

Technology Research

October 22, 2012



Wireless Technology

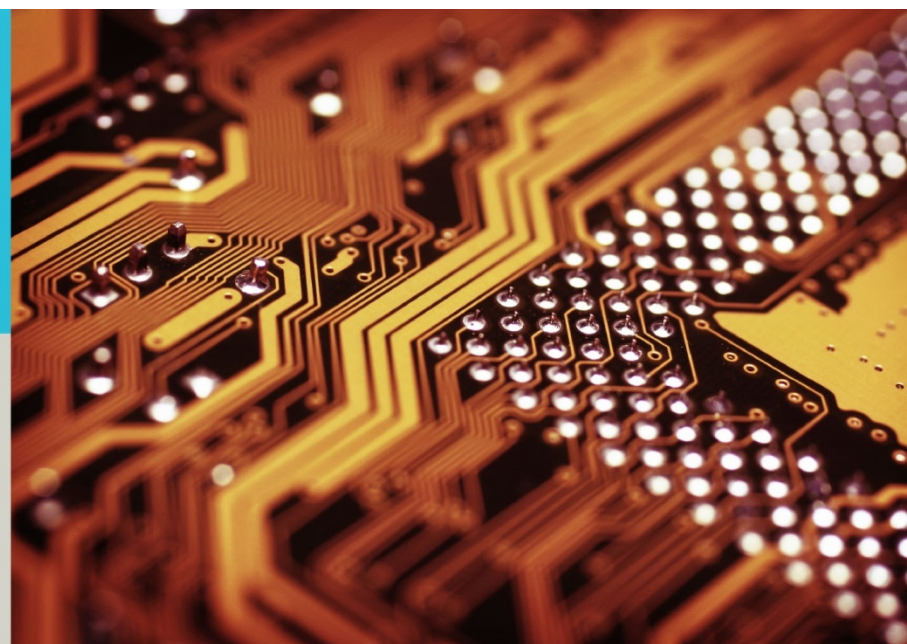
Q3'12 Mobile Developer Survey

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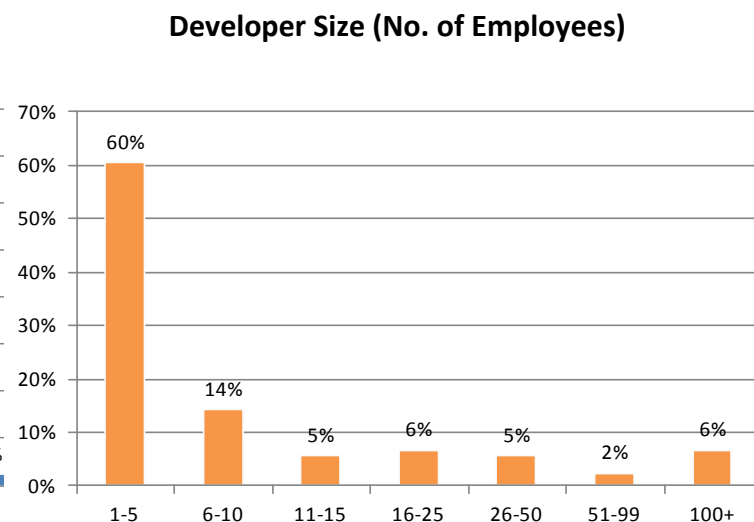
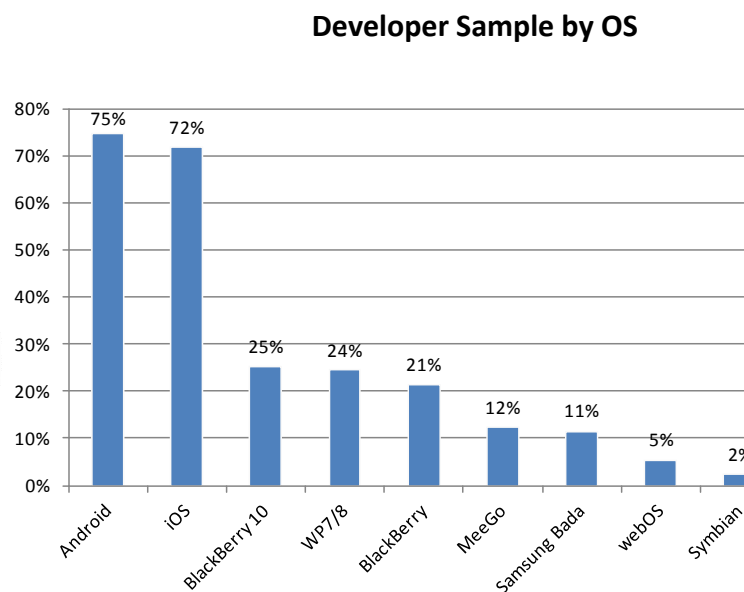
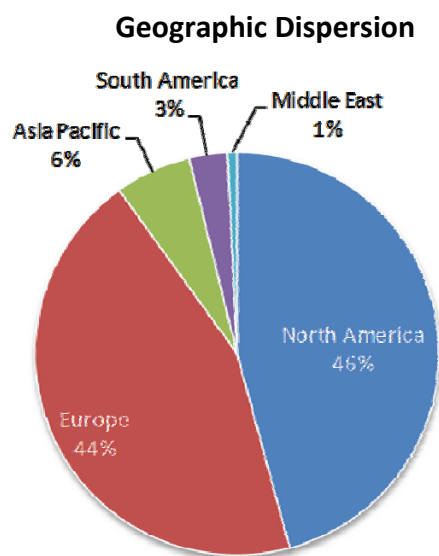
Please refer to Appendix – Important Disclosures and Analyst Certification on pages 18-21.



Survey Background



- **Participants.** We contacted 4,300 mobile app developers and received over 130 complete or semi-complete responses. 60% of the developers we contacted worked at 1-5 person operations. 74% had 1-10 employees.
- **Geography.** 46% of our participants were located in North America, with 44% in Europe, 6% in the Asia Pacific region, 3% in South America, and 1% the Middle East.
- **Large Android and iOS contingents.** As with past surveys, our sample included sizeable Android and iOS contingents. The average number of smartphone platforms that our sample of developers supported was 2.5, consistent with our previous surveys.

