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2013 State of Devices

Device Exhaustion Setting In; Upgrades Should Drive Smartphone Q4

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Key Conclusions – Device Categories

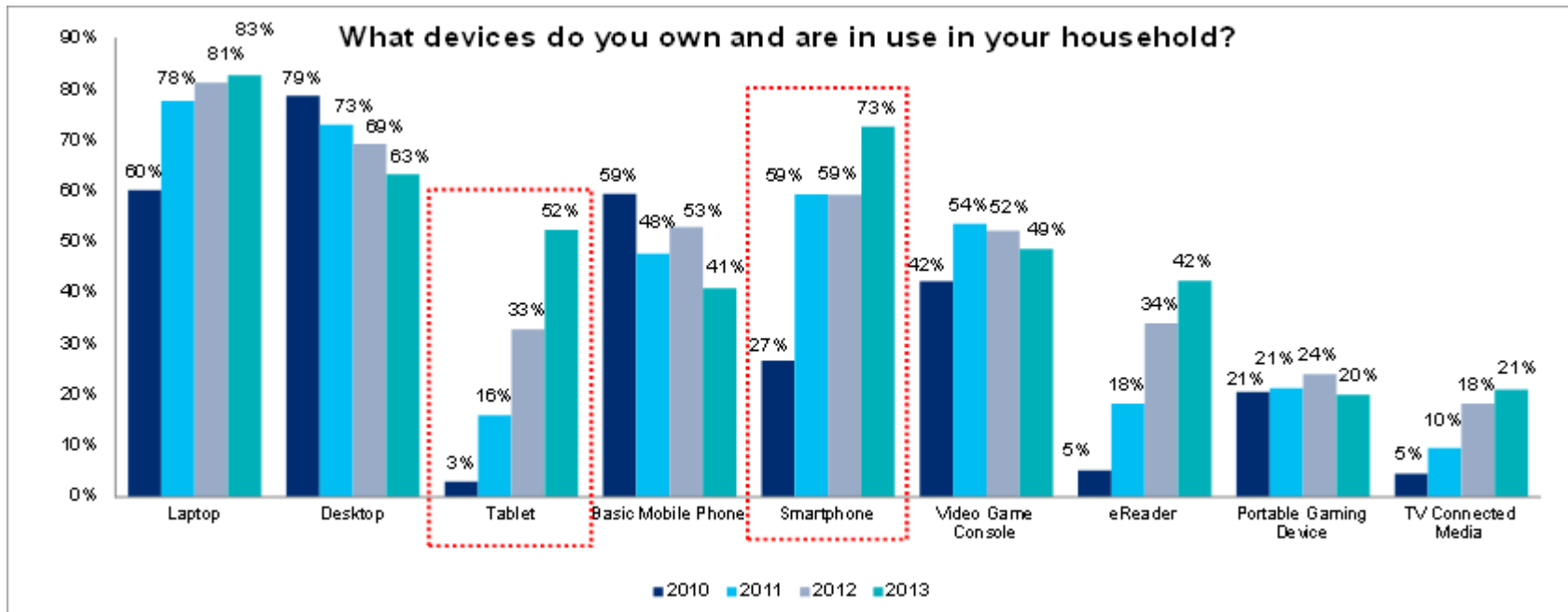
- Smartphone: succumbing to device exhaustion
 - Incremental purchases peaked in 2012, but survey endorses strong 4Q13 driven by 2-year ago sales
 - Penetration 10pts below laptop
- Tablet: still has significant headroom vs. laptop penetration (>30pts)
 - 4Q13 purchase intention below a year ago as low priced tablets introduced a year ago may have pulled forward demand
 - Market share consolidating to Apple and Samsung, others falling off dramatically
 - Entertainment still dominating use cases, hasn't cracked content creation.
- PCs: Endorses stabilization
 - Purchase intentions “less bad”, demand still driven by replacement demand
 - Up-tick in tablet cannibalization and still troubling “activity time shifting”. Still unchallenged for content creation.
 - Less demand than a year ago for touch laptop.
- Game consoles: Looks like it could be a tough gen 3 cycle

Key Conclusions – Companies

- **Apple – Neutral, \$530**
 - Competitive position looks stable in phones, less so in tablets.
 - Leading indicators of less brand loyalty also evident.
 - Could regain some share with larger phone.
- **Microsoft – Buy, \$35**
 - PC purchase intention mixed vs. previously negative, but still negative long-term PC trends.
 - Some pick-up in tablet (mostly) and phone (less) momentum, but from very small base.
 - Poor position in Gen 3 console market (XB1).
- **Amazon – Buy, \$381**
 - Continued penetration of standalone eReaders bodes well for Paperwhite
 - Flat to down Kindle Fire tablet purchase intention, though demand for latest edition may be under-represented
 - Less usage of tablet for reading eBooks, inline with growth in standalone eReader.
 - Tablet ownership is correlated with more online shopping
- **Google – Buy, \$1,025**
 - Increasing share of Android OS devices bodes well for Google's mobile ad, app & data ecosystem
 - Q4 purchase intent for Android-based tablets up Y/Y
- **Samsung – Buy, 1,900,000W**
 - Evidence of recent share gains in phones and tablets.
 - Survey suggests tablet share gains will continue but potentially not in phones in U.S.
- **Sony – Neutral, 2,100Y**
 - No perceptible traction in tablet or phone
 - Position looks strong for Gen 3 console cycle, albeit with negative secular trends in console and portable gaming

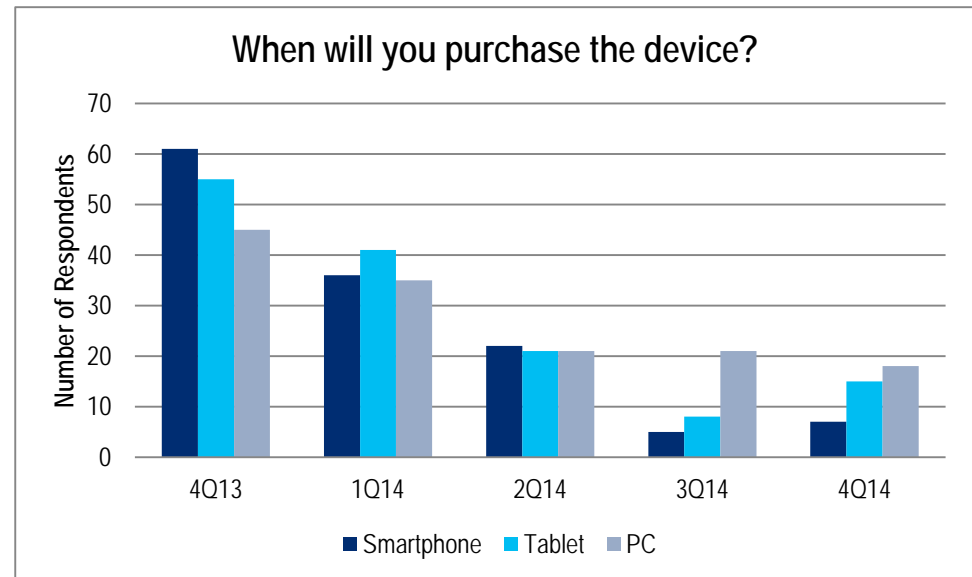
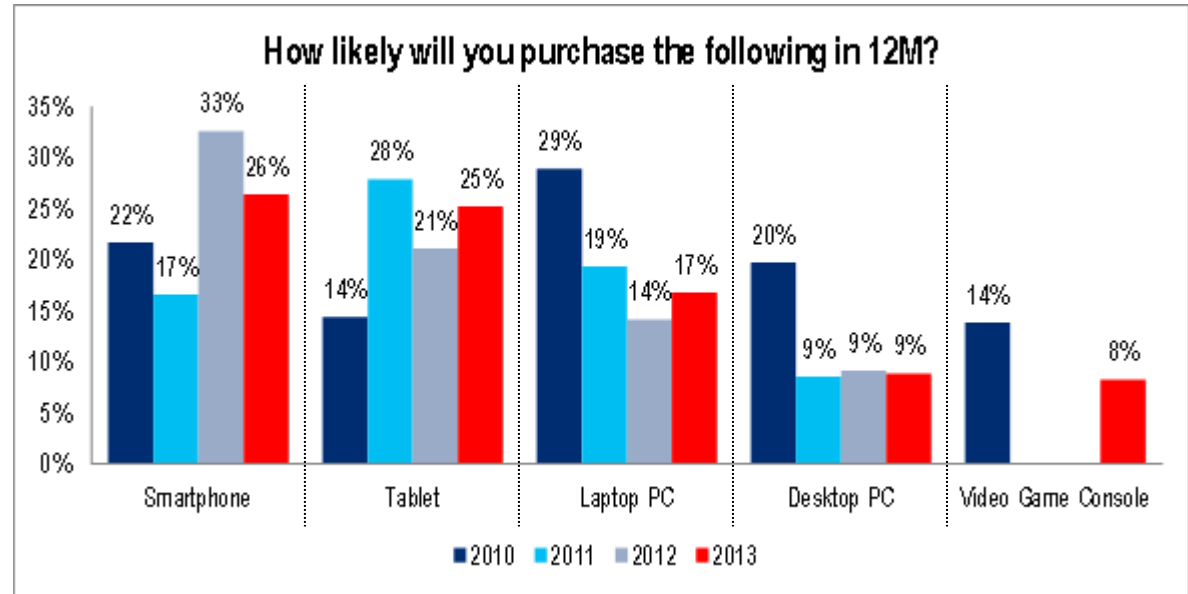
State of Consumer Device Ownership Today

- **Mobile device penetration continues to escalate**
 - Smartphone penetration is high, still 10 pts below laptop
 - Tablet penetration escalating and still has room to move higher vs. laptop
- **Traditional PC still a core device**
 - Laptop penetration remains surprisingly stable
 - Desktop being replaced, much like the basic mobile phone
- **TV-connected experience plateaued? (game console and media device)**
- **Specialized devices challenged – eReader, portable gaming**



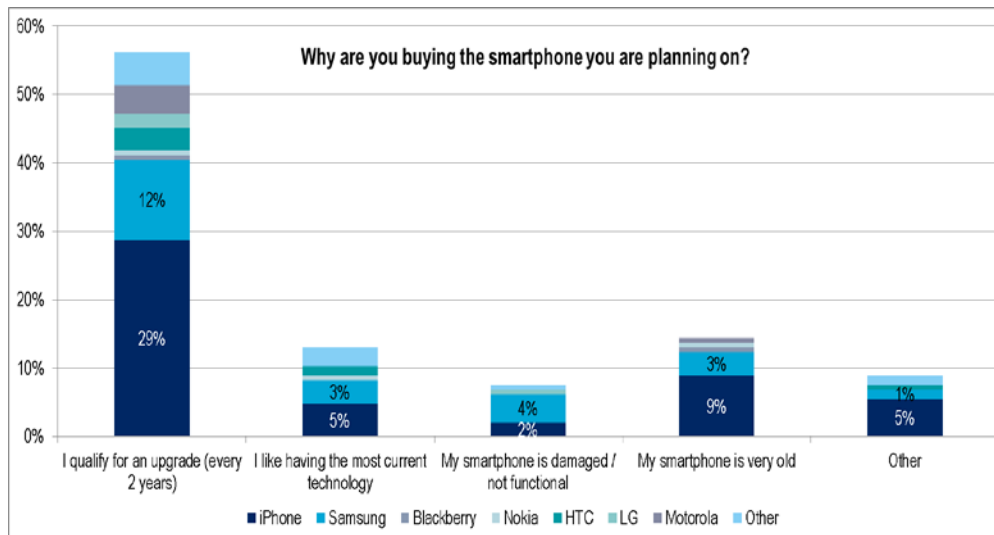
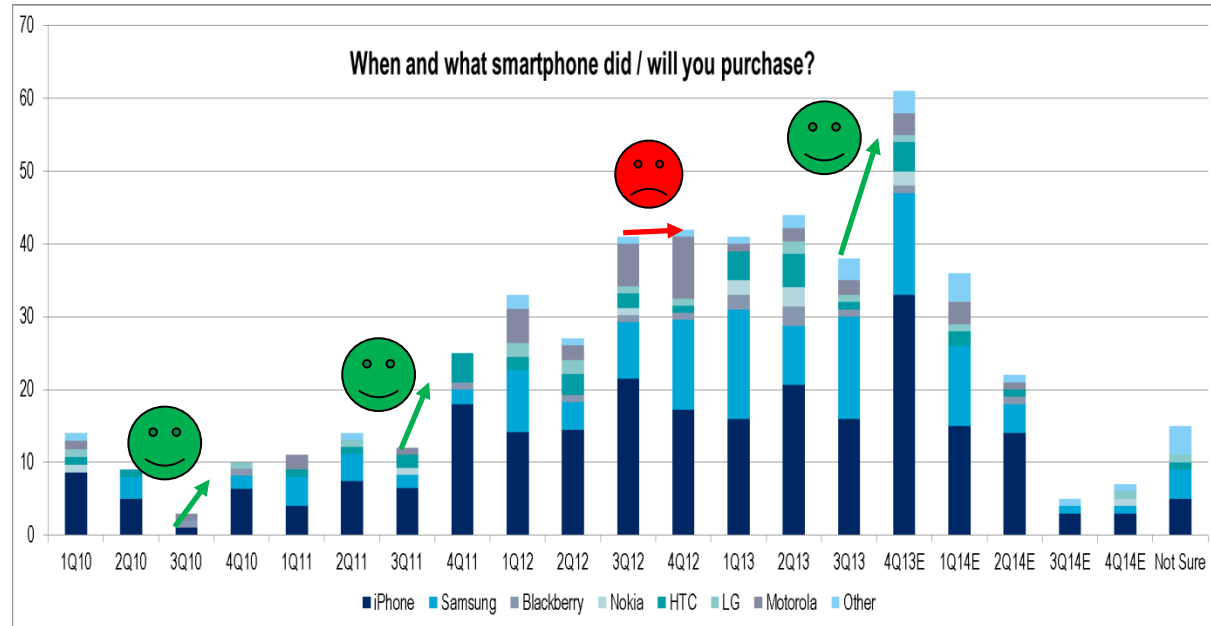
Purchase Intentions Looking Less Extreme

