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

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

Source: Informa, World Cellular Information Service (WCIS). Assumes in 1995, one mobile phone subscription per unique user (no duplication).
Note: In 2014, user base per KPCB estimates based on Morgan Stanley Research and ITU data. Smartphone users & mobile phone users represent unique individuals owning mobile devices; mobile subscribers based on number of connections & may therefore overstate number of mobile users.
Global Public Internet Companies, Ranked by Market Capitalization

<table>
<thead>
<tr>
<th>As of December, 1995</th>
<th>Home Country</th>
<th>Market Cap. ($MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Netscape</td>
<td>USA</td>
<td>$5,415</td>
</tr>
<tr>
<td>2 Apple</td>
<td>USA</td>
<td>3,918</td>
</tr>
<tr>
<td>3 Axel Springer</td>
<td>Germany</td>
<td>2,317</td>
</tr>
<tr>
<td>4 RentPath</td>
<td>USA</td>
<td>1,555</td>
</tr>
<tr>
<td>5 Web.com</td>
<td>USA</td>
<td>982</td>
</tr>
<tr>
<td>6 PSINet</td>
<td>USA</td>
<td>742</td>
</tr>
<tr>
<td>7 Netcom On-Line</td>
<td>USA</td>
<td>399</td>
</tr>
<tr>
<td>8 IAC / Interactive</td>
<td>USA</td>
<td>326</td>
</tr>
<tr>
<td>9 Copart</td>
<td>USA</td>
<td>325</td>
</tr>
<tr>
<td>10 Wavo Corporation</td>
<td>USA</td>
<td>203</td>
</tr>
<tr>
<td>11 iStar Internet</td>
<td>Canada</td>
<td>174</td>
</tr>
<tr>
<td>12 Firefox Communications</td>
<td>USA</td>
<td>158</td>
</tr>
<tr>
<td>13 Storage Computer Corp.</td>
<td>USA</td>
<td>95</td>
</tr>
<tr>
<td>14 Live Microsystems</td>
<td>USA</td>
<td>86</td>
</tr>
<tr>
<td>15 iLive</td>
<td>USA</td>
<td>57</td>
</tr>
<tr>
<td><strong>Total Market Cap of Top 15</strong></td>
<td></td>
<td><strong>$16,752</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>As of May, 2015</th>
<th>Home Country</th>
<th>Market Cap. ($MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Apple</td>
<td>USA</td>
<td>$763,567</td>
</tr>
<tr>
<td>2 Google</td>
<td>USA</td>
<td>373,437</td>
</tr>
<tr>
<td>3 Alibaba</td>
<td>China</td>
<td>232,755</td>
</tr>
<tr>
<td>4 Facebook</td>
<td>USA</td>
<td>226,009</td>
</tr>
<tr>
<td>5 Amazon.com</td>
<td>USA</td>
<td>199,139</td>
</tr>
<tr>
<td>6 Tencent</td>
<td>China</td>
<td>190,110</td>
</tr>
<tr>
<td>7 eBay</td>
<td>USA</td>
<td>72,549</td>
</tr>
<tr>
<td>8 Baidu</td>
<td>China</td>
<td>71,581</td>
</tr>
<tr>
<td>9 Priceline.com</td>
<td>USA</td>
<td>62,645</td>
</tr>
<tr>
<td>10 Salesforce.com</td>
<td>USA</td>
<td>49,173</td>
</tr>
<tr>
<td>11 JD.com</td>
<td>China</td>
<td>47,711</td>
</tr>
<tr>
<td>12 Yahoo!</td>
<td>USA</td>
<td>40,808</td>
</tr>
<tr>
<td>13 Netflix</td>
<td>USA</td>
<td>37,700</td>
</tr>
<tr>
<td>14 LinkedIn</td>
<td>USA</td>
<td>24,718</td>
</tr>
<tr>
<td>15 Twitter</td>
<td>USA</td>
<td>23,965</td>
</tr>
<tr>
<td><strong>Total Market Cap of Top 15</strong></td>
<td></td>
<td><strong>$2,415,867</strong></td>
</tr>
</tbody>
</table>

Source: Morgan Stanley, Capital IQ, Bloomberg.
Note: Market capitalizations are as of May 22, 2015 and December 31, 1995, respectively.
User Control of Content Up Significantly – 1995 → 2015

Evolution of Content Discovery, 1975 – 2015, per Nielsen

Source: Nielson, 12/14.
Impact of Internet Has Been Extraordinary & Broad... But – in Many Ways – It’s Just Beginning

<table>
<thead>
<tr>
<th>Sector of Economy / Society, USA</th>
<th>Internet Impact, to Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer</td>
<td>![Blue Circle]</td>
</tr>
<tr>
<td>Business</td>
<td>![Blue and Grey Circles]</td>
</tr>
<tr>
<td>Security / Safety / Warfare</td>
<td>![Blue and Grey Circles]</td>
</tr>
<tr>
<td>Education</td>
<td>![Blue and Grey Circles]</td>
</tr>
<tr>
<td>Healthcare</td>
<td>![Blue and Grey Circles]</td>
</tr>
<tr>
<td>Government / Regulation / Policy Thinking</td>
<td>![Blue and Grey Circles]</td>
</tr>
</tbody>
</table>

Note: Harvey Balls estimate degree to which Internet has changed behavior / outcomes in selected sectors of economy / society, 4/15.
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%

*Details on Internet Users & Smartphone Subscribers in Appendix.
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

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

Source: US Census, Informa. GDP per capita is adjusted for purchasing-power parity, from IMF.

*These 16 countries encompass 3.1B mobile non-smartphone subscriptions, 52% of world’s smartphone subscriptions (27% ex. China), 62% of non-smartphone (feature phone) subscriptions.
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

Source: Cisco, 2015.
Internet Usage (Engagement) Growth Solid
+11% Y/Y = Mobile @ 3 Hours / Day per User vs. <1 Five Years Ago, USA

Source: eMarketer 9/14 (2008-2010), eMarketer 4/15 (2011-2015). Note: Other connected devices include OTT and game consoles. Mobile includes smartphone and tablet. Usage includes both home and work. Ages 18+; time spent with each medium includes all time spent with that medium, regardless of multitasking.
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

- **Print**: 18% Time Spent, 4% Ad Spend
- **Radio**: 11% Time Spent, 11% Ad Spend
- **TV**: 37% Time Spent, 41% Ad Spend
- **Internet**: 24% Time Spent, 23% Ad Spend
- **Mobile**: 24% Time Spent, 8% Ad Spend

