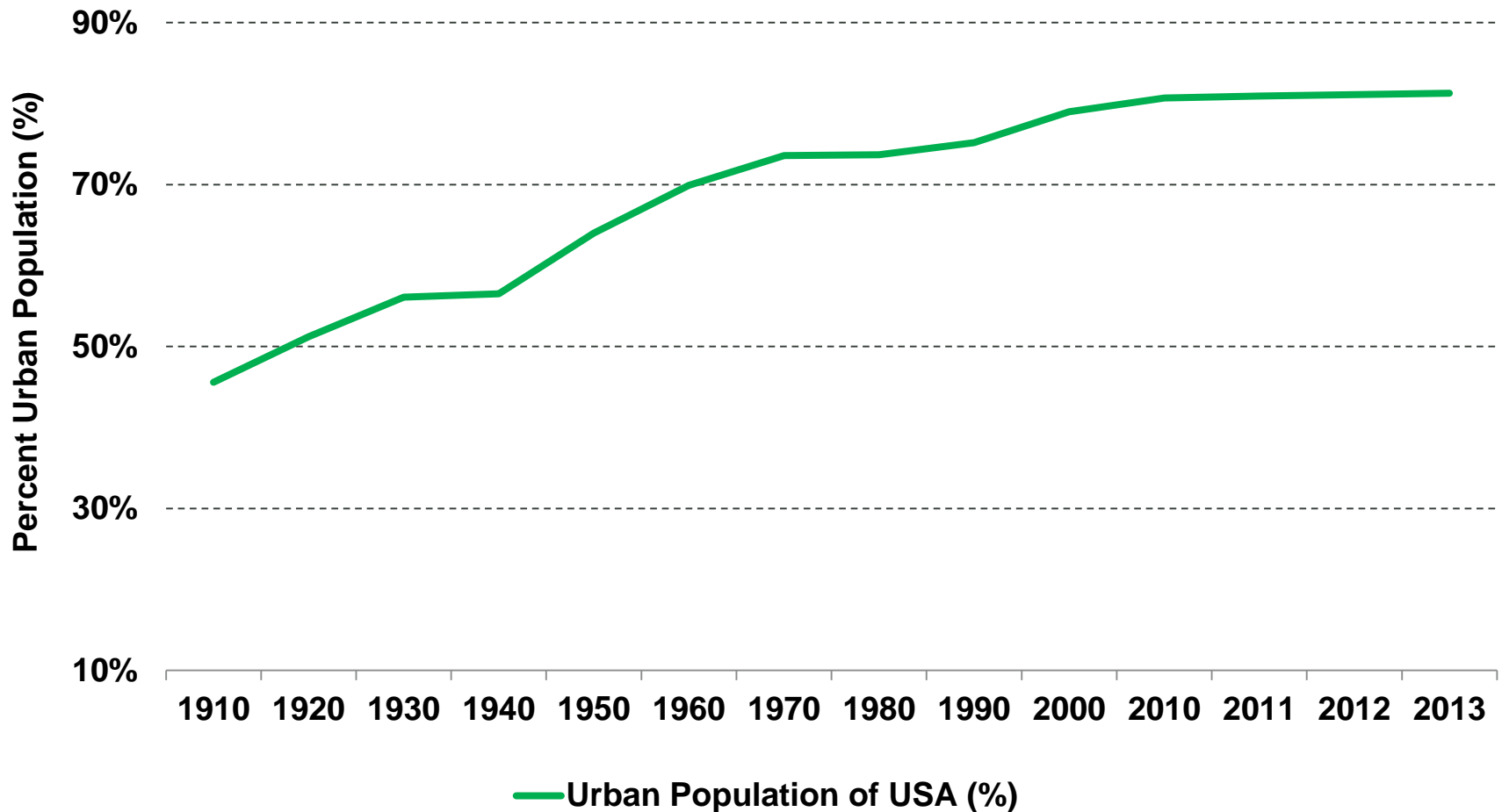
---

# PEOPLE HAVE CHANGED



# Urban Dwellers Have Risen = @ 81% of Population vs. 70% Fifty Years Ago, 46% a Century Ago

## Urban Population as Percent of Total Population, USA, 1910 – 2013



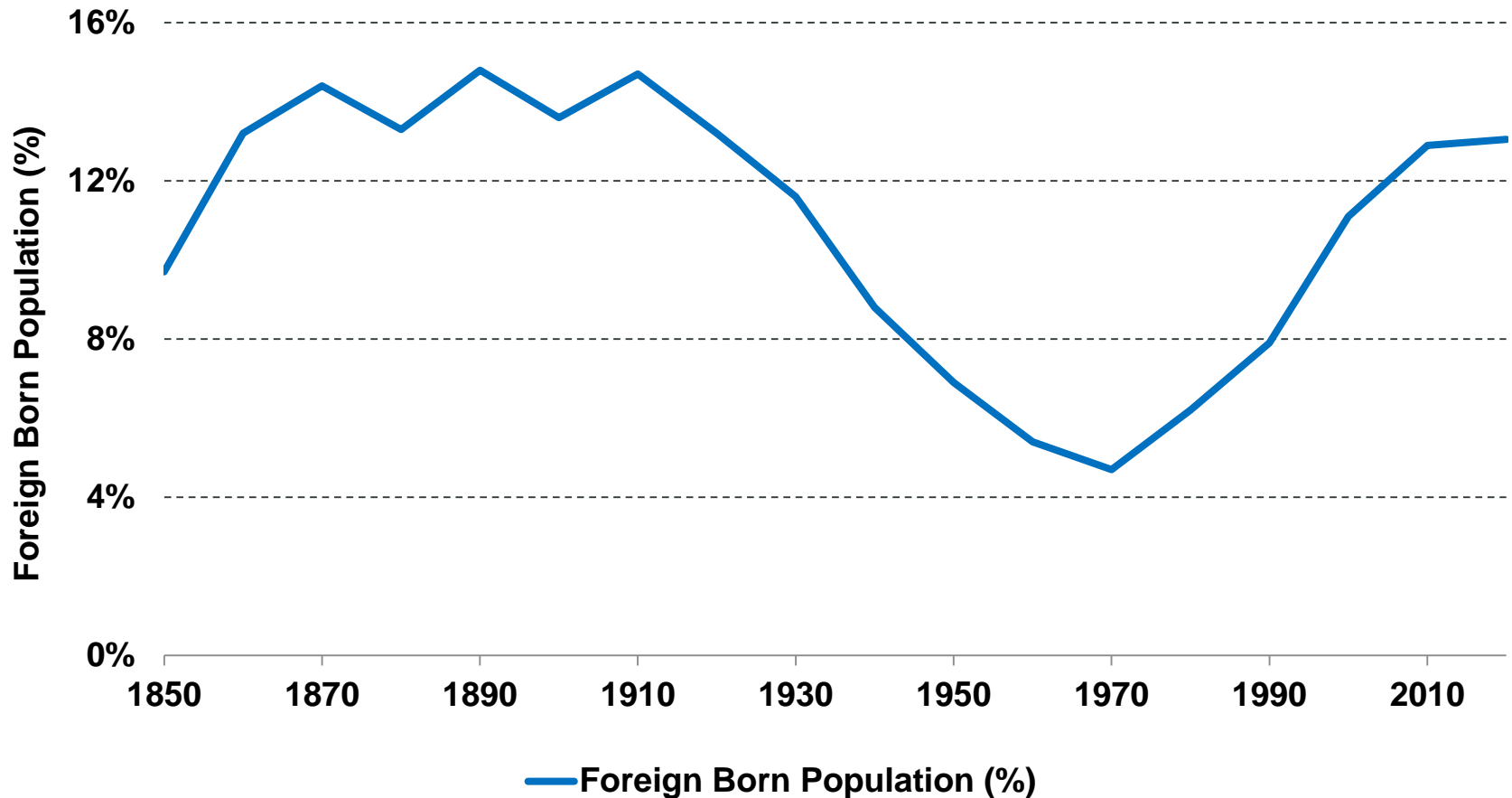
Source: The World Bank, United Nations World Urbanization Prospects. US Census Bureau.

Note: Urban population refers to people living in urban areas. Urban areas are densely developed territories that contain at least 2,500 people, as defined by the Bureau of Labor Statistics. It is calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects.

Interest in urbanization is owing to the fact that many new, online, on-demand platforms / marketplaces typically focus on serving urban populations.

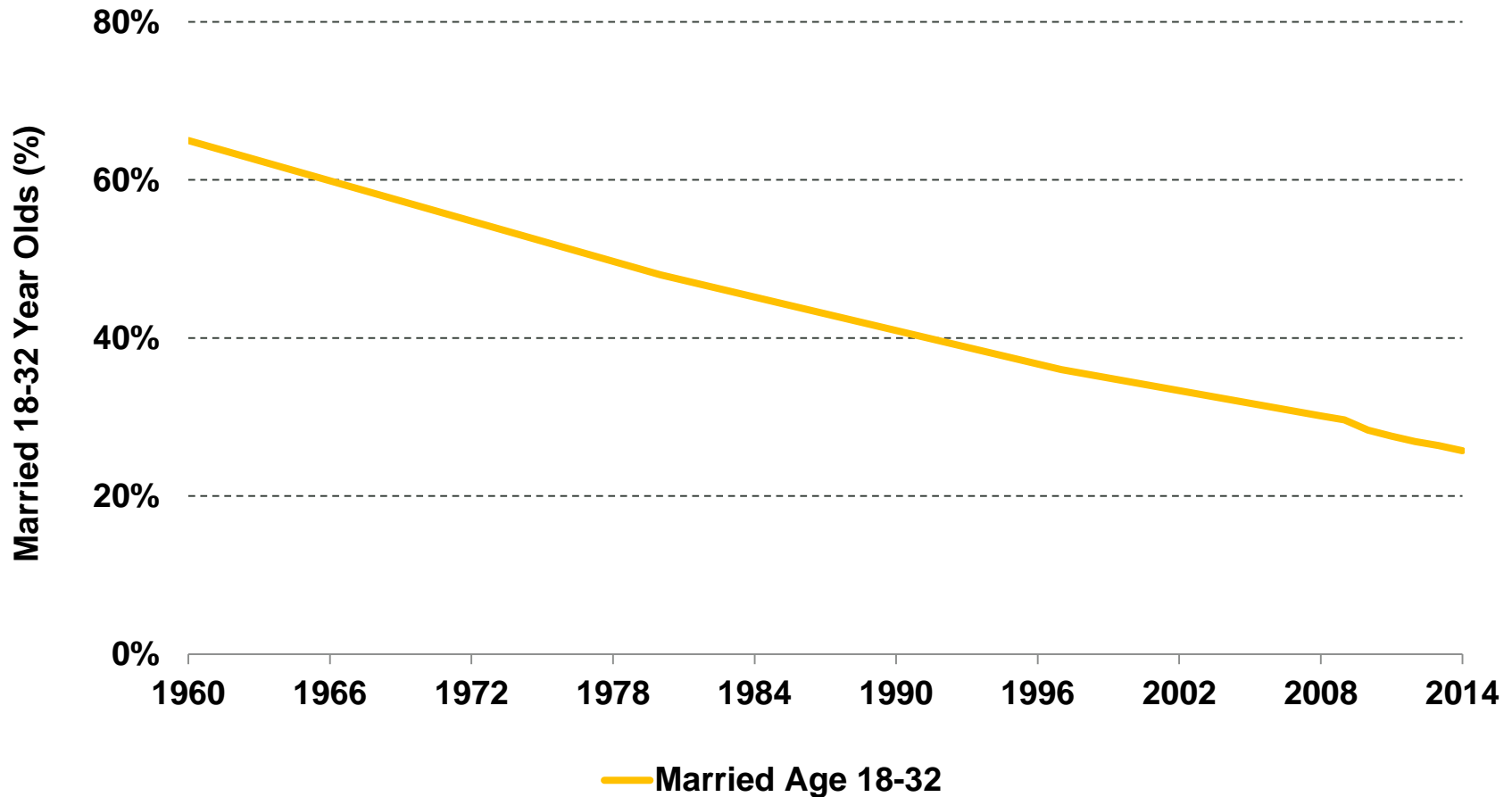
# Immigrant Population Rising = @ 13% of Total vs. <5% in 1970

**Percent of Population that is Foreign-Born, USA, 1850 – 2013**



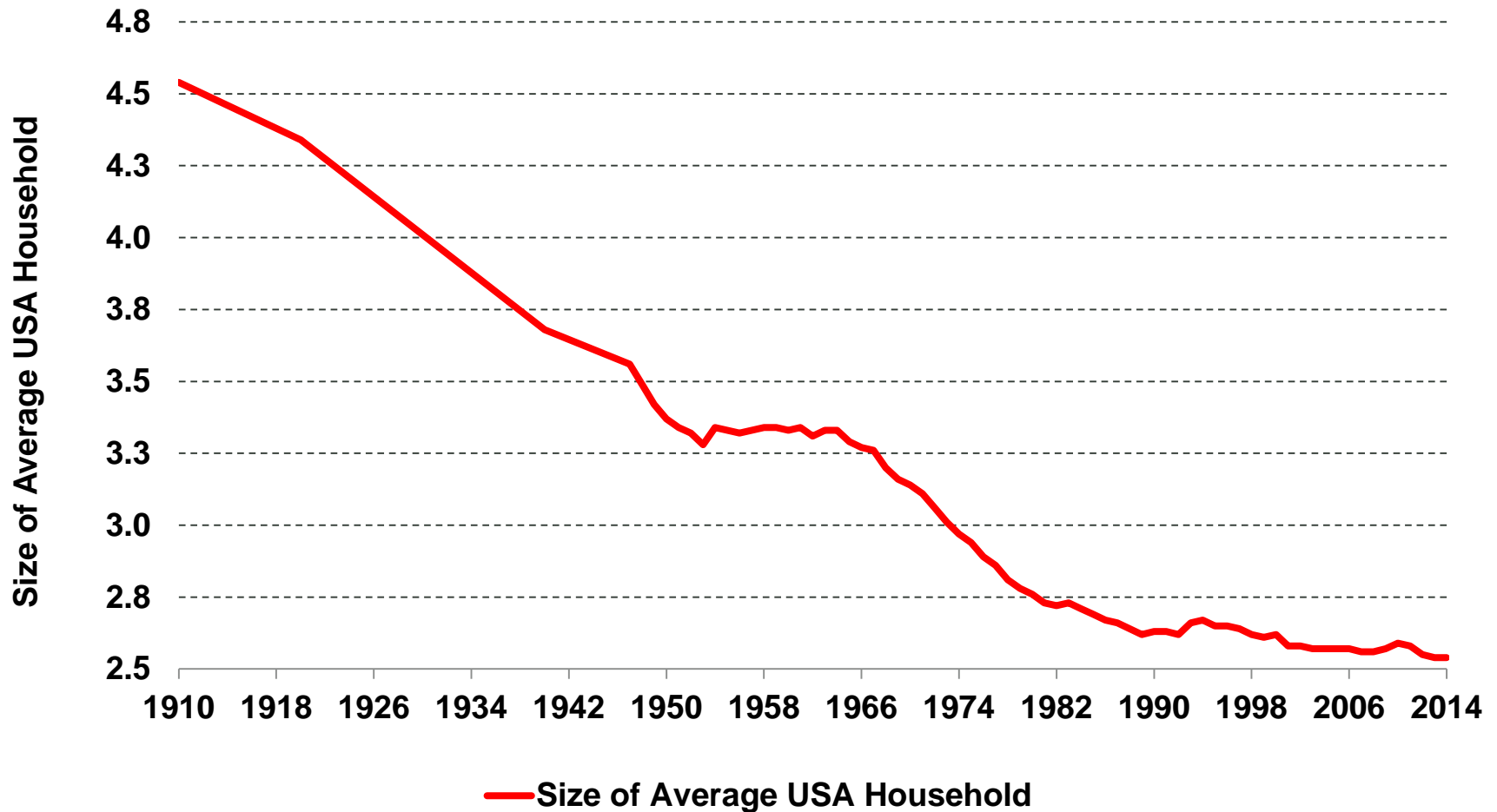
# 18-32 Year Olds Marriage Rates Declining = @ 26% vs. 65% Fifty Years Ago

**Percent of Married 18-32 Year Old Population, USA, 1960 – 2014**



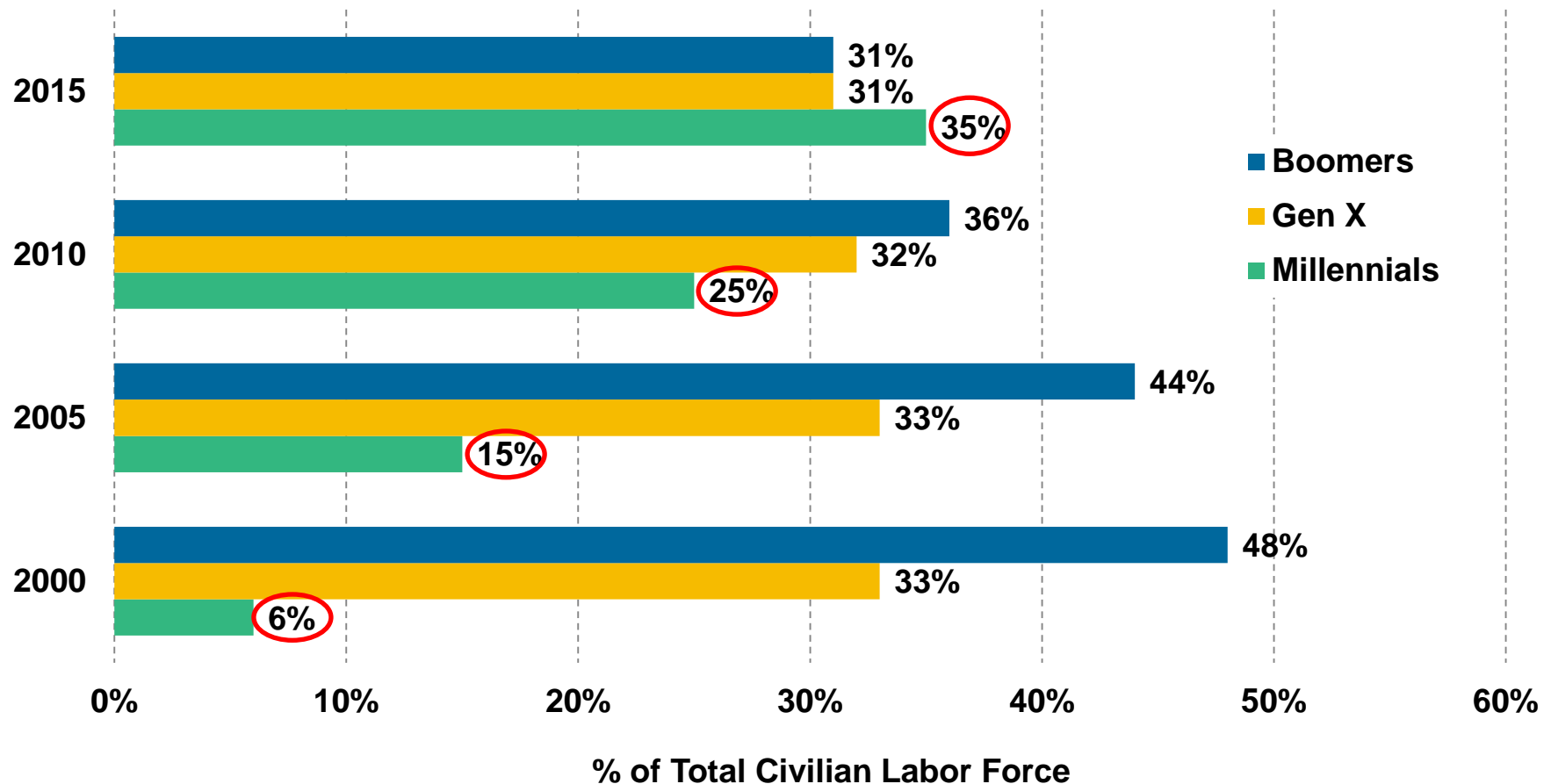
# Household Sizes Declining = @ 2.5 People vs. 3+ Fifty Years Ago, 4+ a Century Ago

**Size of Average Household, USA, 1910 – 2014**



# Millennials (Age 15-35) = Largest Generation in Workforce This Year

## Civilian Labor Force by Generation, USA, 2000 – 2015



Source: Bureau of Labor Statistics, Current Population Survey, 4/15. BLS begins counting Civilian Labor Force at age 16.