- **Tablet still the most sought after, although below launch wave hype of 2011**
- **Smartphone purchase intentions peaked in 2012** (although Q4 could be good)
- **Traditional PC, most notably laptop, seeing some stability in purchase intention** (although looks cyclical not secular)
- **Video game console excitement surprisingly dull** (despite new console wave about to ship)
- **Tablet and smartphone purchase intentions are less pre-meditated vs. PC**



Survey Suggest Strong Smartphone Cycle in Q4

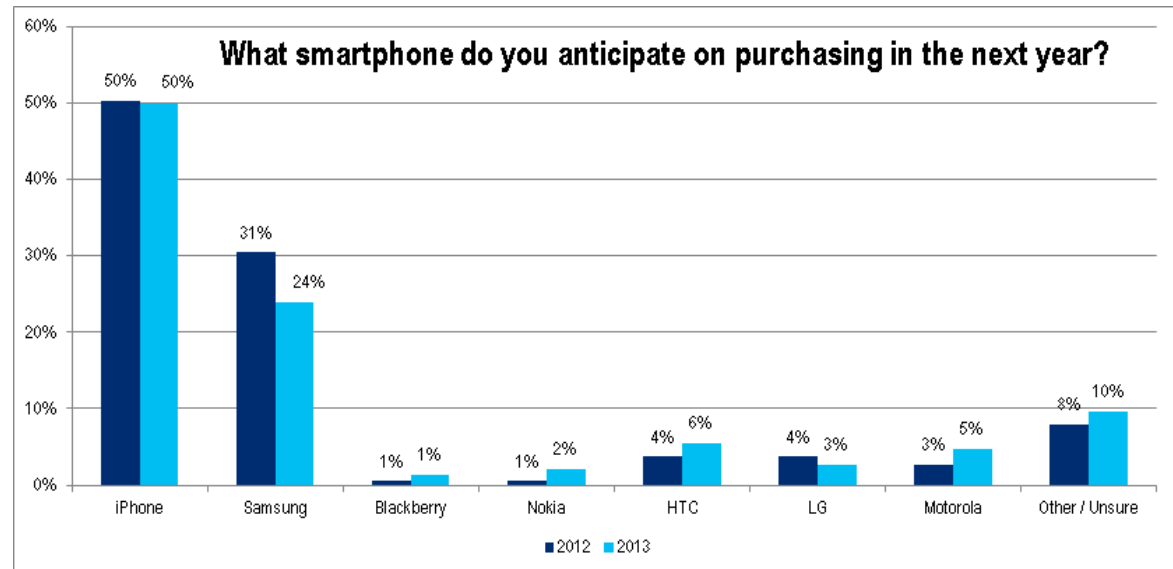
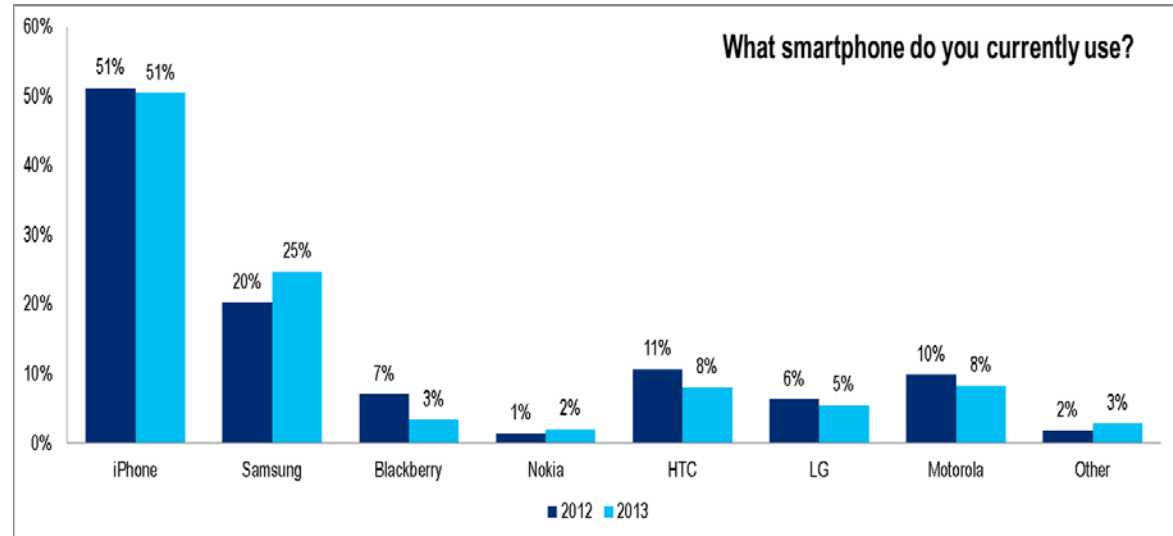
- **2013 smartphone seasonality looks steeper than last year**
 - 2010, 2011 saw steep seasonal Q4 increase in smartphone buying
 - 2012 broke that trend
 - 2013 appears to be returning to prior pattern
 - Apple is primary beneficiary
- **May coincide with large number of new phones in 2011**
 - Survey was conducted before release of iPhone 5S



- **Timing of carrier-granted upgrade is important for smartphone purchase**
 - Less interest in having “most current technology” points to maturing market
 - Responses around smartphone age and “not functional” point to contract as well as maturity of market
 - More users think their iPhone is “old”

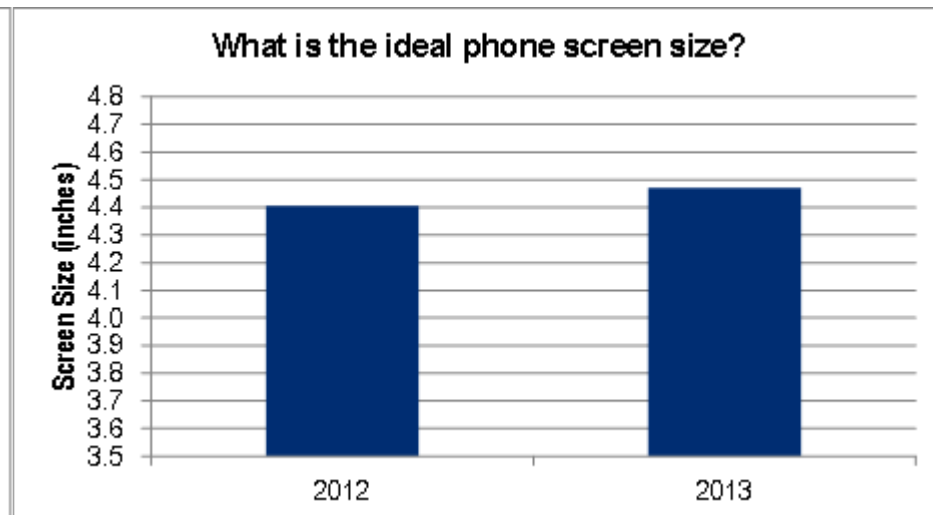
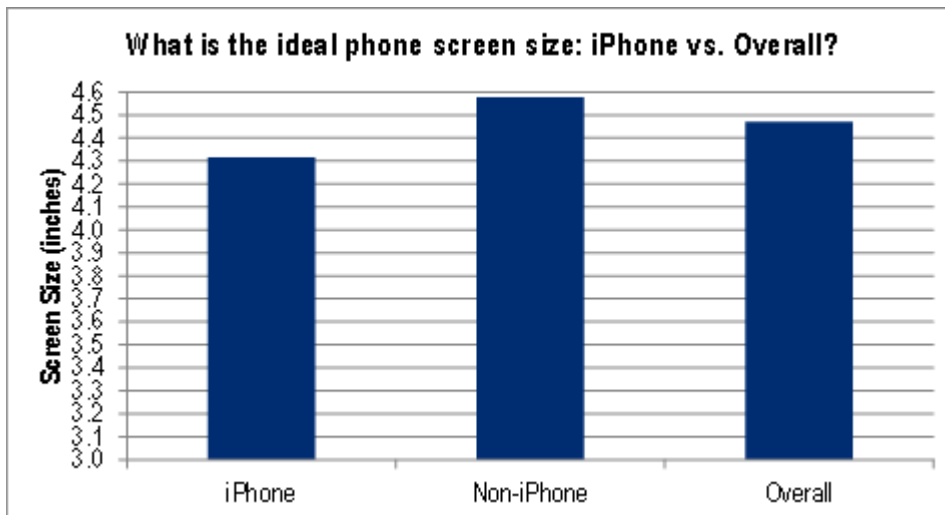
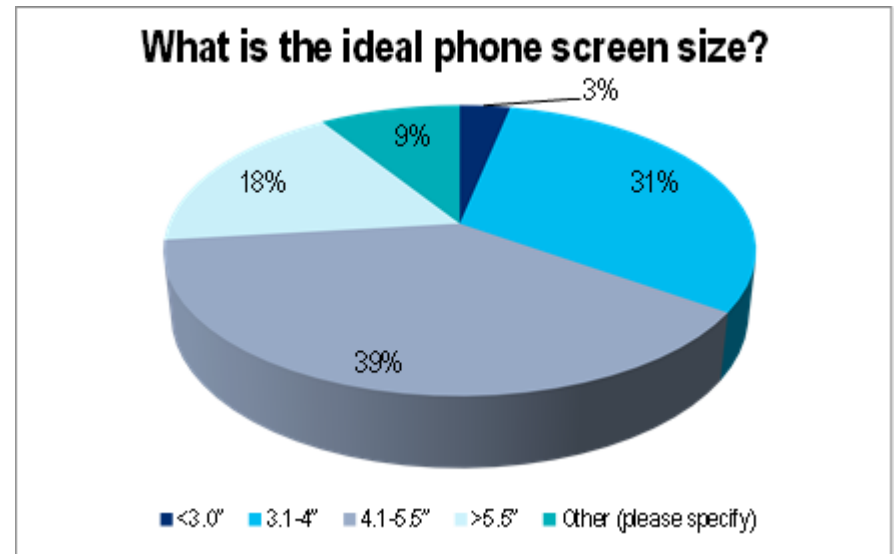
Smartphone Competitive Landscape Stable

