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DEVELOPER ECONOMICS Q1 2014
STATE OF THE DEVELOPER NATION

The de-facto research series tracking the trends in the app economy

In-depth analysis and insights into the key issues of the app economy, including platform prioritisation, going beyond tablets, trending revenue models, and making the right choices in developer tools.

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About VisionMobile ™

VisionMobile™ is the leading research company on the apps economy and mobile business models. Our research and workshops help clients compete and win in their rapidly changing industries.

VisionMobile Ltd.
90 Long Acre, Covent Garden,
London WC2E 9RZ
+44 845 003 8742

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Key Messages

Developer Economics 6th edition represents the largest ever survey of app developers. The State of the Developer Nation report captures app market trends from over 7,000 app developers from 127 countries, from the US and China to Kenya and Brazil.

The app economy

The global app economy was worth $68 billion in 2013 and is projected to grow to $143 billion in 2016. Out of a total global mobile developer population of 2.3 million individuals in 2013, Asia has the most app developer citizens at 760,000 individuals.

Ecosystem wars

Six years on, the mobile ecosystem wars are drawing to a close with Android and iOS capturing over 94% of smartphone sales in Q4 2013.

Android continues to dominate Developer Mindshare with 71% of developers that target mobile platforms, developing for Android.

Apple's iOS comes as a distant second at 55% of global app Developer Mindshare. iOS is strong in Europe and North America, but takes third position behind HTML5 in South Asia, South America and Middle East & Africa.

To attract developers Firefox OS, Windows Phone, Windows 8, Tizen, Jolla, or Ubuntu platforms need to first convince 69% of app developers to abandon Android or iOS from a priority platform.

HTML5 is both an app deployment platform (on-browser) and a technology for creating native apps (off-browser). 37% of mobile developers use HTML5 as a platform, i.e. to develop mobile websites, or web-apps. An additional 15% of app developers use HTML5 beyond the browser, via hybrid apps or HTML5-to-native tools.

On average, developers use 2.5 platforms at the same time, which is down from 2.9 in our Q3 2013 survey, pointing to consolidation.

There is no such thing as an average developer. Developers in the Hunters segment care for revenue, Digital Media Publishers care for reach, Hobbyists care for documentation, Enterprise IT developers care for speed and cost.

Developer loyalty

iOS commands the most loyal developers with 59% of developers that target iOS prioritising it over any other platform. For many developers the question is now about which platform to prioritise, not which platform to develop for.

The appeal of HTML5 as a priority platform for app development is restricted to those use cases where it excels: cross-screen and cross-platform deployment. HTML5 developers target 2.8 screens on average, more than Android or iOS.

iOS is the preferred platform for developers in North America and Western Europe while Android wins in every other region. The difference is especially pronounced in Asia, where 46% of mobile developers prioritise Android vs. 28% for iOS.

Connected screens

Despite the buzz around watches, TVs and thermostats, smartphones are and will remain in the foreseeable future the primary target for app developers.

Tablets are very much a "companion" development option; tablets attract 83% of app developers but just 12% of developers target tablets as their primary development screen.

Despite the flood of Android tablet sales, 52% of app developers that mainly target tablets, prioritise iOS, with Android coming in a distant second at 28% of app developers.

Revenues

60% of developers are below the "app poverty line", i.e. earn less than $500 per app per month, according to the latest Developer Economics survey.

iOS has a larger "middle class" than Android. Among developers that generate $500 - $10K per app per month, 37% prioritise iOS vs. 25% Android.

In-app advertising remains one of most popular revenue models at 26% of app developers, particularly strong on platforms where demand for direct purchases is weak, such as Windows Phone and Android.

Contract development was responsible for 56% of the app economy in 2013, as we found in our App Economy Forecasts report. More importantly, contract development is now the most popular revenue model, with 26% of app developers currently developing apps on commission.

Use of e-Commerce as a revenue model for apps grew significantly, from 5% of app developers in Q3 2013 to 8% in Q1 2014.

Median revenues of organisations involved in e-Commerce are $2,750 per app/month, by far the highest among all app revenue models that we track. The rise in e-commerce is an early signal in the shifting role of developers from innovators to value-added resellers.

In terms of developer revenues per capita, iOS maintains its momentous gap with median revenues between $500 and $1000 per app / month, much higher than the median revenues of Android developers ($100 - $200 per app / month). As Android continues to grow in mid- and low-end handset segments, we don't see the revenues for Android developers catching up with iOS anytime soon.

Developers targeting Windows 8 and Windows Phone generate the lowest revenues, with the median being between $1 and $50 per app per month. This indicates that Microsoft's focus on app catalogue size has attracted a hoard of Hobbyist and Explorer developer segments.

Developer tools

Enterprise IT developers are relatively slow in adopting mobile app development tools, with 25% not using any tool - clearly an opportunity for the 100s of tool vendors targeting corporate budgets.

iOS has the most sophisticated developers, based on tools use. A competitive tools portfolio is vital for a platform to attractive key developers segments - particularly Guns for Hire, Hunters and Digital Media Publishers - that will then drive a healthy app catalogue.

User analytics and cross platform tools are the two most popular developer tool categories, used by 40% and 30% of all app developers, respectively.

About Developer Economics

Welcome to the State of the Developer Nation, the 6th edition of Developer Economics research series - the highly acclaimed series by VisionMobile, tracking the latest trends in mobile development and the app economy. State of the Developer Nation provides in-depth analysis and insights into the key issues in the app economy, including platform prioritisation, developer loyalty, the future beyond tablets, trending revenue models, and making the right choices in developer tools.