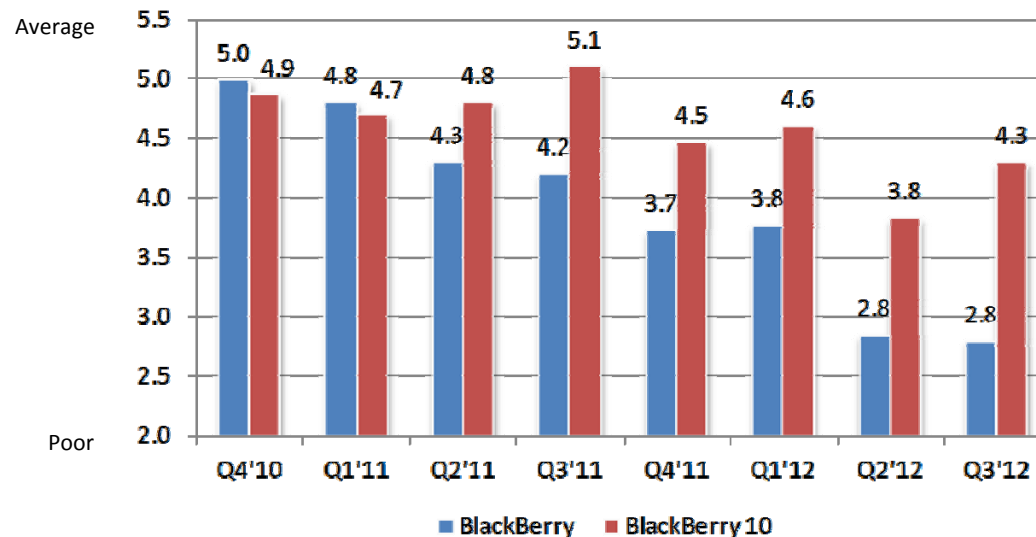


A Sliver of Hope for BlackBerry 10?



- **BlackBerry 10 outlook slightly better.** Developers' long-term view of BlackBerry 10 improved slightly sequentially this quarter, increasing from 3.8 to 4.3, though still down from previous quarters. We attribute this improvement in part to BlackBerry Jam series of events that RIM put on across the globe.
- **Core BlackBerry OS outlook still weak.** Unsurprisingly the outlook for BB OS continues to be weak. We would be surprised if the developer outlook improves going forward as the company transitions its focus toward BB10.

What is the long-term outlook for BlackBerry OS and BlackBerry 10? (All developers)

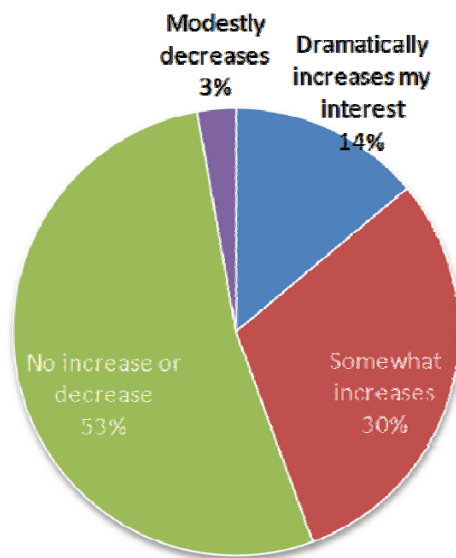


Nokia 920 Most Popular WP8 Device Among Developers

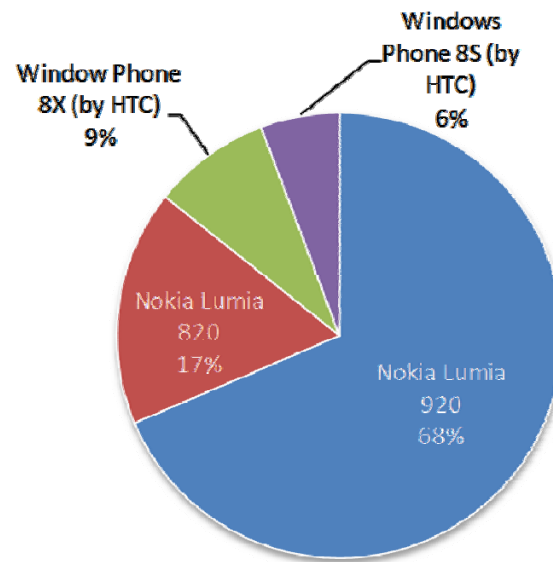


- **Nokia still the top Windows device.** With the release of the Windows Phone devices from HTC, we wondered whether Nokia could lose favor in the WP8 ecosystem. However, among Wp7/8 developers, 68% think that the Nokia Lumia 920 will draw the most new users to the WP platform. Additionally, 44% of WP7/8 developers indicated that the Lumia 920 somewhat or dramatically increased their interest in the WP8 platform.
- **WP7/8 outlook softens.** Despite the interest in the Lumia 920, the long-term outlook for WP7/WP8 declined this quarter among all developers and among current WP7/8 developers, which we suspect may be due to lackluster early sales.

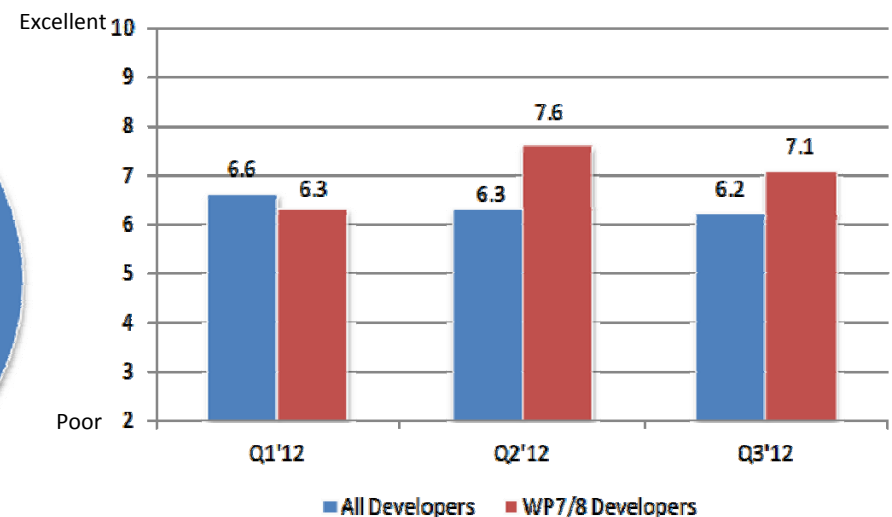
Does the announcement of the Lumia 920 increase your interest in developing for Windows?



Which device do you think will draw the most new users to WP8?