- **Apple has maintained share in last 12 months**
 - Samsung has mopped up share from other Android vendors
 - Other Android diminishing as we see in tablet
- **Forward Apple share indicators look stable**
 - Apple forward share indicator stable vs. 2012
 - Predicted share inline with current share
 - Samsung purchase intention falling off, presumably after very strong new product line-up in 2012 and into early 2013.
 - Less share for Samsung to take from other Android partners

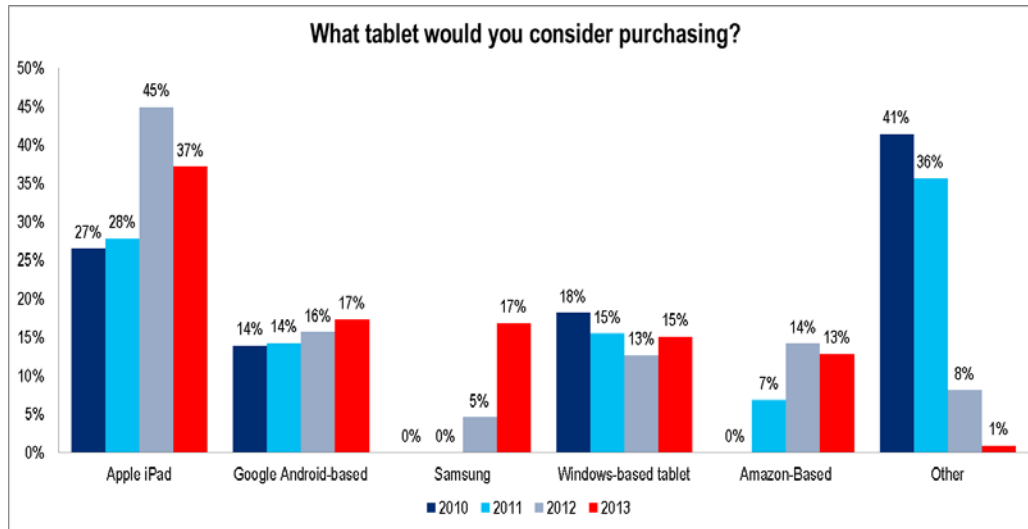


Bigger Screen is Trend, Although iPhone Owners Happy

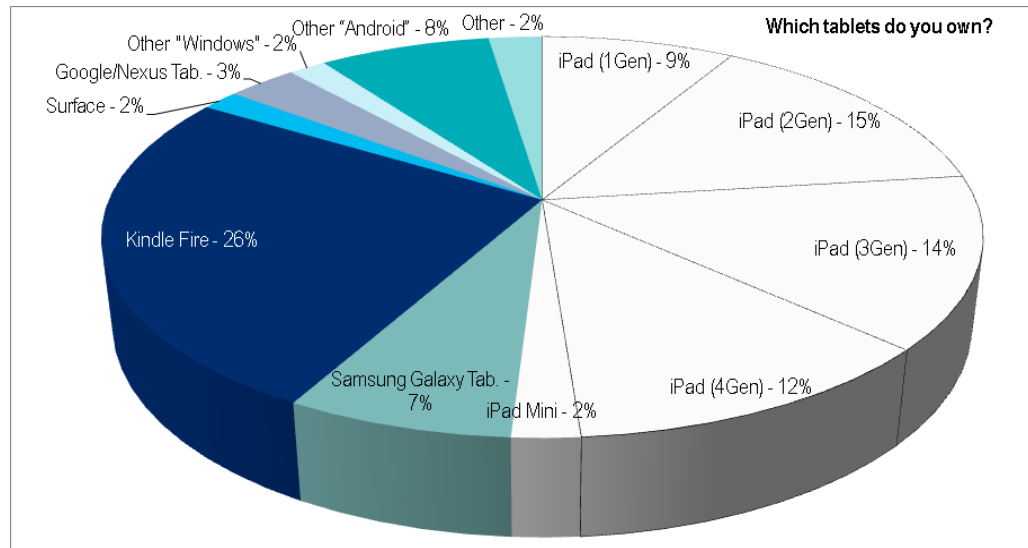
- Over half of respondents want screen larger than 4"
 - 4.1" to 5.5" is mainstream size
 - Nearly 20% want >5.5"
 - Samsung has driven this
- Screen size preference stable vs. last year
- Apple could have more addressable market with larger screen phone
 - Even though core base is happy with ~4" screen



Tablet Winners Should Continue to Narrow

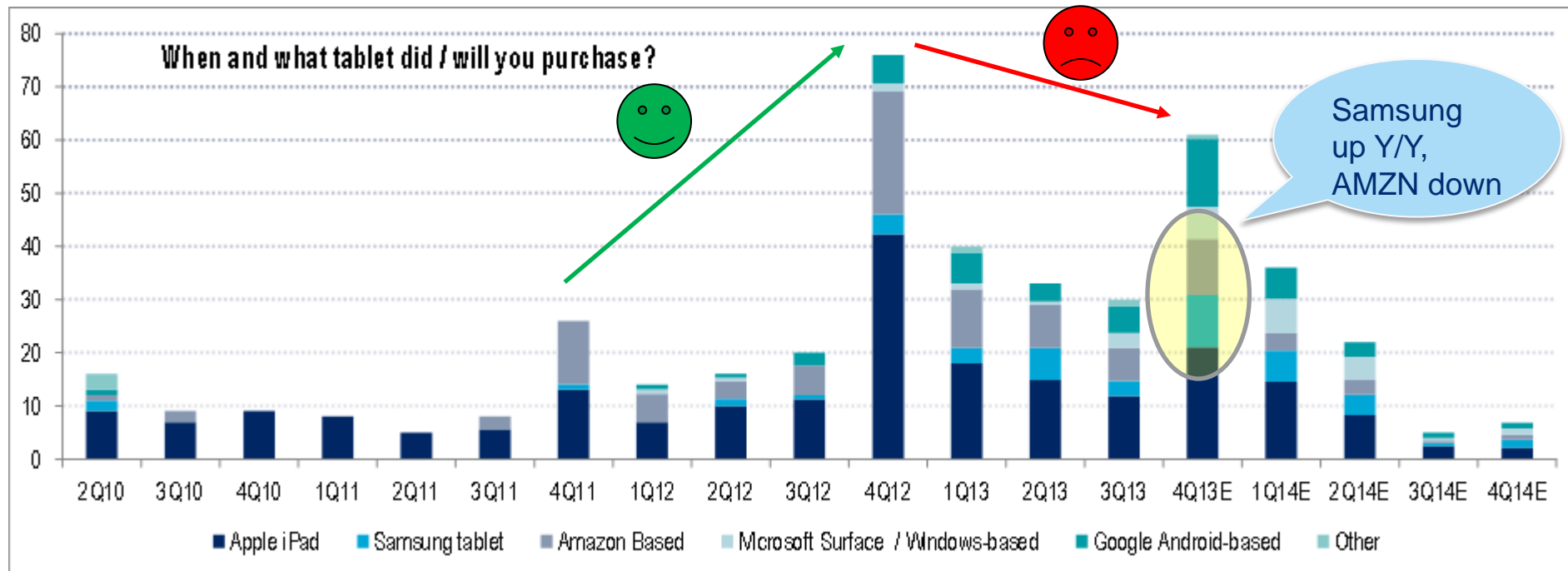


- **Tablet leadership narrowing**
 - Samsung has momentum
 - Top 2 (Apple and Samsung) increasingly dominant
 - Windows purchase intention well below share – positive?
 - Surprisingly little momentum for Kindle
 - Third-tier players HP, Sony, Blackberry and other have dropped off
- **Apple still dominating current market with ~50% share**
 - Forward share (37%) down from prior and below current market share
- **Samsung future share well ahead of current share**

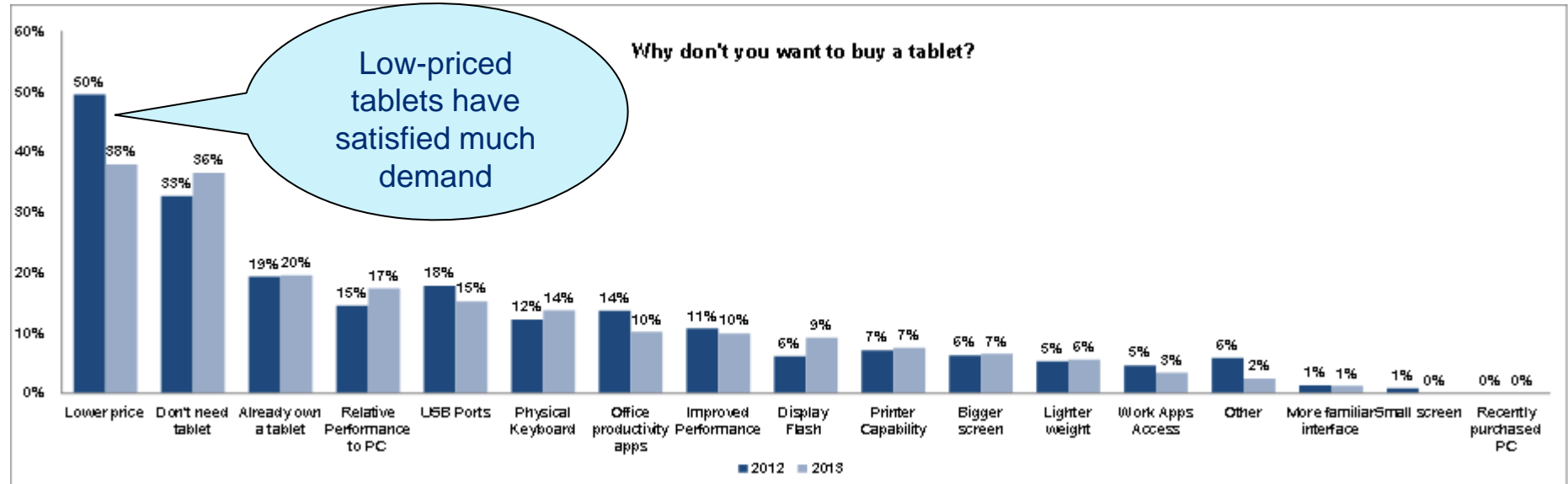


Q4 Purchase Intention for Tablets Below Year Ago Levels

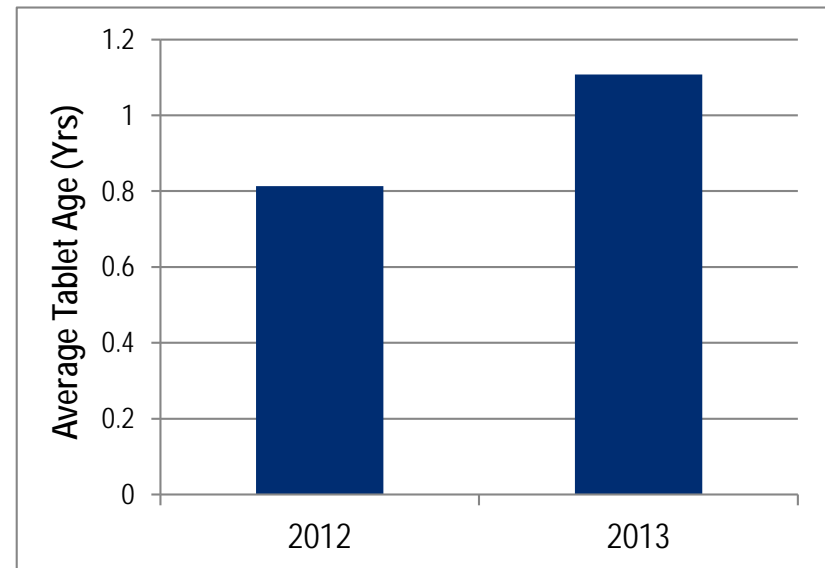
- Unlike smartphone, survey suggests sluggish tablet sales in Q4
 - Despite penetration still having room (slide 4)
 - Apple and Kindle look to be driving down Y/Y
 - Windows / Surface and Samsung / Android likely see growth Y/Y
- Predicted sales below year ago levels for 4Q13, at or below year ago for 1Q14 and 2Q14, after growth in 2Q13 and 3Q13
- Likely due to strong product launches year ago (iPad Mini notably)