The State of the Developer Nation report contains data and insights on the leading mobile platforms (Android, BlackBerry 10, HTML5, iOS, Windows Phone and Windows 8), comparing them across key metrics, such as Developer Mindshare, revenue opportunities, prioritisation across regions, adoption criteria, use of third-party tools, and most popular app revenue models. This report takes a good look at regional characteristics, showcasing how developer perceptions differ across different regions. Apart from regionality, our report also breaks up developers into eight distinct segments, based on goals and needs, and identifies key characteristics for each segment. Finally, we take a close look at the SDK economy, featuring insights into how developers use development tools and how this use varies by platform and other criteria.

We hope you'll enjoy this report and you'll find many useful insights, whether you're a developer or not! If you have any questions or comments, you can get in touch at matos@visionmobile.com. You can also find an online version of our report at www.DeveloperEconomics.com/go

AndreasP, Matos, Christina, AndreasC, Dimitris, Vanessa, Chris, Michael, Nick, Stijn and Mark at VisionMobile.

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Thank you!

We'd like to thank everyone who helped us reach an unprecedented number of respondents for our survey, and create this report:

Our Research Partners – Intel and Mozilla.

Our Regional and Media Partners, who are too many to number here – you know who you are!

Also, the developers and mobile insiders that took the time and interest to share their experiences with us.

Finally, special thanks to Jon Hoehler and Mbugua Njihia, who really helped us reach the African developer community!

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APP ECONOMY FORECASTS 2013-2015

Developer population, platforms, revenues, and revenue models sizing and forecasts 2013-2015

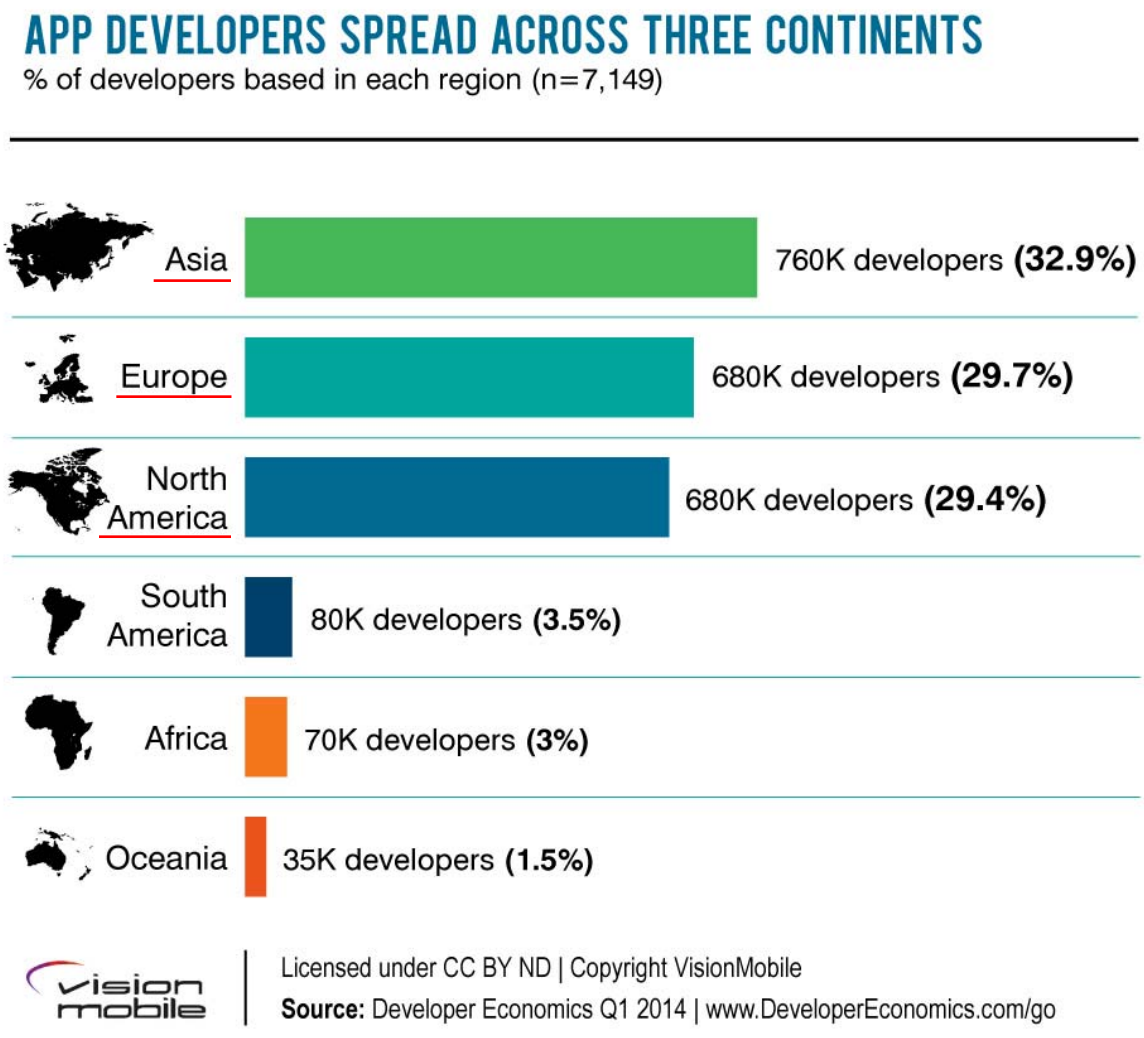
www.DeveloperEconomics.com/Forecasts

CHAPTER ONE

1. A $68 billion app economy

The global app economy was worth $68 billion in 2013 and is projected to grow to $143 billion in 2016. Out of a total global mobile developer population of 2.3 million individuals in 2013, Asia has the most app developer citizens at 760,000 individuals.