What is your long-term outlook for WP7 and WP8? (All developers vs. WP7/8 developers)

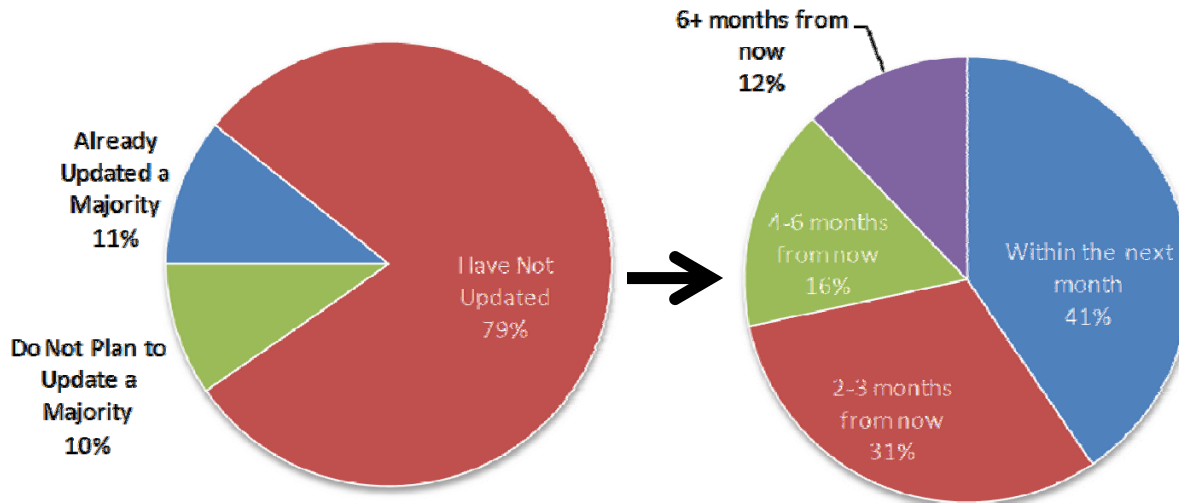


Apple Developers Supporting New 4" Screen

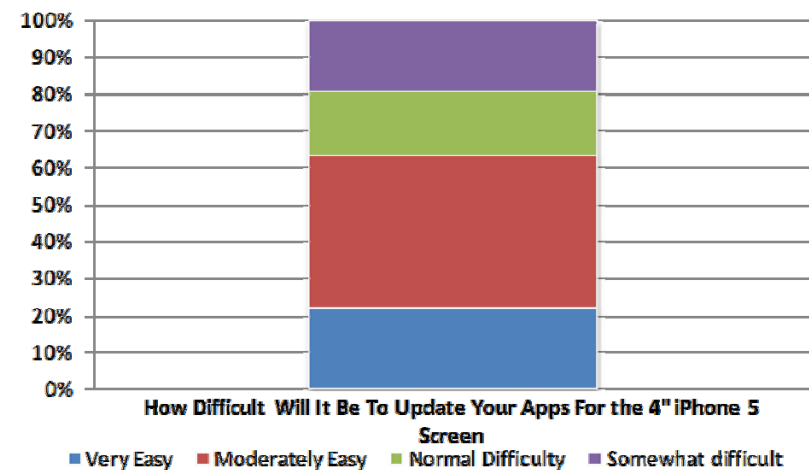


- **Most developers will update apps for new screen size.** 90% of developers we spoke with indicated that they either will or have updated a majority of their apps for the new 4" iPhone screen size. Notably, 11% of developers indicated that they already have updated a majority of their apps.
- **Letterboxed apps mostly gone by December?** If developers' predictions about when they will update apps are correct, we would expect roughly 50% of apps to be updated by the end of October and roughly 80% to be updated by the end of December. We would note that developers who have dropped out of the community and left "orphaned" apps behind are likely not represented by our survey, which could lower the actual percentage of apps that get updated.

Apple Developers: Have you updated your iOS apps for the new 4" screen on the iPhone 5



How difficult will it be to update your apps for a 4" screen?

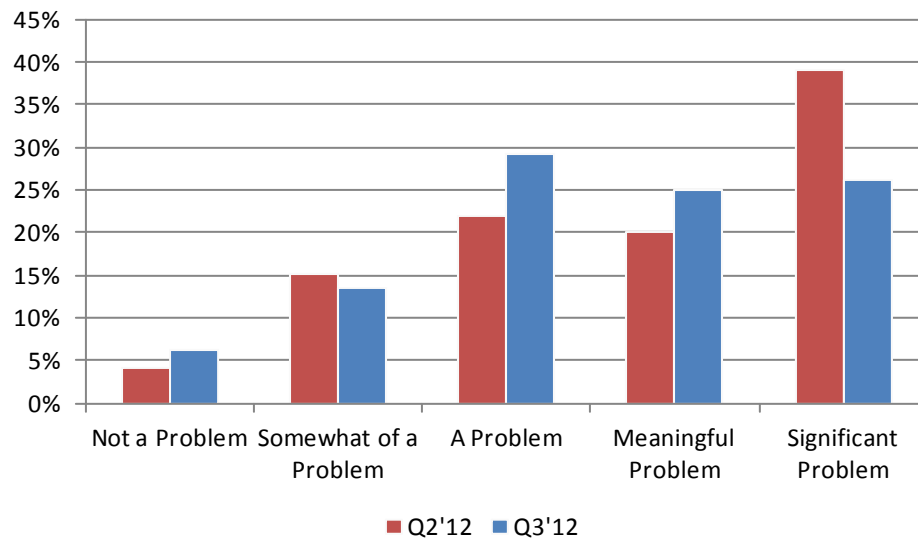


Android Fragmentation Improving, but Concerns Remain

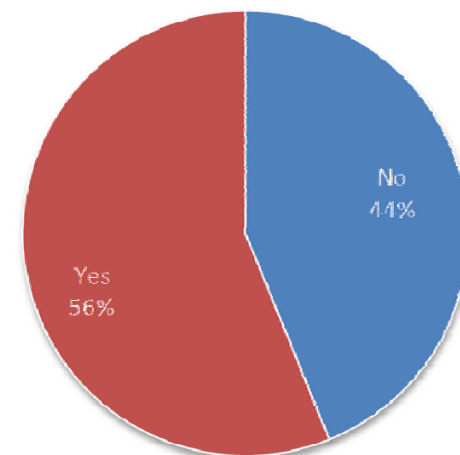


- **Fragmentation remains a concern.** 51% of developers we spoke with responded that Android fragmentation was a meaningful or significant problem, down from 59% last quarter. We view the continued fragmentation of the Android system as a disadvantage, though it doesn't appear to have impacted sales.
- **Amazon App Store porting update.** Notably, 56% of Android developers stated that they are re-submitting apps to the Amazon store, which could be viewed as encouraging. On the other hand, that leaves 44% of Android developers who are not re-submitting apps to Amazon, limiting Amazon's overall app. opportunity.

How big of a problem is Android fragmentation?



Do you re-submit Android apps to the Amazon App Store?