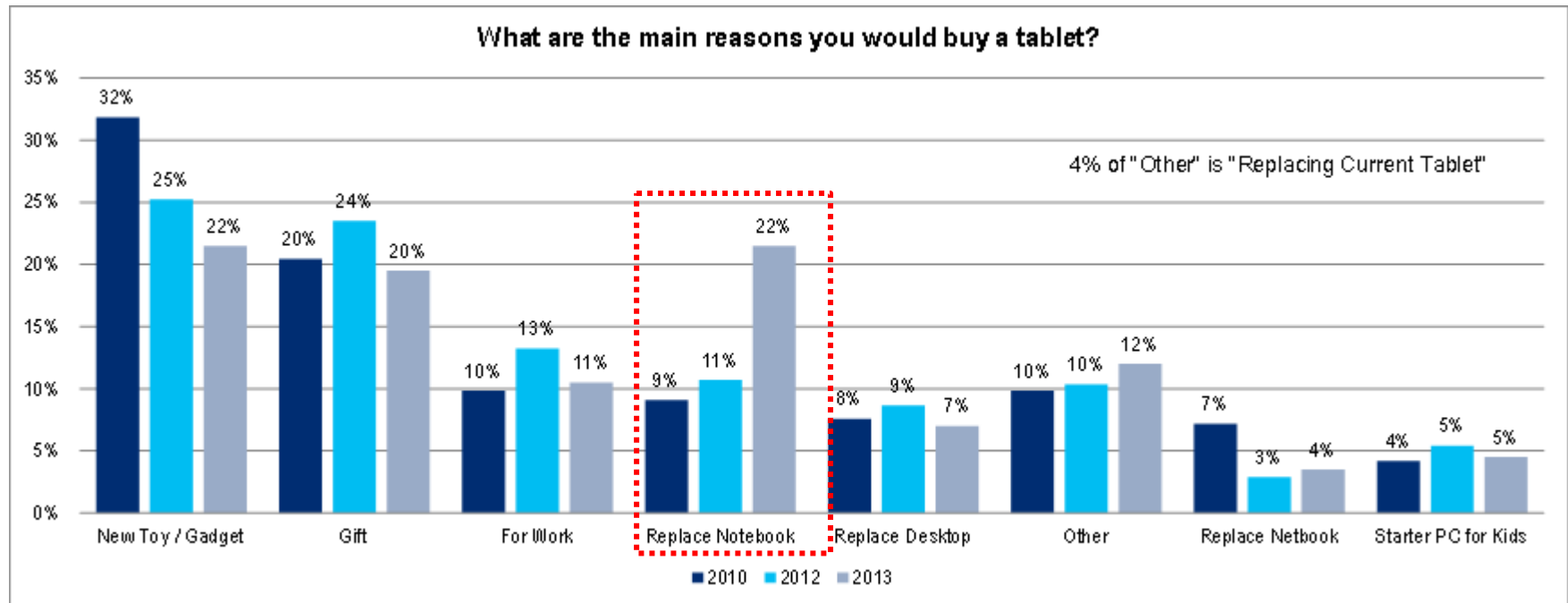
Last Year's "Low Price" Launch Pulled in Demand



- Last year's small screen / low priced tablet introductions pulled in many buyers
- Average "ideal" screen size unchanged (~9.5")
- Uptick in buyers that "don't need" tablet
- Average age of tablet installed base still relatively young (1.15 years)

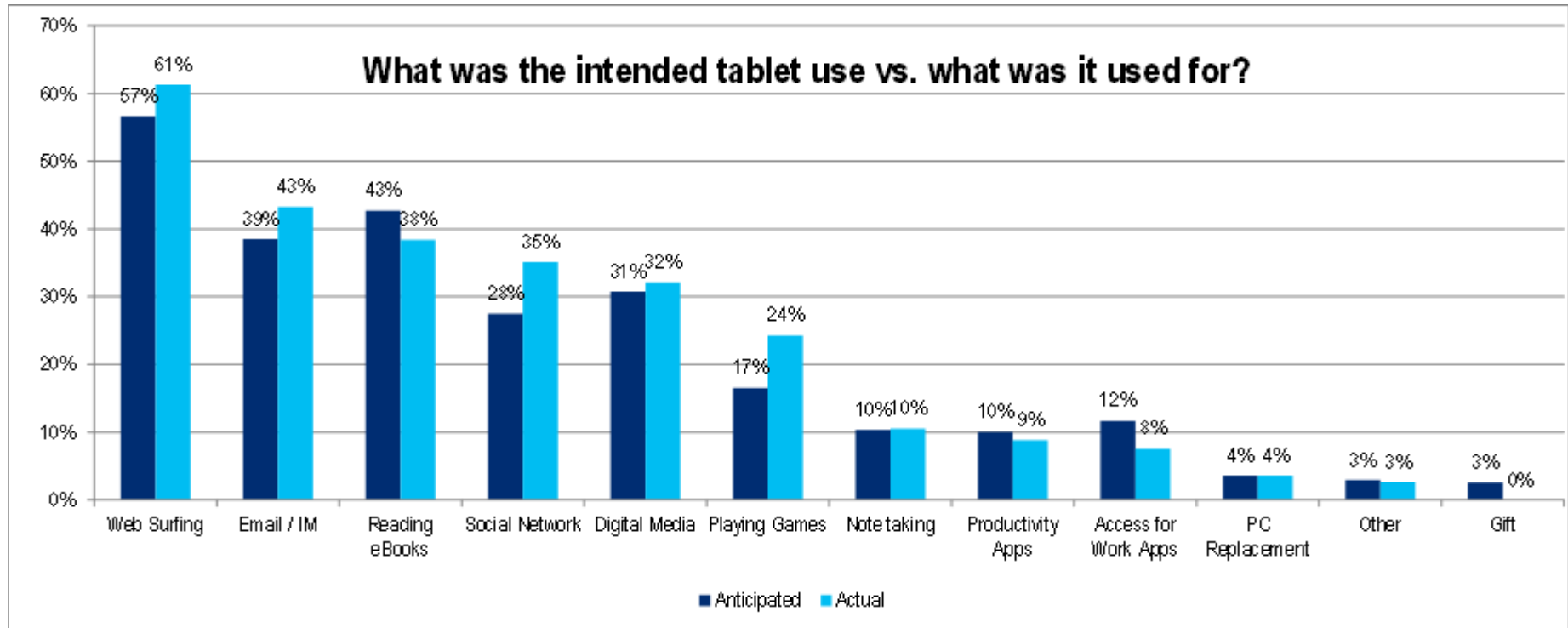


Some Uptick in Tablet / Laptop Cannibalism



- **Meaningful (doubling) of % of tablets that are purchased as a “notebook replacement”**
 - We now estimate ~40% of tablet sales are cannibalistic (formerly ~30%)
- **Still an impulse purchase, but less so**
 - Fewer buying tablet as “new toy / gadget”
- **Still few purchasing “for work”**
 - Foots with minimal use of productivity apps

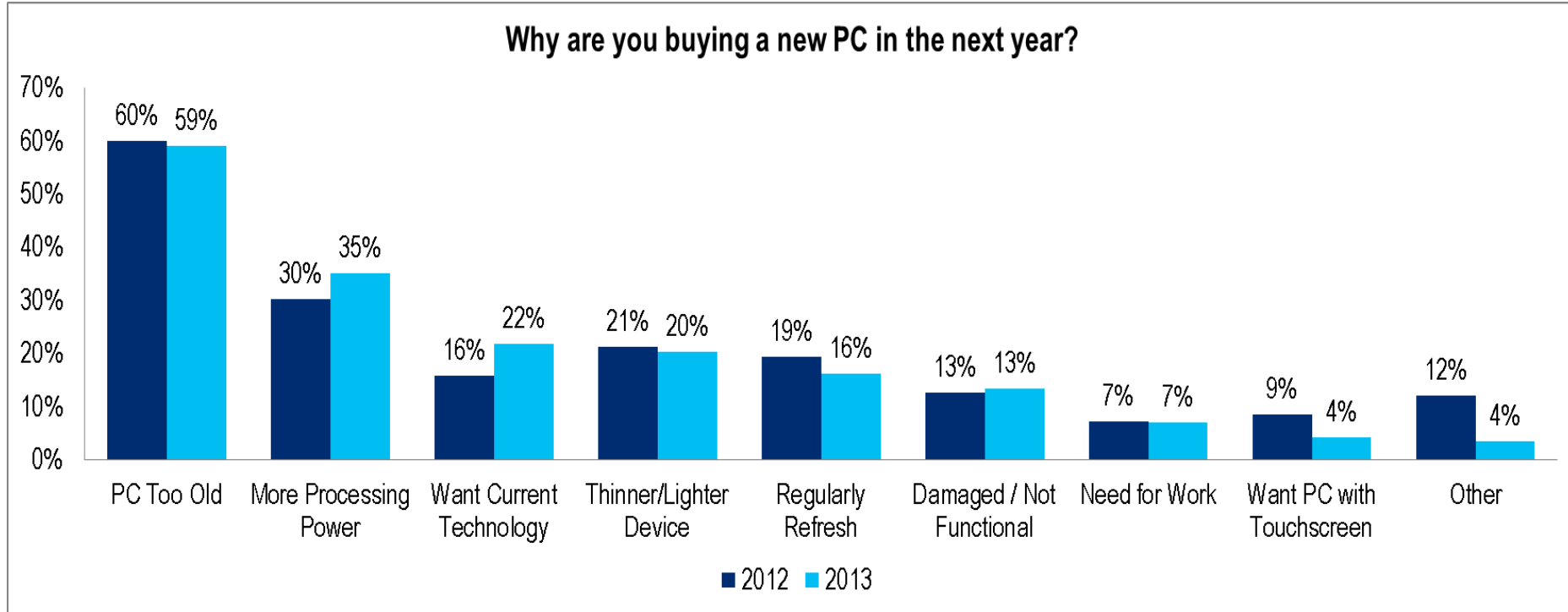
Entertainment Still Dominating Tablet Usage



- **Web surfing still dominant usage**
 - Followed by messaging, reading, social, digital media and playing games
- **Content creation including work, note taking and other productivity uses remain uncommon**
- **Similar results to what we saw on prior year surveys**

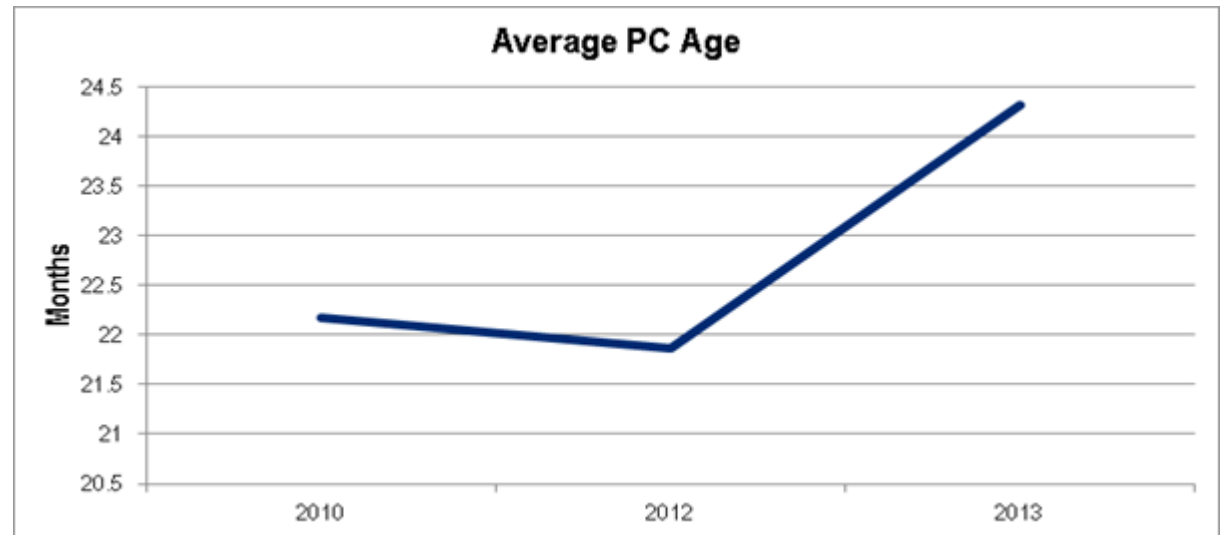
Uptick in PC replacement potential the driver of stabilization