For more forecasts on developer population, platforms, revenues and revenue models see our App Economy Forecasts 2013-2015 report.



1.1. Methodology: reaching 7,000 developers

Developer Economics 6th edition is the largest ever research on app developers and trends in app development. This report is based on a large-scale online developer survey and one-to-one interviews with mobile app developers. The online survey was designed, produced and carried out by

VisionMobile over a period of five weeks between October and late November 2013. One to one interviews were conducted in November and December 2013.

The online survey received over 7,000 responses, making this the largest mobile developer survey to date. Respondents to the online survey came from over 127 countries, including major app development hotspots such as the US, China, India, Israel, UK and Russia and stretching all the way to Kenya, Brasil and Jordan. The geographic reach of this survey is truly reflective of the global scale of the mobile app economy.

The online survey was translated in 6 languages (Chinese, German, Japanese, Korean, Russian, Spanish) and promoted by 60 regional and media partners within the app development industry. As a result, the survey reached an unprecedented number of respondents, globally balanced across Europe (36.5%), Asia (32.1%) and North America (19.7%). The online survey also attracted a significant developer sample from Africa (6.6%) and South America (3.4%).

To eliminate the effect of regional sampling biases, we weighted the regional distribution by a factor that was determined by the regional distribution identified in our App Economy Forecasts (2013 - 2016) report published in July 2013, as shown in the graph above.

The survey gathered responses from developers across 15 platforms including Android, Bada, BlackBerry 5/6/7, BlackBerry 10, Chrome, Facebook, Firefox OS, iOS, Java ME, HTML5, OSX (desktop), Windows (desktop), Windows Phone, Windows 8 and Tizen. As our research focuses on mobile developers, we have excluded from the analysis all respondents that are not developing for mobile platforms.

To minimise the sampling bias for platform distribution across our outreach channels, we weighted the responses to derive a representative platform distribution. We compared the distribution across a number of different developer outreach channels and identified statistically significant channels that exhibited the lowest variability from the platform medians across our whole sample base. From these channels we excluded the channels of our research partners to eliminate sampling bias due to respondents recruited via these channels. We derived a representative platform distribution based on independent, statistically significant channels to derive a weighted platform distribution.

By combining the regional and platform weighting we were able to minimise sampling biases due to these factors. All results in the report are weighted by main platform and region.

CHAPTER TWO

2. Platform winners and losers

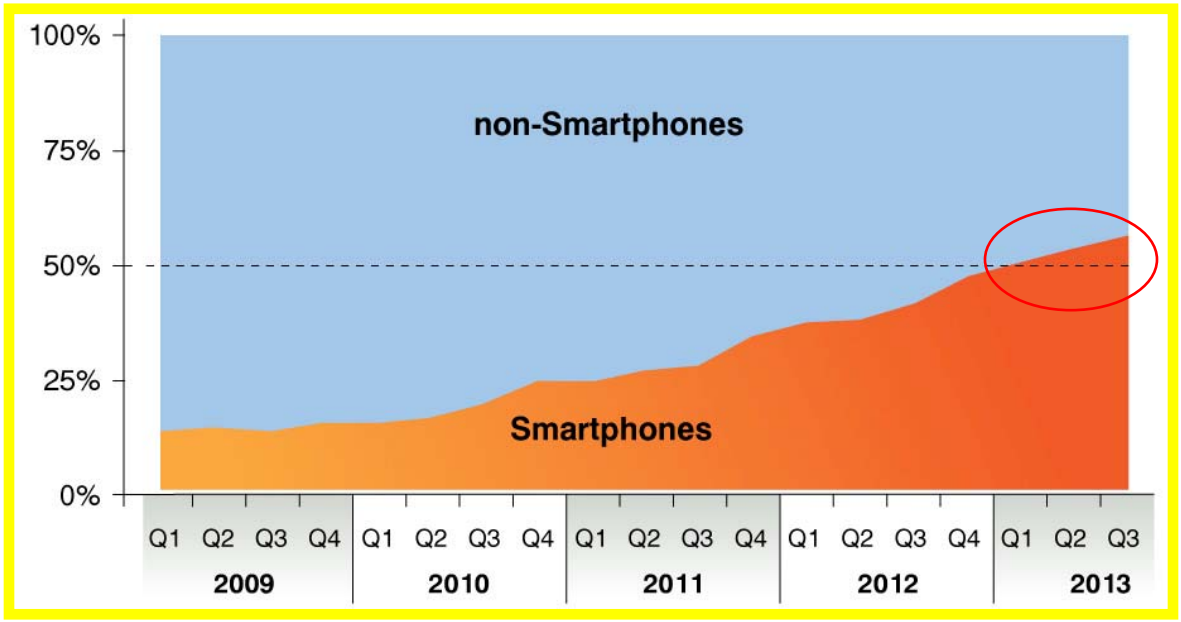
Developer Economics 6th edition is the largest ever research on app developers. This State of the Developer Nation report captures insights from over 7,000 app developers from 127 countries, from the US, China, India, Israel, UK and Russia, stretching all the way to Kenya, Brasil and Jordan. This report paints a truly reflective and accurate picture of the trends in today's global app economy.

"The first phase of mobile ecosystem wars are drawing to a conclusion with only a few wildcards left to play. The duopoly is here to stay for the next 3 years."

