INTERNET TRENDS

@ STANFORD - BASES KICK OFF

12/3/2012

Mary Meeker



Outline

- Basic Stats Internet Growth Remains Robust, Rapid Mobile Adoption Still in Early Stages
- 2) Re-Imagination of Nearly Everything
- 3) Asset-Light Generation From Hand to Cloud & Back...Rise of the Sharing Economy
- 4) 'USA, Inc.' A Lot to be Excited About in Tech, a Lot to be Worried about in Other Areas



BASIC STATS – INTERNET GROWTH REMAINS ROBUST, RAPID MOBILE ADOPTION STILL IN EARLY STAGES

INTERNET USERS



2.4B Global Internet Users in 2012* – 8% Y/Y Growth*, Driven by Emerging Markets

Rank	Country	2008-2012 Internet User Adds (MMs)	2012 Internet Users (MMs)	Y/Y Growth	Population Penetration
1	China	282	538	10%	40%
2	India	88	137	26	11
3	Indonesia	39	55	58	23
4	Iran	35	42	205	55
5	Russia	33	70	6	49
6	Nigeria	31	48	15	30
7	Philippines	28	34	32	35
8	Brazil	27	88	6	45
9	Mexico	19	42	9	37
10	USA	18	244	3	78
11	Argentina	17	28	57	68
12	Egypt	17	30	11	38
13	Colombia	14	25	39	54
14	Turkey	13	35	17	47
15	Vietnam	12	31	7	35
	Top 15	673	1,447	15%	34%
	World	902	2,406	8%	34%



MOBILE USERS



1.1B Global Smartphone Subscribers, 42% Growth, Q4:12 – @ Only 17% of Mobile Subscribers

Rank	Country	Q4:12 Smartphone Subs (MM)	Smartphone as % of Total Subs	Smartphone Sub Y/Y Growth	Rank	Country	Q4:12 Smartphone Subs (MM)	•	Smartphone Sub Y/Y Growth
1	China	270	24%	50%	16	Saudi Arabia	15	31%	38%
2	USA	172	48	50	17	Philippines	15	14	38
3	Japan*	78	65	11	18	Mexico	15	14	55
4	Brazil	55	20	35	19	Thailand	14	17	43
5	India	44	4	52	20	Turkey	13	19	52
6	UK	35	45	31	21	Malaysia	12	32	23
7	Korea	32	59	35	22	South Africa	11	18	26
8	Indonesia	27	9	36	23	Argentina	11	19	55
9	France	26	38	33	24	Netherlands	9	47	37
10	Germany	25	23	19	25	Poland	9	16	30
11	Russia	22	9	44	26	Sweden	8	54	24
12	Spain	18	30	14	27	Egypt	7	8	40
13	Italy	16	19	28	28	Iran	7	8	53
14	Australia	16	50	44	29	Taiwan	7	24	80
15	Canada	15	55	38	30	Hong Kong	6	48	48

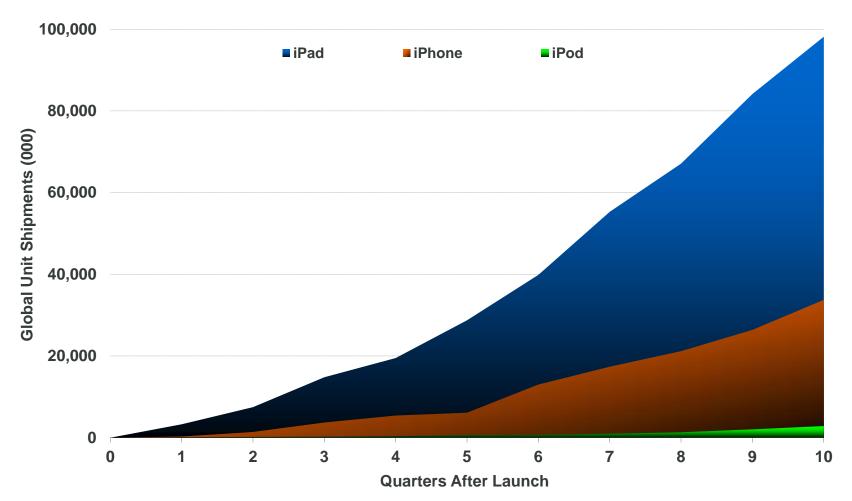
Global Smartphone Stats:	Subscribers = 1,142MM	Penetration = 17%	Growth = 42%
	- 1,1 1211111	1 011011 0111 - 11 70	0.000



MODERN MOBILE DEVICE EVOLUTION

iPods Changed Media Industry...iPhones Ramped Even Faster...iPad Growth (3x iPhone) Leaves "Siblings" in Dust

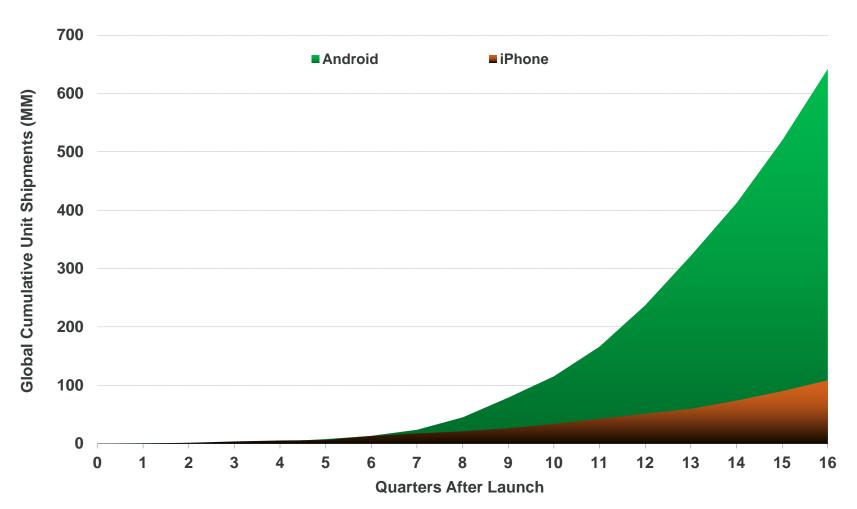
First 10 Quarters Cumulative Unit Shipments, iPod vs. iPhone vs. iPad





Android 'Phone' Adoption Has Ramped Even Faster – Nearly 6x iPhone

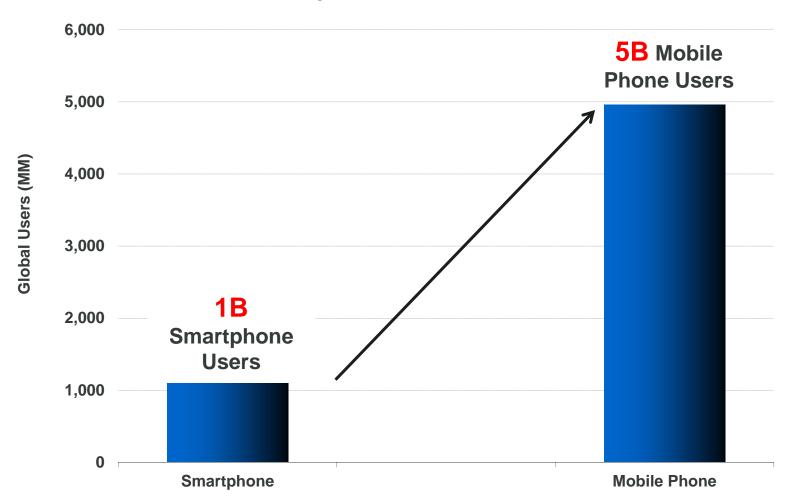
First 16 Quarters Cumulative Global Android & iPhone Unit Shipments