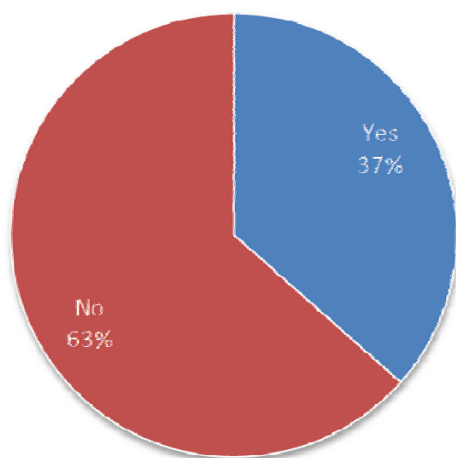


Apple Maps: Mixed Data

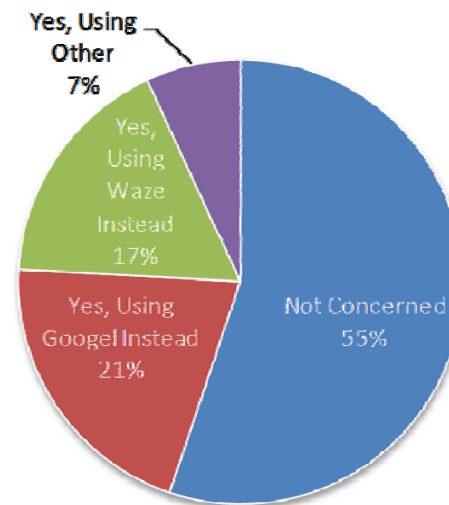


- **Despite press coverage, majority of developers not worried about Apple mapping data though some are.** 37% of developers indicated that they use mapping data as a part of their applications. Of this cohort, 55% were not concerned about Apple's mapping data, though a sizeable number of affected developers are using other map data.
- **Waze and Google are top alternatives.** Of the concerned developers, Google and Waze were top alternative source of mapping data.

Do you develop apps that use mapping data?



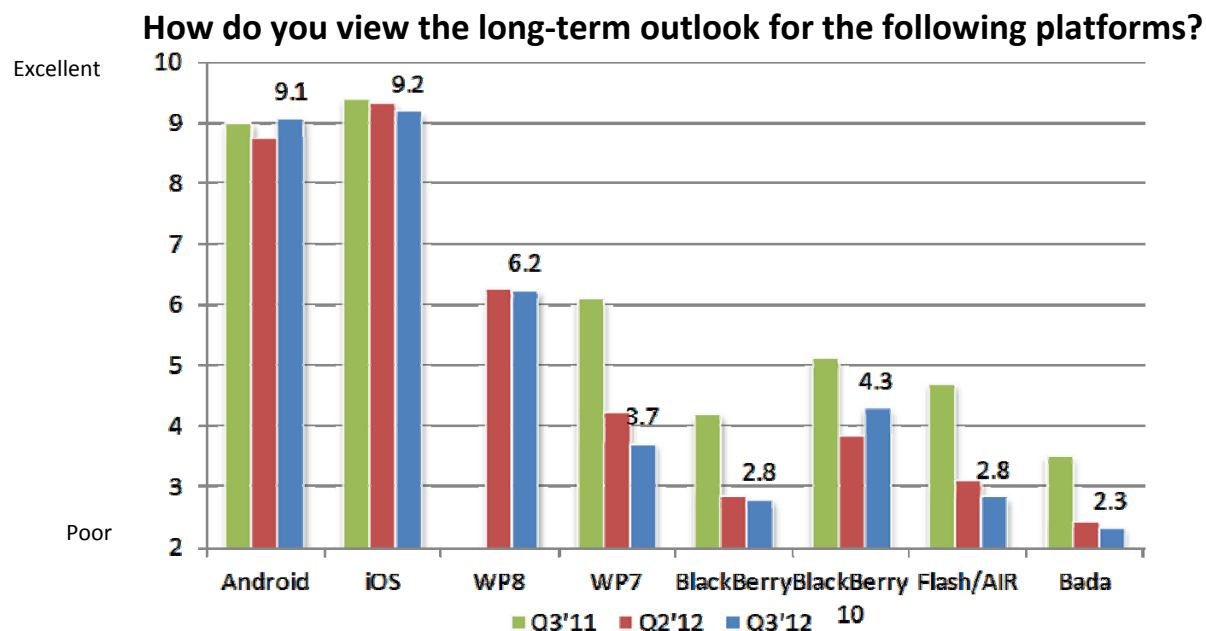
Are you concerned that Apple's new map data will be weaker than what Google provided?



Long-Term Outlook: iOS and Android Still Dominate



- **iOS and Android hold top spots.** Unsurprisingly, iOS and Android continue to lead other software platforms in terms of long-term outlook.
- **WP8 maintains position as third OS, WP7 continues decline.** WP8 maintained its position as the platform with the third-best long-term outlook, holding flat from Q2. The outlook on WP7 continued to slide this quarter, though we find that unsurprising in the face of the coming shift to WP8 by many hardware manufacturers.
- **BB 10 recovers.** The outlook on BlackBerry 10 improved this quarter after several quarters of flat to down trends. We attribute the improvement to the BlackBerry Jam tour undertaken by RIM.



New Quantitative Questions



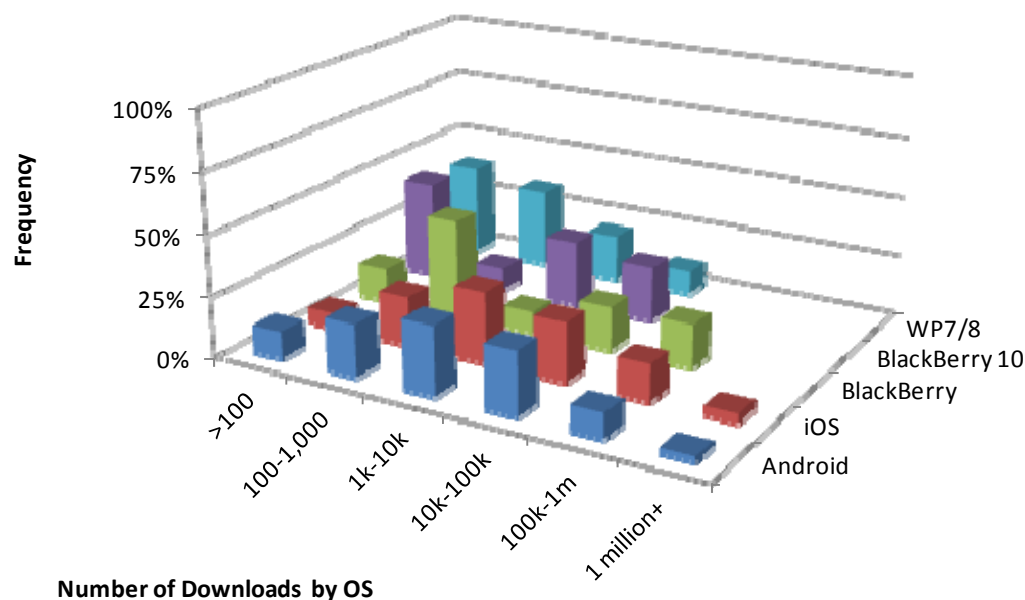
- This quarter we asked a series of new quantitative questions focusing on downloads, revenue, new app starts, etc.
- Out of respect for our developers' privacy, we asked for and display the data largely in percentages which mask individual responses.
- Additionally, we are not displaying data for platforms for which we believe our sample size is too small to accurately reflect the actual developer base.