Millennials defined as those born between 1980 and 2000. In 2015, they are ages 15-35.

GenX defined as those born between 1965 and 1979. In 2015, they are ages 36-50.

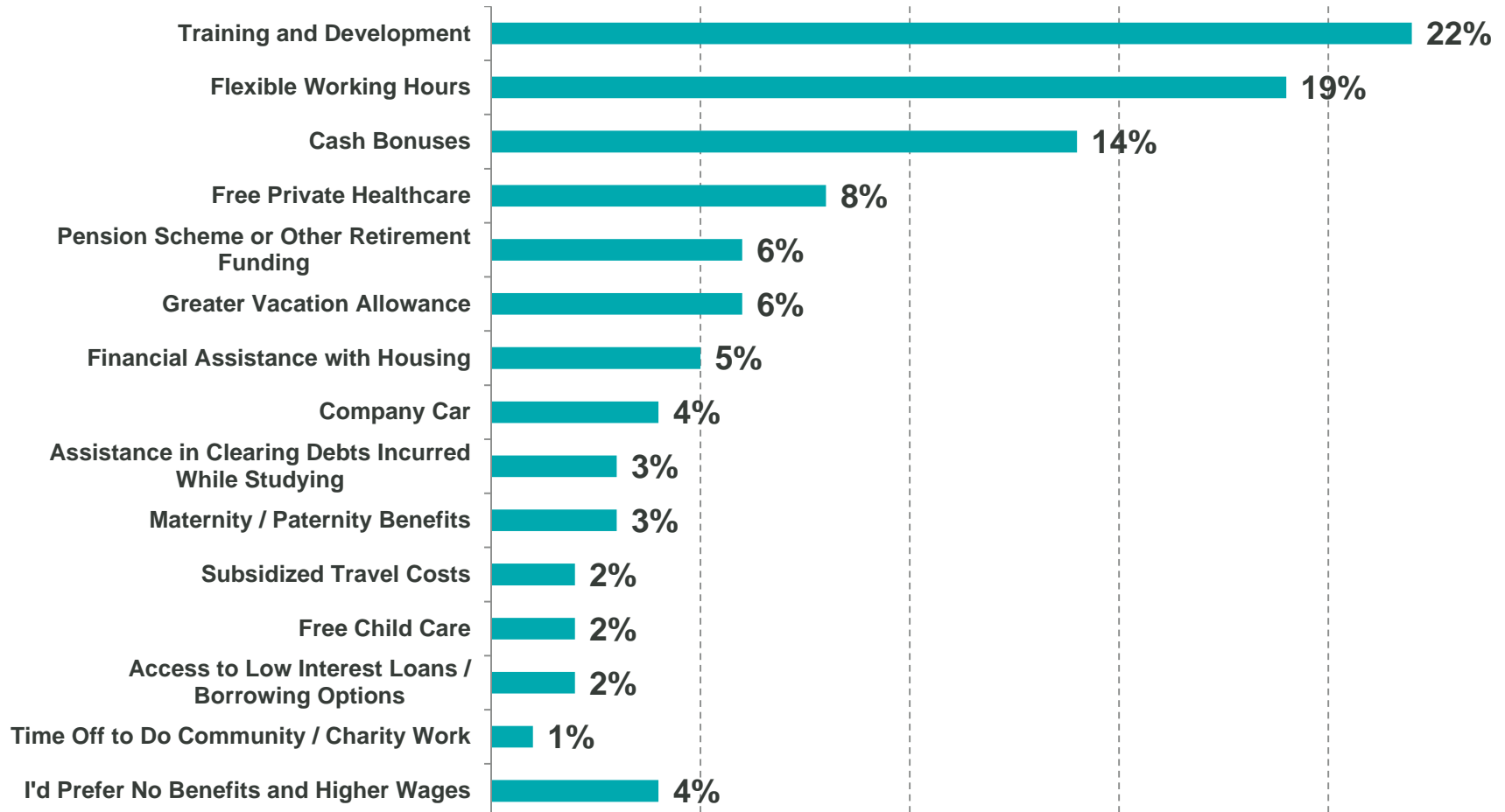
Boomers defined as those born between 1946-1964. In 2015, they are ages 51-70.

Note that there may be different opinions on which years each generation begins and ends. Sums do not add up to 100% owing to exclusion of Silent Generation.

# Millennials' Most Valued Work Benefits =

## 1) Training & Development 2) Flexible Hours 3) Cash Bonuses

### *Which Three Benefits Would You Most Value From an Employer?* *% Ranking Each 1st Place, Global*



# Millennials Expect Flexibility & Like Technology @ Work

## ***Millennials = Expect Flexible Work Hours***

- **Many = expect to be mobile** & work from home / office / cafes at will.
- **~20% = identify as 'night owls'** (often work outside normal business hours).
- **38% = freelancing** vs. 32% among those over 35 years old.
- **32% = believe they will be working 'mainly flexible hours'** in future.

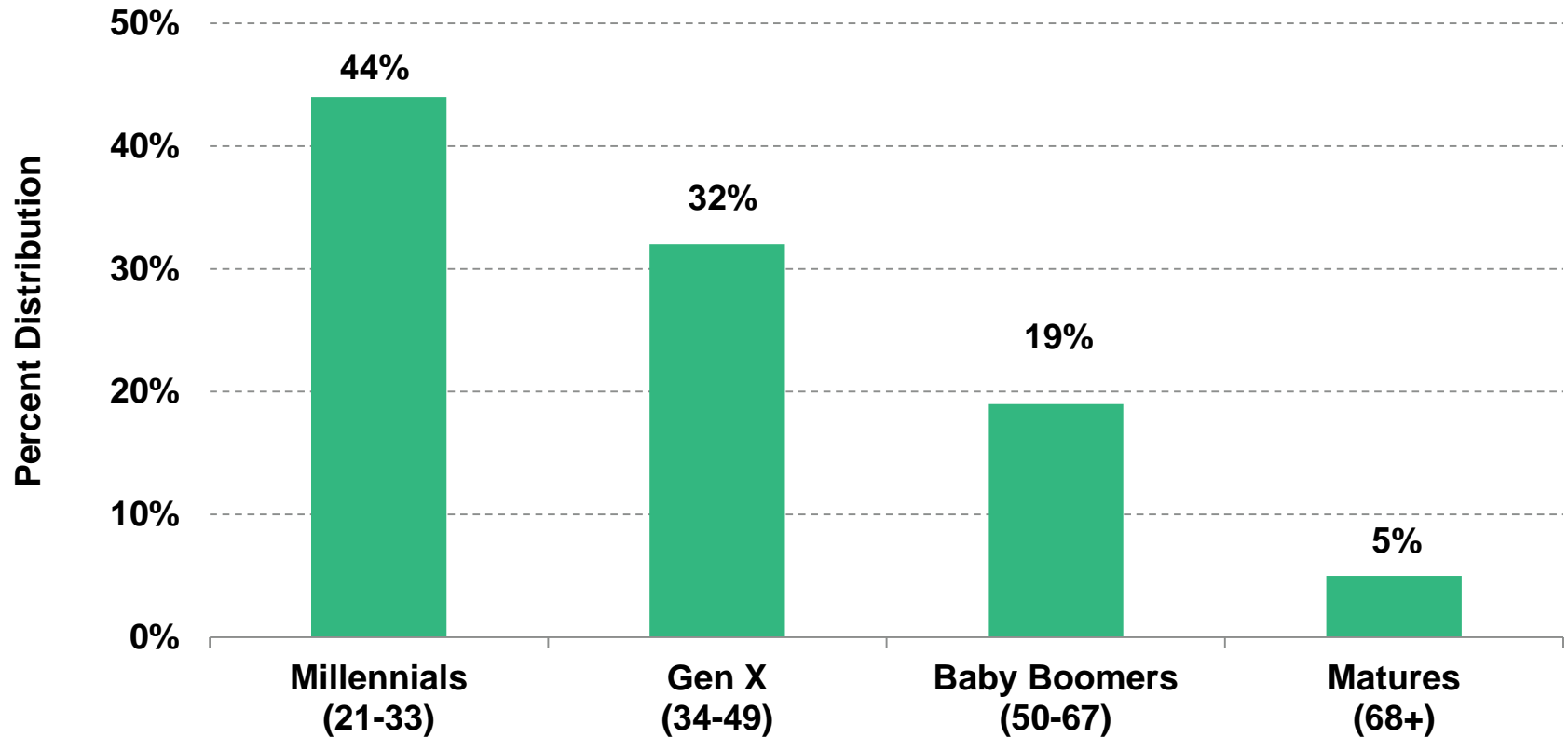
## ***Millennials = Tech Savvy***

- **34% = prefer to collaborate online** at work as opposed to in-person or via phone (vs. 19% for older generations).
- **45% = use personal smartphones for work purposes** (vs. 18% for older generations).
- **41% = likely to download applications to use for work purposes in next 12 months & use their own money to pay for them** (vs. 24% for older generations).

# Millennials = Largest Cohort of 'On-Demand' Workers... @ 1.2MM or 44% of Total

## On-Demand Worker Age Distribution, USA, 2014\*

**2.7MM Workers, Up >2x Y/Y**



Source: MBO Partners and Emergent Research, "Independent Workers and the On-Demand Economy", 4/15, USA.

MBO Partners defines workers in the "On-Demand Economy," as those who generate economic activity through the use of online platforms and marketplaces that help customers quickly connect and transact with suppliers of goods and services. These include services like Airbnb, Uber, Lyft, Handy, Etsy, TaskRabbit, and many others.

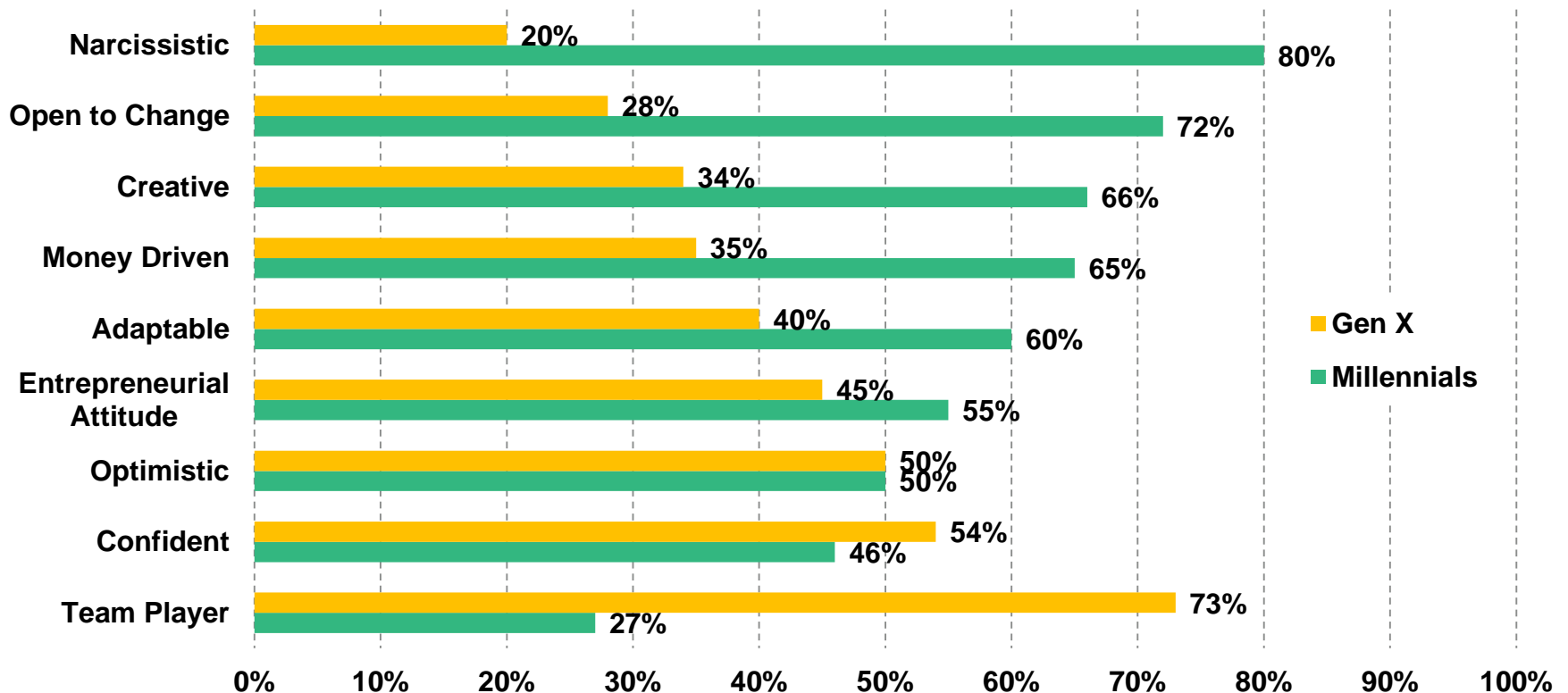
\*NOTE: 2.7MM figure only includes on-demand workers who devote at least one hour per week to an on-demand platform. Those who use these platforms less frequently are not counted. Figure has been de-duplicated.



# Millennial Work Values = Perceived to be Different vs. Prior Generation

**More = Narcissistic / Open to Change / Creative / Money Driven / Adaptable / Entrepreneurial**  
**Less = Confident / Team-Oriented**

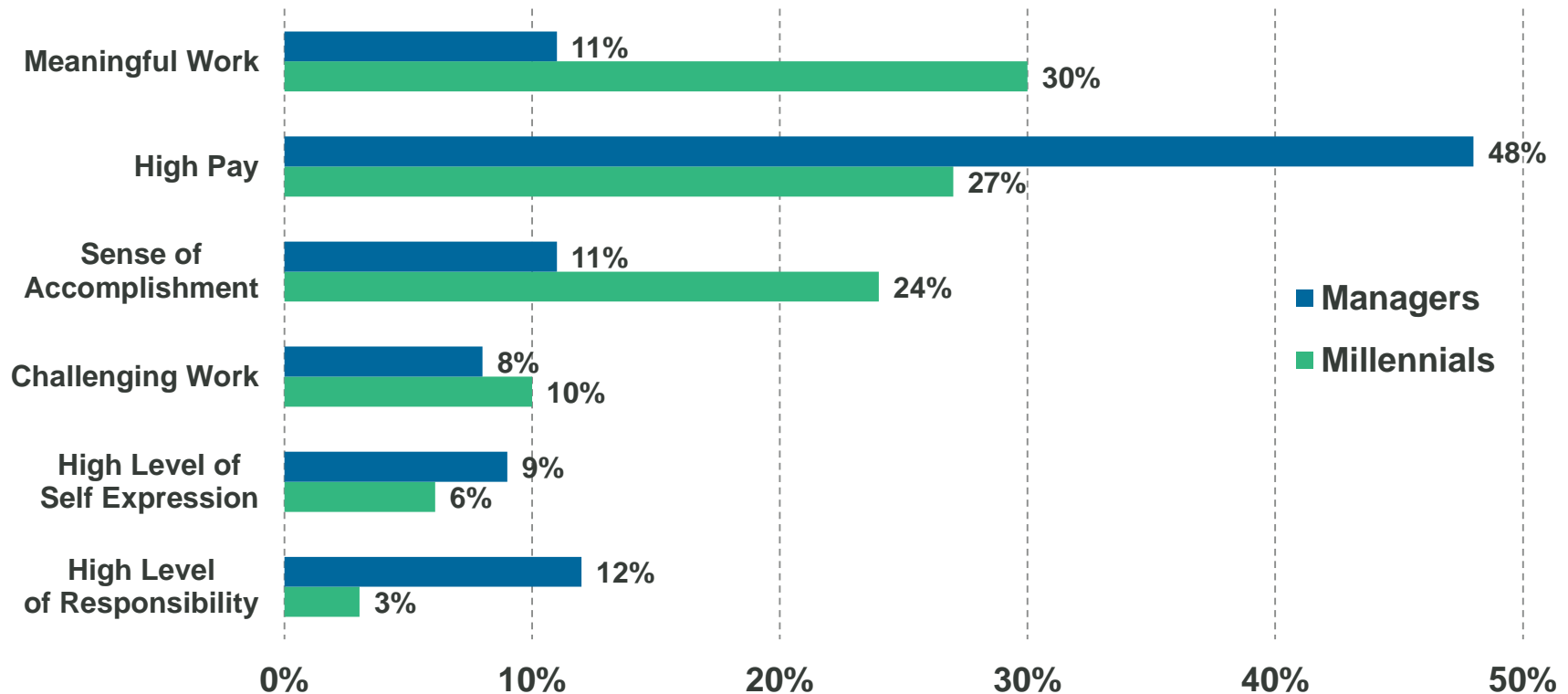
Qualities Each Generation Is Seen as More Likely to Possess (According to Hiring Managers)



# Millennial Work Values = Perception Disconnect?

**Most Important Thing to Millennials = Meaningful Work**  
**What Managers Think Is Most Important Thing to Millennials = Money**

Managers' and Millennials' View of the Most Important Factor That Indicates Career Success to Millennials