Developments throughout 2013 have shown that the first phase of mobile ecosystem wars are drawing to a conclusion with only a few wildcards left to play. The duopoly is here to stay for the next 3 years. Android has firmly established its stronghold with 81% of smartphone sales in Q3 2013 and is now expanding across many new "screens": Internet of Things, wearables, automotive, entertainment and education. iOS is clearly trailing behind Android in terms of user reach, but is still the most valuable platform by revenues. Windows Phone has momentarily picked up momentum during Q3 2013 while BlackBerry 10 is in trouble, having undershot its sales target by a wide margin.

During 2013, global smartphone sales exceeded those of feature phones, reaching 55% of total handset sales. In developing countries all over the world, $50 Android handsets are fast replacing feature phones and opening up new opportunities for innovation in business, commerce and education.

GLOBAL SALES: SMARTPHONES VS. NON-SMARTPHONES



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

need more data? contact our analyst team: moredata@visionmobile.com

On the handset front, Samsung, the leading Android handset maker, continues to dominate the smartphone sales market with 31% of the smartphone sales in Q3 2013. Samsung's Q4 2013 results showed somewhat reduced profits, declining 18% on a quarterly basis despite the holiday season. Samsung is facing increasing competition on both the high-end smartphone market, by Apple and on the low-end market, by a number of Chinese vendors.

In the forefront of the Android assault on the smartphone market are Huawei, Lenovo and LG, having displaced HTC from the leaderboard. HTC, had figured in the top smartphone places for a number of years but has now slipped and is facing serious troubles, following a number of bad quarters. This is indicative of the cut-throat competition among Android OEMs where opportunities for differentiation are increasingly diminishing, particularly following Google's steps to regain control over the Android ecosystem by moving several key APIs out of Android and into Google Play Services. As several key markets are maturing, most of the growth comes from the low-end part of the market spectrum where margins are low and competition is fierce.

"A healthy ecosystem - iOS or Android - is the hygiene factor for handset sales, with differentiation coming only out of a tightly integrated supply chain"

But the picture is not rosy outside the Android camp either, with two of the most prominent handset manufacturers of yesteryear either changing hands or changing direction. Nokia's handset division has been acquired by its partner Microsoft at a bargain valuation. BlackBerry is putting a brake on the revival plans for its handset division, and focusing on enterprise solutions. The writing on the wall for both Nokia and BlackBerry has been there for some time: they were caught off guard by the change in the basis of competition caused by the iPhone and Android. Today, a healthy ecosystem - iOS or Android - is the hygiene factor for handset sales, with differentiation coming only out of a tightly integrated supply chain, as we predicted two years ago in the Apple and Samsung profit recipe.

Meanwhile, Apple seems to have had a very successful iPhone 5S/5C launch, including a low cost model. At the same time, its Q4 2013 revenues grew at 13% in Q4 year-on-year, below investor expectations, and much slower than the smartphone market at 41%, pointing to a product innovation gap post-iPad. Apple has also finally struck a deal with the world's largest carrier, China Mobile, which boasts more than 750 million subscribers. The deal is likely to give a boost to iPhone sales in China, an increasingly important smartphone market due to sheer size.

"For latecomers to a market dominated by strong network effects, the developer acquisition costs are astronomical."

Windows Phone sales picked up significantly in Q3 2013, showing a 140% increase year-on-year, fuelled primarily by low-end device sales. According to Kantar, Windows Phone sales in the three months running to Oct 2013, reached double-digit figures in some Western European markets. While this is certainly a positive sign for Microsoft they will continue facing an uphill struggle, in an increasingly unfavourable race against the two runaway leaders, iOS and Android. For latecomers to a market dominated by strong network effects, the developer acquisition costs are astronomical. Microsoft's developer acquisition costs are in the $10,000s as indicated by the funding levels available through the AppCampus onboarding program.

2.1. Platform developments

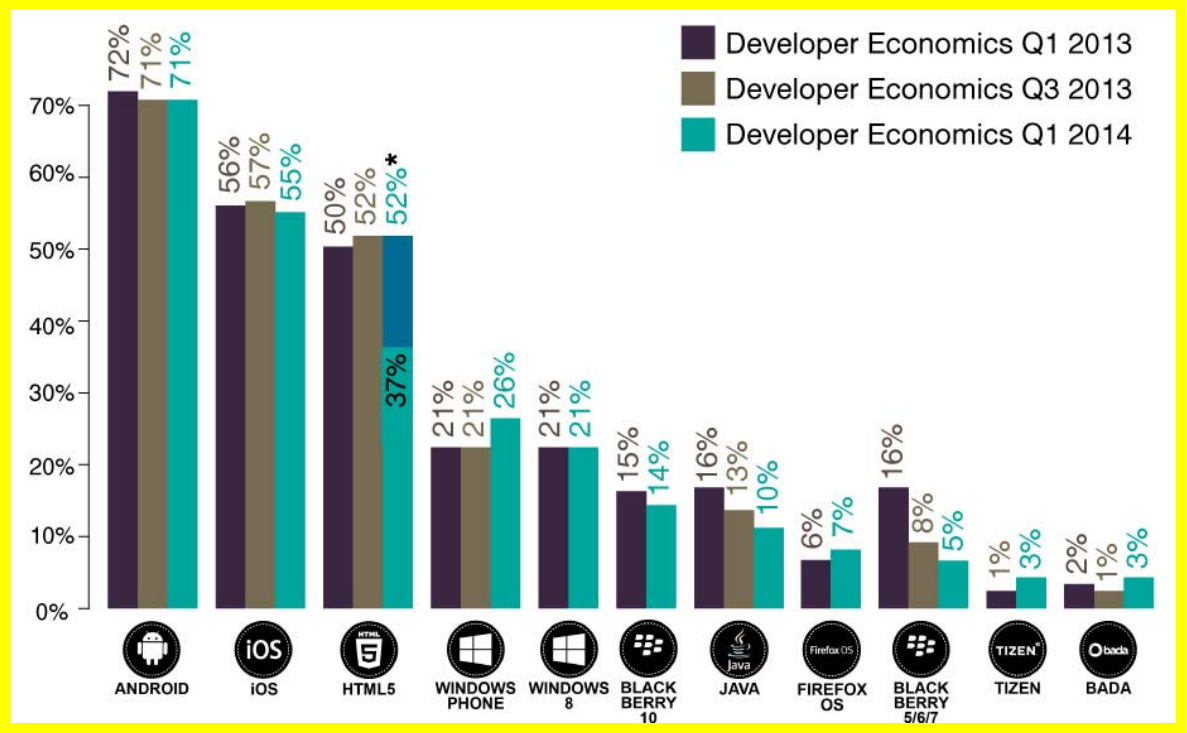
2013 was a year that cemented the Android/iOS duopoly beyond any doubt. Android reached 81% of smartphone sales in Q3 2013. Moreover, Android continues to dominate Developer Mindshare with 71% of developers that target mobile platforms, developing for Android, according to our latest survey of 7,000+ developers. With the market flooded with Android handsets, the surprising fact is that Android's Developer Mindshare has not increased any further. For digital (but not only) businesses targeting mass markets, having a presence on Android is becoming a must. Even if the financial rewards from direct downloads are still lagging behind iOS, Android's massive user base is a good enough reason to justify the investment in the platform, for all developer segments, from Hobbyists to Enterprise IT developers.