Despite Tremendous Ramp So Far, Smartphone User Adoption Has Huge Upside

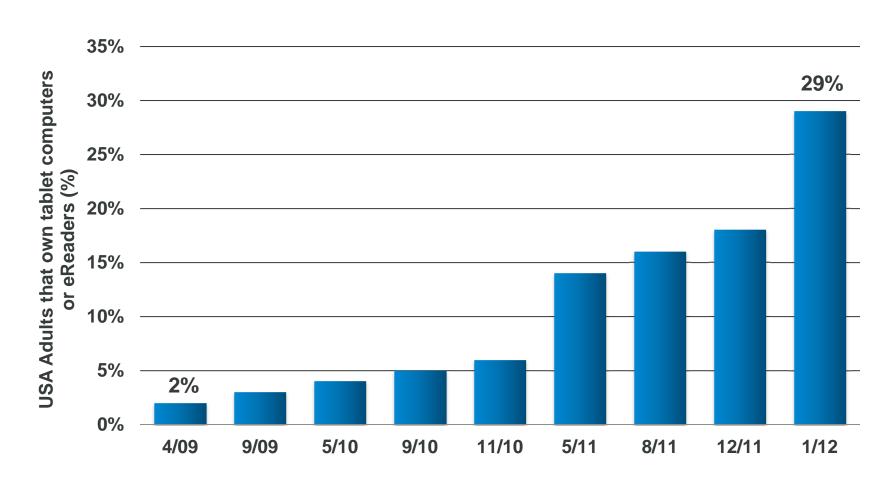
Global Smartphone vs. Mobile Phone Users, 2012E





Impressive 29%+ of USA Adults Own Tablet / eReader, Up from 2% Less Than Three Years Ago

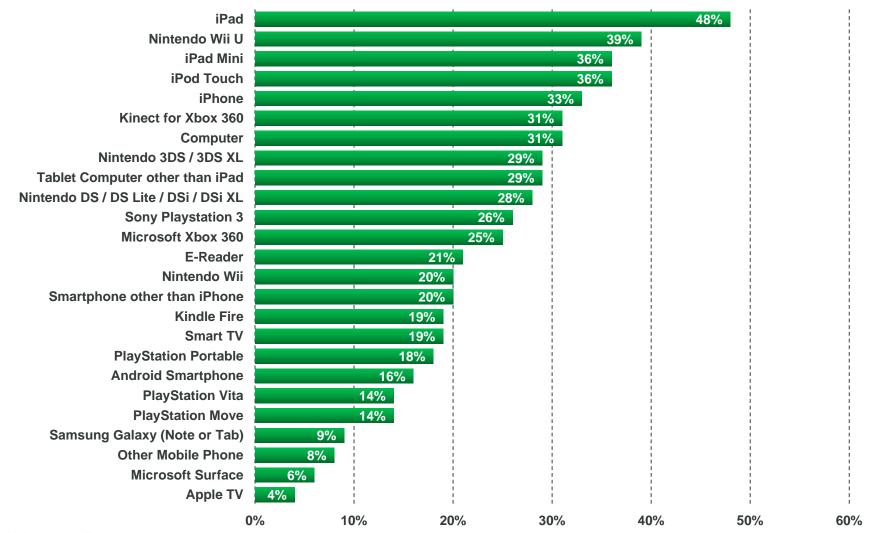
% of USA Adults Who Own Tablet Computers or eReaders, 4/09 – 1/12





iPad = 48% of American Kids Want One for Christmas While 36% Want a Mini...

Interest in Buying in Next 6 Months Among USA Kids Ages 6-12

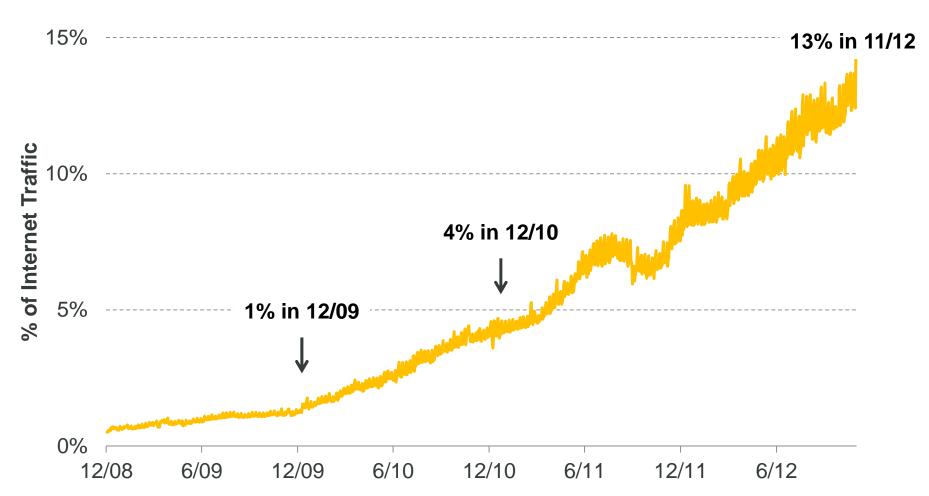




MOBILE MOJO

Global Mobile Traffic Growing Rapidly to 13% of Internet Traffic

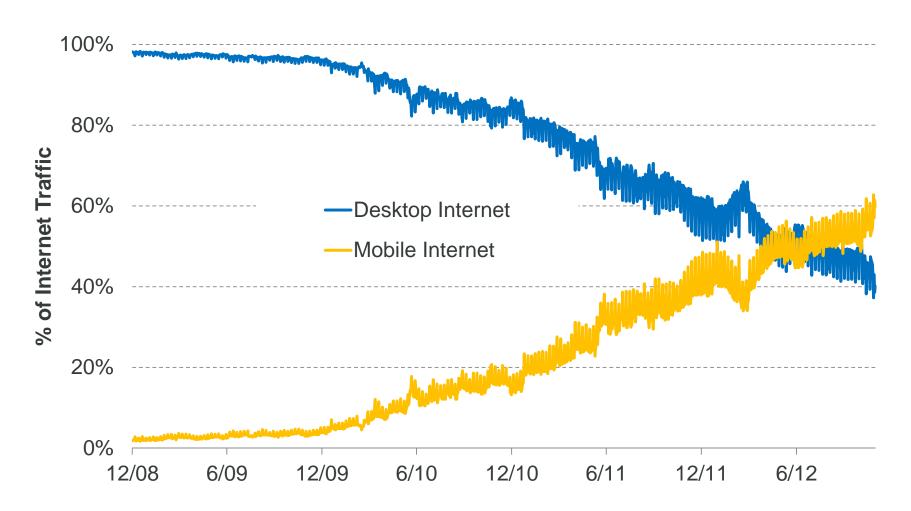






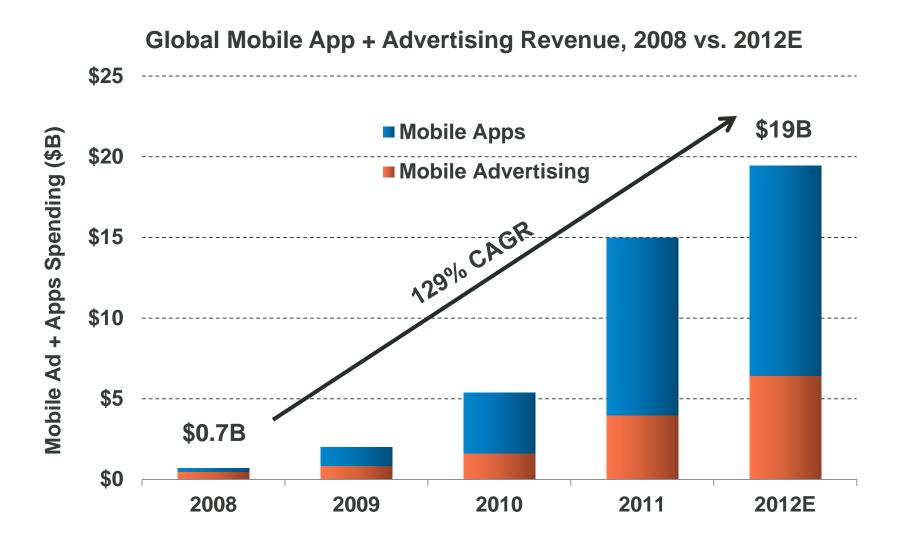
In India, Mobile Internet Traffic Surpassed Desktop Internet Usage in May, 2012 - Other Countries to Follow...