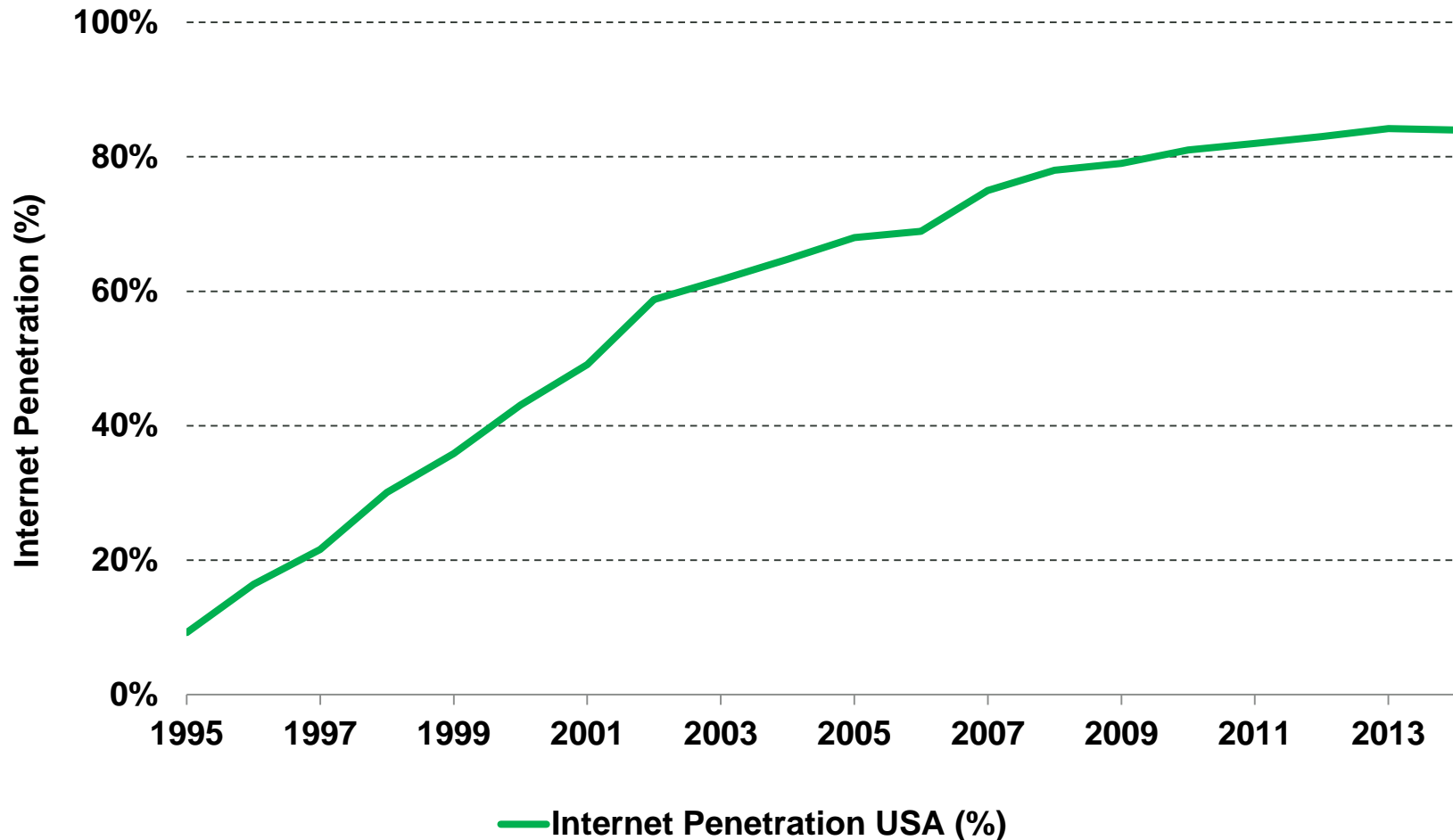


---

# CONNECTIVITY HAS CHANGED

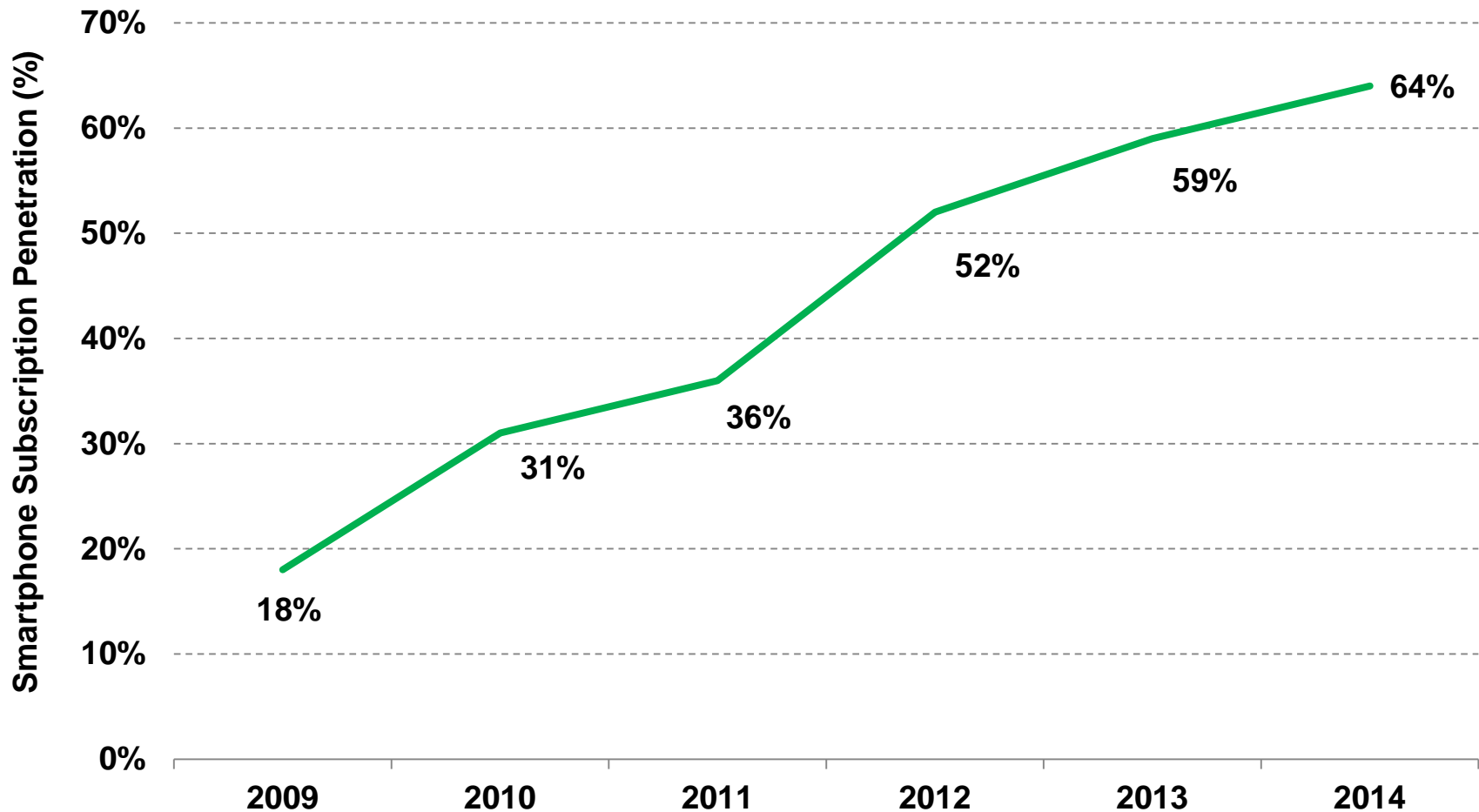
# Connectivity (Via Internet) Up Dramatically = @ 84% of Population vs. 9% in 1995...

**Percent of Population with Internet Access, USA, 1995 – 2014**



# ...Connectivity (via Mobile Smartphones) Up Dramatically = @ 64% of Population vs. 18% in 2009

**Smartphone Subscription Penetration, USA, 2009 – 2014**



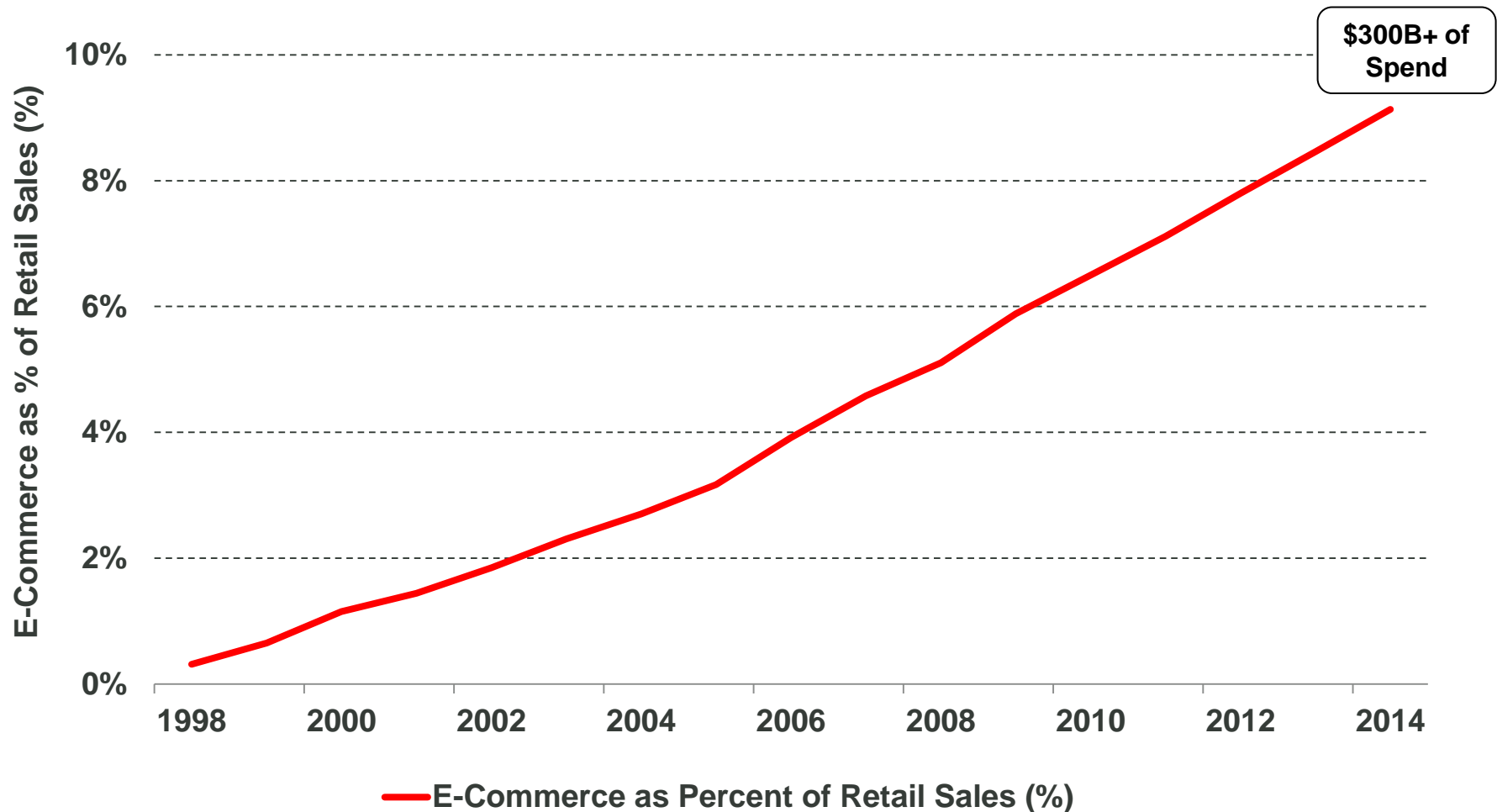
*The Big 20-Year Change =  
People Connected 24/7 with Mobile Devices*

---

# **NEW FORMS OF COMMERCE TRANSFORMING HOW PEOPLE CAN GET PRODUCTS + SERVICES**

# Commerce via Internet Up Dramatically = @ 9% of Retail Sales vs. <1% in 1998

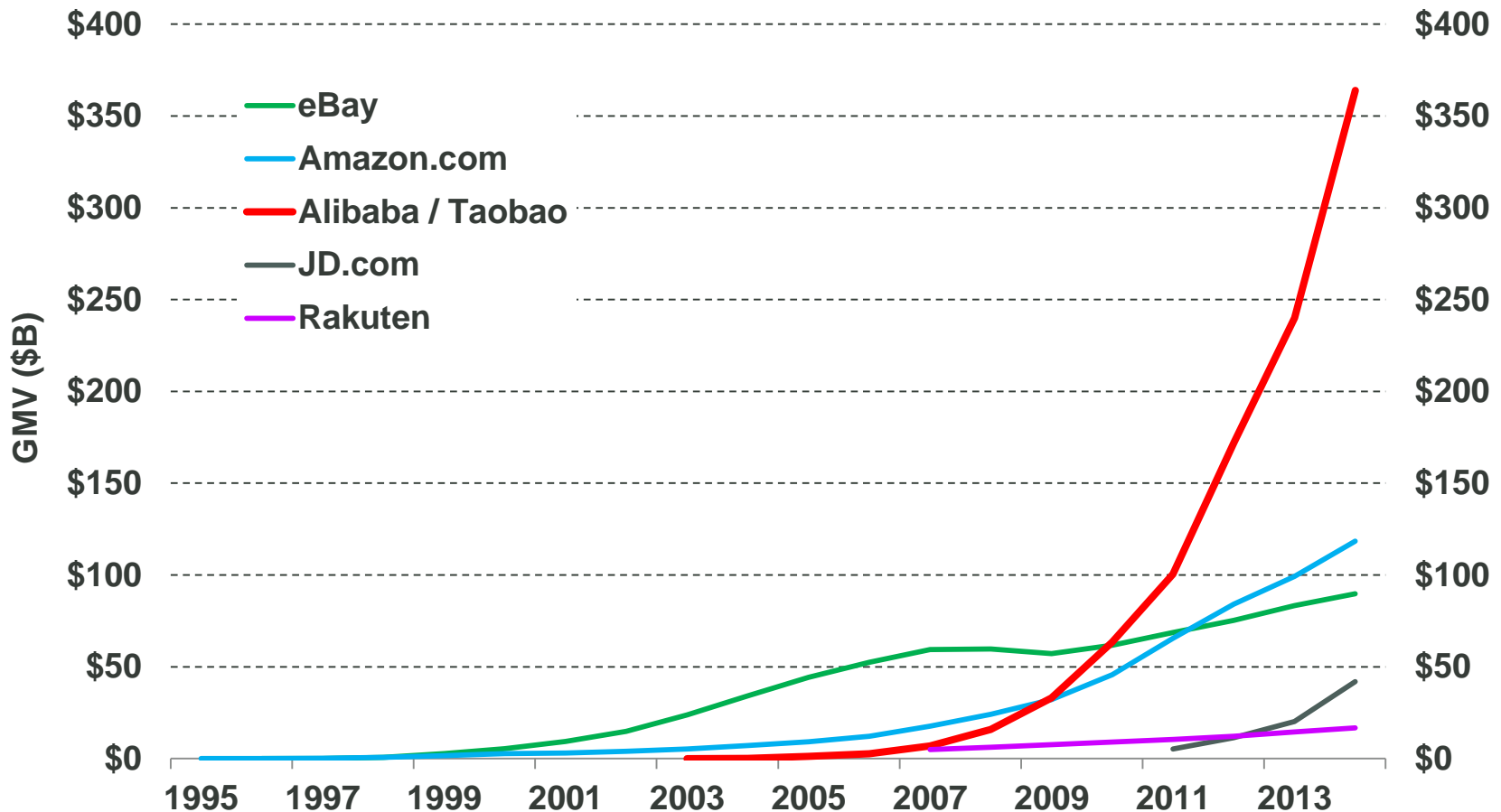
## E-Commerce as % of Total Retail Sales, USA, 1998 – 2014





# 1st Generation 'Online Platforms / Marketplaces for Products Rising = Optimized for Desktop Internet + Traditional Shipping Delivery

## Gross Merchandise Value (GMV), 2014... Measured by Top 5 Global Public E-Commerce Companies



# 2nd Generation Online Platforms / Marketplaces for Services Rising = Optimizing for Mobile Internet Devices + On-Demand Local Delivery

***Many Mobile-Enabled Urban Millennials Believe =  
Should Get What They Want (Products / Services / Work) When They Want It***



*Consumers' Expectation  
That They Can Get What They Want  
With Ease & Speed Will Continue to Rise...*

*This Changes Fundamental  
Underpinnings of Business & Can  
Create Rising Demand for Flexible Workers*

---

**CHANGES IN CONNECTIVITY +  
COMMERCE = IMPACT CONSUMPTION &  
WAYS PEOPLE CAN WORK...  
STILL EARLY INNINGS**

# *More People Working in Flexible / Supplemental Jobs*

# Freelancers = Significant & Growing Portion of Workers @ 53MM People, 34% of USA Workforce

## Freelancer Categories\*

<b>Independent Contractors</b>	<ul style="list-style-type: none"><li>• <b>21MM People</b></li><li>• <i>40% of Freelancers</i></li></ul>	<ul style="list-style-type: none"><li>• Don't have employer...do freelance, temporary, or supplemental work on a project-by-project basis</li></ul>
<b>Moonlighters</b>	<ul style="list-style-type: none"><li>• <b>14MM People</b></li><li>• <i>27% of Freelancers</i></li></ul>	<ul style="list-style-type: none"><li>• Professionals with a primary, traditional job who also moonlight doing freelance work</li></ul>
<b>Diversified Workers</b>	<ul style="list-style-type: none"><li>• <b>9MM People</b></li><li>• <i>18% of Freelancers</i></li></ul>	<ul style="list-style-type: none"><li>• Multiple sources of income; mix of traditional and freelance work</li></ul>
<b>Temporary Workers</b>	<ul style="list-style-type: none"><li>• <b>6MM People</b></li><li>• <i>10% of Freelancers</i></li></ul>	<ul style="list-style-type: none"><li>• Single employer, client, job, or contract project where employment is temporary</li></ul>
<b>Business Owners who Consider Themselves Freelancers</b>	<ul style="list-style-type: none"><li>• <b>3MM People</b></li><li>• <i>5% of Freelancers</i></li></ul>	<ul style="list-style-type: none"><li>• Business owners with 1-5 employees</li></ul>

Source: "Freelancing in America," Survey of 5,000 Working Americans commissioned by Freelancer's Union and Upwork (formerly Elance-oDesk), 9/14, USA.

\*Freelancer defined as person / business engaged in supplemental, temporary, or project / contract-based work in the past 12 months.

Moonlighters responded that they have one employer and are also doing freelance work on the side to earn additional money. Diversified workers responded that they have multiple sources of income from a mix of traditional employment and freelance work.

# Freelancers Use Internet to Get / Do Business

## ***Freelancers\* Say...***

**69%** = Social networking has 'drastically changed dynamics of networking'

**65%** = Internet makes it easier to find work

**42%** = Have done online freelance project

**31%** = Can find a gig online in <24 hours

# Internet Enabling Commerce in Increasingly Efficient Ways



*eBay SMBs = 95% engage in export vs. <5% of USA businesses*

*Setting up export businesses historically required significant investment.*



*Etsy sellers = 35% started business without much capital investment, compared to 21% for small business owners.*



*Only a smartphone needed to set up a listing and become an Airbnb host. Hosts can get set up in minutes.*



*Ability for businesses to access talent quickly – time to hire averages 3 days on Upwork vs. longer time for traditional hiring.*



*Car + smartphone + quick onboarding to be UberX driver-partner vs. materially more to purchase medallion (or equivalent) to be a Taxi driver.*



*SoundCloud Creators can use mobile devices to record / distribute audio content within minutes.*



*Thumbtack professionals pay \$3-15 per introduction to services leads they are interested in vs. buying ads in directories monthly or yearly.*



*Stripe Connect powers most marketplace businesses and enables coordination of transactions between buyers and sellers.*



*Rise of Connectivity +  
Online Marketplaces / Platforms =*

*Helping People  
Earn Income &  
Work on Own Terms*

# Online Platforms Enabling Steady Growth in Product Commerce & Enabling Rapid Growth in Service Commerce

## Product Commerce



**8.5MM+ Sellers**



**2MM+ Third-Party Sellers**



**25MM+ Sellers**



**1.4MM+ Active Sellers  
+26% Y/Y**

## Service Commerce



**35MM Total Guests All-Time  
– nearly 25MM in Last Year**



**~1MM+ Driver-Partners  
+6x Y/Y**



**10MM+ Freelancers  
+63% 5-Year CAGR**

*People Typically Use Online Platforms  
to  
Find Extra Income & Flexibility*

# Many People = Use Online Platforms / Marketplaces to Supplement Income

## Select Online Platforms – Personal Impact



- **72%** = NYC hosts depend on Airbnb earnings to **pay rent / mortgage**...50%+ = NYC hosts are freelancers or other non-traditional workers supplementing income...
- **80-90%** = Global Airbnb hosts occasionally rent out their own home to **supplement income**



- **82%** = Sellers are **part-time** (ie: have jobs outside of Etsy)
- **26%** = Sellers have full-time jobs (outside of Etsy)...48% = independent / part-time / temporary workers
- **36%** = Use Etsy earnings to **cover household expenses**...24% for discretionary spend



- **37%** = Pros are part-time with income supplemented by other sources



- **74%** = Drive to **maintain steady income** as other income sources unstable / unpredictable
- **61%** = Have another job...31% = full-time on another job; 30% = part-time job apart from Uber; 38% = no other job



- **68%** = People who said **earning extra money is a motivation for freelancing**
- **80%** = Non-freelancers willing to do work outside primary job to make more money
- **60%+** = Freelancers provide at least 1/2 household income

Source: "An Analysis of the Labor Market for Uber's Driver-Partners in the United States," Uber, 1/15. Note Uber data are USA only.