"Android continues to dominate Developer Mindshare with 71% of developers that target mobile platforms developing for Android"

iOS shows a slight drop in Developer Mindshare from 57% to 55%, a decline which is, however, within the limits of statistical error. As we will see further ahead, iOS continues to provide better monetisation options for most developers and this is reflected in the stability of iOS Developer Mindshare despite a declining sales market share (from 15% in Q3 2012 to 13% in Q3 2013). Despite continuous talk about the "Apple effect" waning off, there is no such sign among developers, most of whom still view iOS as the most rewarding and engaging development platform. iOS commands the highest developer loyalty, being the preferred platform for 59% of its developer base, as we will see later on, in a section where we discuss how developers prioritise platforms.

MOBILE DEVELOPER MINDSHARE, Q1 2014

% of developers using each mobile platform (n=6,311)



**This figure includes developers who develop hybrid apps and apps developed with HTML5 but translated to native code.*

Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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"37% of mobile developers use HTML5 as a platform, i.e. to develop mobile websites or web-apps, while another 15% use HTML5 to go beyond the browser"

HTML5 has become a bit of a misnomer since it is a technology stack rather than a fully-fledged app ecosystem. Developers employ HTML5 technology in a number of ways: to develop mobile websites, web apps, hybrid apps or use HTML5 code within native apps to display web content. In that sense, HTML5 can be viewed as both a deployment platform (on-browser) and a technology that can be used beyond the browser (off-browser), through tools such as PhoneGap, Appcelerator, Firefox OS and 10s more.

We have split the HTML5 Developer Mindshare to reflect this point: 37% of mobile developers use HTML5 as a platform, i.e. to develop mobile websites

or web-apps, while another 15% use HTML5 to go beyond the browser, with hybrid apps or a HTML5-to-native tool (e.g. Appcelerator Titanium) to target native platforms.

A further 17% of developers indicated that they use HTML5 in a very narrow context, e.g. to display documentation in an otherwise native app. Overall, about 70% of developers use HTML5 in one way or another, but that just shows the strength of the technology rather than just the mobile web as a platform. HTML5 is still far off from being an app ecosystem as it lacks distribution, retailing and monetisation services in the form of a large-scale app store. On top of that, the issues that have been plaguing mobile HTML5 browser apps continue to exist, namely a performance deficit compared to native, lack of deep hardware API access, lack of mature tooling and some level of fragmentation across browser environments. However, the impact of these issues on mobile HTML5 development depends on the development route selected: as we found in our research on HTML5 vs. native development, off-browser routes like PhoneGap, Appcelerator or FireFox OS can mitigate issues relating to performance or API access. In spite of these issues, HTML5 remains a very attractive cross-platform development route for developers, 16% of whom indicate their intention to adopt the platform.

"Microsoft can now claim that over a quarter of developers that target mobile platforms are now actively developing for Windows Phone"

Windows Phone Developer Mindshare has finally moved upwards, following positive market signals in the last two quarters. As we have frequently highlighted in past reports, the developer intent has always been there, with Windows Phone figuring at the top of our Developer Intentshare chart, but needed positive market signs in order to convert this interest into Mindshare. While the 26% Developer Mindshare is still less than half of that for iOS, **Microsoft can now claim that over a quarter of developers that target mobile platforms are now actively developing for Windows Phone**. True to the network effects that govern app ecosystems, increased sales have led to a rise in Developer Mindshare. Developer interest for Windows Phone is still there, with 20% of developers indicating that they plan to adopt the platform; but having seen how difficult it is to translate intent to action in the last two years, we can safely say that the only way that Microsoft can recruit these developers is an aggressive sales strategy.