- **PC purchase intentions “less bad” than prior (slide 4)**
- **PC purchase still driven by replacement demand**
 - Coupled with elevated PC age could drive stabilization
 - Beyond PC being “too old”, consumers are noticing they need more processing power and current technology
 - Touch a minor driver of PC demand and is diminishing as reason to buy PC

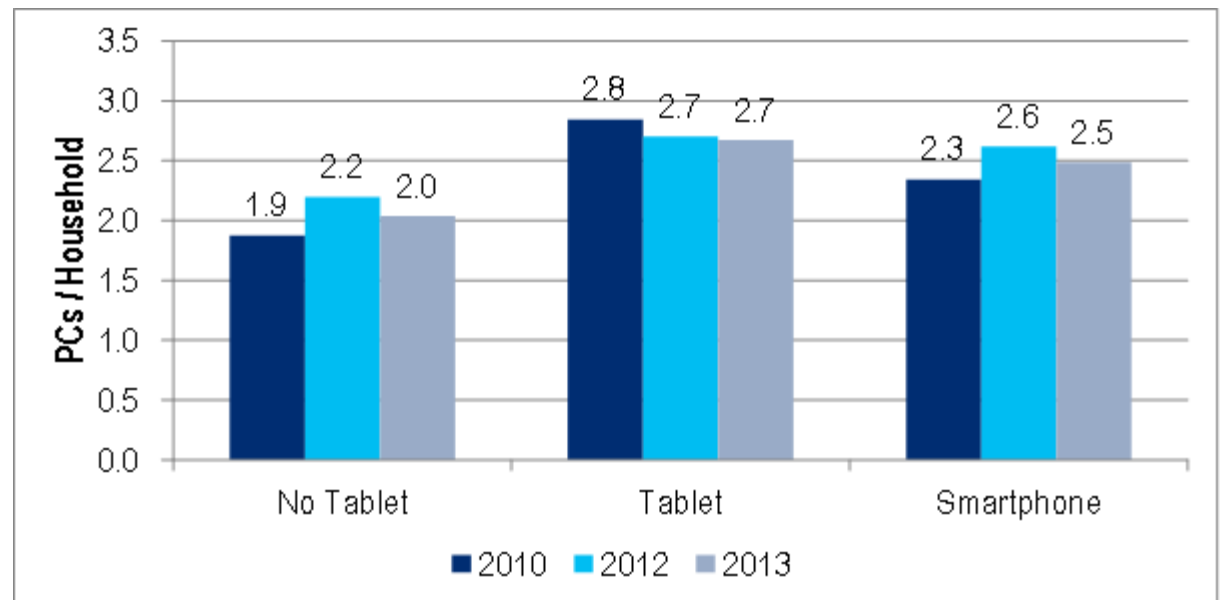


Age and Unit Math Support PC Stabilizing PC Sales

- Average PC life continues to lengthen, although not dramatically



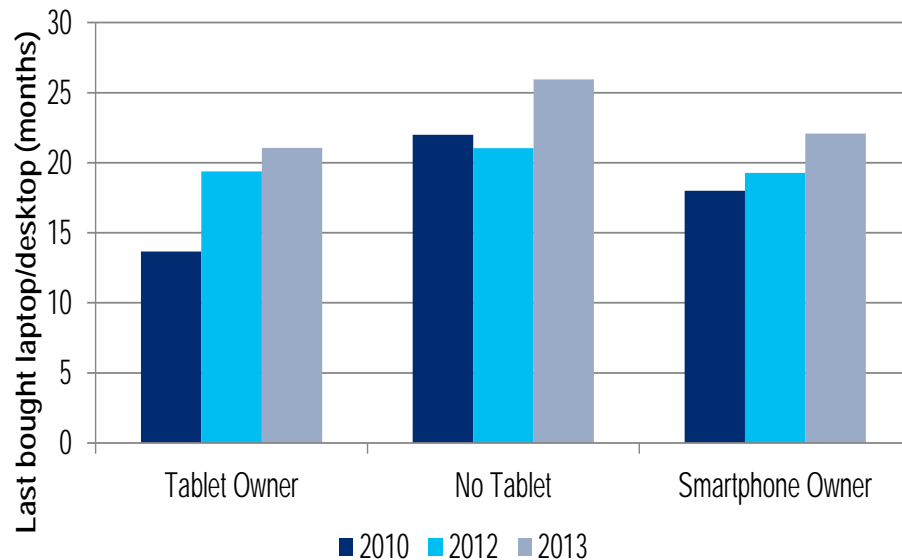
- Tablet and phone owners own PCs more than consumers that only own traditional PCs



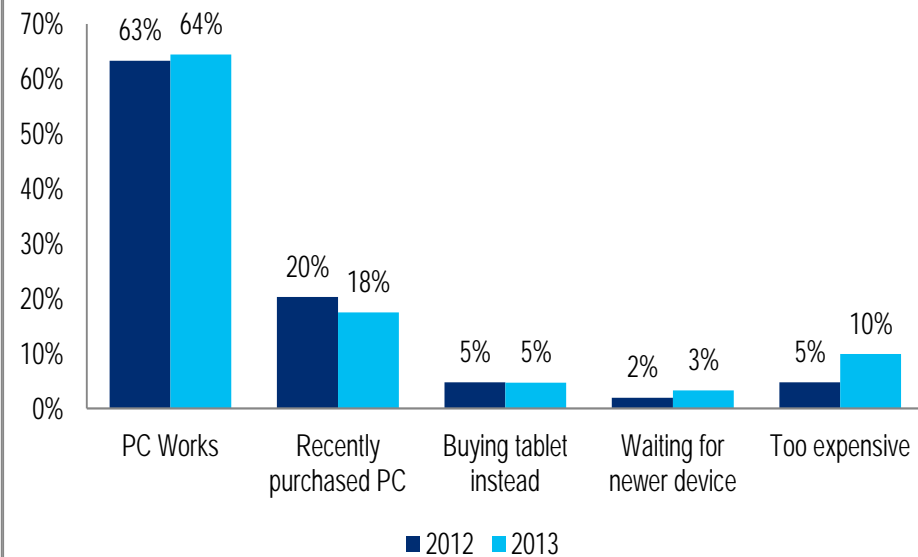
Tablet Owners are More Likely to Have Just Purchased a PC

- Average PC refresh lengthening and lengthening more for tablet owners than those that don't own a tablet
- Surprisingly, refresh rate of tablet and smartphone users is shorter (in absolute) than those that don't own a tablet or a smartphone
 - Consumers starting to see PC as too expensive for current product

Tablet owners more recently purchased a PC

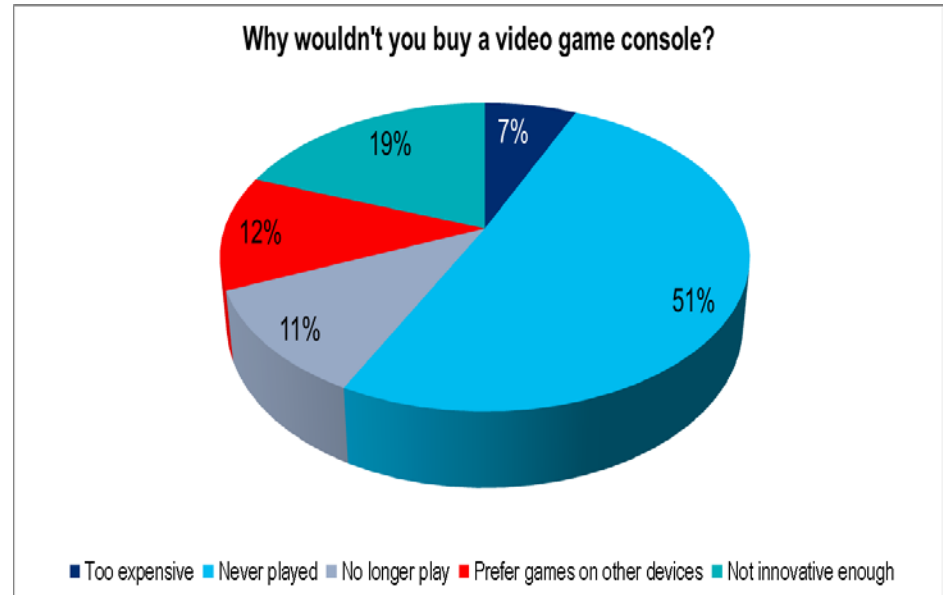
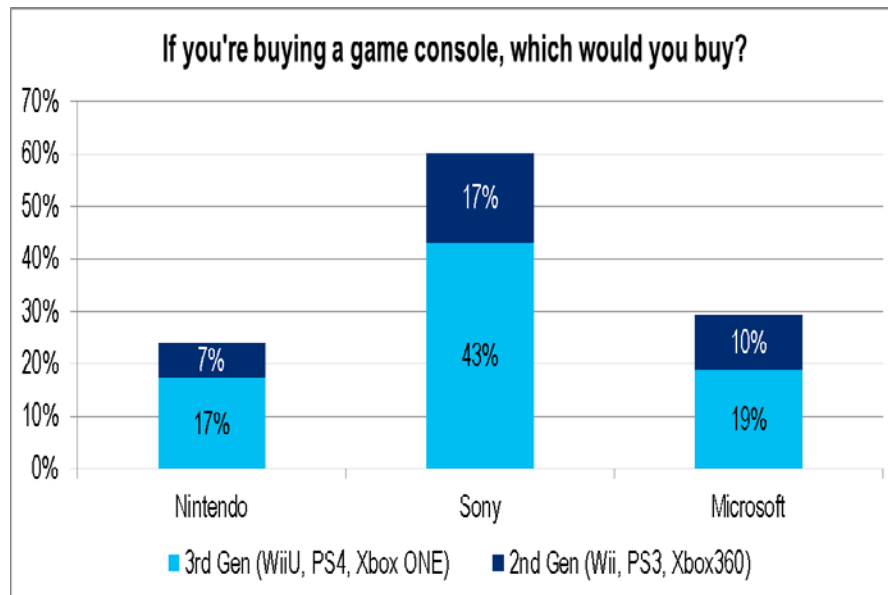


Non-tablet owners: Why are you not purchasing a new PC?