**Total Internet Ad**: $50B
**Of Which Mobile Ad**: $13B

Source: Advertising spend based on IAB data for full year 2014. Print includes newspaper and magazine. ~$25B+ opportunity calculated assuming Mobile ad spend share equal its respective time spent share. Time spent share data based on eMarketer 4/14 (adjusted to exclude outdoors / classified media spend). Arrows denote Y/Y shift in percent share.
### Advertising ARPU, Annualized ($), MAUs

<table>
<thead>
<tr>
<th>Ad ARPU Annualized ($)</th>
<th>Facebook ($)</th>
<th>MAU (MM)</th>
<th>Twitter ($)</th>
<th>MAU (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facebook ($)</strong></td>
<td>$4.60</td>
<td>$5.65</td>
<td>$6.14</td>
<td>$7.76</td>
</tr>
<tr>
<td><strong>Y/Y Growth</strong></td>
<td>15%</td>
<td>32%</td>
<td>39%</td>
<td>51%</td>
</tr>
<tr>
<td><strong>MAU (MM)</strong></td>
<td>1,110</td>
<td>1,155</td>
<td>1,189</td>
<td>1,228</td>
</tr>
<tr>
<td><strong>Y/Y Growth</strong></td>
<td>23%</td>
<td>21%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Twitter ($)</strong></td>
<td>$1.97</td>
<td>$2.22</td>
<td>$2.65</td>
<td>$3.65</td>
</tr>
<tr>
<td><strong>Y/Y Growth</strong></td>
<td>52%</td>
<td>48%</td>
<td>61%</td>
<td>69%</td>
</tr>
<tr>
<td><strong>MAU (MM)</strong></td>
<td>204</td>
<td>218</td>
<td>232</td>
<td>241</td>
</tr>
<tr>
<td><strong>Y/Y Growth</strong></td>
<td>48%</td>
<td>44%</td>
<td>39%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: SEC Filings, Morgan Stanley Research. ARPU = Average Revenue per User, defined as annualized revenue per Monthly Active User (MAU).
Internet Advertising = Mobile Growing Strongly (+34% Y/Y) = @ Just 14% of Total While Desktop Decelerating (+11%)
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

Source: eMarketer 4/15, Coatue analysis. Note: Other connected devices include OTT and game consoles. Mobile includes smartphone and tablet. Usage includes both home and work. Ages 18+. Time spent with each medium includes all time spent with that medium, regardless of multitasking; for example, 1 hour of multitasking on desktop/laptop while watching TV is counted as 1 hour for TV and 1 hour for desktop/laptop.
...Full-Screen Vertical Video Ads on Snapchat = 9x Higher Completion Rate vs. Horizontal Mobile Video Ads

Source: Snapchat. Completion rate compared against industry standard horizontal ads, as measured by Nielsen. Image: Sprinkr blog, news sources.
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
Enterprise software used to be about making existing work more efficient. Now, the opportunity for software is to transform the work itself.
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

Source: Slack, KPCB. Image: TVC Net support website (left), NY Times (right).
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

Source: Square. Image: Square (left and right).
THEN
Difficult to Set Up / Process Online Payments

<table>
<thead>
<tr>
<th>Seller</th>
<th>gateway / processor</th>
<th>ISOs</th>
<th>merchant acquirer</th>
<th>credit card networks</th>
<th>issuing banks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>american express</td>
<td></td>
<td>alternative payment methods (Bitcoin, Alipay)</td>
<td>fraud prevention</td>
<td>reporting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PCI audits</td>
<td>international expansion</td>
</tr>
</tbody>
</table>

NOW
Stripe

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.
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

Source: DocuSign. Image: Good Marketplace (left), PaperlessChase.com (right).
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
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

Source: Anaplan. Image: The Oligarch (left), Anaplan (right).
Recruiting...  
Greenhouse – Daniel Chait

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

**NOW**  
Greenhouse

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

Source: Greenhouse. Image: Market Wired (left), Greenhouse (right).
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

#### Top Apps by Usage

<table>
<thead>
<tr>
<th>Rank</th>
<th>App</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Facebook</td>
</tr>
<tr>
<td>2</td>
<td>WhatsApp</td>
</tr>
<tr>
<td>3</td>
<td>Messenger</td>
</tr>
<tr>
<td>4</td>
<td>Instagram</td>
</tr>
<tr>
<td>5</td>
<td>LINE</td>
</tr>
<tr>
<td>6</td>
<td>Viber</td>
</tr>
<tr>
<td>7</td>
<td>KakaoTalk</td>
</tr>
<tr>
<td>8</td>
<td>Clash of Clans</td>
</tr>
<tr>
<td>9</td>
<td>WeChat</td>
</tr>
<tr>
<td>10</td>
<td>Twitter</td>
</tr>
</tbody>
</table>

#### Top Apps By Number of Sessions

<table>
<thead>
<tr>
<th>Rank</th>
<th>App</th>
<th>Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KakaoTalk</td>
<td>55</td>
</tr>
<tr>
<td>2</td>
<td>WhatsApp</td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>WeChat</td>
<td>29</td>
</tr>
<tr>
<td>4</td>
<td>VK</td>
<td>29</td>
</tr>
<tr>
<td>5</td>
<td>LINE</td>
<td>26</td>
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<tr>
<td>6</td>
<td>Viber</td>
<td>20</td>
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<tr>
<td>7</td>
<td>Facebook</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>Clash of Clans</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>Instagram</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>Messenger</td>
<td>8</td>
</tr>
</tbody>
</table>

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

**Messaging Apps ➔ significant app sessions**

Source: Quettra, Q1:15. Data ranked based on usage. Quettra analyzes 75MM+ Android users spread out in more than 150 countries, collecting install and usage statistics of every application present on the device. Q1:15 data analyzed three months of data starting from 1/1/15. Data excludes Google apps and other commonly pre-installed apps to remove biases. Only apps with 10K+ installs worldwide and 100+ DAU are counted.
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

*Up to 24 hours after original broadcast.
Images: Company websites, Flickr (creative commons).
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**, flat Y/Y, Q1:15
- Messages Sent / Day = **5.2B**
- Revenue* = **$853MM**, +19% Y/Y

*Source: Company public filings, earnings transcripts, websites, statements to the press. Revenue figures are annualized as of most recent quarter. *Revenue of Daum Kakao.*
## Messaging Platforms – Asia In-Country Leaders = Developing Evolving Playbooks