"The Tremendous Impact of Airbnb in New York," Airbnb, 5/15. Additional data are from Airbnb.

"Redefining Entrepreneurship: Etsy Sellers' Economic Impact", 11/13. Published by Etsy. Survey measured 5,500 USA-based sellers on Etsy's marketplace. Note Etsy data is USA only.

Upwork (formerly Elance-oDesk) Annual Impact Report, 2014.

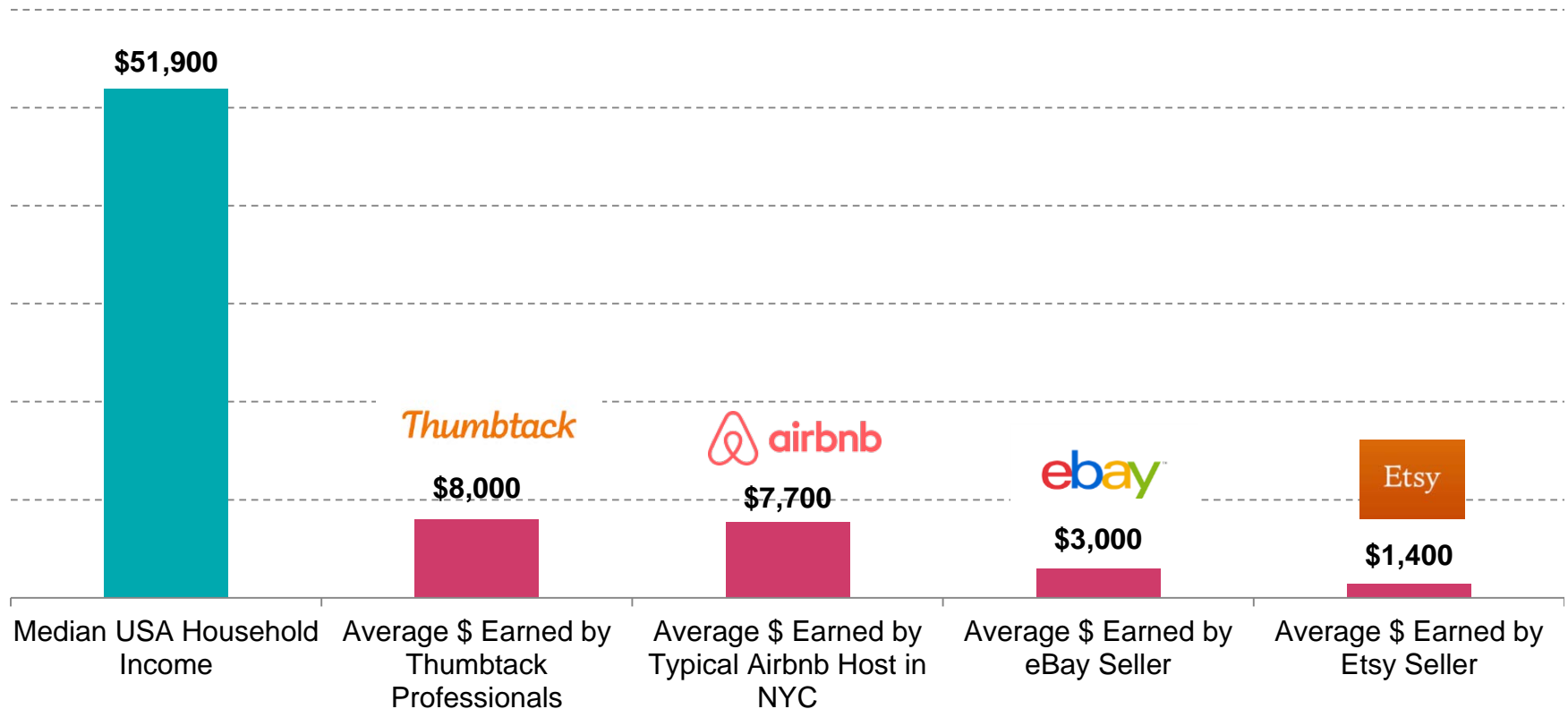
"Freelancing in America," Survey of 5,000 Working Americans commissioned by Freelancer's Union and Upwork (formerly Elance-oDesk), 9/14. USA.

Thumbtack, 2015.

Note percentages may not add up to 100% owing to rounding.

# Online Platform / Marketplace Income = Material for Many People

## Average Annual Earnings – Selected Online Platforms



Source: US Census Bureau Historical Income Tables.  
Etsy, Q1:15; calculated as LTM Gross Merchandise Sales divided by Q1:15 active sellers.  
Airbnb Economic Impact Study, New York City, 5/15. Airbnb income represented is before taxes.  
eBay, 2014; calculated as Gross Merchandise Value divided by number of sellers.  
Thumbtack, 2015.

# Many People = Use Online Platforms / Marketplaces to Find Flexibility

## *Select Online Platforms – Views on Flexibility*



- **55%** = Sellers motivated to set up shop for greater flexibility (for self / family)



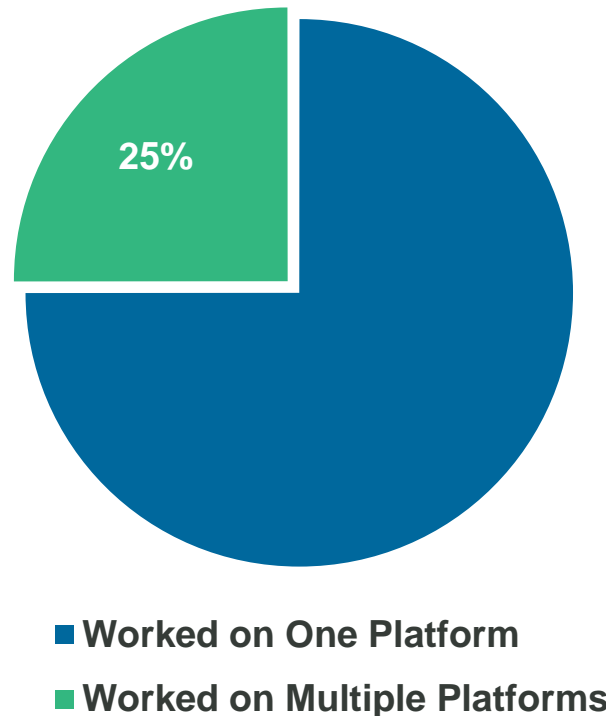
- **87%** = Driver-partners like Uber because they can be own boss / set own schedule



- **#2** = Rank of flexibility among motivations for freelancing
- **92%** = Freelancers who agree they have more freedom to work wherever

# 25% of 'On-Demand' Workers = Use Multiple Platforms

## Percent of 'On-Demand' Workers Who Use Multiple Platforms, USA, 2014



Source: MBO Partners and Emergent Research, "Independent Workers and the On-Demand Economy", USA, 4/15.

MBO Partners defines workers in the "On-Demand Economy," as those who generate economic activity through the use of online platforms and marketplaces that help customers quickly connect and transact with suppliers of goods and services. These include services like Airbnb, Uber, Lyft, Handy, Etsy, TaskRabbit, and many others.

\* NOTE: MBO study only includes on-demand workers who devote at least one hour per week to an on-demand platform. Those who use these platforms less frequently are not counted. Figure has been de-duplicated.

*Growth in Online Platforms / Marketplaces =  
Creates Benefits & Challenges*



# Online Platforms / Marketplaces = Benefits & Challenges for Consumers

## Benefits

**Choice / Access** – product depth + breadth...availability of goods / services / experiences previously hard to find / reach

**Time Savings** – can offset incremental costs, if any

**Transparency** – ability to research / set expectations / track process

**Personalized** – can get items / services on own schedule

**Online Reputation & Trust Systems Often in Place** – ability to read & write reviews / ratings for merchants & service providers

## Challenges

**Time / Cost Tradeoff** – Products with rapid delivery may be more expensive

**Quality** – unable to test products / services...reliant on feedback from peers / reviews

**Trust** – new marketplaces must prove trustworthiness to consumers

**Time / Convenience Tradeoff** – Convenience of delivery to home / work may mean delaying gratification of getting product immediately

# Online Platforms / Marketplaces = Benefits & Challenges for Workers

## Benefits

**Financial** – ability to earn supplemental / primary income

**Flexibility** – choose own schedule / task, location / income goals-targets

**Skill Set Match** – can often effectively match skills with needed services

**Feedback / Communication** – often real-time / direct

**Data** – customer location + data can allow workers to provide more informed / efficient service

**Customer Base** – marketplaces can aggregate demand that may be fragmented / far-reaching (global)

**Growth** – rising sector demand for services should boost opportunities / competition for workers

## Challenges

**Incumbent Displacement** – creates change / uncertainty

**Financial** – lack of predictable income possible

**Uncertainty** – lack of clarity related to demand / work / reporting possible

**Benefits Clarity** – insurance / vacation / sick leave / pension...

**Asset Use** – potential job requirement to use personal items (cars / phones...)

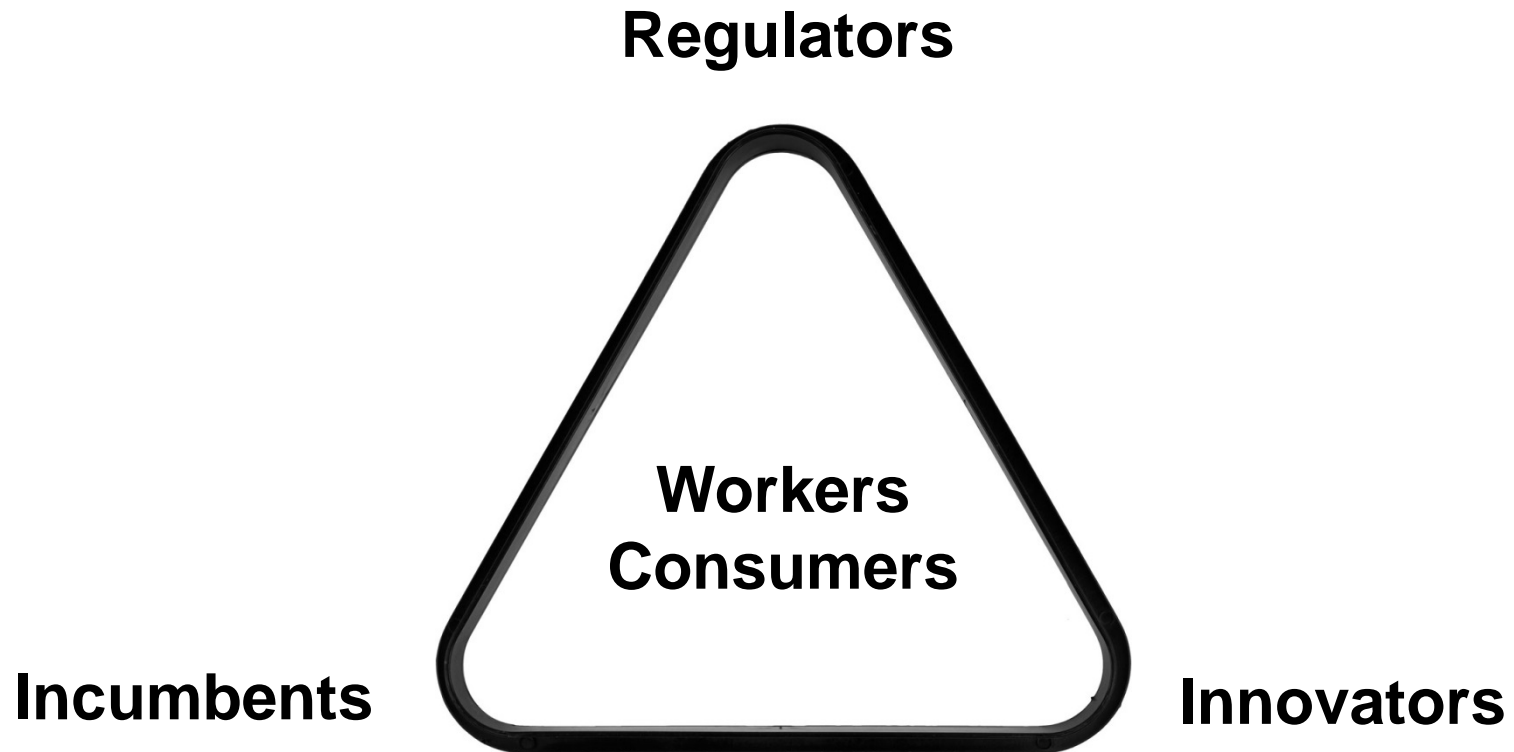
**Training / Development** – potentially limited training / development / supervision

**Workplace Culture** – people often dispersed

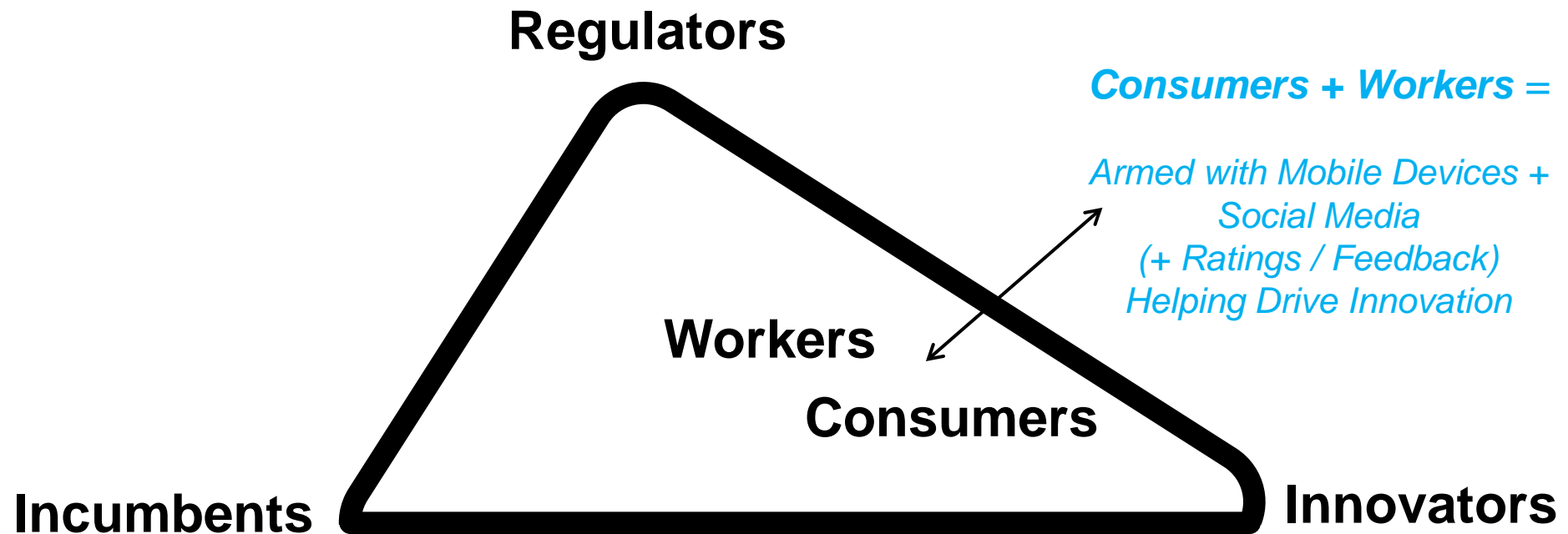
---

**ONLINE MARKETPLACE / PLATFORMS =  
REGULATORY FOCUS EVOLVING**

Traditional Challenge / Opportunity =  
Incumbents ↔ Regulators ↔ Innovators...



...Evolving Challenge / Opportunity =  
Incumbents ↔ Regulators ↔ Innovators



## Innovative Online Platform / Marketplace Business Models = Capturing Attention of Incumbents + Regulators + Policy Makers + Plaintiffs Lawyers

- ***Airbnb Emerges Victorious as New York City Regulators Overturn Host's \$2,400 Fine***  
– *The Verge*, 9/13
- ***Artist Sued for 'Subletting' Loft on Airbnb***  
– *New York Post*, 6/14
- ***Sharing Economy Faces Patchwork of Guidelines in European Countries***  
– *NY Times*, 9/14
- ***State Regulator Says Uber meets Florida Insurance Requirement***  
– *Tampa Bay Times*, 10/14
- ***Handy.com Housecleaners' Lawsuit Could Rock On-Demand Companies***  
– *SF Gate*, 11/14
- ***Uber, Lyft Lawsuits Could Spell Trouble For the On-Demand Economy***  
– *CNN*, 3/15

# Uber, Lyft... = Facing Confusion in Regulatory Environment Related to Worker Classification System

*California law defines whether workers are employees or independent contractors, and there's a test, but **the test and classification system are woefully outdated...***

*...It seems to me, as a matter of common sense, that Lyft **drivers don't fall into the traditional understanding of [the two classifications]. They seem to fall into a third category....***

*The jury in this case will be handed a square peg and asked to choose between two round holes. **The test the California courts have developed over the 20th Century for classifying workers isn't very helpful in addressing this 21st Century problem...***

- Judge Vince Chhabria, U.S. District Judge Presiding Over Cotter vs. Lyft Inc., et al

*\*Note that Lyft was eventually denied motion for summary judgement & case will need to be decided by a jury.*

# Airbnb = Facing Confusion in Regulatory Environment Related to Myriad of Local Laws on Hotels / Short-Term Rentals

*...this is amazing, but **it's also complicated because there are laws that were written many decades ago – sometimes a century ago** – that said,*

*'There are laws for people and there are laws for business.' What happens when a person becomes a business?*

*Suddenly these laws feel a little bit outdated. **They're really 20th-century laws, and we're in a 21st-century economy.***

- Brian Chesky, Co-founder and CEO of Airbnb, 11/14



# StubHub = Faced Confusion in Regulatory Environment & Proved Marketplaces Can Be Regulators' Allies

***Original Intent of Anti-Scalping Laws (passed in 1920s) = Protect Consumers...***

*...the law 'merely prohibits' scalpers and ticket brokers from charging excessive prices and thereby 'end[s] the extortion' of the public...*

***StubHub When Founded in 2000 = Faced Many Anti-Scalping Law Barriers...***

*>20 states prohibited some form of ticket resale...for example, Alabama / Massachusetts require licenses...in Indiana, one couldn't sell tickets to boxing matches...*

***StubHub in 2015 = Legal in Nearly All States & Has Helped Provide...***

- ***Marketplace Liquidity*** = Can help prevent excessive pricing ('extortion of public')
- ***Trust & Safety / Transparency*** = Likes of ratings / feedback systems can help find / remove bad actors

***With passage of time (& collaboration), StubHub has helped regulators do their jobs – effectively regulate what they had intended to regulate all along.***

---

**PEOPLE + SYSTEMS + REGULATIONS /  
POLICIES =  
NEED TO EVOLVE / ADAPT TO MORE  
CONNECTED SOCIETY**

# High-Level Summary...

- **Job Market** – Has been more difficult & work has been harder to find for many
- **Benefits** – Traditional employer-provided benefits like health insurance & retirement plans falling...Recipients of government benefits rising
- **Millennials** – Have different expectations for work than previous generations, for now...Shaped, in part, by Great Recession
- **Connectivity** – Has created efficiencies & changed work for many
- **Work** – Alternative work arrangements (including freelancing) increasing...Competition for workers may rise with demand

## ...High-Level Summary

- **Online Platforms / Marketplaces Growing Rapidly** – Creating new work opportunities & challenges for individuals...These will continue to rise, similar to trends / impact from first-generation Internet companies, potentially faster / broader
- **Need to Shape Direction & Evolve Policies & Laws** – Industry participants (workers / businesses / governments) need to work together to be more aligned with rapidly emerging ways of doing business & creating work & recognize that emerging technologies / marketplaces can help solve for consumer & worker welfare
- **Innovative Online Platforms / Marketplaces Stand to Continue to Benefit Consumers** – As evinced by strong demand for their products & services...
- **Impact of Social Media (+ Feedback / Ratings) Should Not be Underestimated** – Empowered consumers increasingly – in effect – take elements of consumer protection into their own hands

---

## **BIG INTERNET MARKETS =**

- CHINA = #1 IN SHEER MASS...**
- INDIA = #1 IN NEW USER ADDITIONS**

# *China = Digital Innovation Alive & Well*

Hillhouse Capital\*  
Created / Provided China Section of Internet Trends, 2015



\*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 = Massive Scale + Engagement...