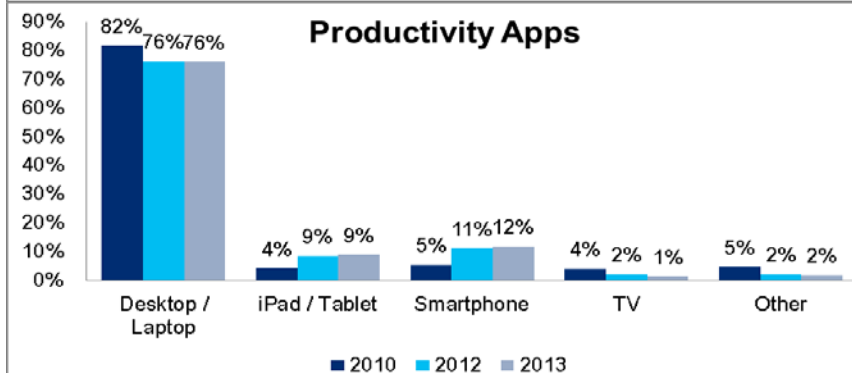
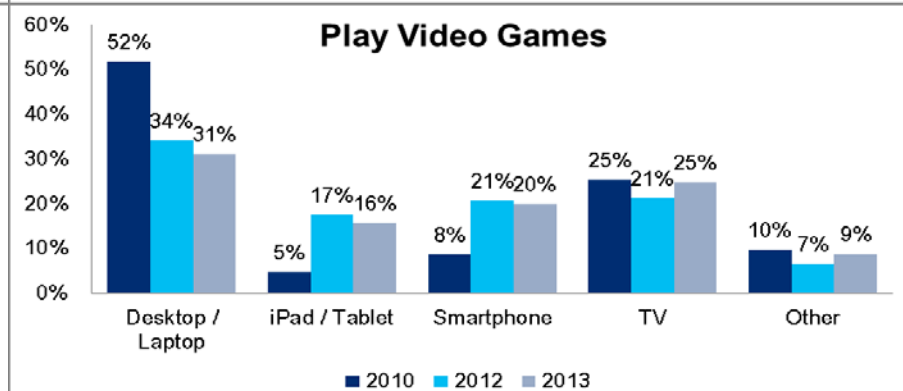
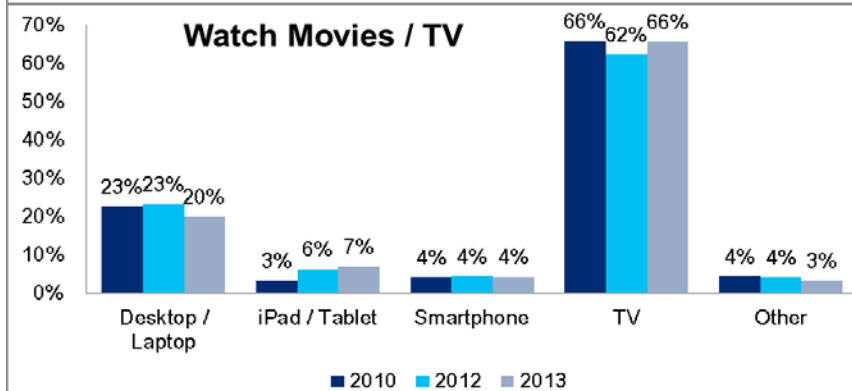
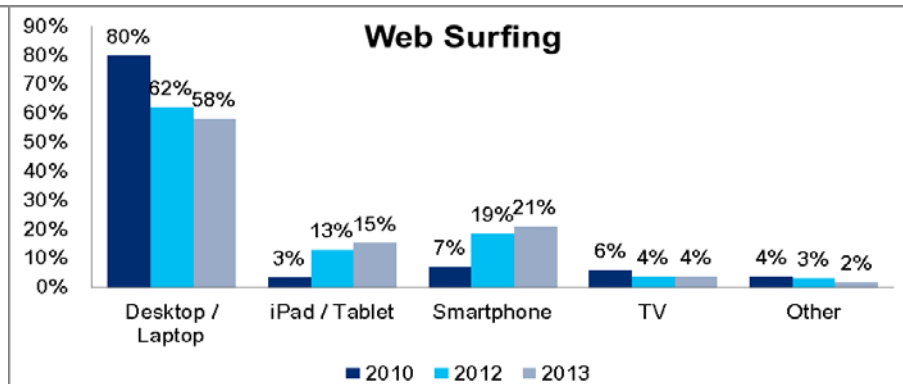
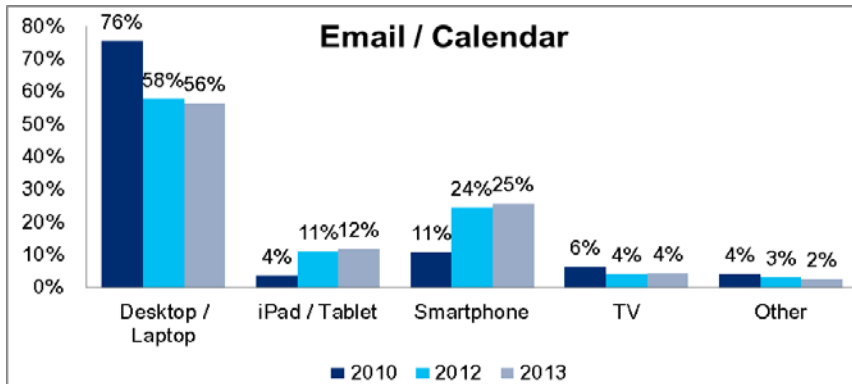


Video Game Console Market has Challenges

- 8% of respondents expect to buy a video game console in the next 12 months, down from 14% in 2010.
- Disappointing in the context of upcoming generations of products, although awareness may still be low
 - Maturity of products and competition from gaming on other devices are biggest headwinds
 - Price not a major issue
- Sony shows up surprisingly well in this U.S. only survey
 - Sony purchase intention stronger for PS4 vs. Xbox One as compared to prior generation
 - Negative for Microsoft, Nintendo WiiU has smaller but loyal following
 - Sony stronger with younger demographic, Microsoft with older

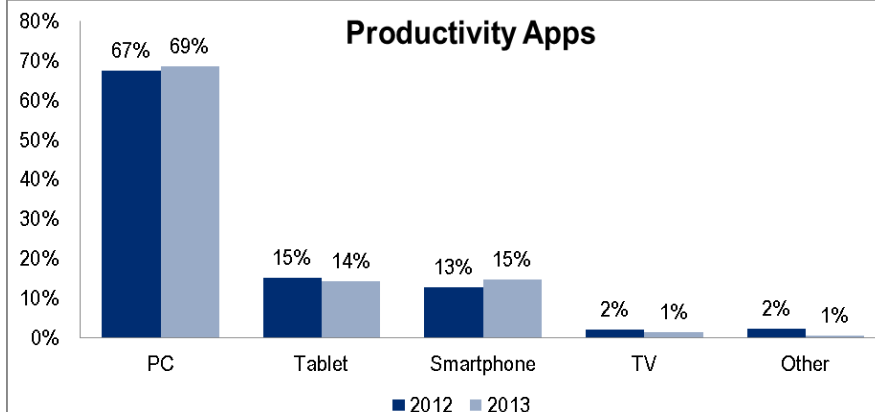
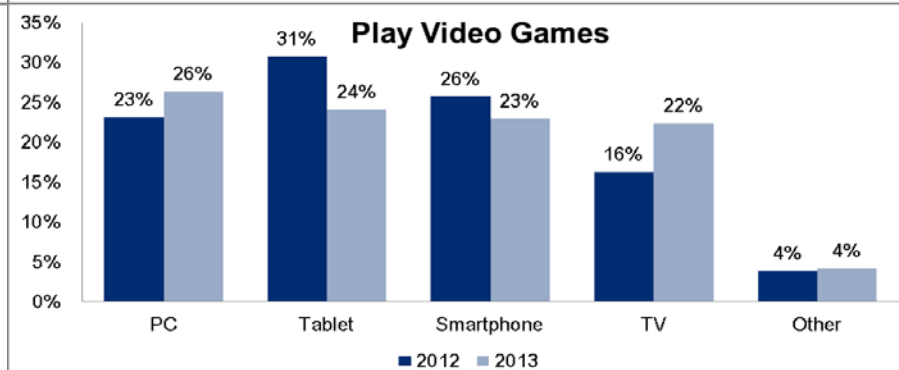
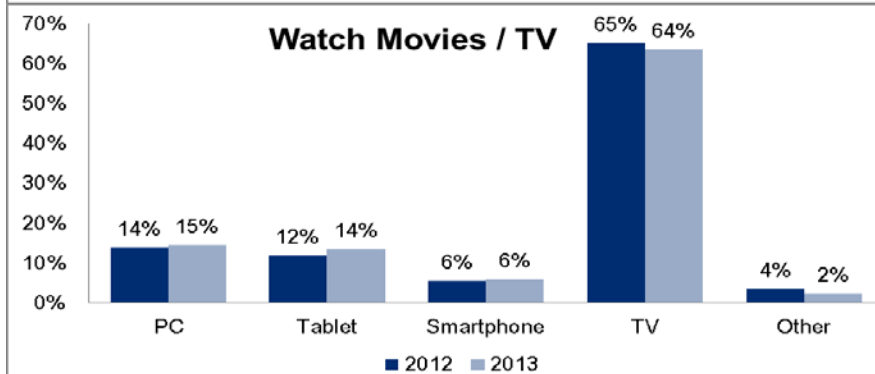
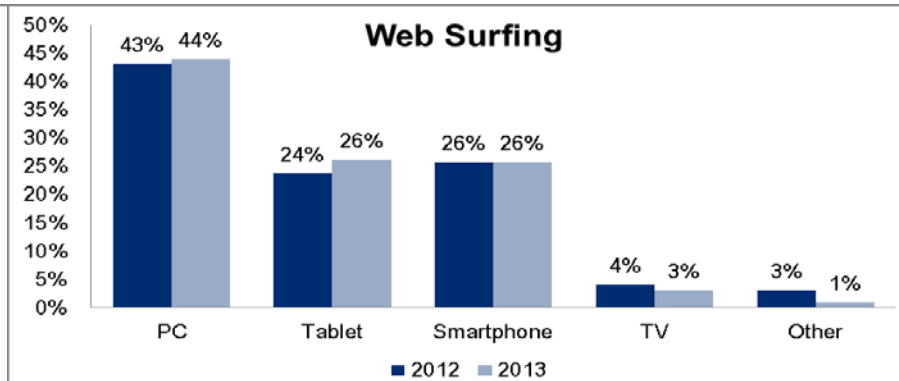
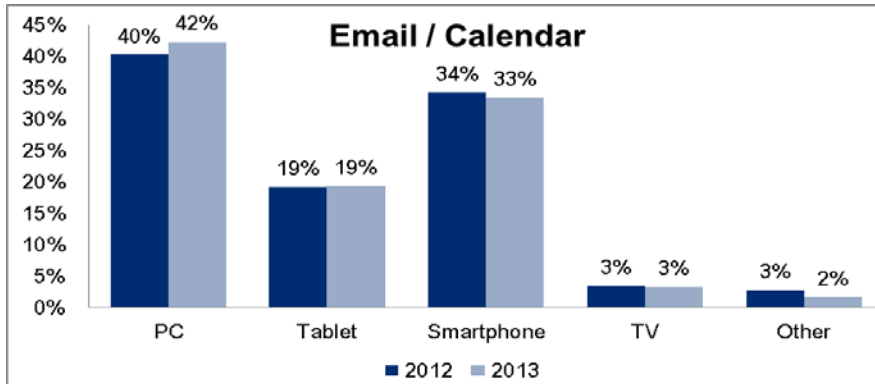


Activity Overall Remains PC-centric...



- Non-PC (combined) approaching PC for lightweight email / web activities
- High value productivity apps still very sticky on PC
- Game console seeing tangible challenge from mobile

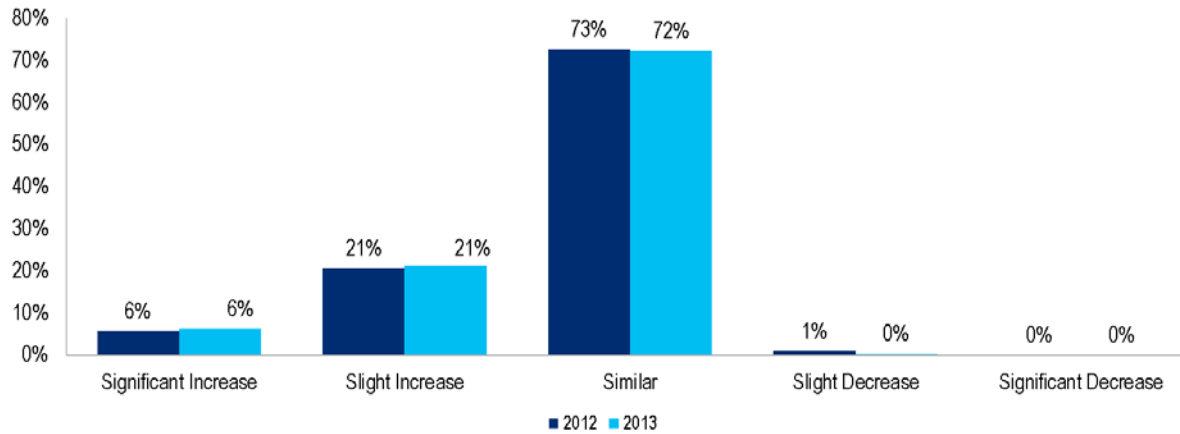
...But NOT Among Multiple Device Owners



- Smartphone and tablet have significant share of web and email, although not necessarily “migrating” from PC
- Video games an even split
- TV / movies still very TV centric, suggesting tablet more of a companion vs. primary media consumption device
- Productivity very sticky to PC