Monthly Downloads by App Store



- **How to read this chart.** This chart represents the number of downloads that responding developers have per platform (e.g., 11% of Android developers who responded to our survey indicated that they have 1-5 apps).
- **The 10K barrier.** The responses we received indicate that most developers, even on the most popular platforms, do not get over the 10K monthly download barrier. 43% of iOS developers achieved greater than then 10K monthly downloads, followed by 38% of Android, 36% of BlackBerry, 23% for BB10 and 10% for WP7/8.
- **iOS and Android breaking 1 million.** Only Android and iOS developers reported achieving 1 million downloads per month on average. As a percentage of our total developer base, less than 4% of respondents broke the 1 million download mark.

How many monthly downloads do you get by app store?

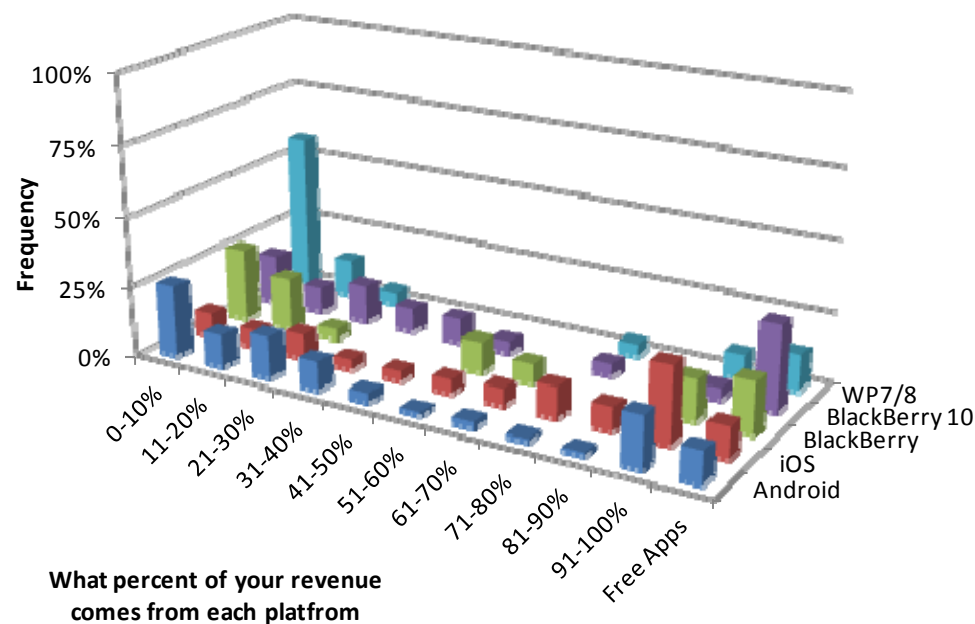


Percent of Revenue by App Store



- **How to read this chart.** This chart represents the percentage of revenue that responding developers make per platform (e.g., 27% of iOS developers who responded to our survey indicated that they make 91-100% of their revenue from iOS).
- **WP7/8 Not generating significant revenue.** 57% of WP7/8 developers that responded to our survey indicated that they make 0-10% of their total revenue from WP7/8. Clearly the platform is still in its early growth stage. We would note that our WP7/8 developer sample is small and could be skewed as a result.
- **BlackBerry 10, free apps reign.** Despite the common perception that Android Apps are almost always free, 30% of BB10 developers indicated that their apps are free, when compared with just 11% for Android.

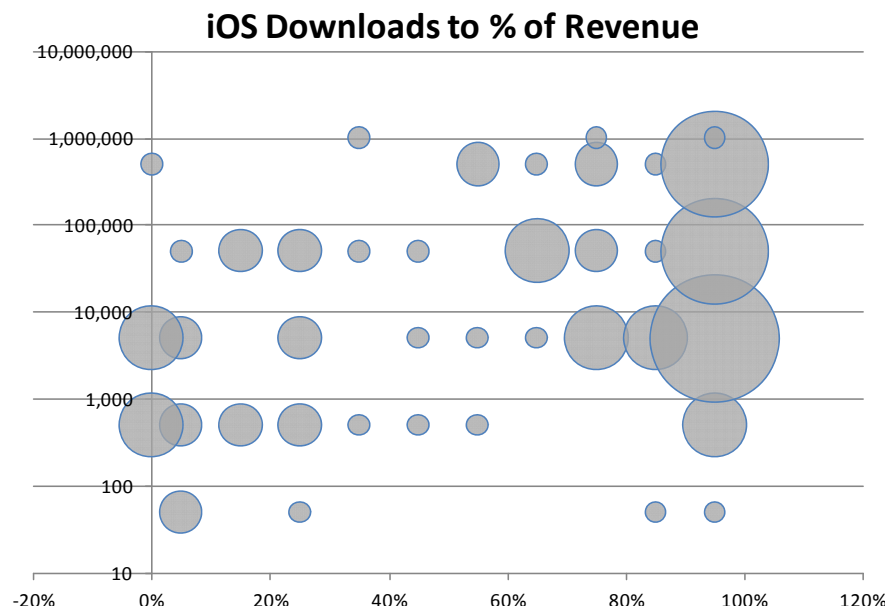
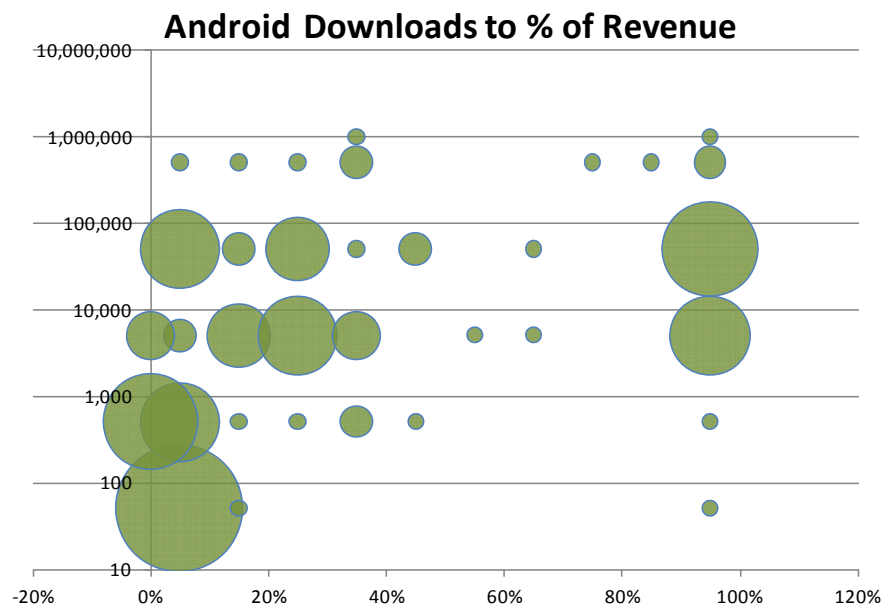
What percent of your revenue comes from each Platform?