India Internet Traffic by Type, Desktop vs. Mobile, 12/08 – 11/12





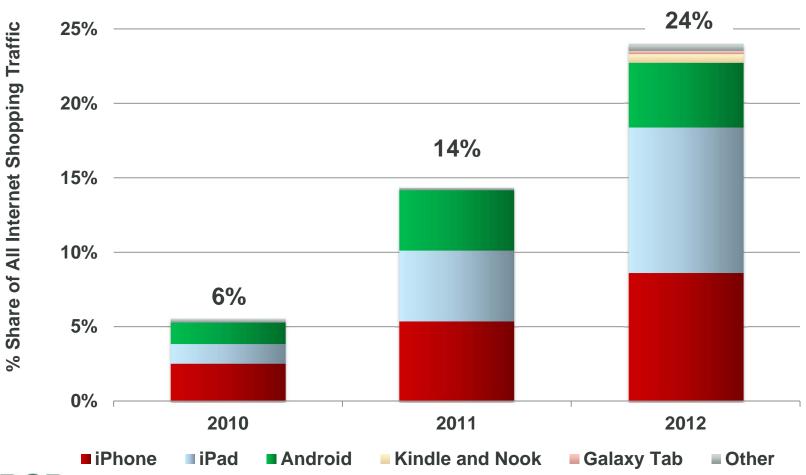
Mobile Monetization Growing Rapidly (67% Apps, 33% Ads)





Mobiles + Tablets = 24% of Online Shopping on Black Friday in 2012 (vs. 6% Two Years Ago), iOS 4x > than Android

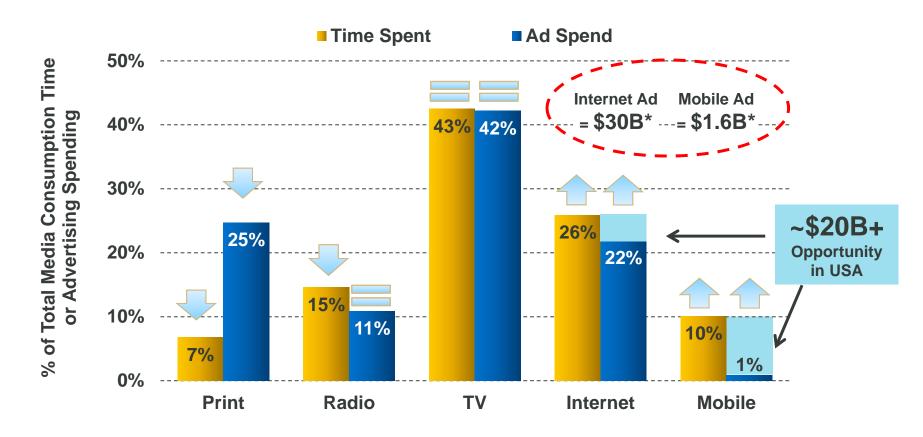
% of USA Black Friday Internet Shopping Traffic From Mobile + Tablet Devices, 2010 – 2012





Material Upside for Mobile Ad Spend vs. Mobile Usage

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





RE-IMAGINATION OF NEARLY EVERYTHING – POWERED BY NEW DEVICES + CONNECTIVITY + UI + BEAUTY – WHERE WE ARE NOW...

Re-Imagination of a Big Idea...

We hope to rewire the way people spread and consume information...We think a more open and connected world will help create a stronger economy with more authentic businesses that build better products and services.

Mark Zuckerberg, Founder / CEO, Facebook
 Letter to Potential Shareholders, May 2012



Re-Imagination of Computing Devices...

THEN... (Desktops / Notebooks)



NOW... (Tablets / Smartphones)



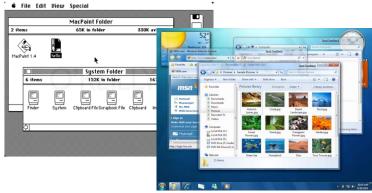




Re-Imagination of User Interfaces...

THEN...

(Keyboard + Mice = Graphical User Interface)



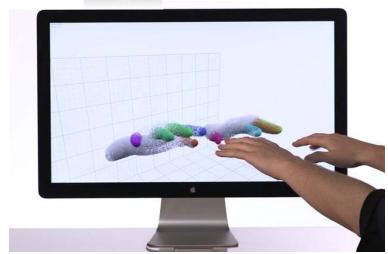


NOW...

(Touch + Voice + Gesture = Natural User Interface)



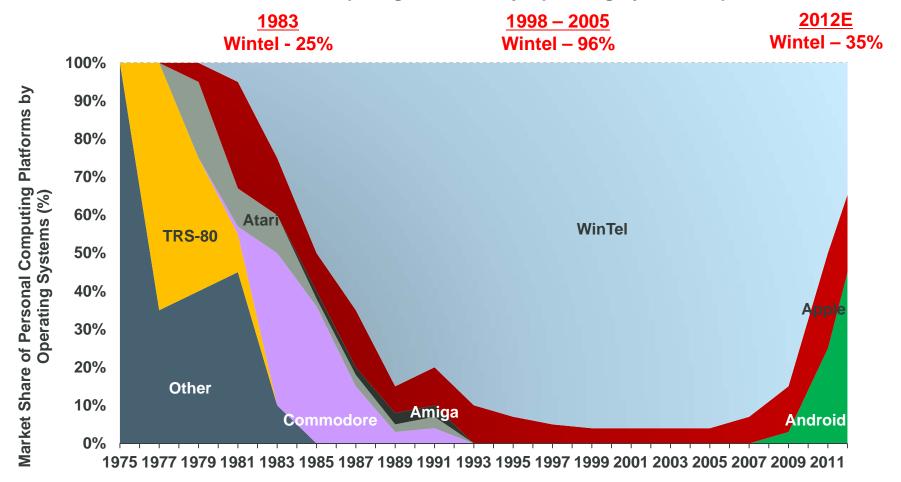






Re-Imagination of Computing Operating Systems - iOS + Android = 45% Share vs. 35% for Windows

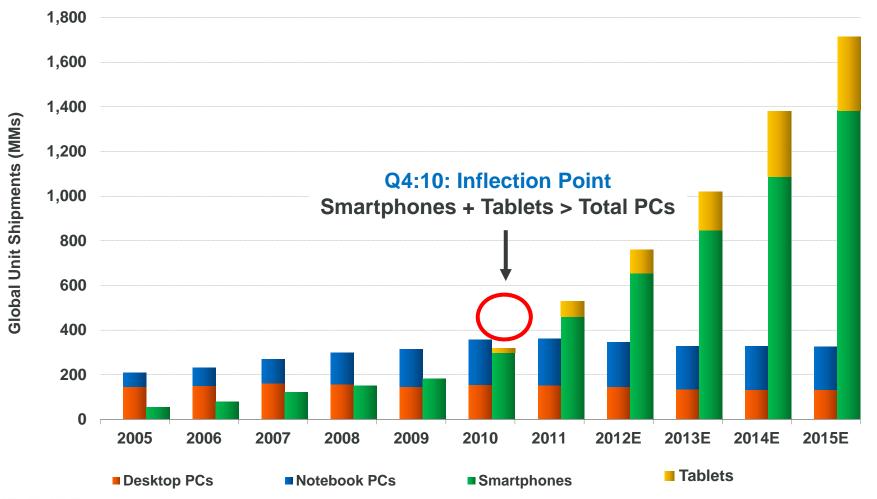
Global Market Share of Personal Computing Platforms by Operating System Shipments, 1975 – 2012E





Global Smartphone + Tablet Shipments Exceeded PCs in Q4:10

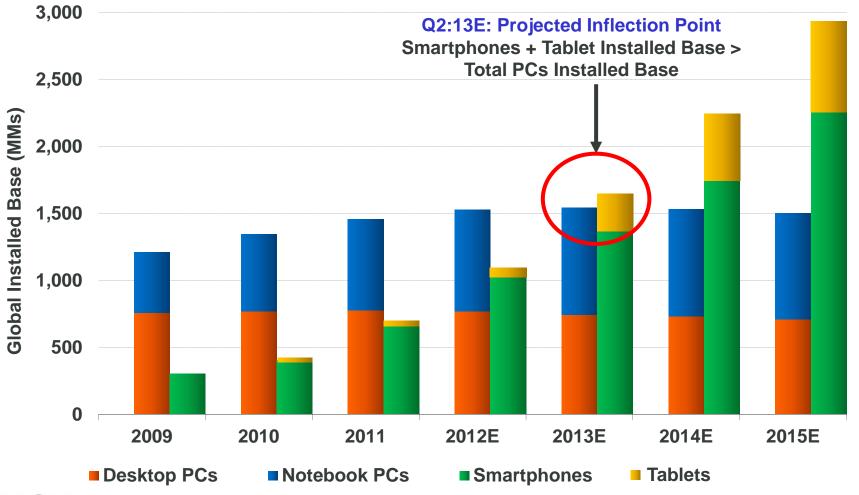
Global Unit Shipments of Desktop PCs + Notebook PCs vs. Smartphones + Tablets, 2005-2015E





Global Smartphone + Tablet *Installed Base* Should Exceed PC Installed Base in Q2:13E

Global Installed Base of Desktop PCs + Notebook PCs vs. Smartphones + Tablets, 2009-2015E





Re-Imagination of Connectivity...