There are challenges ahead though for Microsoft: with just a fifth of the app catalogue of iOS and Android, Windows Phone store is not what has attracted consumers to the platform. Low cost devices and a great Metro UI are good enough to attract some customers but in order to compete with the duopoly, Microsoft needs to work on the developer front, and improve both the quality and the quantity of apps available. Microsoft has been buying developer interest since the platform came out, but only with strong device

sales will developers be convinced - and Windows Phone sales are still very low compared to Android, with Microsoft claiming just 4% of global smartphone sales in Q3 2013 against Android's 81%. With the Nokia acquisition behind it, Microsoft now has to get the Finnish handset maker to learn from the agility of its Chinese and Korean competitors.

As a latecomer to a mobile market dominated by strong network effects, establishing a credible footprint in mobile remains a formidable challenge for Microsoft. We believe that Microsoft may be better served in the long-run by leveraging the Android ecosystem as the deployment platform for Office and Server businesses which are still growing.

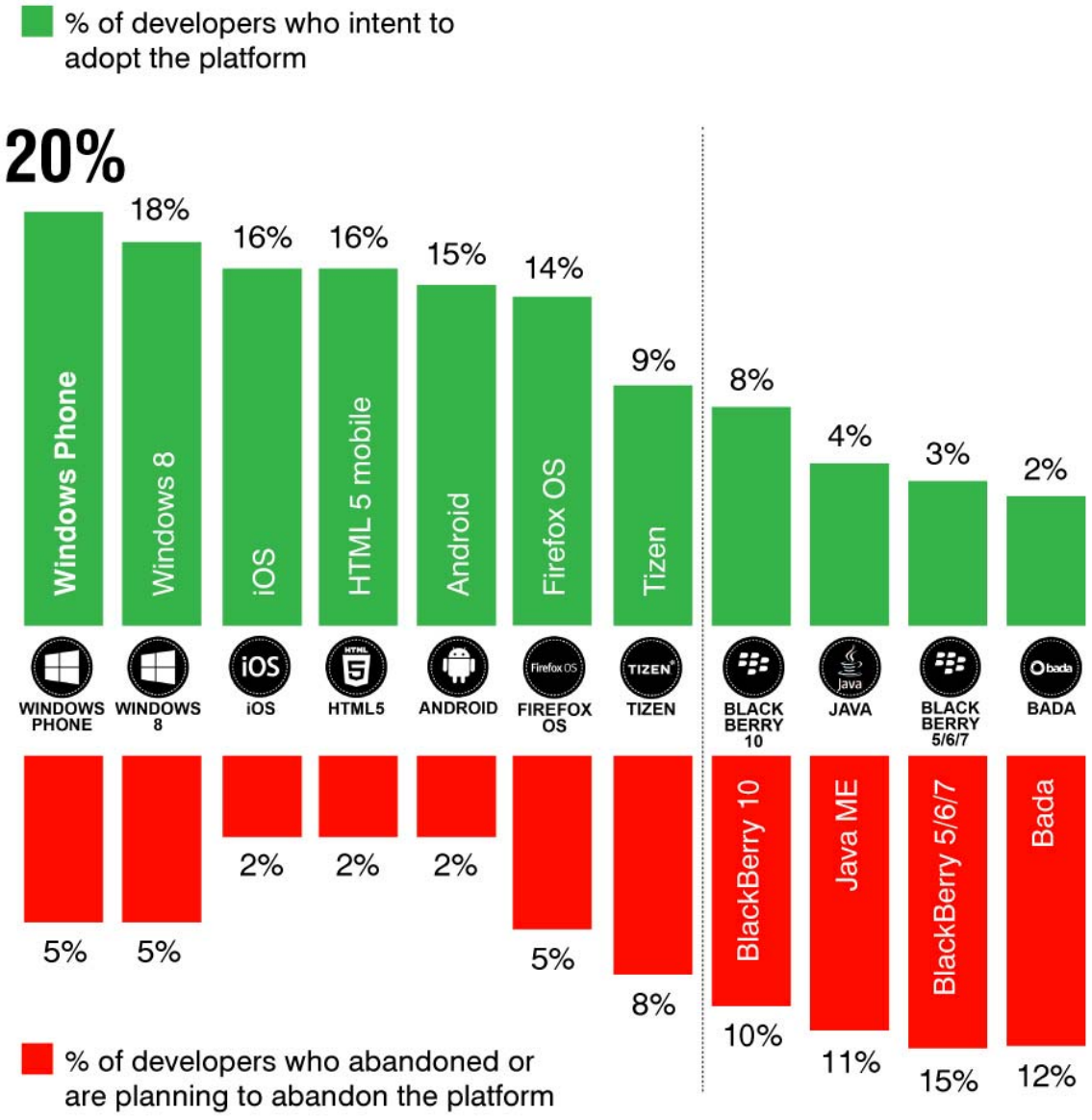
Windows 8 Mindshare has remained stable at 21% tracking poor sales of Surface devices up until Q3 2013. But the recent uplift in Q4 2013, combined with a high developer interest (18% of developers indicate that they plan to adopt Windows 8), is likely to have a positive effect on Windows 8 Developer Mindshare in the first half of 2014. It is still unclear, however, whether Microsoft's tablet strategy will pay off in the long-run. When Apple launched the iPad it took a bold and risky approach that broke away from conventional thinking around computing, and the payoff was huge; but Microsoft is being more cautious and is clinging on to its PC heritage, delivering a hybrid desktop-mobile solution. It may be the wrong strategy: mobile is now redefining personal computing and not the other way round.