<table>
<thead>
<tr>
<th>Name</th>
<th>KakaoTalk</th>
<th>WeChat</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch</td>
<td>March 2010</td>
<td>January 2011</td>
<td>June 2011</td>
</tr>
<tr>
<td>Primary Country</td>
<td>Korea</td>
<td>China</td>
<td>Japan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feature</th>
<th>KakaoTalk</th>
<th>WeChat</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messaging</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Group Messaging</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Video Calls / Chat</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Media</td>
<td>Kakao Topic (2014)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QR Codes</td>
<td>✓</td>
<td>QR code identity (2012)</td>
<td>✓</td>
</tr>
<tr>
<td>Developer Platform</td>
<td>KakaoDevelopers</td>
<td>WeChat API</td>
<td>Line Partner (2012)</td>
</tr>
</tbody>
</table>

Source: Company websites, press releases.
## Messaging Platforms – Global Leaders = Implementing Playbooks & More

<table>
<thead>
<tr>
<th>Name</th>
<th>Facebook Messenger</th>
<th>Snapchat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch</td>
<td>August 2011</td>
<td>September 2011</td>
</tr>
<tr>
<td>Primary Country</td>
<td>Global</td>
<td>Global</td>
</tr>
<tr>
<td>Group Messaging</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Voice Calls</td>
<td>VoIP voice calls in US (2013)</td>
<td>✓</td>
</tr>
<tr>
<td>Stickers</td>
<td>Sticker support (2013)</td>
<td>✓</td>
</tr>
<tr>
<td>Games</td>
<td>✓</td>
<td>✓</td>
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<td>Commerce</td>
<td>Businesses on Messenger (2015)</td>
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<td>Media</td>
<td>✓</td>
<td>Discover (2015)</td>
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<tr>
<td>QR Codes</td>
<td>✓</td>
<td>QR Codes to add friends (2015)</td>
</tr>
<tr>
<td>Food Delivery</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Taxi Services</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>User Stories / Moments</td>
<td>✓</td>
<td>Shared Stories (2013)</td>
</tr>
</tbody>
</table>
In Messaging, Not One-Size-Fits-All, For Now...
Many People Use Different Messaging Apps for Various Purposes

One User... (Illustrative)

...Another User (Illustrative)

[Images of various messaging apps such as Kik, Messages, LINE, Snapchat, Kik, WhatsApp, Hangouts, KakaoTalk, WeChat, Messenger, Snapchat, Tango, LINE, Path, Viber, WhatsApp, Tango, Whisper, Viber, Voxer, Hangouts]
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

Images: Apple, Android Wear.
Next New Internet Users Likely Already Non-Smartphone Mobile Users & Most Likely to Onboard via Messaging Platforms

## Selected Top Countries for Mobile Subscriptions, 2014

<table>
<thead>
<tr>
<th>Ranked by Total Mobile Subscriptions:</th>
<th>Total Population (MM)</th>
<th>Mobile Subscriptions (MM)</th>
<th>Smartphone % of Mobile Subscriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1,356</td>
<td>1,301</td>
<td>39%</td>
</tr>
<tr>
<td>India</td>
<td>1,236</td>
<td>907</td>
<td>15</td>
</tr>
<tr>
<td>Indonesia</td>
<td>254</td>
<td>343</td>
<td>19</td>
</tr>
<tr>
<td>Brazil</td>
<td>203</td>
<td>274</td>
<td>35</td>
</tr>
<tr>
<td>Russia</td>
<td>142</td>
<td>253</td>
<td>23</td>
</tr>
<tr>
<td>Pakistan</td>
<td>196</td>
<td>144</td>
<td>6</td>
</tr>
<tr>
<td>Nigeria</td>
<td>177</td>
<td>143</td>
<td>16</td>
</tr>
<tr>
<td>Vietnam</td>
<td>93</td>
<td>124</td>
<td>17</td>
</tr>
<tr>
<td>Philippines</td>
<td>108</td>
<td>113</td>
<td>26</td>
</tr>
<tr>
<td>Mexico</td>
<td>120</td>
<td>110</td>
<td>27</td>
</tr>
<tr>
<td>Egypt</td>
<td>87</td>
<td>103</td>
<td>19</td>
</tr>
<tr>
<td>Iran</td>
<td>81</td>
<td>99</td>
<td>10</td>
</tr>
<tr>
<td>Thailand</td>
<td>68</td>
<td>99</td>
<td>29</td>
</tr>
<tr>
<td>South Africa</td>
<td>48</td>
<td>73</td>
<td>31</td>
</tr>
<tr>
<td>Turkey</td>
<td>82</td>
<td>70</td>
<td>33</td>
</tr>
<tr>
<td><strong>Total Mobile Subscriptions (MM)</strong></td>
<td><strong>4,153MM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weighted-Avg. of Smartphone as % of Mobile Subs</strong></td>
<td><strong>26%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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
Pinterest Content Growth Strong Across Board... Especially Strong in ‘Non-Core’ Categories...

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

Source: Pinterest, 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

Source: Snapchat.
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

Source: Facebook. Statements made on earnings calls, at F8, and from media blogs, 2015.
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

Source: Twitch, data as of year-end 2014.
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
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

Source: Wattpad, all data as of 5/15.
User-Generated Reviews / Feedback (Reputation) = +140% Y/Y @ 14MM New Reviews on Airbnb, Last 12 Months

Source: Airbnb.
Users Increasingly First Source for News via Twitter / Dataminr

Source: Dataminr, 5/15.
Imagine That...

Users Generating Their Content Are Recreating Their Internet
Re-Imagining Internet Usage...

12-24+ Year Olds Remain Trendsetters
## Social Media Usage Among American Youth (Age 12-24)

<table>
<thead>
<tr>
<th>Platform</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>74%</td>
<td>80%</td>
</tr>
<tr>
<td>Instagram</td>
<td>59%</td>
<td>53%</td>
</tr>
<tr>
<td>Snapchat</td>
<td>46%</td>
<td>57%</td>
</tr>
<tr>
<td>Twitter</td>
<td>32%</td>
<td>36%</td>
</tr>
<tr>
<td>Vine</td>
<td>30%</td>
<td>34%</td>
</tr>
<tr>
<td>Google+</td>
<td>26%</td>
<td>34%</td>
</tr>
<tr>
<td>Pinterest</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>Tumblr</td>
<td>15%</td>
<td>22%</td>
</tr>
<tr>
<td>WhatsApp</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>LinkedIn</td>
<td>7%</td>
<td>9%</td>
</tr>
</tbody>
</table>

## Teens' Most Important Social Network

<table>
<thead>
<tr>
<th>Platform</th>
<th>Spring 2015</th>
<th>Spring 2014</th>
<th>Fall 2013</th>
<th>Fall 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>32%</td>
<td>14%</td>
<td>24%</td>
<td>26%</td>
</tr>
<tr>
<td>Instagram</td>
<td>13%</td>
<td>32%</td>
<td>32%</td>
<td>32%</td>
</tr>
<tr>
<td>Twitter</td>
<td>4%</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Snapchat</td>
<td>24%</td>
<td>13%</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>Tumblr</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Google+</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Pinterest</td>
<td>8%</td>
<td>6%</td>
<td>7%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Note: (1) 12-24 year olds who currently ever use social networking sites/services. (2) Based on survey of US teens with an average age of 16.3 years.
Millennials = Love Their Smartphones…
87% = ‘Smartphone Never Leaves My Side’

Source: Zogby Analytics.