THEN...

NOW...

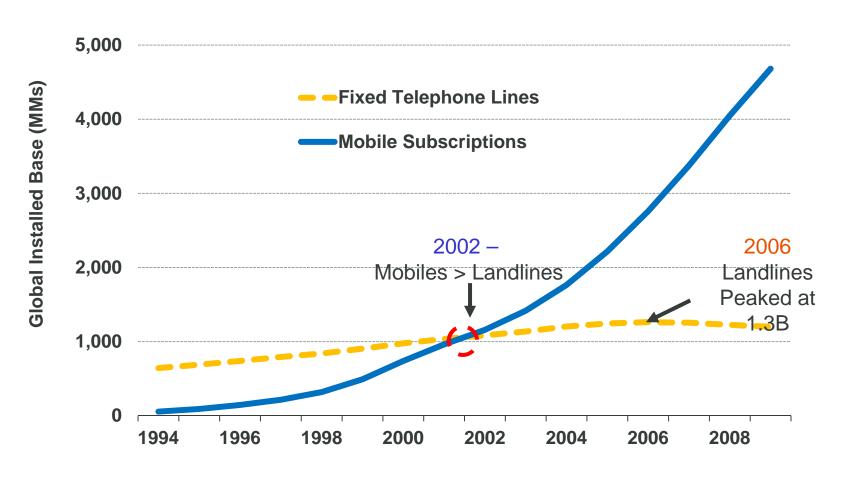






125 Years In, Landlines Were Surpassed by Mobiles in 2002

Global Fixed Telephone Lines vs. Mobile Subscriptions, 1994 - 2009

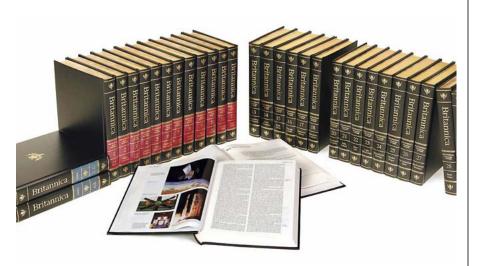




Re-Imagination of Knowledge...

THEN...

(Print Copies / Updated Annually)



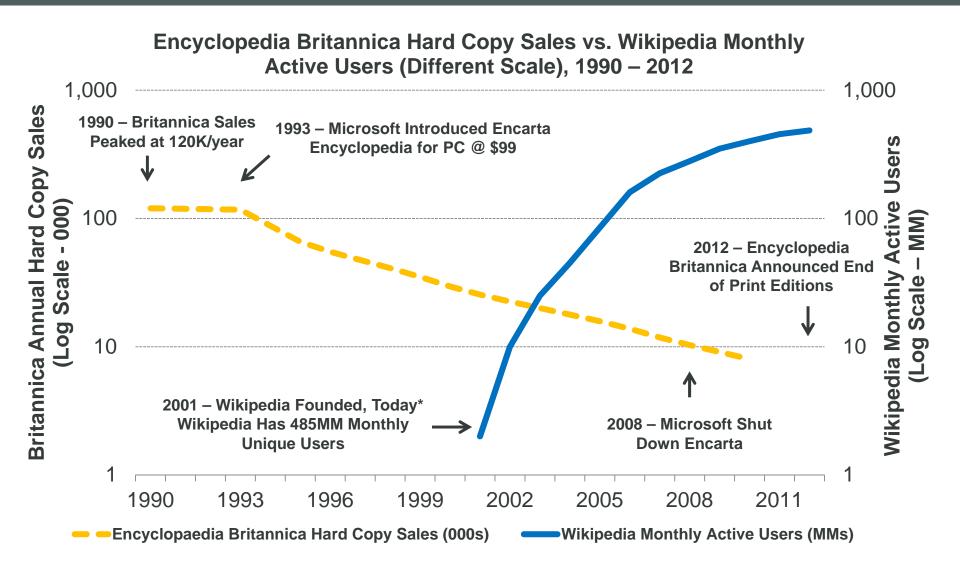
NOW...

(Accessible Everywhere / Updated Real-Time / Everyone Can Contribute)





244 Years In, Encyclopedia Britannica Went Out of Print in 2012





Re-Imagination of Photography...

THEN...

Dedicated Camera / Manually Transfer Digital Files / Develop Films



NOW...

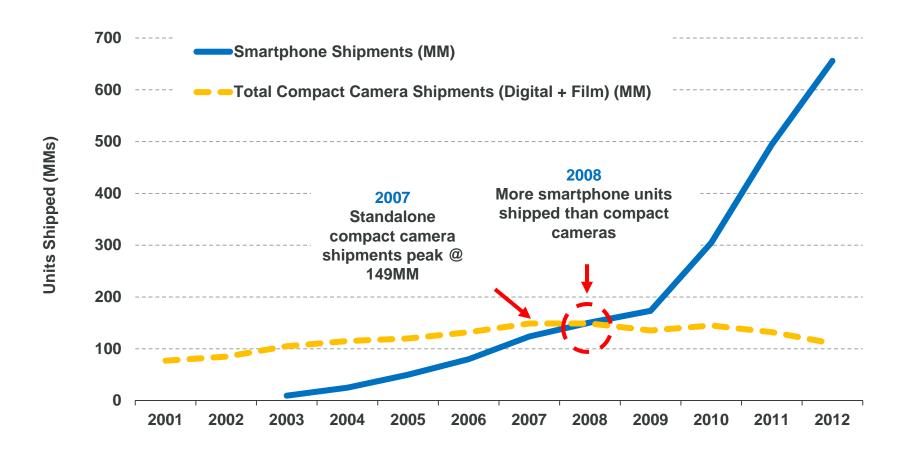
(Instagr.am / Camera+ / Hipstamatic...)
Always With You Camera (Smartphone) /
Instant Digital Effects / Share / Sync / Discover





169 Years In, Standalone Compact Camera Shipments Were Surpassed By Smartphone (with Camera) Shipments in 2008

Worldwide Smartphone vs. Standalone Compact Camera Shipments 2001 – 2012E





Re-Imagination of Navigation + Live Traffic Info...

THEN...

Physical Copies of Map in Car / TV, Radio Reporting of Traffic Info



NOW...

(Waze)

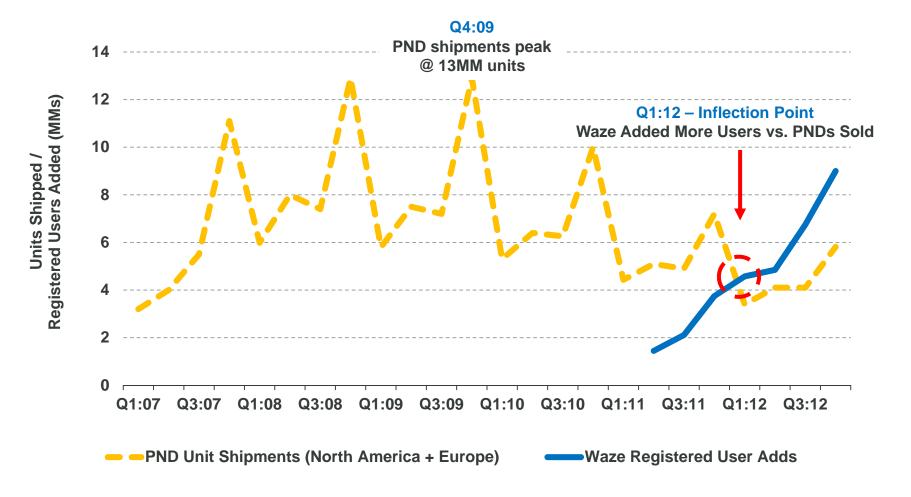
User-Generated Digital Map / Live Crowd-Sourced Traffic Data





20+ Years In, Portable Navigation Device Unit Shipments Were Surpassed by Waze User Additions in Q1:12

Quarterly N. America + Europe Unit Shipments of Portable Navigation Devices (PNDs) vs. Waze Registered User Adds, Q1:07 – Q4:12E





Re-Imagination of News + Information Flow...