## Billions of Red Envelopes Sent / Received on 1 Day

### 1B Virtual Red Envelopes Sent

Chinese New Year's Eve – 2/18/15

### 11B Shakes from 20MM Users

CCTV's New Year Gala TV Show

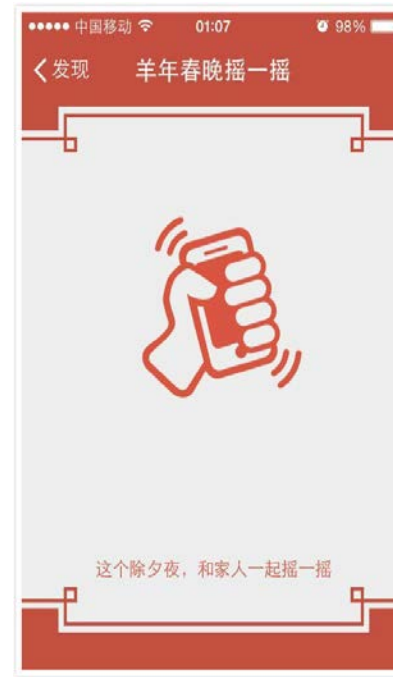
#### User-Initiated Red Envelope Sends in Group Chats



#### Randomized Gift Amount = Fun + Social



#### Sponsor-Initiated Red Envelope Gifts with TV prompts



#### User Shake = Get Gift + Follow Sponsor WeChat Account



# Tencent WeChat = Major Video Distribution Channel... Shaping Social Debate



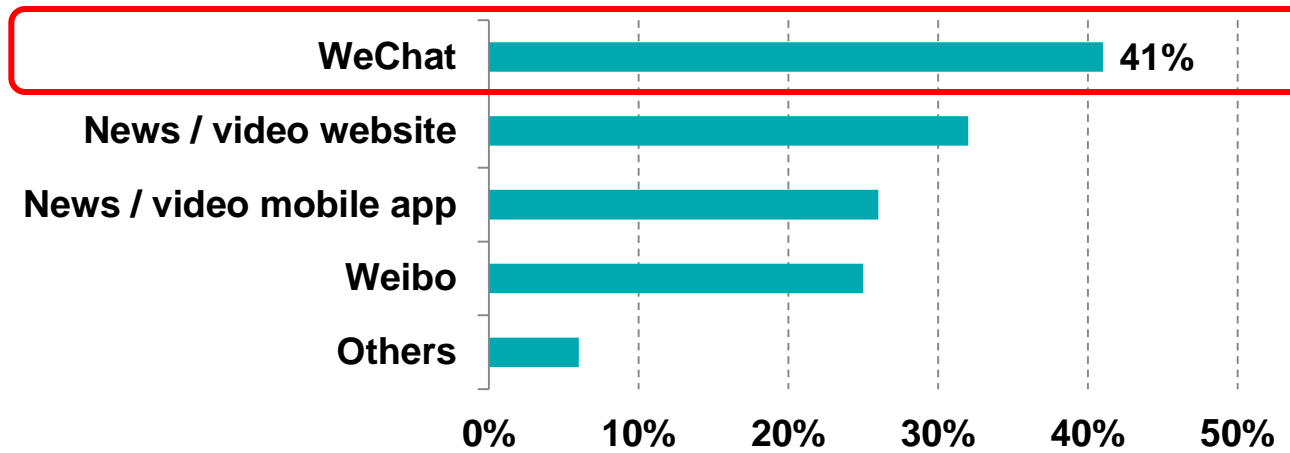
## ‘Under the Dome’

200MM Views Within 3 Days of Release (2/15)

Long-Form Documentary Film (103 minutes)

Investigation of Smog in China

## ‘Under the Dome’ Viewer Distribution by Channel





# Tencent WeChat = Helping Government Get Online... Offering Government Services to its 549MM Users\*

## Shanghai Government Services Provided via WeChat

Hospital  
Appointment

Pay Natural  
Gas Fee

Obtain Taiwan  
Travel Docs

Smog Test  
Appointment

Property Tax  
Lookup



Pay Electricity /  
Water Bill

Passport  
Applications

Driving Violations  
Look Up

Weather / Library  
Search

Fapiao (Receipt)  
Management

# China Social Commerce Rising... Meilishuo + Mogujie Driving = Content (15MM+ Photos) + Community (200MM Users) + Commerce (\$2B GMV)\*

## Mogujie

Seamlessly Integrating  
Content + Product + Buyer + Seller

### Browse



### Chat



### Pay\*\*



## Meilishuo

Pioneering Crowd-Sourced  
Design + Production + Sale of Fashion Items

### Like



### Make



### Sell

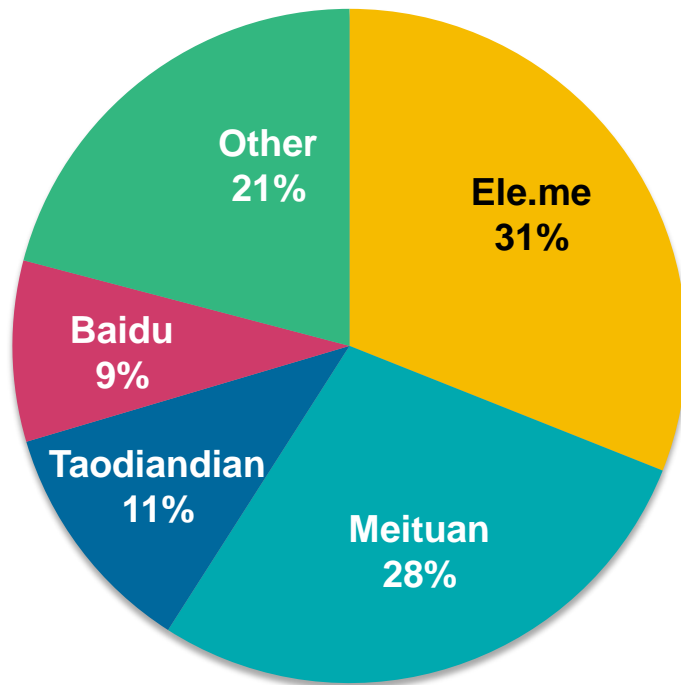


Hillhouse Capital

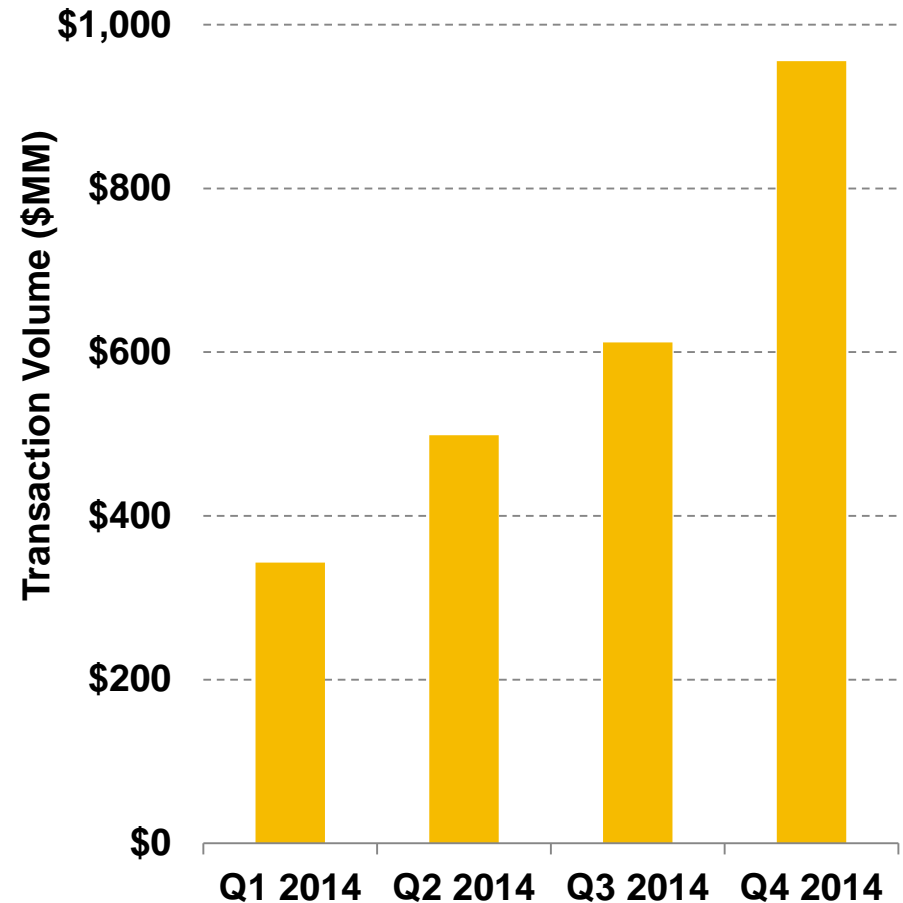
154

# China Local Food Delivery = One of Fastest Growing / Competitive Local On-Demand Services

**China Online Food Delivery  
\$ Market Share, 2014**



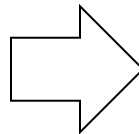
**China Online Food Delivery  
Transaction Volume, Q1-Q4:14**



**Hillhouse Capital**

# China Internet Leaders = Evolving from Info-Only to On-Demand Service Providers

## Baidu.com Search engine

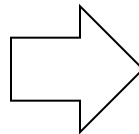


## Baidu Life

Local restaurant / entertainment / delivery...

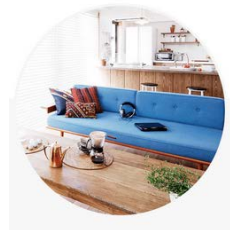


## 58.com Classified ad listings



## 58 Daojia

Owned & operated home services provider



Hillhouse Capital

# China Internet M&A = Accelerating Industry Consolidation / Rationalization

## Didi / Kuaidi

China's #1 / #2 On-Demand  
Transportation Startups



- **\$6B** = combined mark-to-market\* value
- **90%** = estimated combined market share
- **\$1B+** = estimated cumulative marketing / investments prior to merger
- Merger announced 2/15

## 58 / Ganji

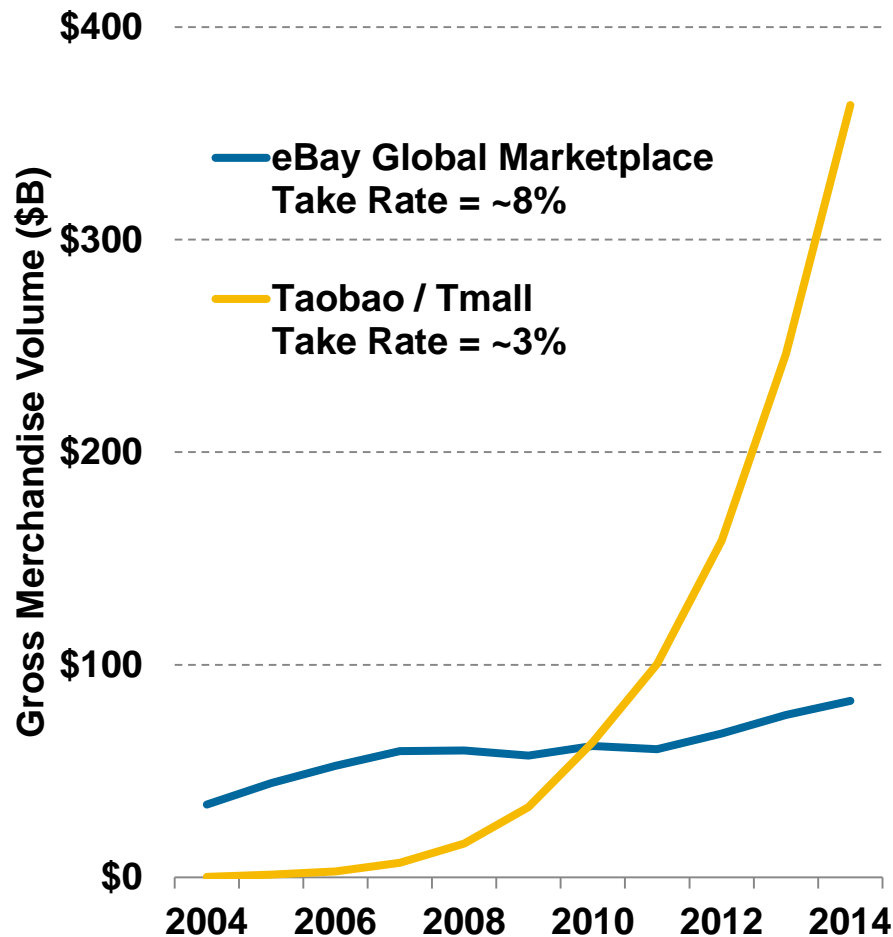
China's #1 / #2 General Online  
Classified Platforms



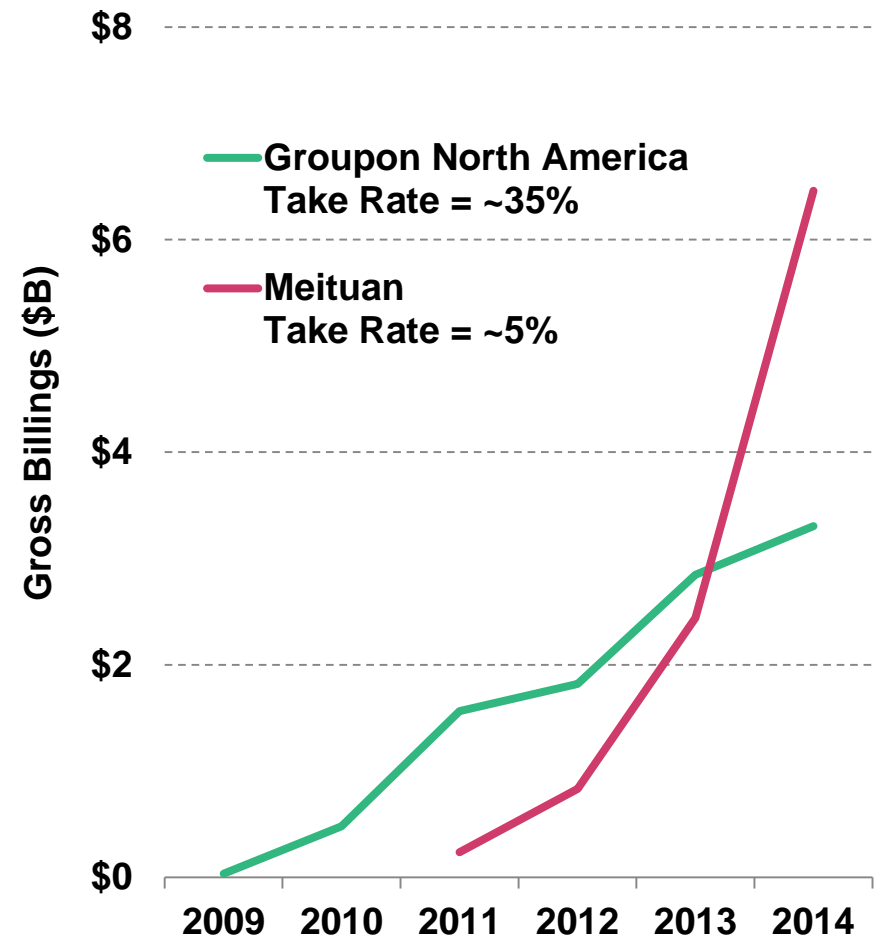
- **\$10B** = combined mark-to-market\* value
- **\$500MM+** = estimated cumulative sales & marketing investments prior to merger
- Merger announced 4/15