Nokia's move for low-end phones as well as cutting-edge hardware brought a lot of people to WP. The increase in the demand has convinced a lot of developers to support the platform
Ali Tayari, Freelance app developer/PhD student

In stark contrast to the Microsoft camp, it is a sad story for BlackBerry. Having finally launched BB10 in March 2013, after a series of setbacks, BlackBerry was too late to turn the tides and saw handset sales falling quarter after quarter, taking on a number of massive write-offs due to piling stocks of unsold devices. BlackBerry is now backing off their handset business, outsourcing manufacturing to Taiwan's Foxconn and repositioning itself as a enterprise mobility services player, rather than a handset maker, capitalising on its long experience dealing with enterprise customers. BlackBerry is now clinging on to the loyal developers that it has amassed throughout the years, with BlackBerry 10 more or less retaining its Mindshare from Q3 2013, while Developer Mindshare for BlackBerry 5/6/7, now a fading niche market, has declined to 5%.

MOBILE PLATFORMS: WINNERS AND LOSERS Q1 2014

% of developers planning to adopt or drop a platform (n=6,311)



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The challengers

Firefox OS now claims a 7% Developer Mindshare which is by no means competitive, but presents a solid foothold for a platform that launched a commercial handset just six months ago. On top of that, 14% of developers indicated that they plan to adopt the platform. Mozilla aims to create an app ecosystem centred around HTML5, by adding ecosystem features and capabilities that are currently missing: web app discovery, distribution, and monetisation. This has certainly grabbed developers' attention, but Mozilla also needs to get consumers' attention and work on device sales to kickstart a positive feedback loop that can give the platform a fighting chance. Handsets running Firefox OS are now available in 13 countries across Europe and Latin America: Brasil, Colombia, Venezuela, Peru, Uruguay, Mexico, Germany, Poland, Hungary, Greece, Spain, Serbia and Montenegro. But with more than 15 operators initially backing the platform, its spread seems rather slow; Telefonica has been the only operator to put its money where its mouth is, claiming half of all country launches, while Deutsche Telekom has only launched in Germany and Poland.

Meanwhile, Mozilla has been busy recruiting partners, not only in mobile devices, but also on the smart TV front, with Panasonic planning to deliver smart TVs based on Firefox OS. Panasonic cites openness as the main reason they decided to side with Mozilla, claiming that Google and Apple already have too much control on other major platforms - and implying that openness correlates to device sales. Mozilla's mid-term plans also include a tablet, with early developer versions being delivered by Foxconn, and even a desktop implementation which chipset manufacturer VIA has been working on. While commercial products are not expected to come to market anytime soon, they certainly indicate some level of industry interest around Firefox OS.

Mozilla aims to build on the momentum and the inherent advantages of HTML5 to create an app ecosystem that extends beyond mobile and across several screens. The discontent with the duopoly is apparent and almost transparent across the mobile industry players. We believe that competing with Android and iOS head on is a game with a predetermined outcome. Instead, players should look to leverage the strengths of the Android ecosystem, and acquire Android users onto their own meta-ecosystems - much like Amazon and Facebook have successfully demonstrated. HTML5 as a development tool, rather than a full web platform, is a much stronger weapon in this, second phase of the ecosystem wars.

Tizen has been off to a slow start with Samsung recently announcing that no device will be launching in the US in 2014. At the same time, NTT DOCoMo, a key partner in the Tizen project, postponed a launch in Japan, one of the

key targets for Tizen's launch. With these setbacks in mind it looks increasingly unlikely that Tizen will become a challenger, even if it manages to launch in other regions. Our own initial assessment of the platform in Q3 2013 indicated that the Tizen SDK was still a long way from being ready for mainstream developer adoption, lacking the polish and ease of use that developers now take for granted in iOS and Android SDKs.

"Google has moved 10s of its own apps and APIs outside the Open Source android Project (AOSP) so that Android apps that rely on certain Google apps and APIs - including Calendar, Location API, Maps, Push Notifications, Account syncing & authentication - will not run directly on forked versions of Android"

Ubuntu did not manage to secure its ambitious $32 million crowdfunding target on Indiegogo, that would go towards development of Ubuntu Edge. This high-end device would double as a desktop when connected to an external monitor and keyboard, delivering a converged desktop/mobile experience. In parallel, Ubuntu Touch, an Ubuntu mobile OS continues being refined and early developer preview versions are available. However, unless Ubuntu manages to convince an OEM about the viability of Ubuntu-powered handsets, it is unlikely that we will see commercial Ubuntu phones anytime soon.

Jolla Sailfish OS, based on Meego, an earlier attempt from Nokia to build a next-gen OS, has launched and has already shipped pre-booked devices from its first production batch. The OS can run Android apps, powered by a pre-installed app store by Yandex and can run on the same hardware specs as Android. While the OS may be popular with enthusiasts, building enough momentum to survive in a globally entrenched duopoly will require more marketing cash than Microsoft has poured into Windows Phone, which Jolla doesn't have.

In light of recent changes in Google Play services, it is doubtful whether competing platforms such as Jolla and Ubuntu, that rely on the Android app ecosystem, will be able to leverage this ecosystem in the mid- to long-term. Google has moved 10s of its own apps and APIs outside the Open Source android Project (AOSP) so that Android apps that rely on certain Google apps and APIs - including Calendar, Location API, Maps, Push Notifications, Account syncing & authentication - will not run directly on forked versions of Android, unless explicitly modified for the forked OS version. Most developers will not invest the extra effort required to port their apps unless porting gives them access to 10s of millions more devices or markedly higher revenues per user.