THEN...

Delayed / Dedicated Reporters + Cameramen / Regional or National Reach





NOW...

(Twitter)

Real-Time / Citizen Reporting via Mobile Devices / Global Reach





Re-Imagination of Note Taking...

THEN...

Pencil + Notepad



NOW...

(Evernote)

Always Synced / Multi-Device / Picture + Audio Enabled / Searchable









Re-Imagination of Files & Folders...

THEN...

Print Copies / Storage Cabinets / Color Tabs



NOW...

(Dropbox / Box.net / Google Drive / Apple iCloud / Microsoft SkyDrive / Amazon Cloud Drive) Always Synced / Always Accessible / Multi-Device Searchable Digital Files





Re-Imagination of Content Organization / Aspiration...

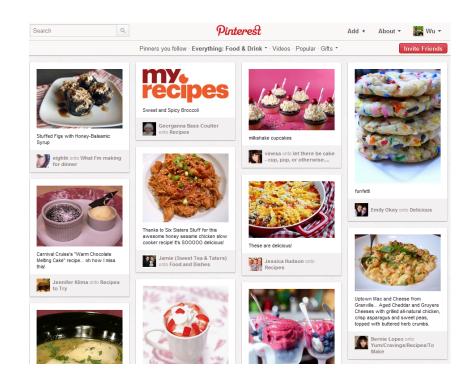
THEN...

Paper / Scissors / Glue



NOW...

(Pinterest)
One-Click to Pin / Share /
Follow / Always Accessible





Re-Imagination of Magazines...

THEN...

Piles of Print Copies



NOW...

(Flipboard)

More Content / Always Up-To-Date / Personalized / Access Everywhere / Interactive (Video + Audio) / Share



Your new Flipboard

Instagram. Social search. Speed.



Re-Imagination of Cash Registers...

THEN...

Big + Odd Looking Machines / Receipt Printers Cash Drawers



NOW...

Email Receipts / Touch Signing

(Square)
Simple + Elegant Tablet + Square Reader /





Re-Imagination of Borrowing / Lending Money...

THEN...

Brick 'n Mortar Bank Branch / Paper Applications / Lengthy Approval Process



NOW...

(Lending Club...)

Online Interface / Apply & Get Funded in Days / Lower Interest Rates For Borrowers / Better Diversification / Returns For Investors





Re-Imagination of Idea Building / Funding...

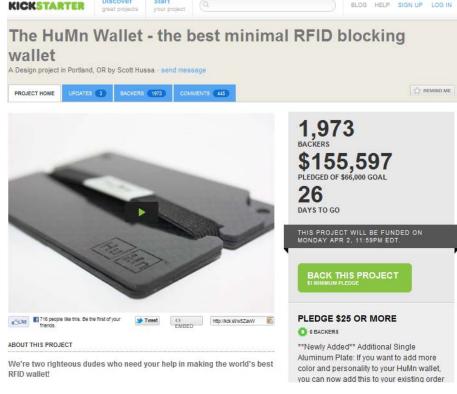
THEN...

Flyers / Loudspeakers / Dinners / Checks



NOW...

(KickStarter)
Online / Social Distribution /
Real-Time Progress





Re-Imagination of Recruiting / Hiring...

THEN...

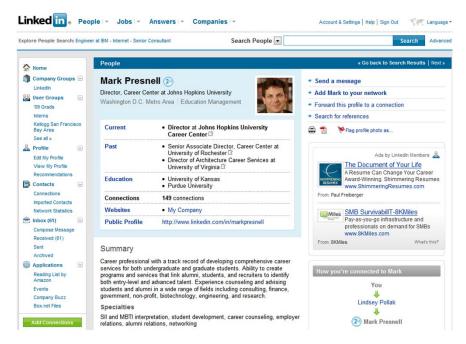
Job Fairs / Campus Recruiting Events / Paper Resumes



NOW...

(LinkedIn)

Online Resumes / Social Relevancy For Recruiters / Searchable Skill Sets / Endorsements / Recommendations





Re-Imagination of Product Design...

THEN...

Secretive / In-House R&D



NOW...

(Quirky)

Open / Crowd-Sourced / Collaborative Design / Live Online Broadcast of Product Evaluation / 3D Printed Prototypes

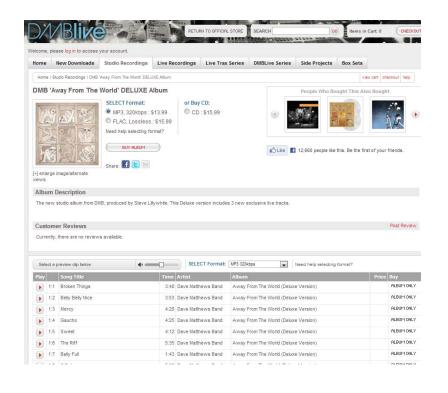




Re-Imagination of Selling Digital Goods...

THEN...

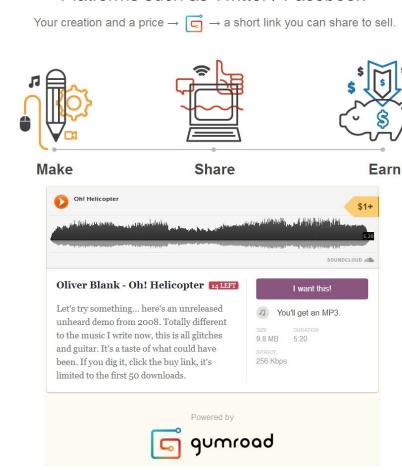
Dedicated Shopping Site / Fulfillment Infrastructure



NOW...

(Gumroad)

Democratization of Commerce / Leverage Distribution
Platforms such as Twitter / Facebook





Re-Imagination of Signatures...

THEN...

Scan / Fax / Mail to Return Signature Page





NOW...

(DocuSign)
Electronic Documents / Secure Audit
Trail / Instant E-Signature

18. Addenda: 22D(Opt. Clauses); 22J(Lead Disci); 22F
35(Inspection); 41C(SB Commission);

2FEF11E53C5944F...

John Hancock

Buyer's Signature
Date

1234 1st Avenue
Buyer's Address

Adopt Your Signature
Your Full Name:
Your Initials:





Re-Imagination of Health Awareness...

THEN...

Awareness Campaigns / Physician Visits



NOW...

(Nike+ / Jawbone UP)
Always-On Tracking + Syncing + Analytics /
Quantified Self





Re-Imagination of Door Locks...

THEN...

Keys & Latches



NOW...

(Lockitron)

Lock / Unlock From Your Smartphone Anywhere in the World / Keyless Entry with Bluetooth Auto-Sensing / Wi-Fi Enabled





Re-Imagination of Thermostats...

THEN...

On/Off Switch + Temperature Setting



NOW...

(Nest)

Wi-Fi Enabled / Auto-Learning / Auto-Sensing / Remote Control / Energy Efficient





Re-Imagination of Education...

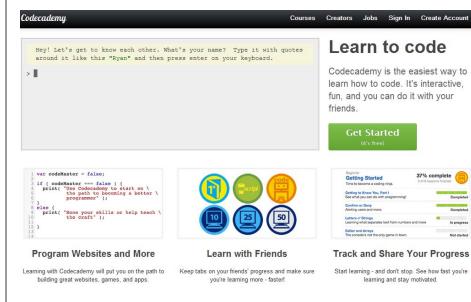
THEN...

Classrooms / Lectures / Reading Materials



NOW...

(Codecademy / Coursera / Khan Academy...)
Interactive / Online / Accessible by
Anyone Anywhere Anytime





Re-Imagination of Learning...

THEN...



NOW...



From learning by listening to learning by doing... Education and learning will become as much fun as videogames. We call it 'full body learning.'

Bing Gordon, Interactive Arts Hall-of-Famer, KPCB Partner



Re-Imagination of The Rose Bowl...