# China E-Commerce = Low Take Rates\* Helped China Marketplace Leaders Pass USA Peers

**Gross Merchandise Value, 2004 – 2014  
eBay vs. Alibaba (Taobao / Tmall)**



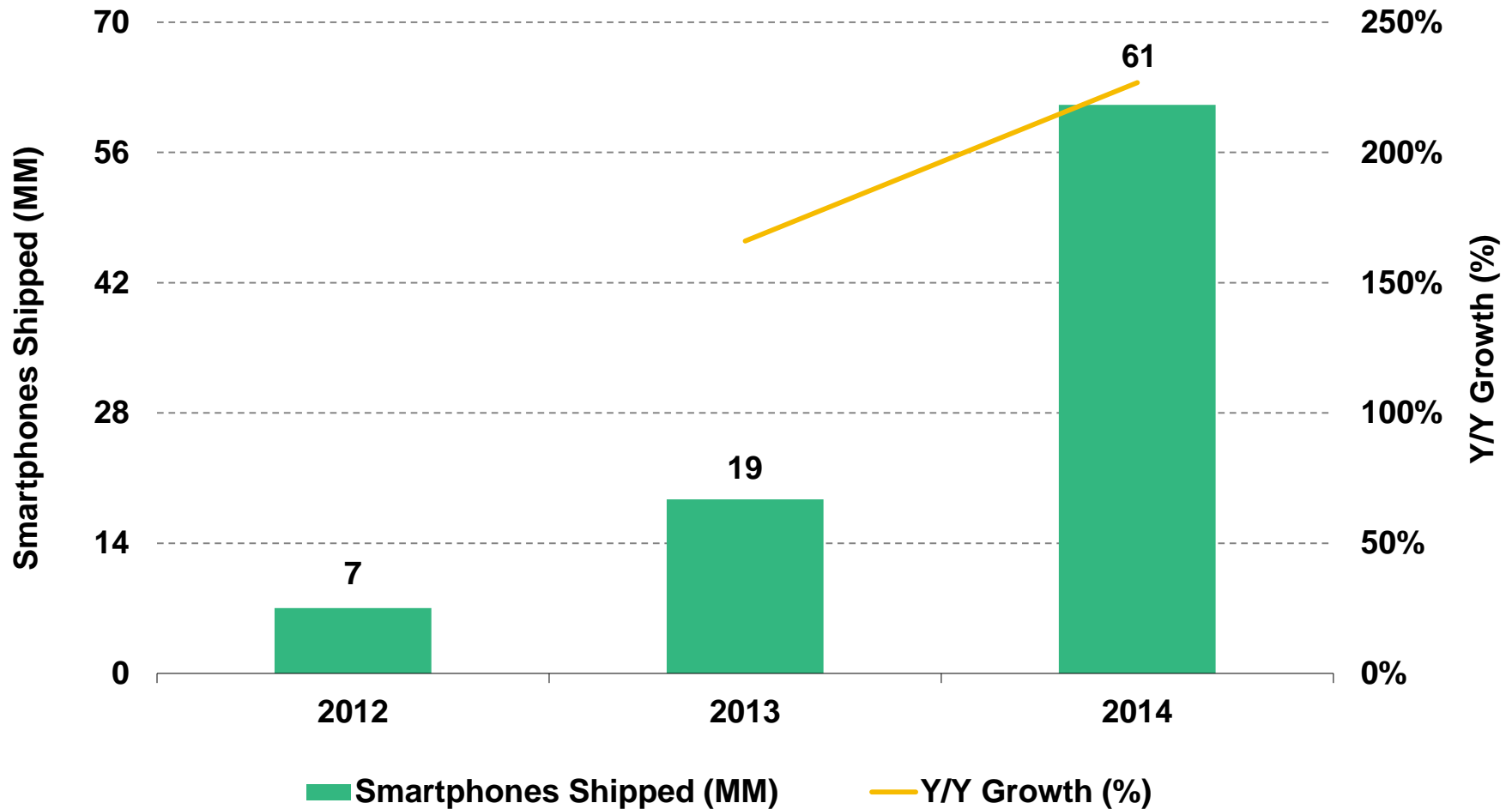
**Gross Billings, 2009 – 2014  
Groupon N. America vs. Meituan**



*China =  
Internet of Things Alive & Well*

# Xiaomi = Supported Strong Smartphone Growth... +227% Y/Y @ 61MM, 2014

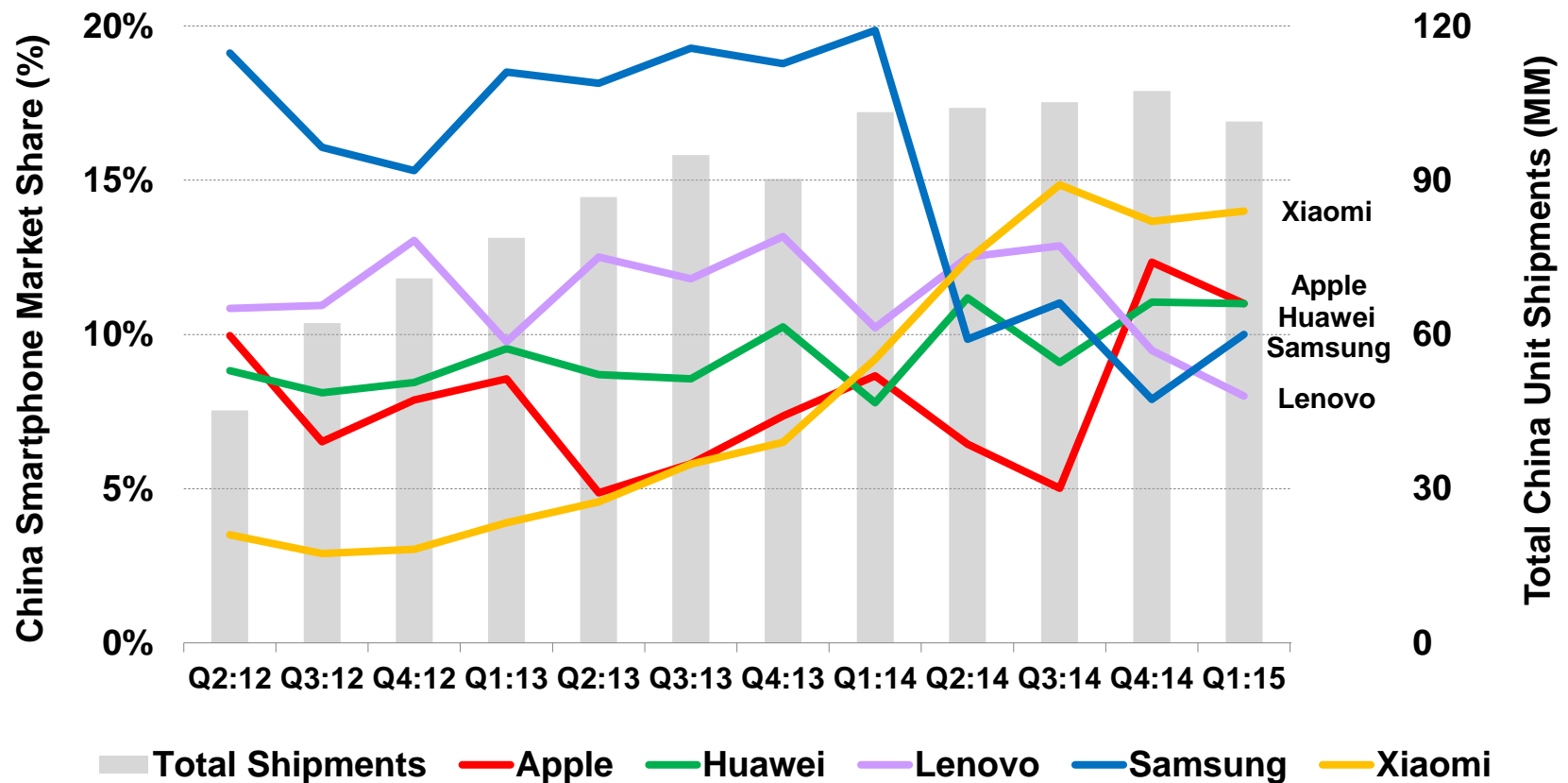
**Xiaomi Smartphones Shipped Globally, 2012 – 2014**





# Xiaomi = China Smartphone Shipment Leader

## Smartphone Shipment Market Share, China, Q2:12 – Q1:15



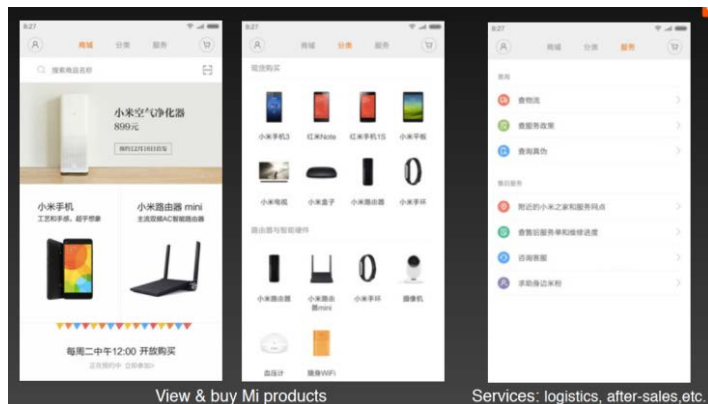
# Xiaomi Evolution = Smartphone + Retail Store + Remote Control for Home Management

## Smartphone / Computer

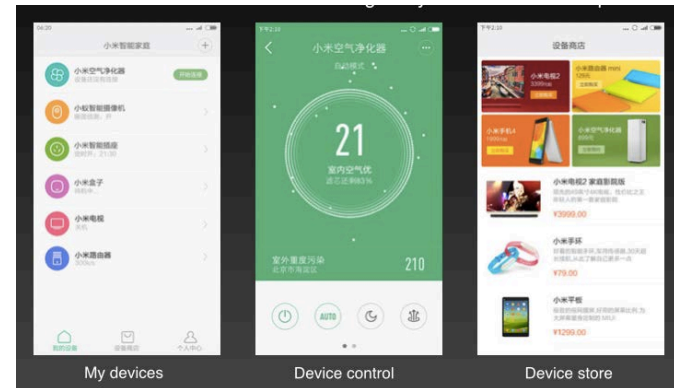
2011 = Mi 1  
2012 = Mi 2  
2013 = Mi 3 / Redmi 1  
2014 = Mi 4 / Redmi 1s / Redmi Note(s) / Mi Pad  
2015 = Mi Note(s) / Redmi 2



## Connected Retail Store (Mi Market App) with Reminder Prompts



## Mi Home App = Remote Control for Connected Devices



2012 = Set-Top Box  
2013 = TV  
2014 = Router / Power / Fitness + Health (Band / Air Purifier / Blood Pressure) / Webcam / Light Bulb  
2015 = Scale / Power Strip / Smart Home Kit (beta)



# Xiaomi Mi Internet of Things Ecosystem = Solid Upsell + Volumes (2MM Users, +5x Since 2013)

<b>Xiaomi Ecosystem</b>	<b>2013</b>	<b>2015*</b>
<b>Mi Smartphones Sold</b>	19MM	61MM*
<b>Mi Smartphone Online** Buyers</b>	9MM	29MM
<b>Mi Smart Home Products Available</b>	2	10+
<b>Mi Smartphone Online** Buyers Purchasing ≥1 Xiaomi Home Product</b>	338K or 4%	2MM+ or 7%

Source: Xiaomi. \*Data through 4/9/15, cumulative unless otherwise noted. \*Mi Smartphones data are annual (not cumulative). 61MM = phones shipped in 2014 full year.

\*\* via mi.com only. Xiaomi sells phones via different distribution channels (mi.com, 3rd party e-commerce, carrier stores, resellers, etc.). Note that each buyer account can purchase several phones.

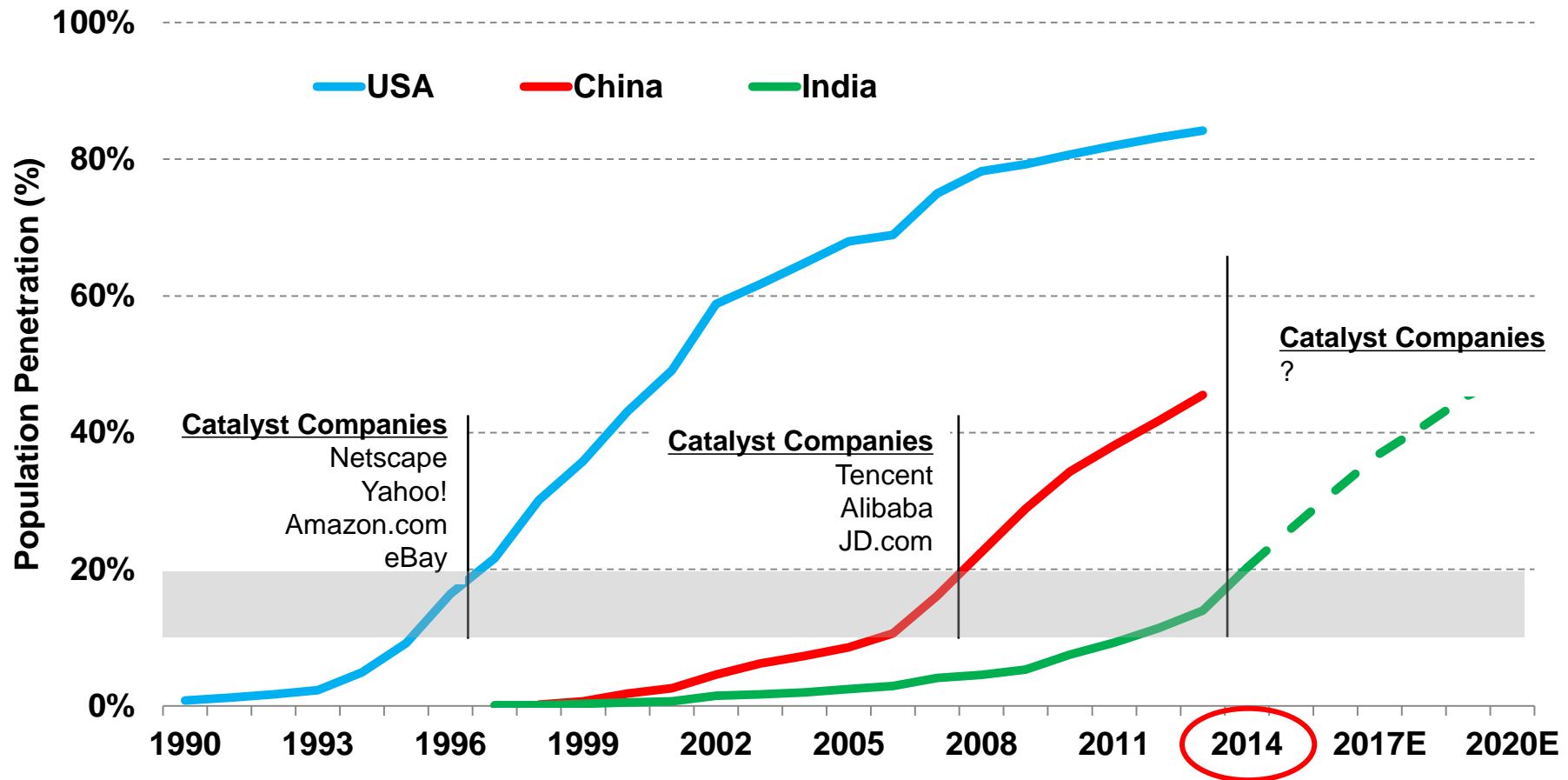
Data here represent number of Mi Accounts that have purchased smartphones via mi.com. This is the base off of which we calculate users who have also purchased a home product. Mi Account is an all-in-one personal account that allows users to access / manage all Xiaomi products and services, such as shopping on mi.com, reserving after-sale services, enabling Mi smart products, syncing data across devices with Mi Cloud, making posts on MIUI forum, etc.

*Large Scale  
Internet Adoption History =*

*USA → China...  
India Next?*

# India = Appears to Be @ Internet Penetration Growth Inflection

## Internet User Penetration Curve, USA / China / India, 1990 – 2020E



*India =*

*232MM Internet Users (+37% Y/Y)...  
3<sup>rd</sup> Largest Market*

*Top Country in New Internet User  
Adds per Year (+63MM in 2014)*

# India = Often #1 or #2 MAU Market for Global Internet Leaders



## Facebook

**India = 2nd Largest Market @ 112MM MAUs,**  
8% of Global MAUs, 9/14

USA & Canada = Largest Markets @ 210MM  
MAUs, 3/15



## LinkedIn

**India = 2nd Largest Market @ 24MM MAUs,** 8%  
of Members, 2/14

USA = Largest Market @ 100MM Members, 4/14



## WhatsApp

**India = Largest Market @ 70MM...10% of**  
Global MAUs, 11/14...

Global MAUs = 800MM, 3/15



## Twitter

**India = Fastest Growing User Market, 3/15**



## YouTube

**70MM Users in India, ~7% of Global Users**













## Amazon

**"Amazon Announces Additional \$2 Billion**  
Investment in India," 7/14

# Top India Android Apps =

1) WhatsApp 2) Facebook 3) MX Video Player 4) Facebook Messenger 5) Truecaller

## Top Android Apps by Usage, India, Q1:15

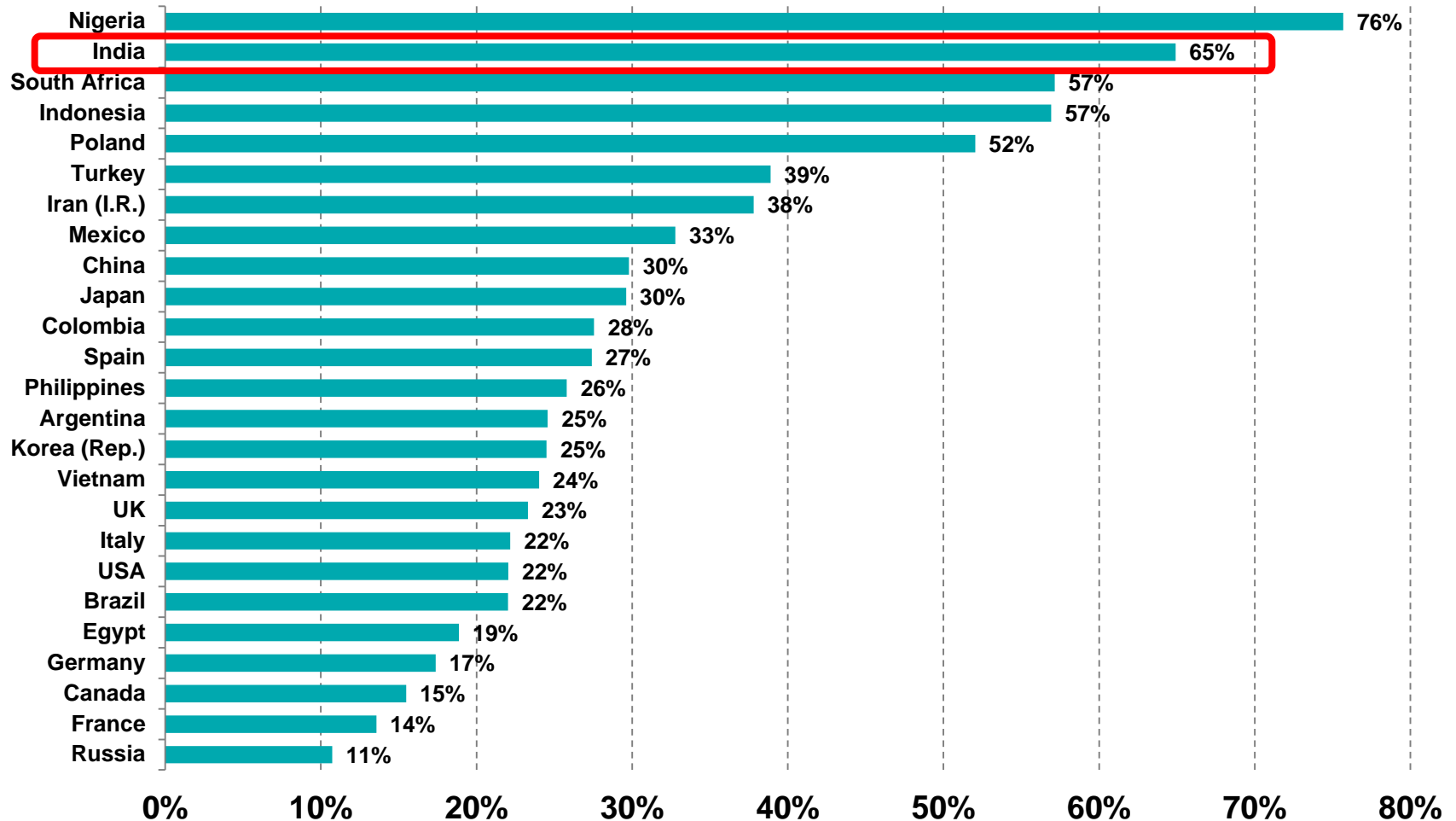
①		WhatsApp	⑥		Candy Crush Saga
②		Facebook	⑦		Opera Mini
③		MX Player	⑧		Hike Messenger
④		Messenger	⑨		Subway Surfers
⑤		Truecaller	⑩		Cricbuzz Cricket Scores & News