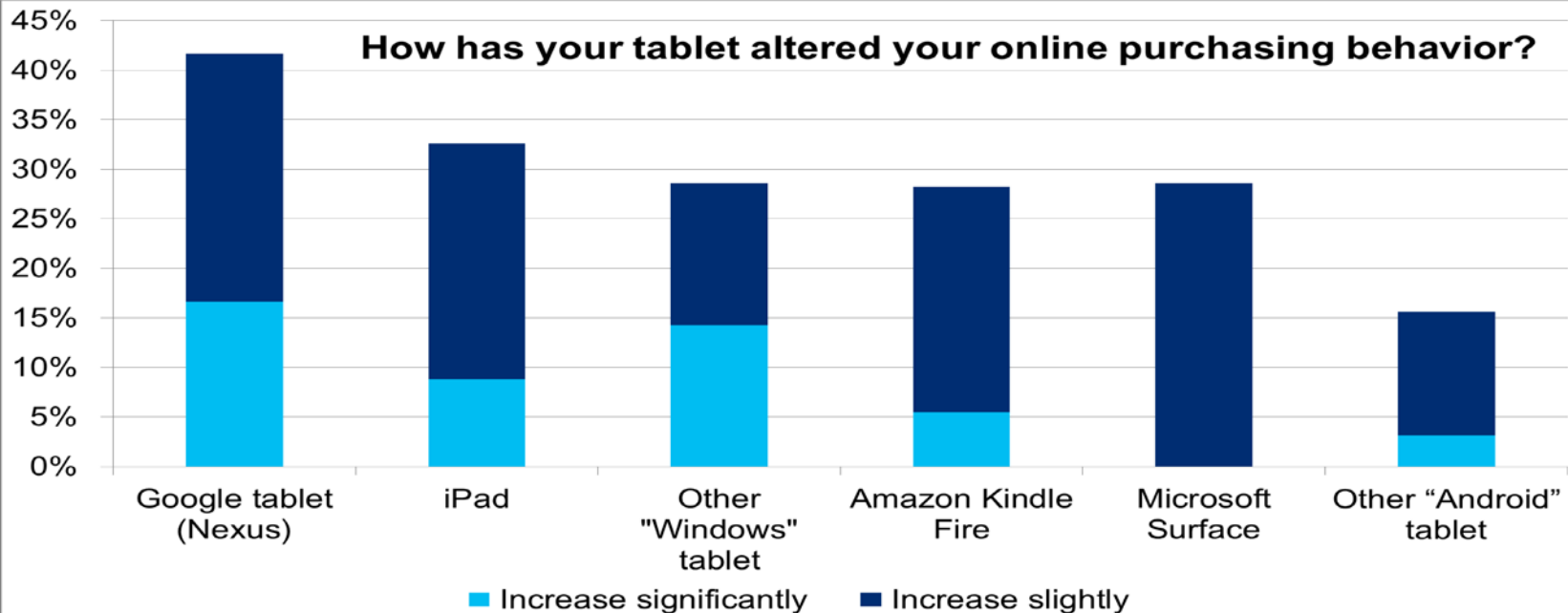
Tablet owners are more likely to shop online

Has the tablet caused your overall online purchasing of physical consumer goods or travel to change?



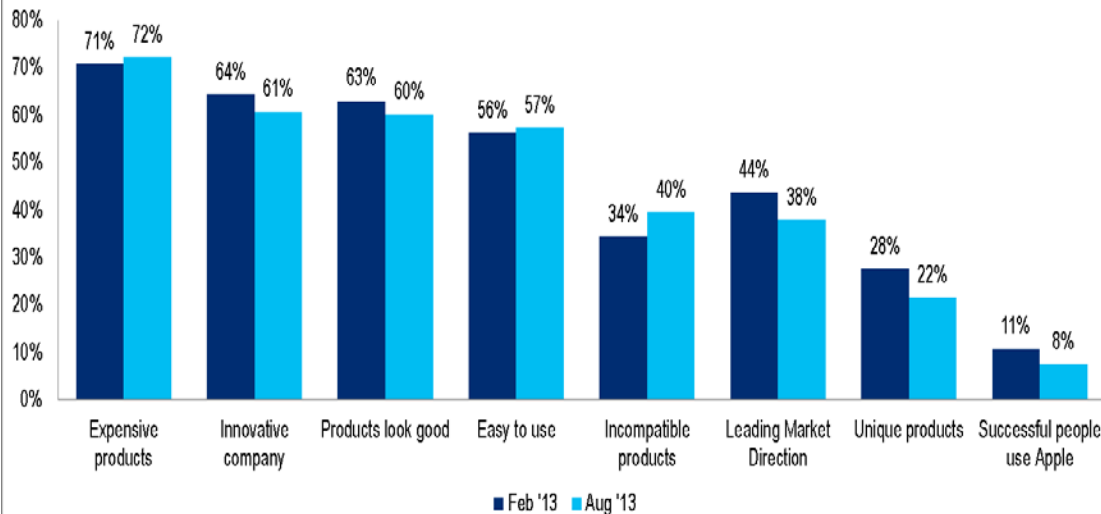
- 27% of respondents noted that tablet has driven an increase in online purchasing of physical goods.
- Kindle owners about as likely to do more eCommerce as average tablet user

How has your tablet altered your online purchasing behavior?



Apple Brand Faces Some Challenges

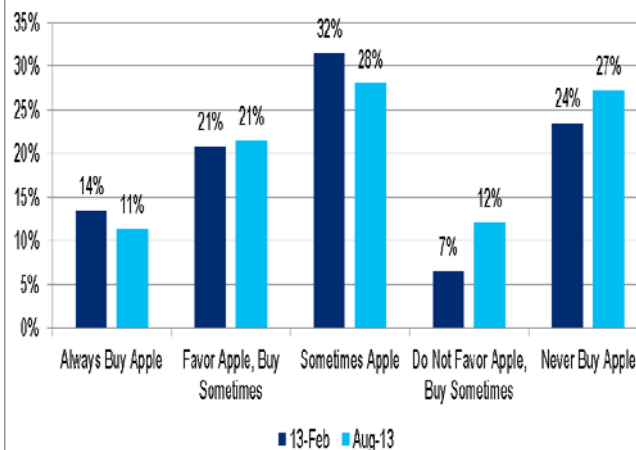
What comes to mind when thinking of Apple's Brand?



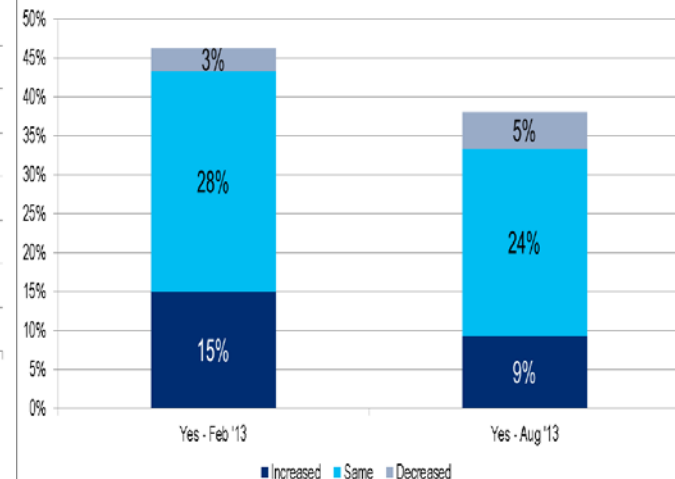
- Apple = “Expensive” but “Innovative”
 - Expensive perception increasingly offset by “less positive” other attributes
 - Intangibles like Innovation, uniqueness, exclusiveness and market leadership waning

- Less Apple brand loyalty as fewer “always” buy Apple and uptick in “never” buy Apple
- Less Apple brand consideration as <40% of respondents thought Apple’s brand mattered – vs. 46% in 2012

When buying devices, how do you in relation to Apple?

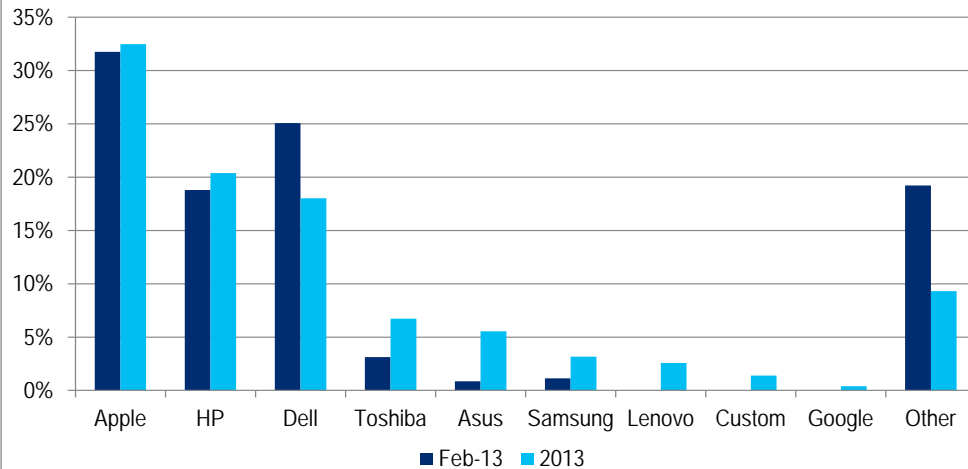


Does Apple's brand matter to you, and has it changed in the last year?



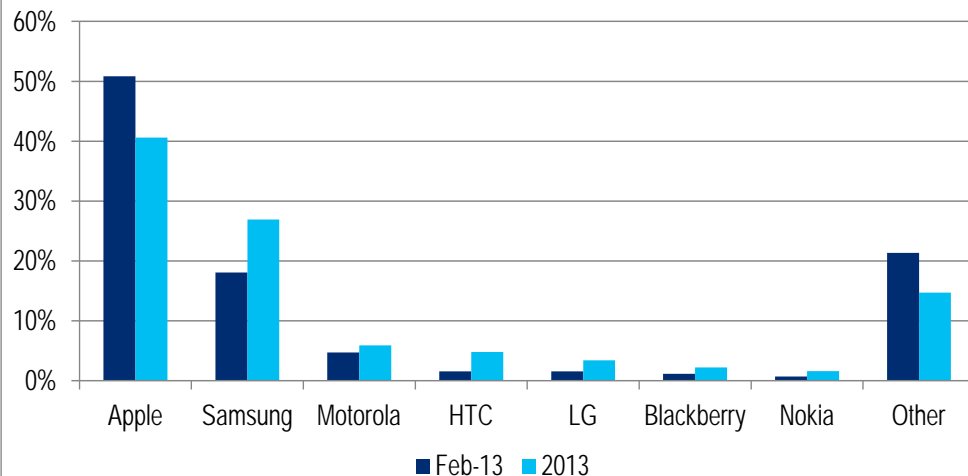
Branding Question by device category

Which company makes the best PC?

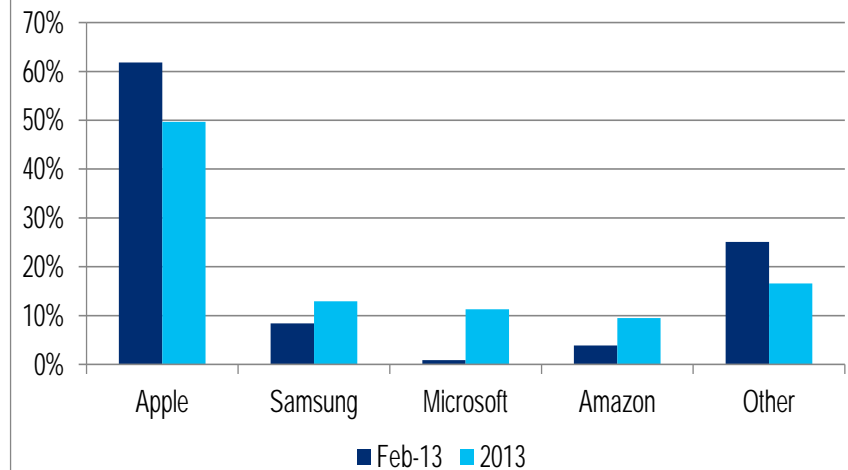


- **Apple brand has down-ticked in smartphone and tablet, up-ticked in PCs**
- **Dell brand has been hurt in PCs, Asian PC makers taking its place**
- **Samsung improvement across the board**
- **Microsoft tablet perception has improved (although hasn't driven purchasing)**

Which company makes the best smartphone?