Games are even more engaging for fans with the sports screen trifecta - mobile / tablet / TV.

Megan Quinn, Stanford Fan, KPCB Partner



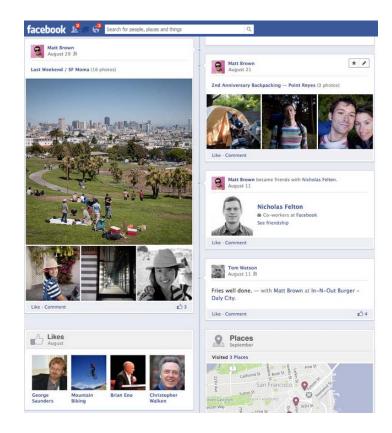
Re-Imagination of Data – Big to Bigger to Bigger & It's Still "The Wild West"...

In less than ten years, Facebook garnered massive volunteered (and shared) big data from its 1B+ users – to tune of 300MM+ images uploaded everyday / 125B+ friend connections / \$3B+ in capex.

THEN...



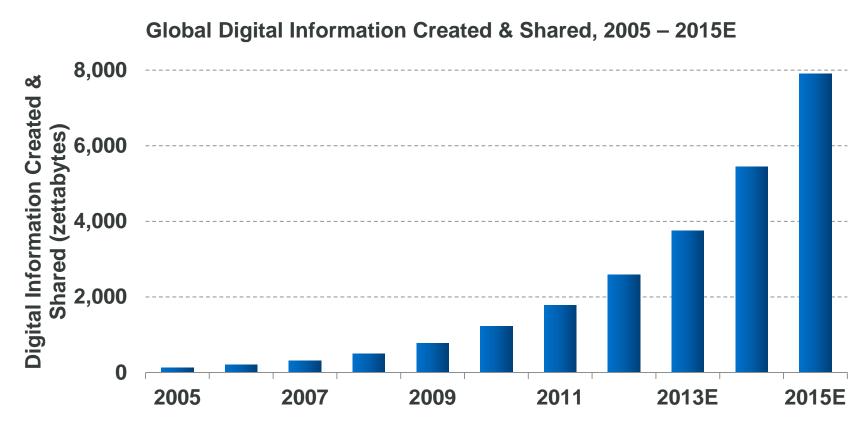
NOW...





...Re-Imagination of Data – Big to Bigger to Bigger and It's Still "The Wild West"...

Amount of global digital information created & shared – from documents to pictures to tweets - grew 9x in five years to nearly 2 zettabytes* in 2011, per IDC.



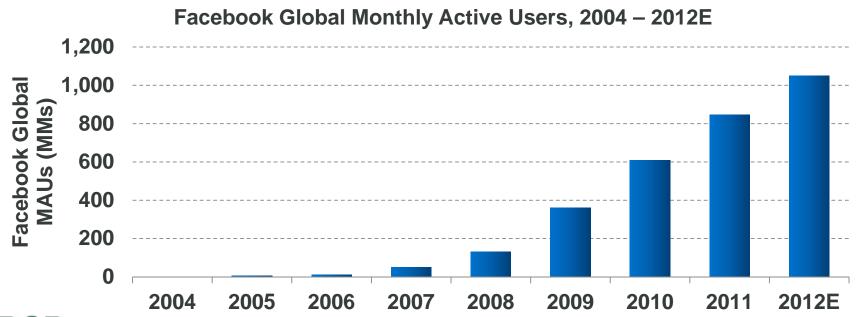


...Re-Imagination of Data – Big to Bigger to Bigger and It's Still "The Wild West"

If Facebook can create a 'front-end' to massive amounts of largely new & personal "big data," in spite of huge initial resistance to "sharing" – think what can come to pass with "front-ends" + connections to *most* types of data over the next ten years.

Headlines From The New York Times

- "Facebook Retreats on Online Tracking" 11/2007 @ 50MM Users
- "Facebook's Users Ask Who Owns Information" 2/2009 @ 200MM Users
- "Facebook Privacy: A Bewildering Tangle of Options" 5/2010 @ 500MM Users





Re-Imagination of Data – Help Me, Help You, Help Others...

Waze

- 30MM Users, +3x Y/Y
- 600MM+ Miles Driven per Month with Waze Open



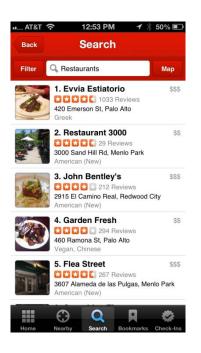
Jawbone UP

- Initial Launch of ~70KUsers (11/11) =
 - 7B+ Steps
 - 800 Years of Sleep
- Re-launched 11/12



Yelp

- 84MM Users, +37% Y/Y
- 33MM User-Generated Reviews, +49% Y/Y





Re-Imagination of Always On...

Bluetooth

~2B Bluetooth-Enabled Devices Shipped Globally in 2012E, Up 87x in 10 Years



Wi-Fi

~1.5B Wi-Fi Enabled Devices Shipped Globally in 2012E, Up 5x in 4 Years













Personal Server in Your Pocket + Sensors / Signals Uber Alles

How Many of You are Wearing a "Wearable" Now?

How Many of You will be Wearing a "Wearable" in 5 Years?



Magnitude of Upcoming Change Will be Stunning - We are Still in Spring Training

- Nearly Ubiquitous High-Speed Wireless Access in Developed Countries
- Unprecedented Global Technology Innovation
- Ultra Competitive Markets for Mobile Operating Systems + Devices
- Broadly Accepted Social + Interest Graphs / Information Transparency
- Fearless (& Connected) Entrepreneurs
- Difficult 'What Do I Have to Lose' Economic Environment for Many
- Available (& Experienced) Capital
- Fearless (& Connected) Consumers
- Inexpensive Devices / Access / Services (Apps)
- Ability to Reach Millions of New Users in Record (& Accelerating) Time
- 'Social Emerging as Starting Distribution Point for Content,' (Brian Norgard, Chill)
- Aggressive (and Informed) 'On My Watch' Executives at 'Traditional' Companies
- Unprecedented Combo of Focus on Technology AND Design
- Nearly 'Plug & Play' Environment For Entrepreneurs Marketplaces / Web Services /
 Distributed Work / Innovative Productivity Tools / Low 'Start Up' Cost
- Beautiful / Relevant / Personalized / Curated Content for Consumers



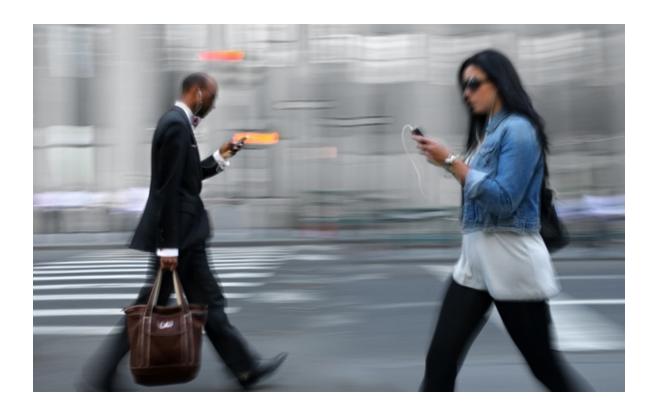
ASSET-LIGHT GENERATION – FROM HAND TO CLOUD & BACK... RISE OF THE SHARING ECONOMY

Who Ya Gonna Text?

to tune of 'Ghostbusters'

You Can Walk Out Your Door...

With the Clothes on Your Back, a Charged Mobile Device... Cash in the 'Bank' & Happily Go a Very Long Way...





Mobile Internet Re-Imagining Asset-Heavy Lifestyle

Asset-Heavy Lifestyle Consumes:

Space Time Money







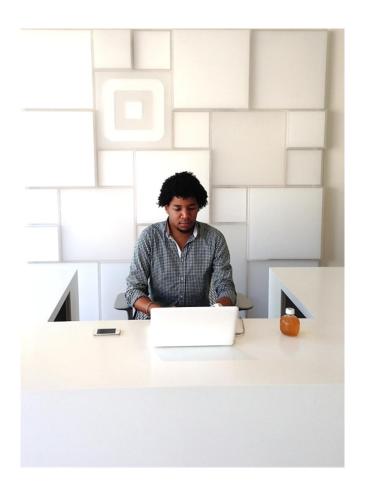


Asset-Light Lifestyle Frees: Space...