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. Sums may exceed 100% owing to rounding.
Millenials Love Their Smartphone Cameras...
44% Use Camera / Video Function Daily...76% Post on Social Media

<table>
<thead>
<tr>
<th>Millennial Smartphone Camera Usage*, USA, 2014</th>
<th>Millennial Smartphone Camera Use Cases, USA, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How often do you use your device’s camera/video function?</strong></td>
<td><strong>For what things do you use your smartphone camera?</strong></td>
</tr>
<tr>
<td>At least once a day</td>
<td>Pictures/video to post on social media</td>
</tr>
<tr>
<td>Every other day</td>
<td>Pictures of things to do later</td>
</tr>
<tr>
<td>At least once a week</td>
<td>Photo of check to deposit via banking app</td>
</tr>
<tr>
<td>Once a month</td>
<td>Pay bills</td>
</tr>
<tr>
<td>Never</td>
<td>Other</td>
</tr>
<tr>
<td>Not sure</td>
<td>Not sure</td>
</tr>
</tbody>
</table>

% of Total Respondents

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

- Get turn-by-turn navigation while driving: 84%
- Follow along with breaking news events: 84%
- Learn about events or activities in one's community: 79%
- Get help in an emergency situation: 52%
- Get public transit information: 46%

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

Selected On-Demand Company Fulfillment Time Estimates

<table>
<thead>
<tr>
<th>Transportation</th>
<th>Food</th>
<th>Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUXE ~10 min</td>
<td>Caviar &lt;20 min</td>
<td>Postmates</td>
</tr>
<tr>
<td>LYFT Within minutes</td>
<td>DoorDash</td>
<td>Shyp ~20 min</td>
</tr>
<tr>
<td>Uber Within minutes</td>
<td>Munchery</td>
<td></td>
</tr>
<tr>
<td>Dining</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OpenTable Instant booking</td>
<td>Sprig 15 min</td>
<td>Airbnb Instant booking</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Grocery</td>
<td>Hotel Tonight</td>
</tr>
<tr>
<td>SeatGeek Instant booking</td>
<td>Instacart</td>
<td>Instant booking</td>
</tr>
</tbody>
</table>

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<td>Instant booking</td>
</tr>
</tbody>
</table>

Source: Statements from company and publicly available information.
Note: Fulfillment time for transportation companies and Shyp is defined as wait time until pickup. Fulfillment time for food companies, Instacart, and Postmates is defined as time until delivery of goods. Fulfillment time for the remaining companies is defined as time until completion of the transaction.
Re-Imagining Consumer Spending
### Average Annual Expenditure of USA Household, 2013 – 2014

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

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

Image: Airbnb, Uber, Instacart.
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


“Grocery Shopping: Who, Where and When,” The Time Use Institute, 2008. Time spent grocery shopping excludes time spent getting to and from store.

Image: Airbnb, Uber, Instacart.
Innovation in *Weak User Experience* Markets

Images: iMore, Uber, 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

Source: KPCB estimates.
Global Consumer Drones – Revenue by Region, 2014

- USA: 35%
- Europe: 30%
- China: 15%
- Rest of the World: 20%

Source: KPCB estimates.
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

**Infrastructure Inspection**

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

**Mining & Quarrying**

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

**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


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

Source: Angus Maddison, University of Groningen, OECD, data post 1980 based on IMF data (GDP adjusted for purchasing power parity). Other countries account for ~35% of global GDP.
World Trade Rising as % of GDP = @ 25%, Up ~3x Over Past ~50 Years

World Trade as % of World GDP, 1960 – 2014

Source: Trade data per World Trade Organization (WTO), GDP data per United Nations (UN) and IMF.
Note: World trade calculated as the sum of all countries’ imports (or exports). The biggest trading partners of USA includes EU nations, Canada, China, Mexico, Japan and South Korea.
‘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

Jobs within “Goods-Producing Industries” includes manufacturing, construction, mining and logging. All other industries are classified as “Service-Providing Industries.” Industries include all jobs classified within those industries, including supervisory jobs. Total includes only nonfarm employment.
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%


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)


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

Note: Union membership calculated as the total number of employed workers that are union members over the total number of employed, nonfarm workers.
Employer Retirement Plan Sponsorship Falling = @ 59% in 2012 vs. 69% in 1979

Private, Full-Time Workers Whose Employers Sponsor 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

- Employer-Sponsored
- Direct-Purchase
- Government (Medicaid / Medicare / Military)
- Uncovered

Source: Census Bureau.
Note: Percentages may add up to >100%, as coverage is not mutually exclusive (e.g. individuals may be covered by multiple sources throughout the year). Employer coverage includes insurance coverage purchased by unions. Government health insurance coverage includes Medicaid, Medicare, Department of Veterans Affairs, and military.
Government Benefit Recipients Rising = @ 50% of Population vs. 30% in 1983


- 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.

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

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

Source: US Census Bureau, Center for Immigration Studies.
Note: USA Foreign-born population includes anyone who is not a USA citizen at birth, including those who become USA citizens through naturalization.
18-32 Year Olds Marriage Rates Declining = @ 26% vs. 65% Fifty Years Ago

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

Married defined as married, spouse present or married, spouse absent.