Comparing App Downloads to Revenue Generation



- **How to read these charts.** The X-axis represents the percent of revenue that a developer receives from a platform. The Y-axis represents the number of downloads the developer has received in the last 30 days from the same platform. The width of the bubble represents number of developers who picked the same X and Y options.
 - i.e., A small bubble in the top right hand corner = few developers receive a lot of downloads and get a high % of revenue from a specific platform.
- **Android.** A significant number of Android devs who receive 10K-100K monthly downloads still earn a small percentage of their revenue from the platform. This can be seen in the grouping of large bubbles along the Y-axis. This trend largely supports the popular conception that Android users download a lot of apps, but are less interested in paying for the experience.
- **iOS.** In contrast to Android, iOS developers who break into the 10k-100k download bucket are more likely to earn nearly 100% of their revenue from the platform.
- Note, 0% of revenue is equivalent to "My apps are free," and bubble width is not directly comparable between platforms.

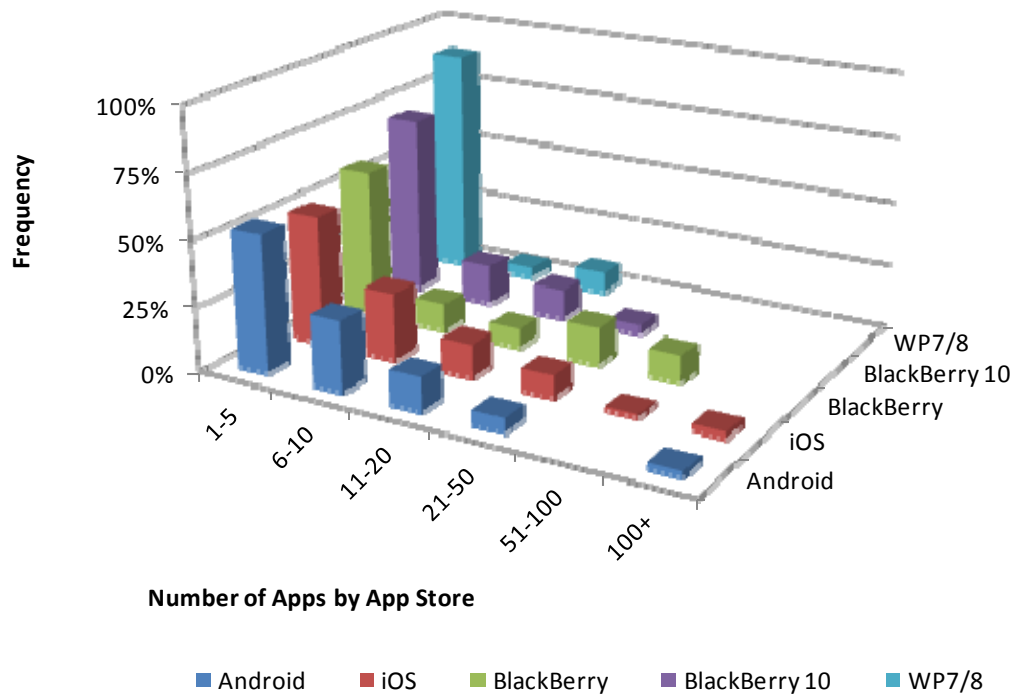


Apps Per Developer Per App Store



- **How to read this chart.** This chart represents the number of apps that responding developers have per platform (e.g., 88% of WP7/8 developers who responded to our survey indicated that they have 1-5 apps).
- **Number of Apps correlated to lifespan of platform.** It seems obvious to point out that iOS and Android have the most developers in the 100+ bucket because those app stores are well known to have the largest app ecosystems. However, we would point out that BlackBerry OS has the largest percentage of developers in the 21-50 and 51-100 buckets. This, we believe, is due to long lifespan of the platform, which has given legacy developers time to create many apps for the ecosystem. It is imperative for the health of BB10 that RIM is able to convince legacy BBOS developers to move over to BB10.

How many apps do you have in each app store?

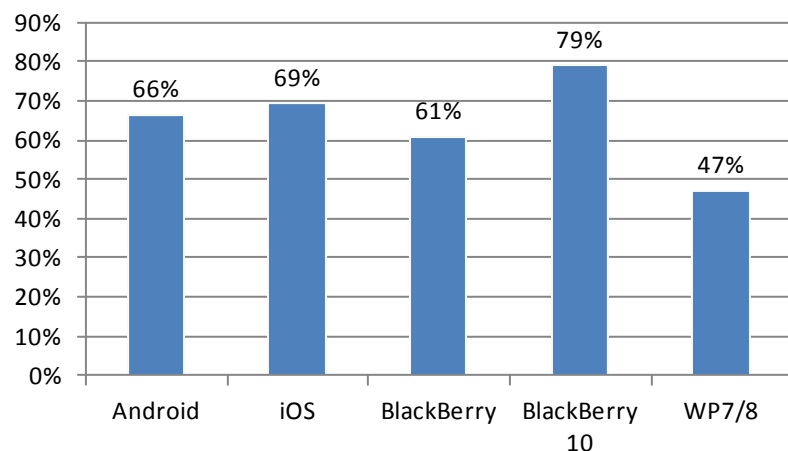


New App Starts Per Store

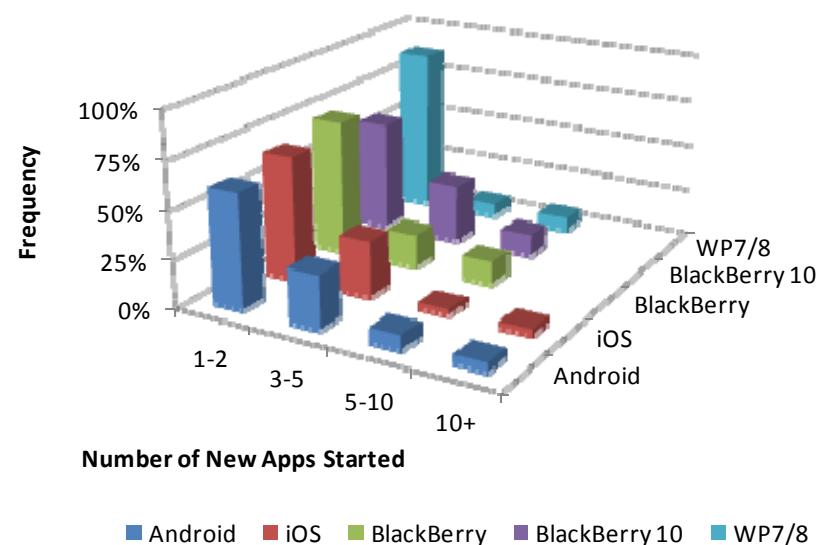


- **BlackBerry 10 Generation Strong, WP7/8 Weak.** 79% of BlackBerry 10 developers indicated that they had started a new app in the past three months, above all other platforms. That said, the company did just release its SDK to developers in May, which could be the driver of recent starts. 47% of WP7/WP8 developers indicated that they started a new app in the last three months, which may be caused by the lack of a public WP8 SDK.
- **Android and iOS likely still separating from the pack.** Interestingly, more iOS and Android developers indicated that they started 5+ apps than competing platforms. This could be driven by the fact that large developer companies gravitate towards more entrenched ecosystems. Regardless of the cause, the greater number of starts for iOS and Android will likely expand the considerable gap in app store size between them and the runners up.