# Mobile = 65% of India Internet Traffic...

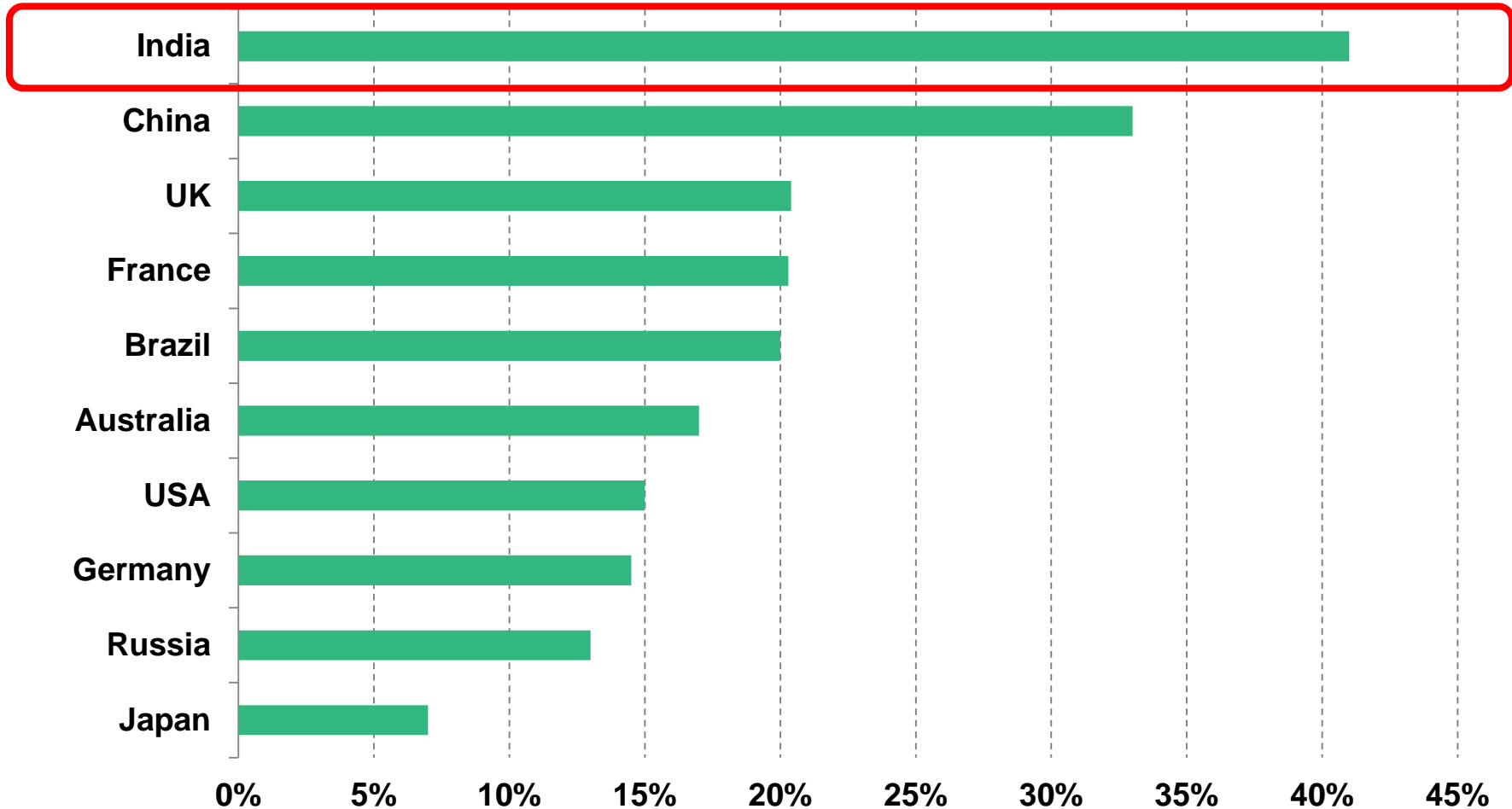
## More Mobilized vs. Most Other Countries

**Mobile % of Total Internet Traffic by Country, 5/15**

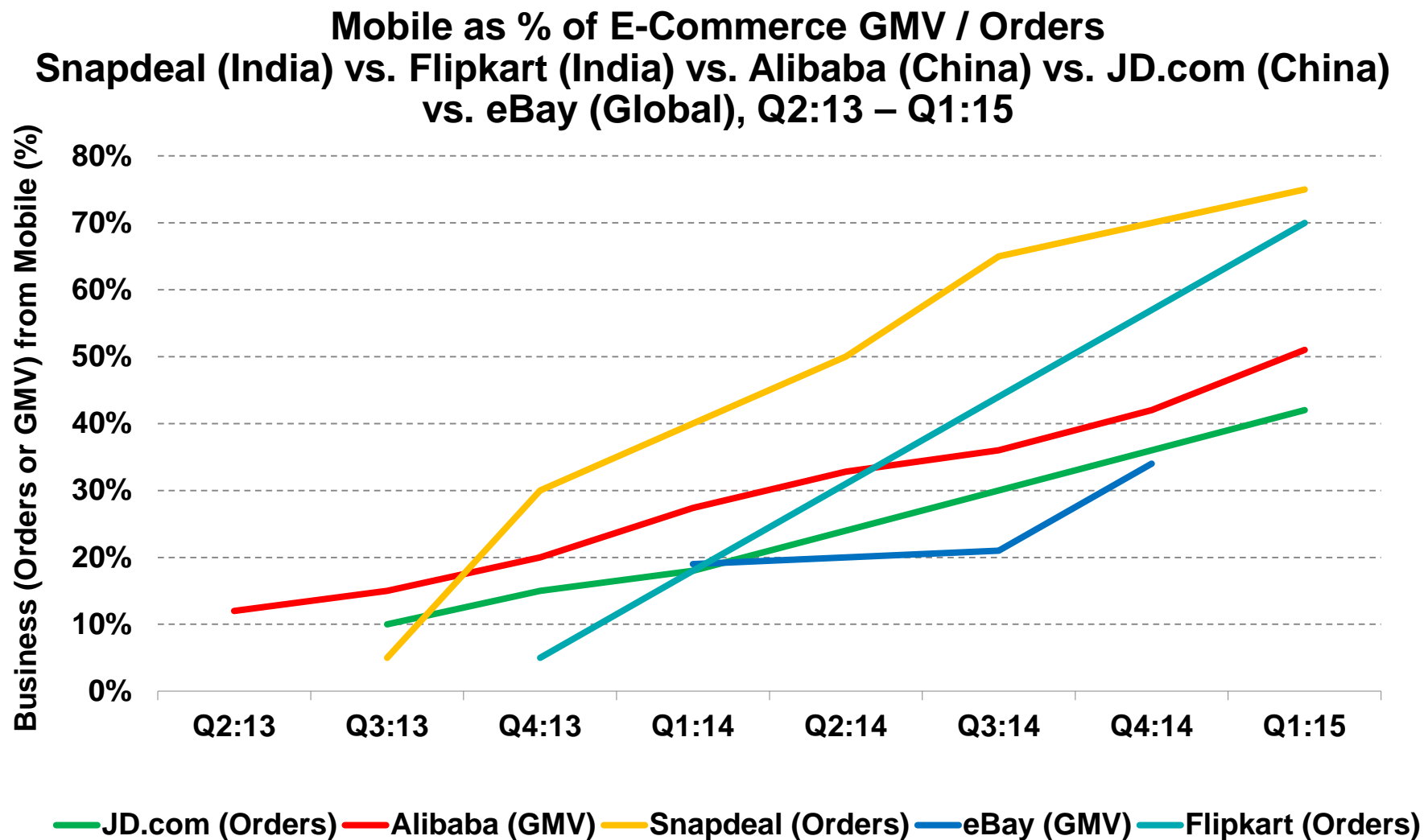


# Mobile = 41% of India E-Commerce... = More Mobilized vs. Most Other Countries\*

**Mobile as % of Total E-Commerce Sales, 2014**



# India E-Commerce Leaders = More Mobilized vs. Global Leaders



---

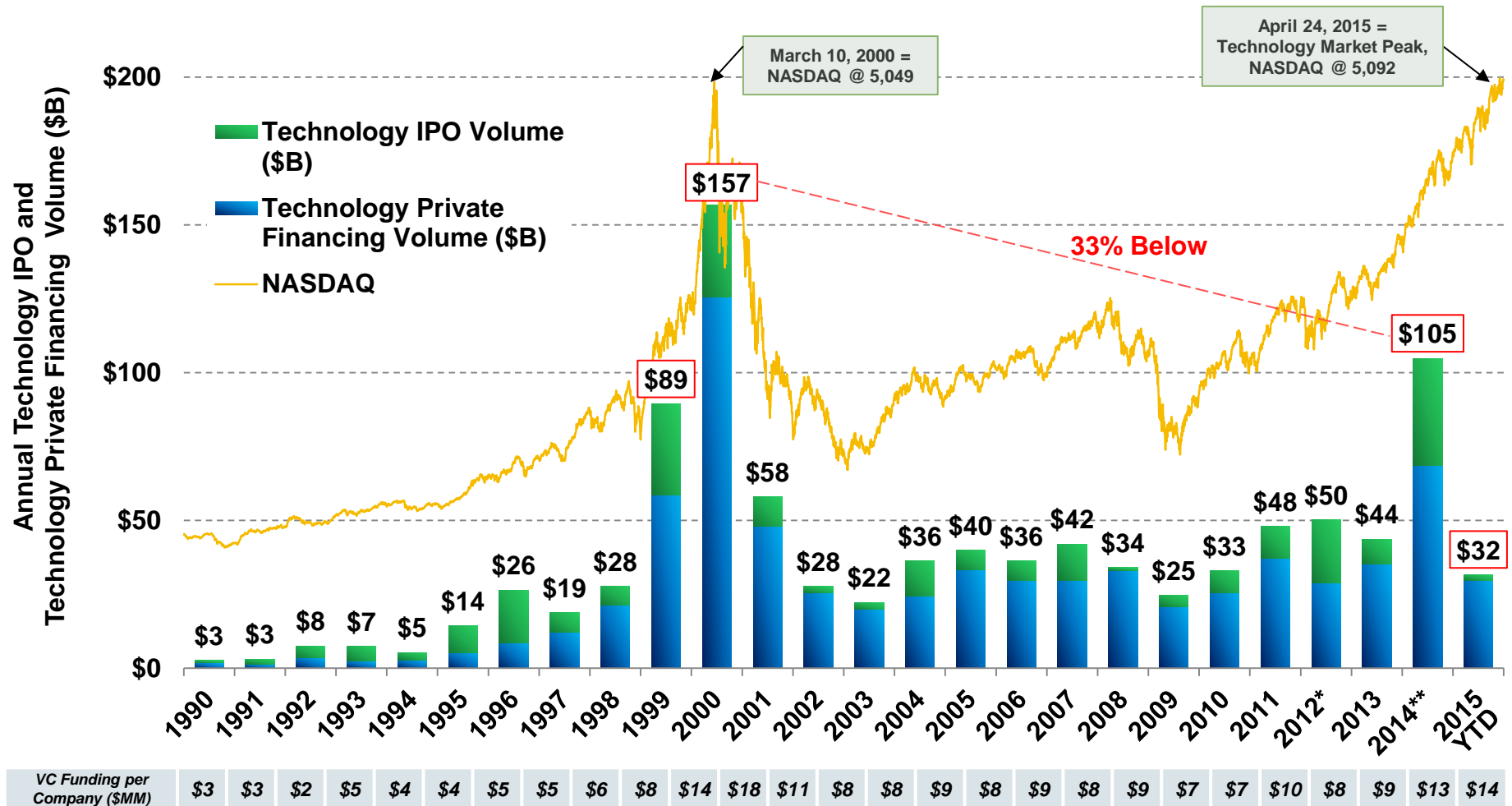
# PUBLIC & PRIVATE COMPANY DATA

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

Rank	Company	Region	2015 Market Value (\$B)	2014 Revenue (\$MM)
1	Apple	USA	\$764	\$199,800
2	Google	USA	373	66,001
3	Alibaba	China	233	11,417
4	Facebook	USA	226	12,466
5	Amazon	USA	199	88,988
6	Tencent	China	190	12,727
7	eBay	USA	73	17,902
8	Baidu	China	72	7,909
9	Priceline Group	USA	63	8,442
10	Salesforce.com	USA	49	5,374
11	JD.com	China	48	18,543
12	Yahoo!	USA	41	4,618
13	Netflix	USA	38	5,505
14	LinkedIn	USA	25	2,219
15	Twitter	USA	24	1,403
16	Yahoo! Japan	Japan	23	3,441
17	Rakuten	Japan	23	4,996
18	NetEase	China	19	1,889
19	Naver	Korea	17	2,527
20	Vipshop	China	15	3,774
Total			\$2,513	\$479,939

# 2014 Global Technology Public + Private Financings = \$ Volume 33% Below 2000 Peak Level / 17% Above 1999 Level

## Global US-Listed Technology IPO Issuance and Global Technology Venture Capital Financing, 1990 – 2015YTD



# Technology-Related Company Investing Observations

- **Booms / Busts** – In periods of material business disruption – like those brought about by the evolutions of the Internet – company creation typically goes through a boom → bust → boom-let cycle while wealth creation typically goes through a boom-let → bust → boom cycle.
- **Valuations** – There are pockets of Internet company overvaluation but there are also pockets of undervaluation – the one rule is that very few companies will win – those that do – can win big.
- **Platforms** – Race is won by those that build platforms & drive free cash flow over long-term (a decade or more).
- **Free Cash Flow** – Value of a business, over time, is the present value of its future cash flows.

---

**ONE MORE THING....**



One of the things I have learned about effective decision making is that the best decisions are often made by diverse groups of people.

Saying or hearing these words is magic...

‘That’s really interesting, I had never thought of it that way before. Thank you.’

Thanks...

## **KPCB Partners**

Especially Alex Tran / Cindy Cheng / Dino Becirovic / Alex Kurland / Paul Vronsky who helped develop the ideas / presentation we hope you find useful...

## **Participants in Evolution of Internet Connectivity**

From creators to consumers who keep us on our toes 24x7...and the people who directly helped us prepare this presentation...

## **Walt & Kara**

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

# Disclosure

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

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

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

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

---

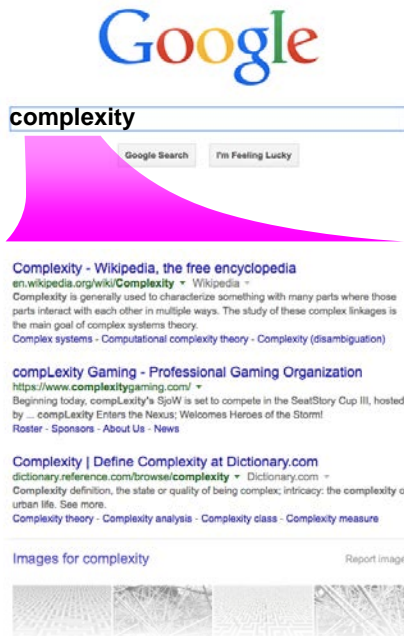
# RAN OUTTA TIME THOUGHTS

# *Re-Imagining Design / User Experience*

# Key Design Concepts That Have Made a Difference... per John Maeda...

## Google Search

*Hide complexity behind  
a simple door*

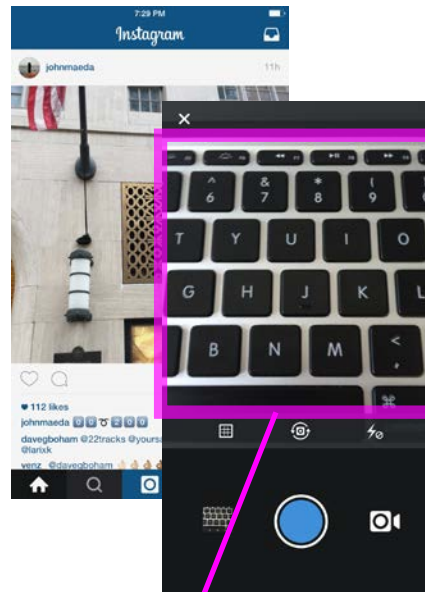


The longstanding discipline by Google to keep the homepage limited to a single search box has been key to maintaining its simplicity. Once a search term is typed into Google, it gets complex really quickly -- but you don't notice it at first.

Analogy: The Motorola Startac phone introduced a clamshell design that hid all the complexity -- to be revealed only when used.

## Instagram

*Remove choice to make  
things simpler*

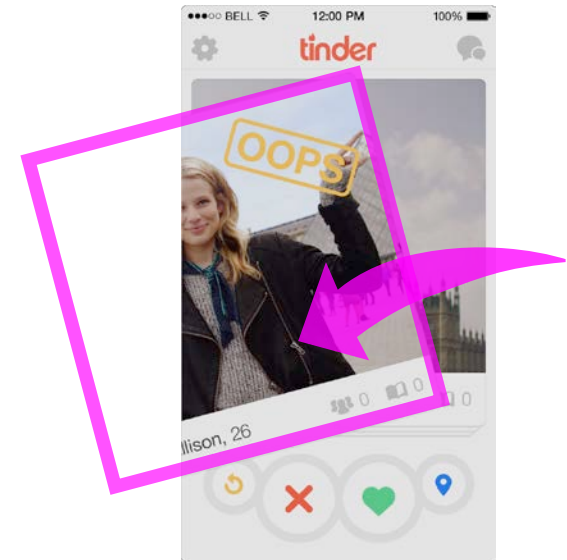


By removing the need to choose portrait versus landscape mode, Instagram made it easier for the user. Only square photos could be taken on Instagram -- which were uncommon at the time and could stand out. Instagram made things easy.

Analogy: Similar to when Steve Jobs removed the extra buttons on a mouse to have only one button. In doing so, the Mac became known for simplicity.

## Tinder

*Iconic gesture for choosing  
"thumbs up/down"*



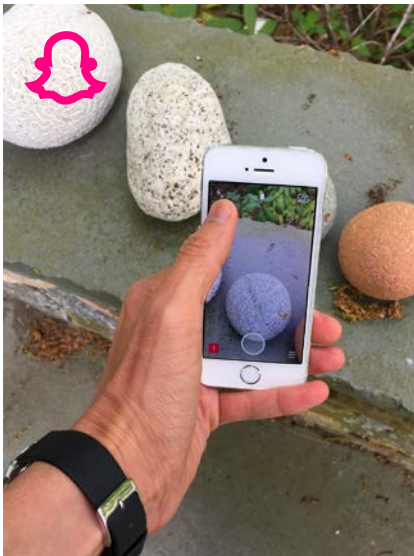
Traditional computers are grounded in the one- or two-button mouse -- which tends to promote "clicking" and minimal dragging. The touch screen introduced a new element: swiping. When supported by animation, it speaks of power.

Analogy: The "slide to unlock" feature on the Apple iPhone introduced the idea of translating an emphatic motion to a button press.

# ...Design Elements That Have Made a Difference... per John Maeda

## Snapchat

*Start with the activity to  
bias towards*

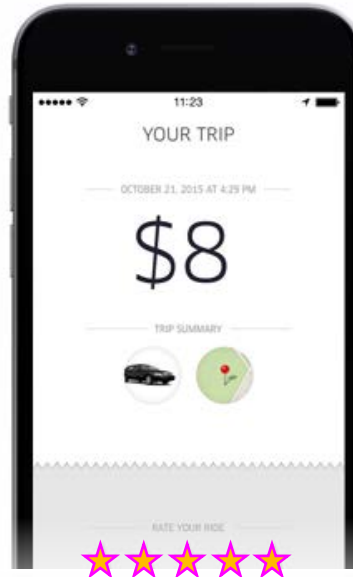


Most imaging applications asked to turn on the camera, whereas Snapchat began the interaction in live camera mode. The invitation to snap a photo was immediate; and the secretive, self-destruct feature completed the addictive loop.