Source: US Census Bureau.
Household Sizes Declining =
@ 2.5 People vs. 3+ Fifty Years Ago, 4+ a Century Ago

Size of Average Household, USA, 1910 – 2014

Note: A household consists of all people who occupy a housing unit regardless of relationship. A household may consist of a person living alone or multiple unrelated individuals or families living together.
Millennials (Age 15-35) = Largest Generation in Workforce This Year

Civilian Labor Force by Generation, USA, 2000 – 2015

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

- **Training and Development**: 22%
- **Flexible Working Hours**: 19%
- **Cash Bonuses**: 14%
- **Free Private Healthcare**: 8%
- **Pension Scheme or Other Retirement Funding**: 6%
- **Greater Vacation Allowance**: 6%
- **Financial Assistance with Housing**: 5%
- **Company Car**: 4%
- **Assistance in Clearing Debts Incurred While Studying**: 3%
- **Maternity / Paternity Benefits**: 3%
- **Subsidized Travel Costs**: 2%
- **Free Child Care**: 2%
- **Access to Low Interest Loans / Borrowing Options**: 2%
- **Time Off to Do Community / Charity Work**: 1%
- **I’d Prefer No Benefits and Higher Wages**: 4%

Survey of 4,364 graduates across 75 countries. All respondents were aged 31 or under and had graduated between 2008 and 2011. Millennials defined as those born between 1980 and 2000. In 2015, they are ages 15-35.
Millennials Expect Flexibility & Like Technology @ Work

**Millennials = Expect Flexible Work Hours**

- Many = expect to be mobile & work from home / office / cafes at will.

- \(~20\% = \text{identify as ‘night owls’} \) (often work outside normal business hours).

- \(38\% = \text{freelancing} \) vs. \(32\% \) among those over 35 years old.

- \(32\% = \text{believe they will be working ‘mainly flexible hours’ in future.} \)

**Millennials = Tech Savvy**

- \(34\% = \text{prefer to collaborate online at work as opposed to in-person or via phone} \) (vs. \(19\% \) for older generations).

- \(45\% = \text{use personal smartphones for work purposes} \) (vs. \(18\% \) for older generations).

- \(41\% = \text{likely to download applications to use for work purposes in next 12 months} \) & 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

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

MBO Partners defines workers in the 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)

Hiring Managers Survey - Q: Please look at this list of personality attributes. Do you think Millennials (age 21-32) or the previous generation (age 33-55) are more likely to possess each? N = 200
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

- **Meaningful Work**
  - Managers: 11%
  - Millennials: 30%

- **High Pay**
  - Managers: 48%
  - Millennials: 27%

- **Sense of Accomplishment**
  - Managers: 11%
  - Millennials: 24%

- **Challenging Work**
  - Managers: 8%
  - Millennials: 10%

- **High Level of Self Expression**
  - Managers: 9%
  - Millennials: 6%

- **High Level of Responsibility**
  - Managers: 12%
  - Millennials: 3%

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

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

Source: World Bank, IDC
Connectivity (via Mobile Smartphones) Up Dramatically = @ 64% of Population vs. 18% in 2009

Smartphone Subscription Penetration, USA, 2009 – 2014


Smartphone penetration data are based on subscriptions (also referred to as connections), which may overstate actual users for those who have multiple devices or connections.
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

E-Commerce as % of Retail Sales (%)

- 0%
- 2%
- 4%
- 6%
- 8%
- 10%


Source: Forrester

$300B+ of Spend

@KPCB
1st Generation ‘Online Platforms / Marketplaces for \textbf{Products} Rising = Optimized for Desktop Internet + Traditional Shipping Delivery

\textbf{Gross Merchandise Value (GMV), 2014...}
\textit{Measured by Top 5 Global Public E-Commerce Companies}

\begin{itemize}
  \item \textcolor{green}{eBay}
  \item \textcolor{blue}{Amazon.com}
  \item \textcolor{red}{Alibaba / Taobao}
  \item \textcolor{gray}{JD.com}
  \item \textcolor{purple}{Rakuten}
\end{itemize}

Source: Companies are eBay, Amazon, Alibaba, JD.com, and Rakuten. Per publicly available company data, Morgan Stanley Research.
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*

<table>
<thead>
<tr>
<th>Category</th>
<th>People</th>
<th>Percentage of Freelancers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Contractors</td>
<td>21MM</td>
<td>40%</td>
<td>Don’t have employer...do freelance, temporary, or supplemental work on a project-by-project basis</td>
</tr>
<tr>
<td>Moonlighters</td>
<td>14MM</td>
<td>27%</td>
<td>Professionals with a primary, traditional job who also moonlight doing freelance work</td>
</tr>
<tr>
<td>Diversified Workers</td>
<td>9MM</td>
<td>18%</td>
<td>Multiple sources of income; mix of traditional and freelance work</td>
</tr>
<tr>
<td>Temporary Workers</td>
<td>6MM</td>
<td>10%</td>
<td>Single employer, client, job, or contract project where employment is temporary</td>
</tr>
<tr>
<td>Business Owners who Consider Themselves Freelancers</td>
<td>3MM</td>
<td>5%</td>
<td>Business owners with 1-5 employees</td>
</tr>
</tbody>
</table>

*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.

Source: “Freelancing in America,” Survey of 5,000 Working Americans commissioned by Freelancer’s Union and Upwork (formerly Elance-oDesk), 9/14, USA.
Freelancers Use Internet to Get / Do Business

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

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

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.
## Internet Enabling Commerce in Increasingly Efficient Ways

<table>
<thead>
<tr>
<th>eBay</th>
<th>Etsy</th>
<th>airbnb</th>
<th>Upwork</th>
</tr>
</thead>
<tbody>
<tr>
<td>eBay SMBs = 95% engage in export vs. &lt;5% of USA businesses&lt;br&gt;Setting up export businesses historically required significant investment.</td>
<td>Etsy sellers = 35% started business without much capital investment, compared to 21% for small business owners.</td>
<td>Only a smartphone needed to set up a listing and become an Airbnb host. Hosts can get set up in minutes.</td>
<td>Ability for businesses to access talent quickly – time to hire averages 3 days on Upwork vs. longer time for traditional hiring.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Platform</th>
<th>Number</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alibaba</td>
<td>8.5MM+</td>
<td></td>
</tr>
<tr>
<td>Amazon</td>
<td>2MM+</td>
<td>Third-Party</td>
</tr>
<tr>
<td>eBay</td>
<td>25MM+</td>
<td>Sellers</td>
</tr>
<tr>
<td>Etsy</td>
<td>1.4MM+</td>
<td>Active</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+26% Y/Y</td>
</tr>
</tbody>
</table>

#### Service Commerce

<table>
<thead>
<tr>
<th>Platform</th>
<th>Number</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airbnb</td>
<td>35MM Total Guests All-Time</td>
<td>– nearly 25MM in Last Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uber</td>
<td>~1MM+ Driver-Partners</td>
<td>+6x Y/Y</td>
</tr>
<tr>
<td>Upwork</td>
<td>10MM+ Freelancers</td>
<td>+63% 5-Year CAGR</td>
</tr>
</tbody>
</table>