Asset-Heavy...



Asset-Light...





...Frees: Time...

Asset-Heavy...



Asset-Light...









...And Frees: Money

Asset-Heavy...



Asset-Light...





Be a 25 Year Old...

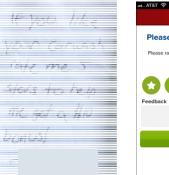


From Hand to Cloud & Back... Cherry Car Wash...

Pull Out Your Smartphone







Please Rate Your Carwash
Please rate how Ed did washing your Blue
2009 Lexus IS 250.

Feedback

Send Feedback

Review / Feedback



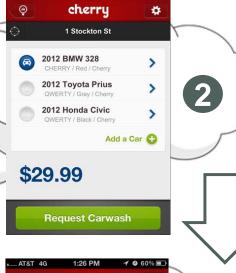
Set Location

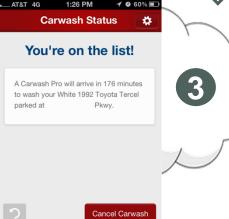
Set Carwash Location











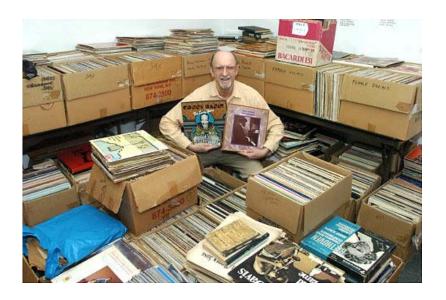
Confirm / Pay



Asset-Light Generation – Music...

Asset-Heavy...

Pay for Ownership / Buy Albums + CDs in Stores / Playback via Dedicated Players



Asset-Light...

(Spotify, Pandora, iTunes...)
Pay for Access / Instant On-Demand Streaming on Internet-Enabled Devices / Discovery of Music Through Friends + Experts /





Asset-Light Generation – Video...

Asset-Heavy...

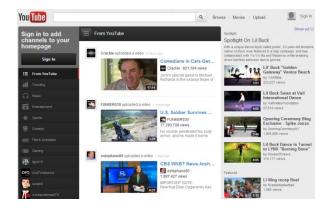
Pay for Ownership / Space Consuming



Asset-Light...

(YouTube / Netflix...)

On-Demand / Instant Access Anywhere / Paid for by Advertising or Subscription







Asset-Light Generation – Housing...

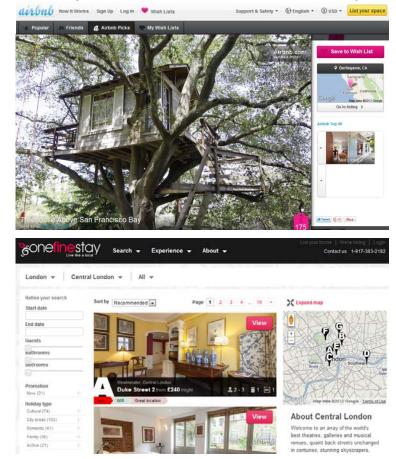
Asset-Heavy...

Dedicated Hotel Buildings / Uniform-Looking Rooms / 60-80% Utilization



Asset-Light...

(Airbnb / Onefinestay / CouchSurfing...)
Turns Any Privately-Owned House / Apartment / Room
Into a Unique / Local / Adventurous Hotel Experience





Asset-Light Generation – Getting Around / Riding...

Asset-Heavy...

One Car per Person / Inefficient Use of Resources Leading to Traffic Congestion / Pollution





Asset-Light...

(Zipcar / Uber / Hailo...)
On-Demand Car / Ride-Sharing via Mobile Apps /
With Reviews / Location-Aware















Asset-Light Generation – Services...

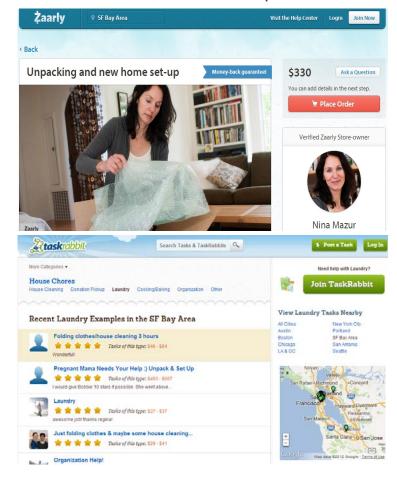
Asset-Heavy...

Do-It-Yourself / Time (Virtual Asset) Consuming



Asset-Light...

(Zaarly / TaskRabbit...)
Getting Grocery Shopping / Laundry / Other Things
Done, all via Smartphone





Asset-Light Generation – Textbooks...

Asset-Heavy...

Pay for Ownership / Expensive / Inefficient Utilization (Rarely Used After Course Completion)



Asset-Light...

(Chegg / Amazon Textbook Rental...)
Pay For Usage Rights During the Semester / Up to
3x Cheaper vs. Buying







Asset-Light Generation – Wallet...

Asset-Heavy...

Wallet with Cash / Coins / Credit Cards / Reward Cards



Asset-Light...

(Square / PayPal / Google / Apple ...)
Smartphone is the New Wallet w/ Payment Capability /
Reward Cards / Boarding Passes / eTickets







Asset-Light Generation – Employment...

Asset-Heavy...

Full Time / Fixed Cost



Asset-Light...

(oDesk, Freelancer, OnForce...)
Workforce as a Service (WaaS) / On-Demand /
Global / 24x7 / Variable Cost



Hire online for a fraction of the cost! Freelancer.com is the world's largest outsourcing marketplace, empowering entrepreneurs & small businesses worldwide. Outsource anything you can think of! Projects start at \$30 and the average job is under \$200 Programmers, designers, content writers are ready now! Only pay freelancers once you are happy with their work



Re-Imagination of Flexibility...

Easier for Consumers to Get What They Want When They Want it...

Easier for Crafty & Flexible People to Make Money...



NET, LOTS OF STUFF BEING RE-IMAGINED AND THERE'S A LOT MORE TO BE RE-IMAGINED...

Consumer Internet 'White Space' To Be Re-Imagined...



1) Ear (+ Body) - owing to better devices (wireless Bluetooth) / services (Siri / Spotify / Soundcloud...) / products (Jambox / UP...)



2) Car – 52 minutes per day by 144MM Americans (76% alone)* spent in cars – largely untapped



3) TV – 3+ hours per day spent in front of TVs** – way better devices / interfaces / interfaces coming rapidly...Apple & Google footsteps raising bar...50MM+ American households have Internet-enabled TVs



...Consumer Internet 'White Space' To Be Re-Imagined



4) Back Pocket – 600MM+ credit cards in use in USA, average American carries 3-4 credit cards in addition to check cards / loyalty cards / coupons / cash in wallet. 17% average credit card borrowing rate vs. 1.7% 10-Year US Treasury bond yield*.



5) Education – \$1.1T+ annual spending on education in USA, \$460B+ = post-secondary, cost of going to college up +2x (inflation adjusted) over 30 years, \$914B** student loans outstanding (\$25K per graduating student), bigger than credit card (\$672B) & auto loans (\$750B). Student loans up 8x over ten years.