Which company makes the best tablet?



Appendix

Appendix 1: What is Normal Seasonality?

Historical QOQ Growth Rates		Past 5 Years	
		Mean	Median
Desktop	1Q	(8%)	(10%)
	2Q	(0%)	1%
	3Q	4%	3%
	4Q	1%	0%
Notebook	1Q	(10%)	(11%)
	2Q	0%	(1%)
	3Q	17%	14%
	4Q	4%	1%
DTP + NTBK	1Q	(9%)	(8%)
	2Q	(0%)	(1%)
	3Q	10%	11%
	4Q	3%	(0%)
Tablets	1Q	(30%)	(30%)
	2Q	65%	65%
	3Q	27%	27%
	4Q	65%	65%
Smart Phones	1Q	(2%)	(3%)
	2Q	7%	6%
	3Q	16%	13%
	4Q	22%	20%
Total Handsets	1Q	(4%)	(2%)
	2Q	5%	4%
	3Q	7%	7%
	4Q	3%	4%
TVs	1Q	(26%)	(26%)
	2Q	11%	12%
	3Q	11%	13%
	4Q	30%	27%

Desktops are soft in Q1 due to new corporate IT budgets being determined

Notebooks are strongest in Q3 due to back to school demand

Tablets are strongest in Q4 due to Christmas and holiday shopping

Smart phones are strongest in Q3 and Q4 due to back to school and Christmas and holiday shopping

TVs are strongest in Q4 due to Christmas and holiday shopping

Appendix 2: Citi's Global PC Model

Tablet Growth Remains Strong at 66% growth in 2013 and 38% in 2014 which significantly outperforms both portable and desktop PC trends per Citi estimates

		Citi Research		IDC as of 8/30/13		Comments
		Units (millions)	Y/Y	Units (millions)	Y/Y	
2012	Desktop	148	(4%)	148	(4%)	PCs ended down 4% in 2012 compared to mid-single digit growth expected in the beginning of year.
	Portable	201	(4%)	201	(4%)	
	Total Client PC	349	(4%)	349	(4%)	
	Tablets	144	89%	144	89%	
	Total Units	511	10%	511	10%	
2013	Desktop	136	(8%)	134	(9%)	Compared to IDC, Citi is more cautious on PCs in 2013-2015. But more positive on tablets given growth in white-box market. Mix shift to tablets helps total unit growth.
	Portable	173	(14%)	181	(10%)	
	Total Client PC	309	(12%)	315	(10%)	
	Tablets	239	66%	229	59%	
	Total Units	559	9%	564	10%	
2014	Desktop	132	(2%)	130	(3%)	Assuming some modest growth given a combination of improving macro, aging installed base, and lower priced touch-enabled notebooks. Mix shift to tablets helps total unit growth
	Portable	164	(5%)	179	(1%)	
	Total Client PC	297	(4%)	309	(2%)	
	Tablets	330	38%	287	25%	
	Total Units	635	14%	615	9%	
2015	Desktop	130	(2%)	127	(2%)	Consumer PCs could continue to grow assuming continued innovation in notebook form factor, touch experience, and further reduction in ASPs. Mix shift to tablets helps total unit growth
	Portable	161	(2%)	185	3%	
	Total Client PC	290	(2%)	312	1%	
	Tablets	380	15%	332	16%	
	Total Units	679	7%	663	8%	

Denotes major investor focus items

The above is only a summary of our Global PC Model and the detailed PC model is available upon request

Appendix 3: Citi's Global Handset Model

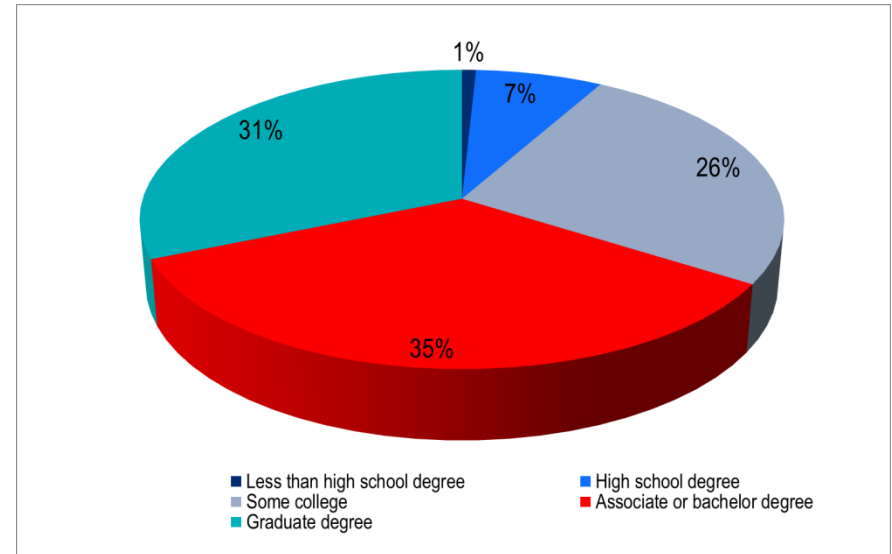
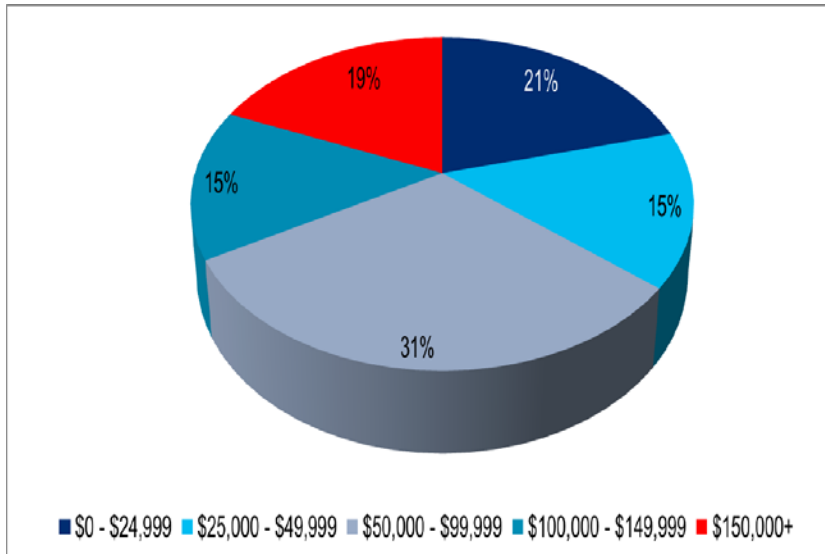
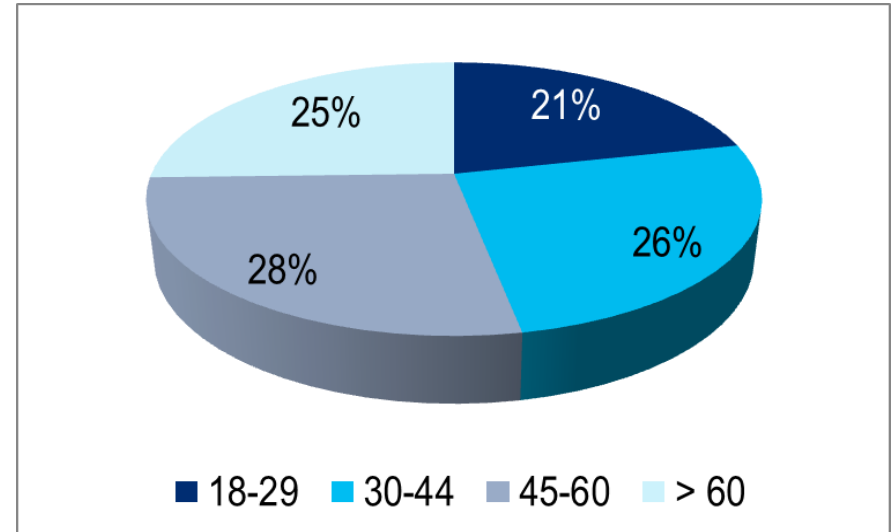
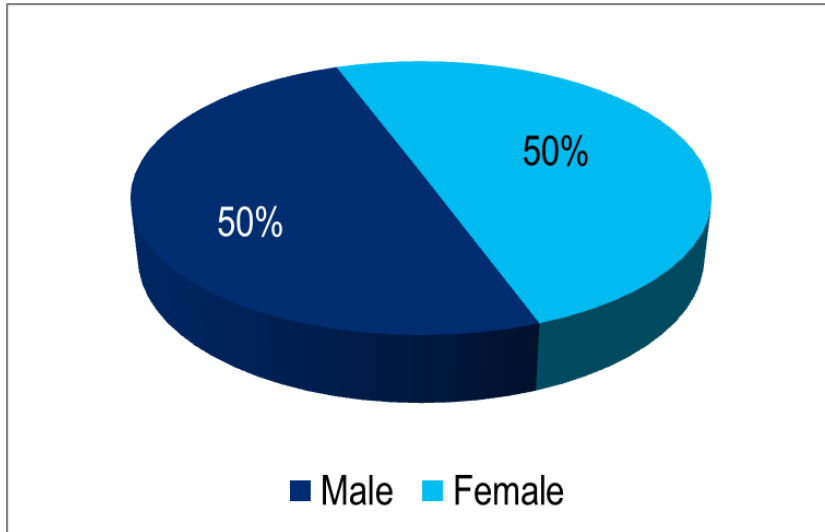
Total Unit Shipments (mn)	2010	2011	2012	2013E	2014E	2015E
Nokia	453.0	417.1	335.5	252.7	236.0	221.2
Motorola	37.2	41.4	34.3	24.0	24.6	27.6
Samsung	278.7	328.6	400.6	444.8	512.9	588.4
LG	116.7	88.0	56.5	71.3	87.1	101.6
Sony	43.1	34.2	31.1	40.6	52.3	62.6
BBRY	48.0	52.8	33.2	29.2	35.3	37.8
Apple	47.5	93.1	135.8	152.1	158.1	160.8
ZTE	28.5	56.9	63.3	55.4	62.3	69.1
Huawei	33.3	40.7	52.8	62.4	74.9	86.2
Top OEMs	1,049	1,100	1,058	1,041	1,134	1,231
-Y/Y growth	9%	5%	-4%	-2%	9%	9%
WW Shipments include white brands	1,726	1,967	1,991	2,042	2,231	2,315
-Y/Y growth	24%	14%	1%	3%	9%	4%

Total handset industry units are being driven by smart phone shipments

Smart Phone Unit Shipments(mn)	2010	2011	2012	2013E	2014E	2015E
NOK- Converged Device	100.3	77.3	35.0	32.6	42.2	47.3
BBRY	48.0	52.8	33.2	29.2	35.3	37.8
Apple	47.5	93.1	135.8	152.1	158.1	160.8
Motorola	13.7	18.6	20.6	15.6	17.6	21.1
Samsung	24.9	97.2	212.3	321.3	446.9	558.7
Sony	10.3	19.6	29.9	40.6	52.3	62.6
LGE	6.5	20.2	26.2	50.0	72.6	92.2
ZTE	1.8	10.5	30.0	43.0	58.0	70.0
Huawei	2.3	15.6	31.8	45.4	61.8	78.4
Top OEMs	276.9	423.9	523.7	667.7	852.6	1011.7
Y/Y growth	83%	53%	24%	28%	28%	19%
WW Converged Device Shipments	320.0	487.0	744.7	1127.9	1411.9	1614.2
Y/Y growth	70%	52%	53%	51%	25%	14%

The above is only a summary of our Global Handset PC Model and the detailed Handset model is available upon request

Appendix 4: Demographics of Respondents (all US)



Citi Research survey collection partner: SurveyMonkey

The data for this survey was collected using SurveyMonkey Audience. Information on how respondents are recruited to SurveyMonkey is available here:<http://svy.mk/t3l60A>. The SurveyMonkey Audience main website is available here:<http://svy.mk/slR9Sy>.

Appendix A-1

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12 Month Rating			Relative Rating		
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