Have you created a new App in the previous three months? Yes, I have.



How many new apps have you started in the past three months?

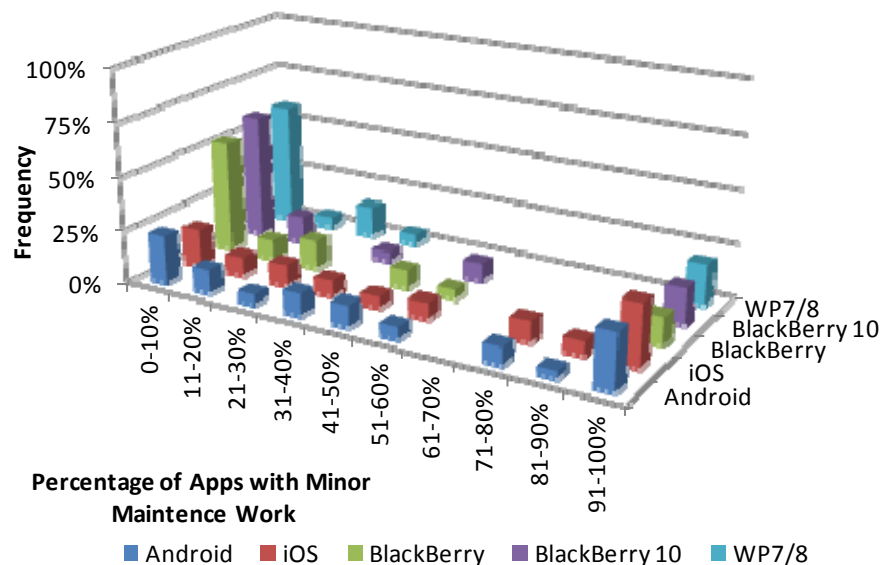


Maintenance

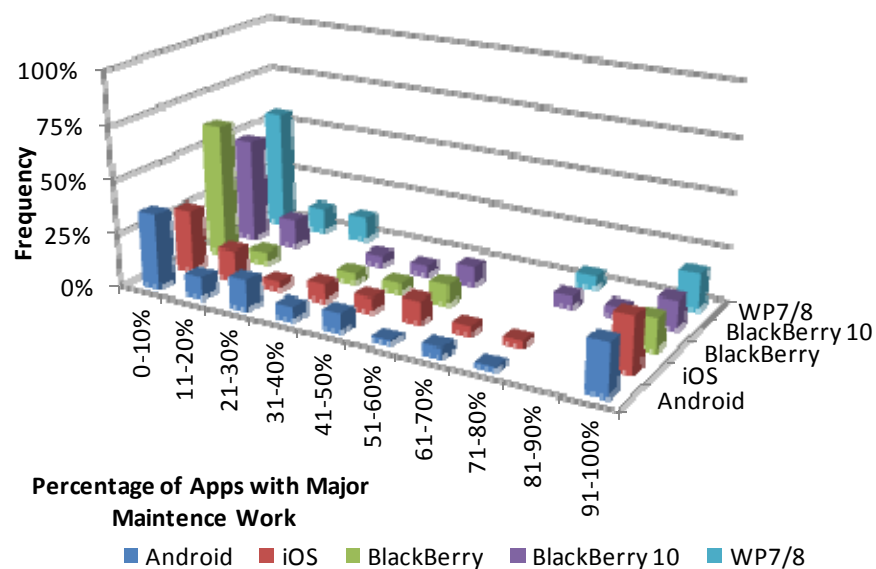


- **How to read this chart.** This chart represents the percentage of developers that conducted minor and major maintenance on their apps in the past 6 months (e.g., 26% of Android developers who responded to our survey indicated that they have done minor maintenance on 91-100% of their Android apps in the past six months).
 - Minor maintenance = bug fixes, small aesthetic changes, etc.
 - Major maintenance = additional features, add-ons, etc.
- **Android and iOS renewed frequently.** Both Android and iOS developers indicated that they frequently conduct minor and major maintenance on a majority of their apps, while BBOS, BB10 and WP7/8 are receiving infrequent updates.

For what percentage of your apps have you done minor maintenance work in the last 6 months?



For what percentage of your apps have you done major maintenance work in the last 6 months?



Valuation



- **Apple (AAPL-\$665.24-Outperform)**

- **Current valuation.** AAPL is currently trading at 14.7x our calendar 2012 EPS estimate and 11.7x 2013. That compares to the S&P 500 at 12.8x '13E. Ex. current cash, AAPL is trading at 12.0x our calendar 2012 EPS estimate and 9.6x 2013. The stock also trades at a 1.6% dividend yield.
- **Target price.** Our \$740 target price is based on 13x our calendar 2013 EPS estimate of \$57.02. A 13x multiple puts it at a 1x premium to the S&P 500 average, which we believe is justified by higher-than-average growth.

- **HTC(2498.TW-\$255.50-Neutral)**

- **Current valuation.** HTC is currently trading at 10.8x our 2012 EPS forecast and 10.3x 2013, vs. the big cap tech group at 10x '13E.
- **Target price.** Our NT\$275 target price is based on 11x '13E EPS, which puts it roughly in line with the big-cap tech group at 10x '13, which we view as fair in light of increasing competitive risks and uncertainties.

- **Nokia (NOK-\$2.80-Underperform)**

- **Current valuation.** Nokia is currently trading at 0.2x our 2012 revenue forecast and 0.2x 2013, compared to ERIC, HTC and RIM, which are trading at 0.7x, 0.6x and 0.2x '13E, respectively.
- **Target price.** Our new \$2 target price is based on a combination of projected 2013 net cash per share, assumed patent value, 0.5x Location & Commerce revenue, and 0.25x proportionate NSN revenue. Our patent and revenue assumptions are based on public peers and recent transactions.

- **Research In Motion (RIMM-\$7.84-Underperform)**

- **Current valuation.** RIM is trading at an EV/revenue ratio of 0.2x our fiscal 2013 revenue forecast, vs. Apple, HTC and Nokia at 2.1x, 0.6x and 0.2x calendar '13E, respectively.
- **Target price.** Our \$7 target price is based on a sum-of-the-parts approach that includes \$4 per share in current cash and \$3 in patent value.