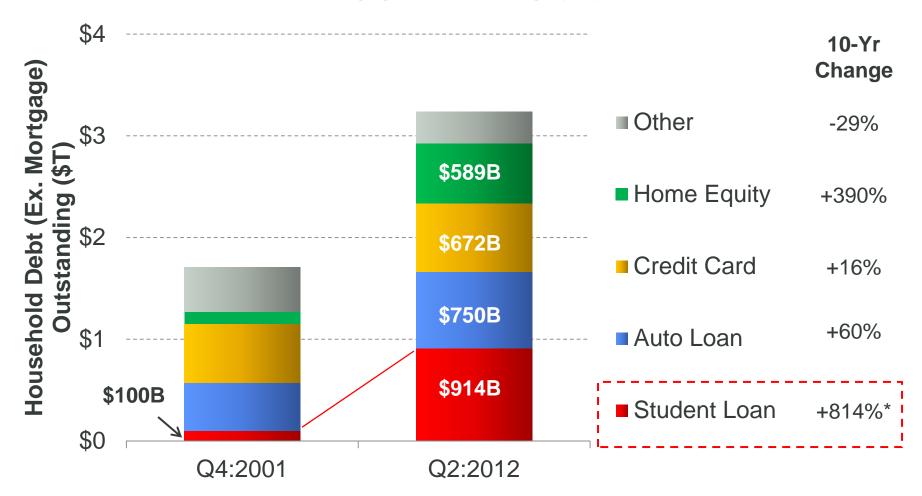


6) Healthcare – \$2.6T+ annual spend on healthcare in USA, 18% of GDP in 2010, up from 5% 50 years ago, and 2x OECD average, 32% of Americans considered obese in 2008, up from 15% in 1990.***



USA Student Loans Outstanding = \$914B, Up 8x vs. 10 Years Ago, Higher Than Auto Loan & Credit Card Debt

USA Household Debt (Ex. Mortgage) Outstanding by Type, Q4:2001 vs. Q2:2012





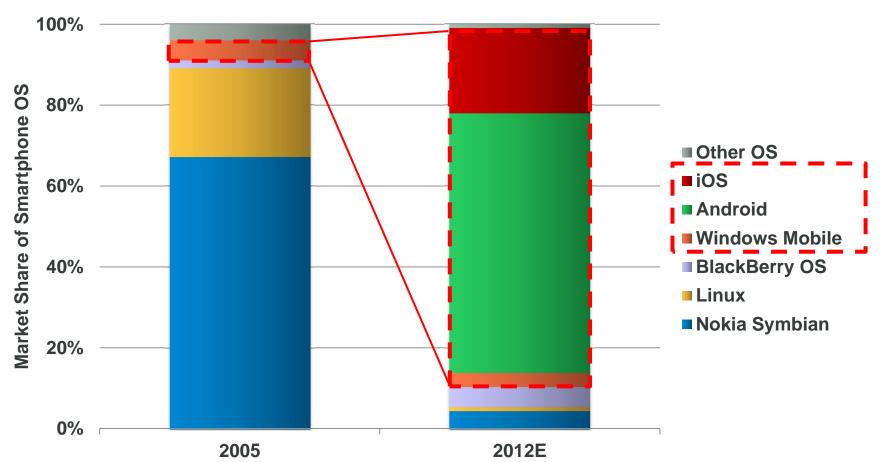
Note: *Federal Reserve Bank of New York improved measurement for student loans in 2011 and believes that student loan data prior to 2011 may be under reported. 'Other' cateogry includes personal loans, retail (clothing, grocery, department stores, home furnishing, gas, etc) loans. There're 36MM+ people with outstanding student loans in USA, average outstanding student loan amount was \$23,300, per FRB NY analysis of 241MM people with Equifax credit reports in 2/12. Source: Federal Reserve Bank of New York.

USA, INC. – A LOT TO BE EXCITED ABOUT IN TECH, A LOT TO BE WORRIED ABOUT IN OTHER AREAS

'Made in USA' Smartphone Operating Systems = 88% Share from 5% Six Years Ago

Global Smartphone Operating System Market Share

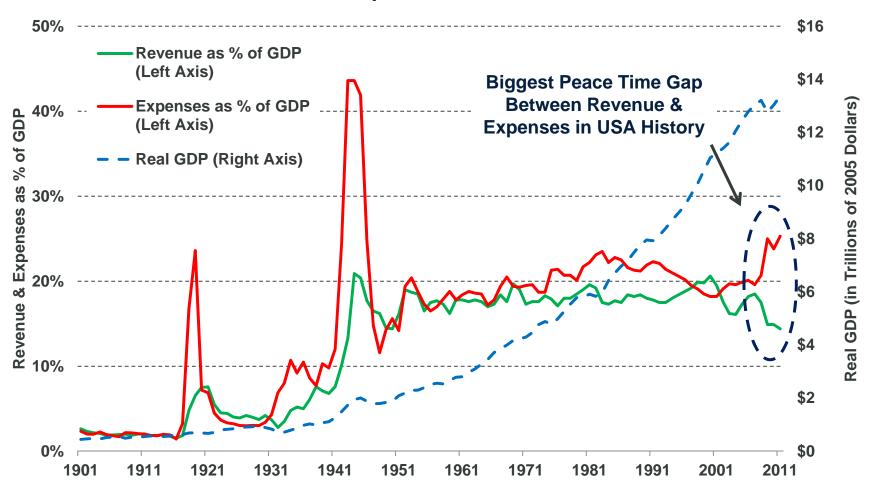
(by Units Shipped), 2005 vs. 2012E





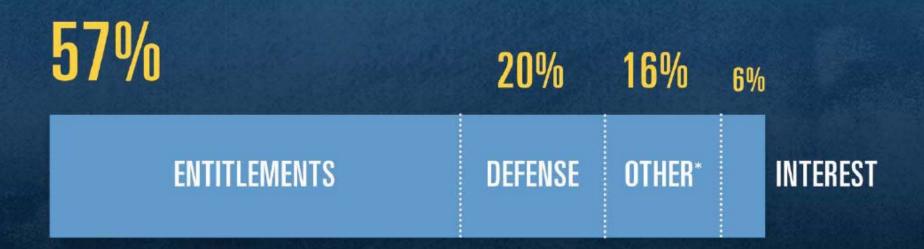
USA, Inc. – Biggest Peace Time Gap Between Revenue & Expenses in USA History

USA Inc. Revenue & Expenses as % of GDP, 1901 – 2011

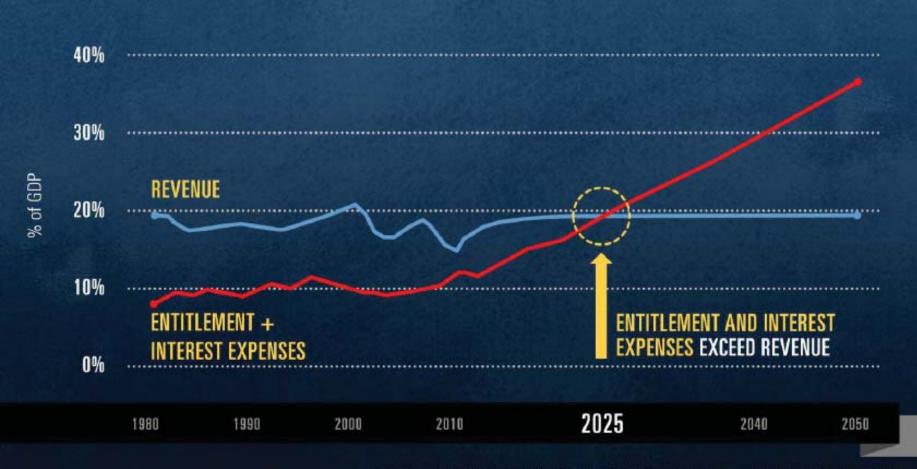




ARE YOU HAPPY WITH WHERE YOUR TAX DOLLARS GO?



ENTITLEMENT AND INTEREST EXPENSES WILL EXCEED USA INC.'S REVENUE WITHIN 15 YEARS



America's Debt Level Relative to Other Countries – You Do the Math...

		2010 Gross Government Debt				2010 Gross Government Debt	
Rank	Country	(\$B)	% of GDP	Rank	Country	(\$B)	% of GDP
1	Japan	\$12,009	220%	16	Hungary	\$105	80%
2	Jamaica	19	143	17	Israel	168	77
3	Greece	436	143	18	UK	1,699	76
4	Lebanon	53	134	19	Egypt	161	74
5	Iraq	97	120	20	Austria	272	72
6	Italy	2,445	119	21	Sudan	47	72
7	Belgium	452	97	22	Brazil	1,397	67
8	Singapore	214	96	23	Jordan	18	67
9	Ireland	196	95	24	Côte d'Ivoire	15	67
10	USA	13,707	94	25	India	1,046	64
11	Portugal	213	93	26	Netherlands	497	64
12	Iceland	12	92	27	Cyprus	14	61
13	Germany	2,759	84	28	Spain	848	60
14	Canada	1,324	84	29	Uruguay	23	57
15	France	2,110	82	30	Pakistan	100	57



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THIS CYCLE OF TECH DISRUPTION IS MATERIALLY FASTER & BROADER THAN PRIOR CYCLES...

Disclosure

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