Analogy: A hammer's handle invites you to grasp it. In the design world that's called an object's "affordance" — it primes how you might use it.

## Uber

*Entirely remove a constraint  
with technology*

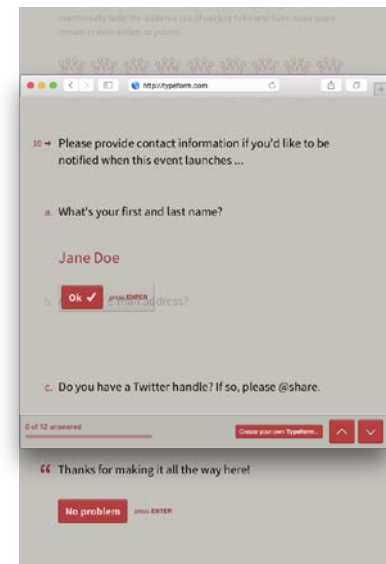


Removing cash or a card payment from a taxi transaction was a huge technical innovation that achieved a better designed outcome. It's often easy to hope that design can solve a fundamental problem — technology is what enables quantum leaps.

Analogy: When cars were rear-wheel drive, the "hump" in the back seat was a bummer. Front-wheel drive cars completely removed that constraint.

## Typeform

*Sustain overall context so user is  
aware where (s)he is*



By keeping the entire interaction in view, and easily referred to within a vertical scroll, the experience of inputting information feels less like the computer is in control; and leads to completion rates of survey information with an average of 60% (vs 10%).

Analogy: The acclaimed film "Birdman" used the cinematic illusion of "the single take" to achieve a similar effect to create greater viewer immersion.

*Healthcare – Continuing to Shift  
Towards Consumer-Driven,  
Value-Based Care =  
Opportunity for Technology Solutions*

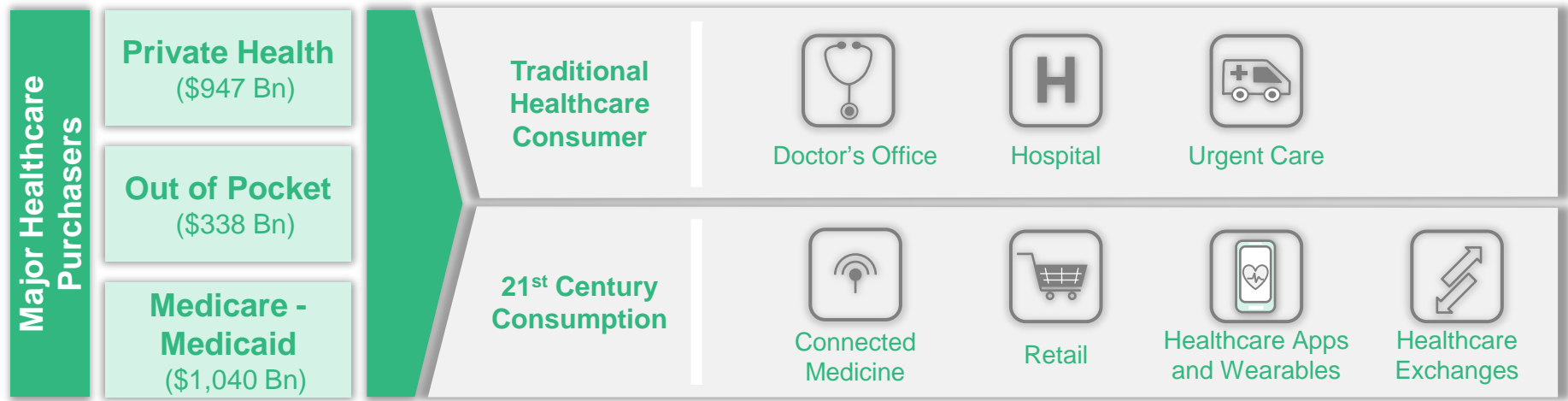


# US Healthcare in the 21<sup>st</sup> Century

## Purchase + Delivery Change Forever

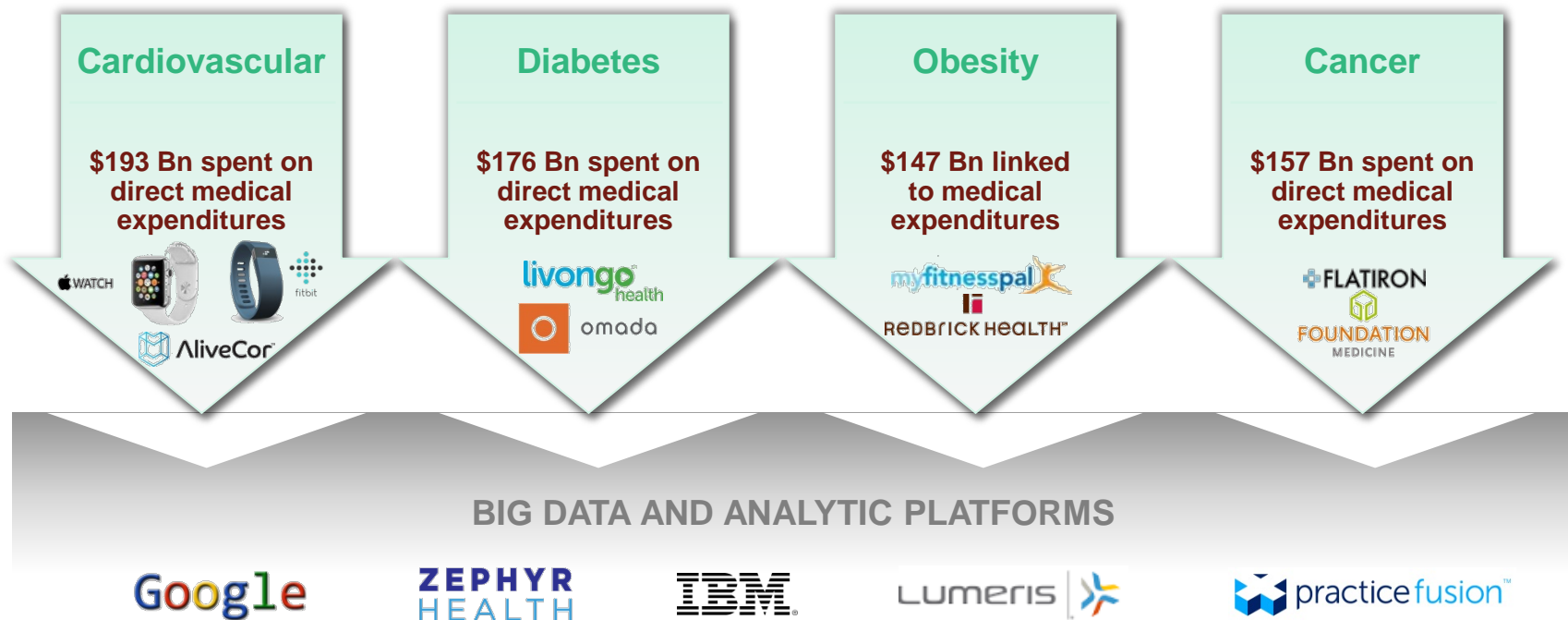
### ACA and Government Effects

- With Cadillac tax coming into effect in 2018, employers are moving towards offering high deductible health benefit plans
- 72% of employers offer at least 1 consumer directed health plan
- 30% of Medicare payments will be tied to quality or value by end of 2016 and 50% by end of 2018
- Effective Jan 2015, Medicare has separate payments for chronic care management for “non-face-to-face” care



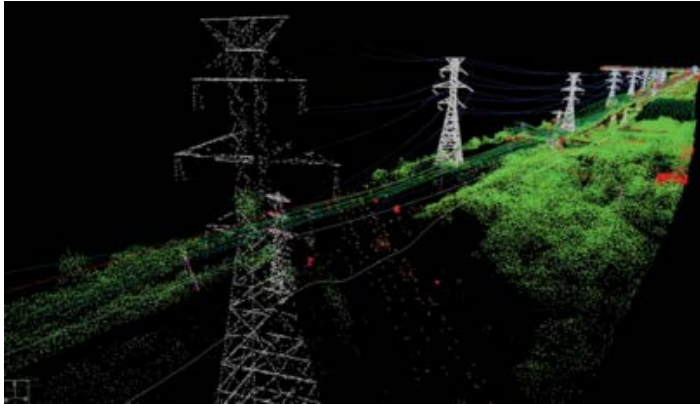
# Lower Healthcare Costs by Utilizing Technology to Help Manage and Prevent Chronic Diseases

- In 2013, the US government spent \$591 billion on Medicare. However, Medicare is projected to have insufficient funds to pay all hospital bills beginning in 2030
- Chronic disease accounts for 86% of US healthcare costs, which can be reduced by enabling the healthcare ecosystem with innovative technology

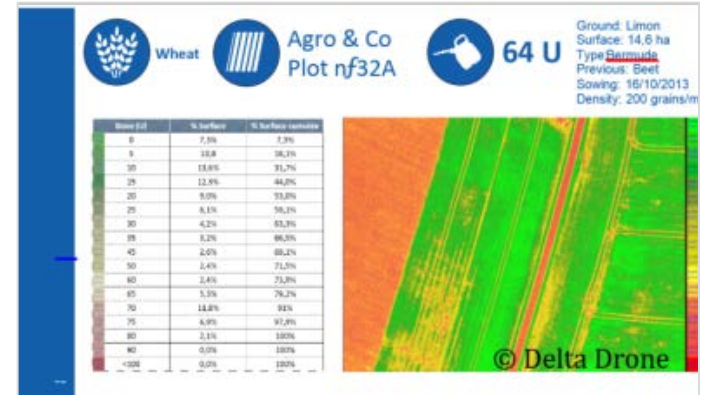


# *More Drone Thoughts*

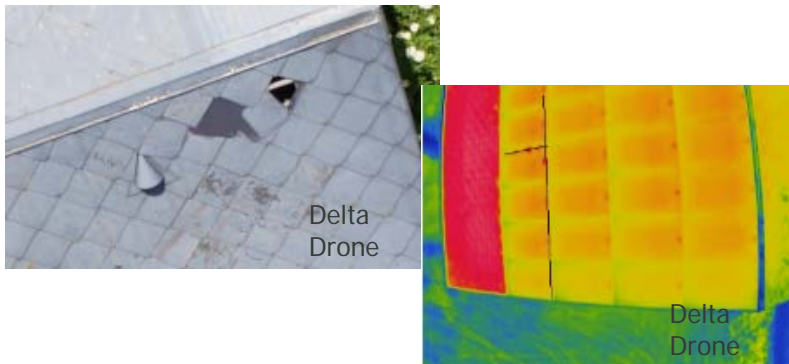
# Drones = Driving New Wave of Big Data Collection / Analysis



Point cloud models created from aerial LiDAR surveys measure conductor tension & vegetation encroachment, reducing inspection cost & injury.



Vegetation health maps created from multi-spectral imaging surveys help minimize use of water & pesticides & maximize crop yields.



High resolution photos of rooftops aid damage assessment for insurance underwriters & thermal imaging being used for building insulation inspections.



Stockpile maps created from aerial photo surveys provide faster & more accurate volumetric calculations for mining and quarry operations.

# Consumer / Commercial Drone Development – Ranking Countries by Government Accommodation...

## 1) France & United Kingdom

- Both countries allow Beyond Visual Line of Sight “BVLOS” commercial operations.
  - In France, users must obtain a proper pilot’s license plus 100 hours of flying experience & 20 hours of drone training.
  - In United Kingdom, operator must be approved by the Civil Aviation Authority “CAA.”
- France & UK both have training certifications, weight categories & relatively mature regulatory framework.

## 2) Canada

- Early to allow commercial operations with Special Flight Operating Certificates and regulator takes holistic safety approach without requiring pilots licenses. In November 2014, Transport Canada issued blanket exemptions for drones weighing less than 2kgs, but restrictions are tight whereby UAVs 2kg or less have to avoid flying closer than 9km from build-up areas (e.g. group of buildings larger than a farmstead).
- Still lacks a comprehensive regulatory framework.

## 3) Australia

- Australia has a mature regulatory framework, but Civil Aviation and Safety Authority “CASA” is rewriting its regulations with the concept of a micro UAS rule. Yamaha has had success in Australia with its R-MAX unmanned helicopter.

## 4) Japan

- Led way on UAVs 20 years ago with development of the Yamaha R-MAX, but country did not develop regulatory structure, and has lost its early technical lead.

# ...Consumer / Commercial Drone Development – Ranking Countries by Government Accommodation

## 5) USA

- FAA is about 6 months into an exemption program that grants company-by-company exemptions (permits) for specific UAS applications. However, those permits come with restrictions & conditions that pose impediments to operators, such as pilot certification (in a real aircraft), mandatory separation from persons and structures (500 feet), a prohibition against night operations, & other parameters that are generally viewed as overly conservative & potentially not capable of being satisfied by many of the companies being granted those permits. Agency claims that statutes prohibit it from providing a more reasonable approach to UAS permits.
- FAA is trying to speed up its processes, and is now up to ~400 exemptions granted to companies. However, it still has a massive backlog with ~1,200 more pending. Additionally, the FAA is at least 18 months away from actual small UAS rules.

## 6) China

- Military allots only 1/5 of airspace to civilian use and is very sensitive about drone usage. While there is no blanket ban on commercial drone activity, China's Civil Aviation Administration requires anyone operating a drone >7kg to have a license. For flying drones <7kg, no license is required as long as it's below 400 feet and within operator's line of sight. However, this policy has caused confusion among operators and regulators. In one example, the Beijing Police briefly detained a well-known aerial photographer for filming the Forbidden City - they confiscated his quadcopter and later returned it to the photographer at the airport on his flight out of China.

### • Other countries developing UAS regulations

- Mexico recently released framework including micro UAS rule.
- New Zealand is behind but has proposed a solid risk-based set of regulations.

# *Appendix*

Established 'Big' Internet Markets (China / USA / Japan / Brazil / Russia) = +6% Growth in 2014 vs. +7% Y/Y = Slowing, Most Well Past 50% Penetration

## Countries with Internet Penetration >45%, 2014

Rank	Country	2014 Internet Users (MM)	2014 Internet User Growth	2013 Internet User Growth	Population Penetration	Total Population (MM)	Per Capita GDP (\$000)
1	China	632	7%	10%	47%	1,356	\$13
2	United States	269	2	2	84	319	\$55
3	Japan	110	0	9	86	127	\$37
4	Brazil	105	4	12	52	203	\$16
5	Russia	87	15	9	61	142	\$25
6	Germany	68	0	1	84	81	\$46
7	United Kingdom	57	4	1	90	64	\$40
8	France	54	-1	5	82	66	\$40
9	Iran (I.R.)	49	8	16	60	81	\$17
10	Egypt	43	15	13	50	87	\$11
11	Korea (Rep.)	42	1	1	85	49	\$35
12	Turkey	38	4	6	46	82	\$20
13	Italy	36	1	2	58	62	\$35
14	Spain	34	0	7	72	48	\$34
15	Canada	30	0	5	86	35	\$45
Top 15		1,653	5%	7%	59%	2,800	
World		2,793	8%	10%	39%	7,176	



# Developing 'Big' Internet Markets (India / Indonesia / Nigeria / Mexico) = +24% Growth in 2014 vs. +23% Y/Y = Still Growing Strongly

## Countries with Internet Penetration ≤45%

Rank	Country	2014 Internet Users (MM)	2014 Internet User Growth	2013 Internet User Growth	Population Penetration	Total Population (MM)	Per Capita GDP (\$000)
1	India	198	33%	34%	16%	1,236	\$6
2	Indonesia	83	17	13	33	254	\$11
3	Nigeria	67	18	19	38	177	\$6
4	Mexico	52	15	11	43	120	\$18
5	Vietnam	41	12	14	44	93	\$6
6	Philippines	40	4	27	37	108	\$7
7	Pakistan	21	11	12	11	196	\$5
8	Thailand	20	10	12	29	68	\$14
9	Ukraine	19	23	17	42	44	\$9
10	Kenya	18	24	17	39	45	\$3
11	Peru	12	4	7	39	30	\$12
12	Uzbekistan	11	6	22	38	29	\$6
13	Bangladesh	11	5	28	7	166	\$3
14	Sudan	8	10	13	23	35	\$4
15	Algeria	6	10	11	17	39	\$14
Top 15		607	19%	21%	23%	2,641	
World		2,793	8%	10%	39%	7,176	

Established 'Big' Smartphone Markets (USA / Japan / Brazil / Germany / UK) = +13% Growth in 2014 vs. +18% in 2013 = Slowing, Most Well Past 50% Penetration

## Markets with >45% Penetration

Rank	Country	2014 Smartphone Subs (MM)	2014 Smartphone Sub Growth	2013 Smartphone Sub Growth	Population Penetration	Total Population (MM)	Per Capita GDP (\$000)
1	USA	204	9%	16%	64%	319	\$55
2	Japan	104	5	5	82	127	\$37
3	Brazil	96	28	43	47	203	\$16
4	Germany	52	33	30	65	81	\$46
5	United Kingdom	45	9	14	71	64	\$40
6	France	43	16	43	65	66	\$40
7	South Korea	39	5	15	80	49	\$35
8	Spain	26	1	19	55	48	\$34
9	Saudi Arabia	25	14	6	91	27	\$52
10	South Africa	23	26	48	47	48	\$13
11	Australia	22	1	40	100	23	\$46
12	Canada	21	16	20	60	35	\$45
13	Argentina	20	28	52	47	43	\$23
14	Malaysia	20	16	38	66	30	\$25
15	Taiwan	14	1	50	61	23	\$46
Top 15		756	13%	21%	64%	1,186	
World		2,107	23%	27%	29%	7,176	

Developing 'Big' Smartphone Markets (China / India / Indonesia / Russia) = +28% Growth in 2014 vs. +29% in 2013 = Strong, Well Below 50% Penetration

## Markets with ≤45% Penetration

Rank	Country	2014 Smartphone Subs (MMs)	2014 Smartphone Sub Growth	2013 Smartphone Sub Growth	Population Penetration	Total Population (MMs)	Per Capita GDP (\$000)
1	China	513	21%	26%	38%	1,356	\$13
2	India	140	55	19	11	1,236	\$6
3	Indonesia	64	40	36	25	254	\$11
4	Russia	57	24	95	40	142	\$25
5	Mexico	30	31	50	25	120	\$18
6	Philippines	29	39	47	27	108	\$7
7	Thailand	29	11	69	43	68	\$14
8	Italy	28	17	26	45	62	\$35
9	Turkey	23	22	42	28	82	\$20
10	Nigeria	23	58	62	13	177	\$6
11	Vietnam	21	33	39	23	93	\$6
12	Egypt	20	50	20	23	87	\$11
13	Poland	14	42	12	37	38	\$25
14	Colombia	12	41	50	26	46	\$13
15	Iran	10	42	19	12	81	\$17
Top 15		1,014	29%	32%	26%	3,950	
World		2,107	23%	27%	29%	7,176	

---

# INTERNET TRENDS 2015

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