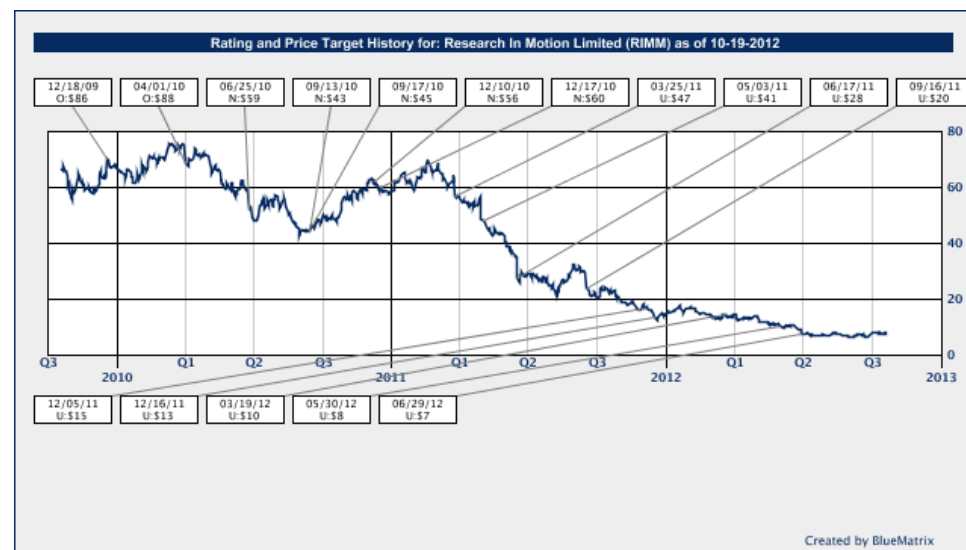
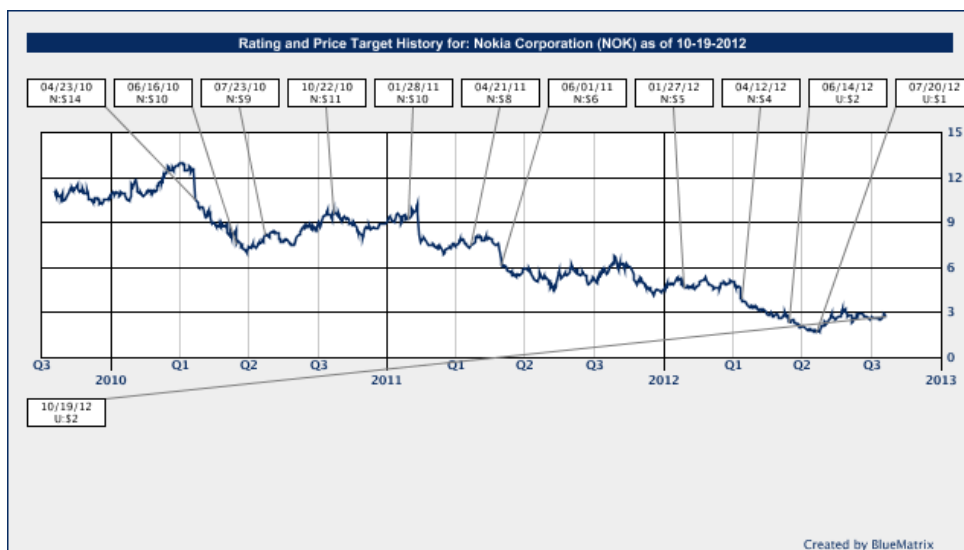
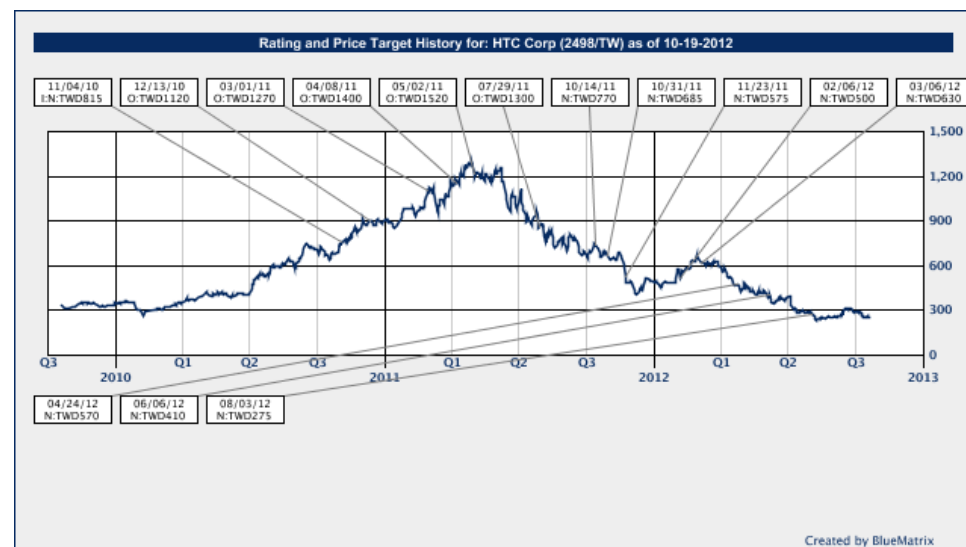
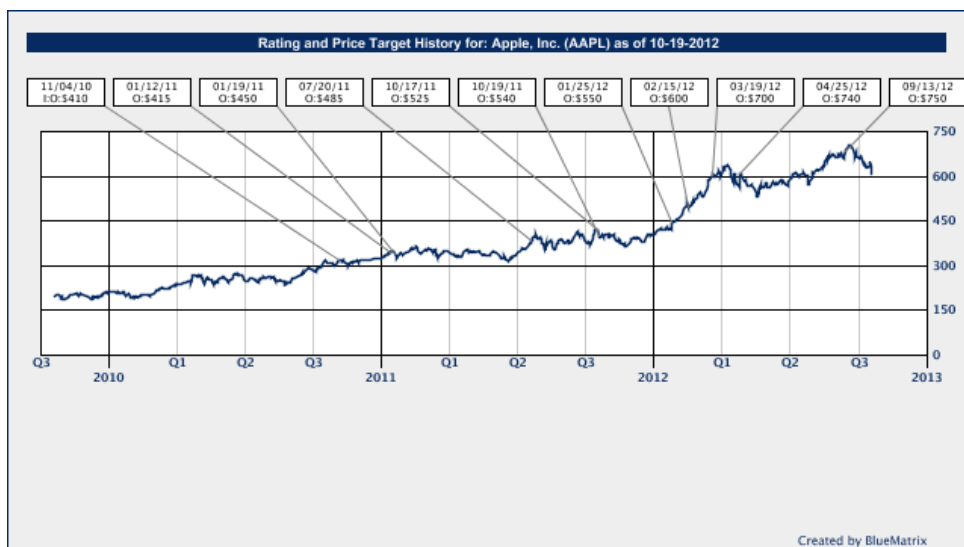
Risks



- **Apple (AAPL-\$665.24-Outperform)**
 - Increasing Competition
 - Dependency on iPhone
 - Patent Litigation
- **HTC(2498.TW-\$255.50-Neutral)**
 - Increasing Competition
 - Android Fragmentation
 - Patent Litigation
- **Nokia (NOK-\$2.80-Underperform)**
 - Patent Value
 - Cash Balance
 - Acquisition Target
- **Research In Motion (RIMM-\$7.84-Underperform)**
 - BB10 Launch
 - Acquisition Target

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