Source: Alibaba. Active sellers only includes 3 China retail marketplaces: Tmall, Taobao, Juhuasuan, Q2:14 (LTM). eBay, 2014. Amazon, Q1:15 earnings call; sellers refer to worldwide active seller accounts. Etsy, Q1:15 public filings; active sellers defined as those who have incurred at least one charge from Etsy in the last 12 months. Upwork (formerly Elance-oDesk) database, 2015. 10MM+ is cumulative registered freelancers. Uber, 2015. Airbnb, 2015.
People Typically Use Online Platforms to Find Extra Income & Flexibility
Many People = Use Online Platforms / Marketplaces to Supplement Income

## Select Online Platforms – Personal Impact

<table>
<thead>
<tr>
<th>Platform</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airbnb</td>
<td>• 72% = NYC hosts depend on Airbnb earnings to pay rent / mortgage...50%+ = NYC hosts are freelancers or other non-traditional workers supplementing income...&lt;br&gt;• 80-90% = Global Airbnb hosts occasionally rent out their own home to supplement income&lt;br&gt;&lt;br&gt;• 82% = Sellers are part-time (ie: have jobs outside of Etsy)&lt;br&gt;• 26% = Sellers have full-time jobs (outside of Etsy)...48% = independent / part-time / temporary workers&lt;br&gt;• 36% = Use Etsy earnings to cover household expenses...24% for discretionary spend&lt;br&gt;&lt;br&gt;• 74% = Drive to maintain steady income as other income sources unstable / unpredictable&lt;br&gt;• 61% = Have another job...31% = full-time on another job; 30% = part-time job apart from Uber; 38% = no other job&lt;br&gt;&lt;br&gt;• 68% = People who said earning extra money is a motivation for freelancing&lt;br&gt;• 80% = Non-freelancers willing to do work outside primary job to make more money&lt;br&gt;• 60%+ = Freelancers provide at least 1/2 household income</td>
</tr>
<tr>
<td>Etsy</td>
<td>• sellers are part-time (ie: have jobs outside of Etsy)&lt;br&gt;• 26% = Sellers have full-time jobs (outside of Etsy)...48% = independent / part-time / temporary workers&lt;br&gt;• 36% = Use Etsy earnings to cover household expenses...24% for discretionary spend&lt;br&gt;&lt;br&gt;• 74% = Drive to maintain steady income as other income sources unstable / unpredictable&lt;br&gt;• 61% = Have another job...31% = full-time on another job; 30% = part-time job apart from Uber; 38% = no other job&lt;br&gt;&lt;br&gt;• 68% = People who said earning extra money is a motivation for freelancing&lt;br&gt;• 80% = Non-freelancers willing to do work outside primary job to make more money&lt;br&gt;• 60%+ = Freelancers provide at least 1/2 household income</td>
</tr>
<tr>
<td>Thumbtack</td>
<td>• 37% = Pros are part-time with income supplemented by other sources&lt;br&gt;&lt;br&gt;• 74% = Drive to maintain steady income as other income sources unstable / unpredictable&lt;br&gt;• 61% = Have another job...31% = full-time on another job; 30% = part-time job apart from Uber; 38% = no other job&lt;br&gt;&lt;br&gt;• 68% = People who said earning extra money is a motivation for freelancing&lt;br&gt;• 80% = Non-freelancers willing to do work outside primary job to make more money&lt;br&gt;• 60%+ = Freelancers provide at least 1/2 household income</td>
</tr>
<tr>
<td>Upwork</td>
<td>• 37% = Pros are part-time with income supplemented by other sources&lt;br&gt;&lt;br&gt;• 74% = Drive to maintain steady income as other income sources unstable / unpredictable&lt;br&gt;• 61% = Have another job...31% = full-time on another job; 30% = part-time job apart from Uber; 38% = no other job&lt;br&gt;&lt;br&gt;• 68% = People who said earning extra money is a motivation for freelancing&lt;br&gt;• 80% = Non-freelancers willing to do work outside primary job to make more money&lt;br&gt;• 60%+ = Freelancers provide at least 1/2 household income</td>
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Online Platform / Marketplace Income = Material for Many People

Average Annual Earnings – Selected Online Platforms

- **Median USA Household Income**: $51,900
- **Thumbtack**: $8,000
- **Average $ Earned by Typical Airbnb Host in NYC**: $7,700
- **eBay**: $3,000
- **Etsy**: $1,400

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


“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.

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

25% of ‘On-Demand’ Workers = Use Multiple Platforms

Percent of ‘On-Demand’ Workers Who Use Multiple Platforms, USA, 2014

- Worked on One Platform
- Worked on Multiple Platforms

Source: MBO Partners and Emergent Research, “Independent Workers and the On-Demand Economy”, USA, 4/15.
MBO Partners defines workers in the 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
### 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

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial</strong> – ability to earn supplemental / primary income</td>
<td><strong>Incumbent Displacement</strong> – creates change / uncertainty</td>
</tr>
<tr>
<td><strong>Flexibility</strong> – choose own schedule / task, location / income goals-targets</td>
<td><strong>Financial</strong> – lack of predictable income possible</td>
</tr>
<tr>
<td><strong>Skill Set Match</strong> – can often effectively match skills with needed services</td>
<td><strong>Uncertainty</strong> – lack of clarity related to demand / work / reporting possible</td>
</tr>
<tr>
<td><strong>Feedback / Communication</strong> – often real-time / direct</td>
<td><strong>Benefits Clarity</strong> – insurance / vacation / sick leave / pension...</td>
</tr>
<tr>
<td><strong>Data</strong> – customer location + data can allow workers to provide more informed / efficient service</td>
<td><strong>Asset Use</strong> – potential job requirement to use personal items (cars / phones...)</td>
</tr>
<tr>
<td><strong>Customer Base</strong> – marketplaces can aggregate demand that may be fragmented / far-reaching (global)</td>
<td><strong>Training / Development</strong> – potentially limited training / development / supervision</td>
</tr>
<tr>
<td><strong>Growth</strong> – rising sector demand for services should boost opportunities / competition for workers</td>
<td><strong>Workplace Culture</strong> – people often dispersed</td>
</tr>
</tbody>
</table>

Source: Various.

This list is meant to be general, it is not mutually exclusive or collectively exhaustive. Some platforms / marketplaces may possess all these elements, while others will possess only a few.
ONLINE MARKETPLACE / PLATFORMS = REGULATORY FOCUS EVOLVING
Traditional Challenge / Opportunity = Incumbents ↔ Regulators ↔ Innovators...
...Evolution Challenge / Opportunity =
Incumbents ⇔ Regulators ⇔ Innovators

Consumers + Workers =
Armed with Mobile Devices + Social Media
(+ Ratings / Feedback)
Helping Drive Innovation
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
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.
...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
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

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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

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

11B Shakes from 20MM Users
CCTV’s New Year Gala TV Show

Source: Tencent.
Note: For context, around America’s most viewed live events Super Bowl 2015, Twitter recorded 28 million tweets and Facebook recorded 265 million posts.

Hillhouse Capital
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

- WeChat: 41%
- News / video website: 30%
- News / video mobile app: 20%
- Weibo: 10%
- Others: 0%

Source: CTR Market Research's online survey of 1,580 respondents, Kantar China Insights, Tencent.
*Monthly active users as of 1Q15.
Tencent WeChat = Helping Government Get Online... Offering Government Services to its 549MM Users*

<table>
<thead>
<tr>
<th>Shanghai Government Services Provided via WeChat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Appointment:</td>
</tr>
<tr>
<td>Pay Natural Gas Fee:</td>
</tr>
<tr>
<td>Obtain Taiwan Travel Docs:</td>
</tr>
<tr>
<td>Smog Test Appointment:</td>
</tr>
<tr>
<td>Property Tax Lookup:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>China Services Provided via WeChat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Appointment:</td>
</tr>
<tr>
<td>Pay Natural Gas Fee:</td>
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<tr>
<td>Smog Test Appointment:</td>
</tr>
<tr>
<td>Property Tax Lookup:</td>
</tr>
</tbody>
</table>

*Monthly active users as of 1Q15.

Source: Tencent.

---

Hillhouse Capital
China Social Commerce Rising... Melishuo + Mogujie Driving = Content (15MM+ Photos) + Community (200MM Users) + Commerce ($2B GMV)\textsuperscript{*}

Mogujie
Seamlessly Integrating
Content + Product + Buyer + Seller

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

Browse
Chat
Pay**

Like
Make
Sell

Source: Melishuo, Mogujie.
\textsuperscript{*}Photos / community / commerce data are cumulative estimates of both companies combined through 2014E.
\textsuperscript{**}Mogujie introduced new payment option allowing buyers to 'request payment' from their partners.
China Local Food Delivery = One of Fastest Growing / Competitive Local On-Demand Services

China Online Food Delivery
$ Market Share, 2014

- Ele.me: 31%
- Meituan: 28%
- Taodiantian: 11%
- Baidu: 9%
- Other: 21%

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

- Q1 2014: $300 MM
- Q2 2014: $500 MM
- Q3 2014: $900 MM
- Q4 2014: $1,400 MM

Source: Analysis.cn Enfodesk.
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
<table>
<thead>
<tr>
<th><strong>Didi / Kuaidi</strong></th>
<th><strong>58 / Ganji</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>China’s #1 / #2 On-Demand Transportation Startups</td>
<td>China’s #1 / #2 General Online Classified Platforms</td>
</tr>
<tr>
<td>$6B = combined mark-to-market* value</td>
<td>$10B = combined mark-to-market* value</td>
</tr>
<tr>
<td>90% = estimated combined market share</td>
<td>$500MM+ = estimated cumulative sales &amp; marketing investments prior to merger</td>
</tr>
<tr>
<td>$1B+ = estimated cumulative marketing / investments prior to merger</td>
<td>Merger announced 2/15</td>
</tr>
<tr>
<td>Merger announced 2/15</td>
<td>Merger announced 4/15</td>
</tr>
</tbody>
</table>

*Mark-to-market value based on private or public market valuations at time of merger announcement.
China E-Commerce = Low Take Rates* Helped China Marketplace Leaders Pass USA Peers

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

- eBay Global Marketplace
  Take Rate = ~8%
- Taobao / Tmall
  Take Rate = ~3%

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

- Groupon North America
  Take Rate = ~35%
- Meituan
  Take Rate = ~5%

Source: Meituan gross billings data are estimates by Tuan800.com, eBay, Groupon, Alibaba GMV data per company.
Note: Take rate defined as net revenue divided by gross merchandise value or gross billings. eBay marketplace take rate excludes PayPal (~3%), eBay, Alibaba GMV data per company. Meituan take rate is estimate per media report.
China =

Internet of Things Alive & Well
Xiaomi = Supported Strong Smartphone Growth...
+227% Y/Y @ 61MM, 2014

Xiaomi Smartphones Shipped Globally, 2012 – 2014

Source: Xiaomi, based on public statements from Lei Jun (Xiaomi CEO) for 2014, 2013 and Li Wanqiang (Co-Founder and Vice President) for 2012.
Xiaomi = China Smartphone Shipment Leader

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

Source: IDC, IHS for 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

Source: Xiaomi.

Mi Home App = Remote Control for Connected Devices

Connected Retail Store (Mi Market App) with Reminder Prompts

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 Ecosystem

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2015*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mi Smartphones Sold</strong></td>
<td>19MM</td>
<td>61MM*</td>
</tr>
<tr>
<td><strong>Mi Smartphone Online</strong></td>
<td>9MM</td>
<td>29MM</td>
</tr>
<tr>
<td><strong>Mi Smart Home Products Available</strong></td>
<td>2</td>
<td>10+</td>
</tr>
<tr>
<td><strong>Mi Smartphone Online</strong></td>
<td>338K or 4%</td>
<td>2MM+ or 7%</td>
</tr>
</tbody>
</table>

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

Population Penetration (%)

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%


India =

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

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

Source: IAMAI, 2014 year-end India Active Internet User (has used the Internet at least once in the last one month). Note: China is the largest Internet market in the world with 629MM Internet users at the end of 2014; China was the 2nd largest market in 2014 in Internet user additions per year, with 31 million Internet user additions. Figures here are year-end and may not match other figures in presentation, which are mid-year figures.
### India = Often #1 or #2 MAU Market for Global Internet Leaders

<table>
<thead>
<tr>
<th>Service</th>
<th>MAU in India</th>
<th>% of Global MAUs</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facebook</strong></td>
<td><strong>2nd Largest Market @ 112MM MAUs, 8%</strong></td>
<td>USA &amp; Canada = Largest Markets @ 210MM MAUs, 3/15</td>
<td>LinkedIn, per Facebook earnings call and statement by Neeraj Arora of Whatsapp, press release, and earnings, Amazon, Twitter.</td>
</tr>
<tr>
<td><strong>WhatsApp</strong></td>
<td><strong>Largest Market @ 70MM...10%</strong></td>
<td>Global MAUs = 800MM, 3/15</td>
<td>LinkedIn, USA &amp; Canada = Largest Markets @ 210MM MAUs, 3/15</td>
</tr>
<tr>
<td><strong>YouTube</strong></td>
<td><strong>70MM Users in India,</strong> 7%</td>
<td></td>
<td>LinkedIn, USA &amp; Canada = Largest Markets @ 210MM MAUs, 3/15</td>
</tr>
<tr>
<td><strong>Twitter</strong></td>
<td><strong>Fastest Growing User Market</strong></td>
<td></td>
<td>LinkedIn, USA &amp; Canada = Largest Markets @ 210MM MAUs, 3/15</td>
</tr>
</tbody>
</table>

**Source:** Facebook, WhatsApp (per Facebook earnings call and statement by Neeraj Arora of Whatsapp), LinkedIn (per Company blog, press release, and earnings), Amazon, Twitter. YouTube data per Google.
Top India Android Apps =
1) WhatsApp  2) Facebook  3) MX Video Player  4) Facebook Messenger  5) Truecaller

Source: Quettra, Q1:15. Data ranked based on usage.
Quettra analyzes 75MM+ Android users spread out in more than 150 countries, collecting install and usage statistics of every application present on the device. Q1:15 data analyzed three months of data starting from 1/1/15. Data excludes Google apps and other commonly pre-installed apps to remove biases. Only apps with 10K+ installs worldwide and 100+ DAU are counted.
Mobile = 65% of India Internet Traffic...
More Mobilized vs. Most Other Countries

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

Source: Statcounter, 5/15.
Mobile = 41% of India E-Commerce...
= More Mobilized vs. Most Other Countries*

Mobile as % of Total E-Commerce Sales, 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Mobile E-Commerce %</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>41%</td>
</tr>
<tr>
<td>China</td>
<td>30%</td>
</tr>
<tr>
<td>UK</td>
<td>20%</td>
</tr>
<tr>
<td>France</td>
<td>18%</td>
</tr>
<tr>
<td>Brazil</td>
<td>16%</td>
</tr>
<tr>
<td>Australia</td>
<td>15%</td>
</tr>
<tr>
<td>USA</td>
<td>14%</td>
</tr>
<tr>
<td>Germany</td>
<td>14%</td>
</tr>
<tr>
<td>Russia</td>
<td>13%</td>
</tr>
<tr>
<td>Japan</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Mobile e-commerce penetration defined as % of total e-commerce sales made via mobile devices.
Source: Morgan Stanley Research.
India E-Commerce Leaders = More Mobilized vs. Global Leaders

Mobile as % of E-Commerce GMV / Orders
Snapdeal (India) vs. Flipkart (India) vs. Alibaba (China) vs. JD.com (China) vs. eBay (Global), Q2:13 – Q1:15

Source: Flipkart, Public filings (JD.com, Alibaba.com, eBay.com). Snapdeal data per public statements from Kunal Bahl (CEO). JD.com, Snapdeal, and JD.com based on order volume; Alibaba and eBay based on gross merchandise value (GMV). Flipkart data shown as a trendline from 5% in Q4:13 to 70% in Q1:15.
Mobile Wallet Use = Rising Along with E-Commerce Adoption...
Paytm @ 80MM Wallet Users, + 17x Y/Y

Number of Mobile Wallets, India, 2014

Source: Paytm, 4/15.
PUBLIC & PRIVATE COMPANY DATA
Global Internet Public Market Leaders = Apple / Google / Alibaba / Facebook / Amazon / Tencent...

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

Total: $2,513 $479,939

Source: CapIQ. 2015 market value data as of 5/22/15.
Note: Colors denote current market value relative to Y/Y market value. Green = higher. Red = lower. Purple = newly public within last 12 months.

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

*Facebook ($16B IPO) = 75% of 2012 IPO $ value. **Alibaba ($25B IPO) = 69% of 2014 IPO $ value.

Source: Thomson ONE, 2015YTD as of 5/22/15. VC Funding per Company ($MM) calculated as total venture financing per year divided by number of companies receiving venture financing.

Morgan Stanley Equity Capital Markets, 2015YTD as of 05/21/15. All global U.S.-listed technology IPOs over $30MM, data per Dealogic, Bloomberg, & Capital IQ.
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

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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.

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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*

Google Search

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*

Instagram

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”*

Tinder

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 21st 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.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>$147 Bn linked to medical expenditures</td>
</tr>
<tr>
<td>Cancer</td>
<td>$157 Bn spent on direct medical expenditures</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>$193 Bn spent on direct medical expenditures</td>
</tr>
<tr>
<td>Diabetes</td>
<td>$176 Bn spent on direct medical expenditures</td>
</tr>
</tbody>
</table>

Source: Beth Seidenberg, KPCB General Partner and Lynne Chou, KPCB Partner. Sources: Kaiser Family Foundation website and CDC website http://www.cdc.gov/chronicdisease/overview/
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.

Source: News articles, KPCB analysis.
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.
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

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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>632</td>
<td>7%</td>
<td>10%</td>
<td>47%</td>
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Source: United Nations / International Telecommunications Union, US Census Bureau. Internet user data is as of mid-year. Internet user data for: China from CNNIC, India from IAMAI, Iran from Islamic Republic News Agency, citing data released by the National Internet Development Center, Indonesia from APJII / eMarketer.
### Developing ‘Big’ Internet Markets (India / Indonesia / Nigeria / Mexico) = +24% Growth in 2014 vs. +23% Y/Y = Still Growing Strongly

#### Countries with Internet Penetration ≤45%

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<td>39%</td>
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Source: United Nations / International Telecommunications Union, US Census Bureau. Internet user data is as of mid-year. Internet user data for: China from CNNIC, India from IAMAI, Iran from Islamic Republic News Agency, citing data released by the National Internet Development Center, Indonesia from APJII / eMarketer.
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

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<th>Rank</th>
<th>Country</th>
<th>2014 Smartphone Subs (MM)</th>
<th>2014 Smartphone Sub Growth</th>
<th>2013 Smartphone Sub Growth</th>
<th>Population Penetration</th>
<th>Total Population (MM)</th>
<th>GDP ($000)</th>
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Source: Informa. Note: Japan data per Gartner, Morgan Stanley Research, and KPCB estimates.
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

<table>
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<th>Rank</th>
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<th>2014 Smartphone Subs (MMs)</th>
<th>2014 Smartphone Sub Growth</th>
<th>2013 Smartphone Sub Growth</th>
<th>Population (MMs)</th>
<th>Total Population (MMs)</th>
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INTERNET TRENDS 2015

kpcb.com/InternetTrends