Amazon's Kindle Fire ecosystem is also powered by a modified version of Android so it is directly affected by the migration of key APIs outside AOSP. In order to maintain app compatibility between Android and Kindle Fire,

Amazon has to provide its own version of any Google API that is not available in the AOSP version, and app developers need to support these APIs explicitly in their apps. Amazon has already been doing this, by providing a number of its own substitute APIs (Maps, In-app purchases, Game Circle), which makes Amazon resilient to the new Android API control points. Revenues generated on Amazon's App Store are high enough for developers to justify the added investment.

2.2. Regional outlook

Android now dominates Developer Mindshare across all regions. With an installed based that exceeds one billion users and relatively low barriers to international expansion, developers worldwide are adopting Android as it opens up opportunities within and across borders.

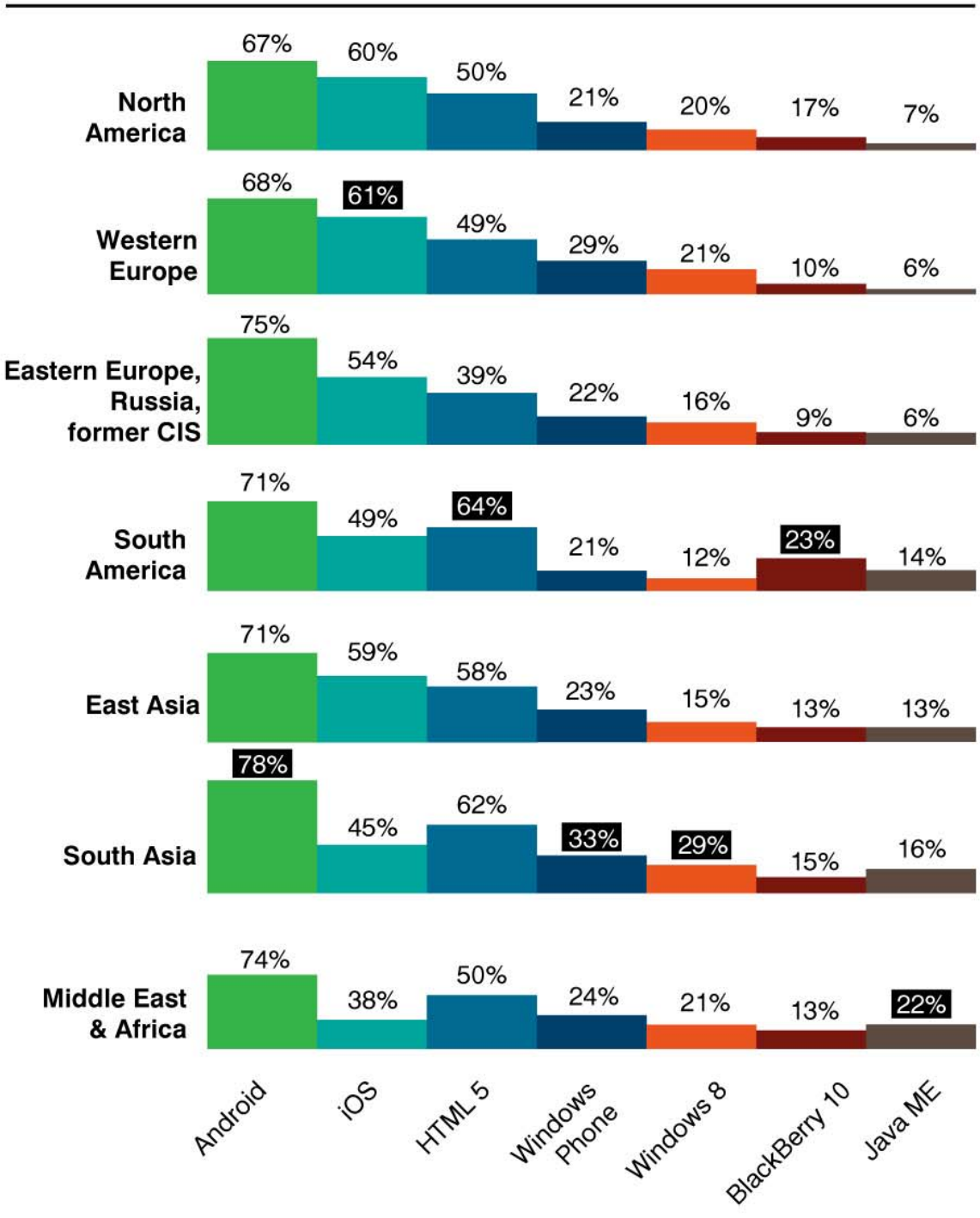
"In South Asia, South America and Middle East & Africa, HTML5 takes the second spot in Developer Mindshare, leaving iOS in third place."

Western Europe and North America show an elevated Developer Mindshare around 60%, contrary to the rest of the world. These two regions show the narrowest gap in Developer Mindshare between iOS and Android, with iOS trailing by 7 percentage points. iOS still holds a strong smartphone sales market share and installed base in Europe and North America, which are the most mature markets in terms of smartphone penetration: in Q3 2013 ComScore reported a 51.8% market share for Android vs. 40.6% for iOS in the US. Europe and North America present higher monetisation potential in terms of average revenue per user, and both regions have a strong presence of Hunters, the developer segment that aims to monetise apps directly, via paid downloads. Developers in these two regions are also more likely to have the purchasing power to afford the higher startup costs associated with iOS development.

In South Asia, South America and Middle East & Africa, HTML5 takes the second spot in Developer Mindshare, leaving iOS in third place. It's worth noting, that these numbers for iOS and Android developers also include those that publish hybrid apps, i.e. native apps with HTML5 code, that target Android or iOS devices. South America continues to show a strong preference towards HTML5, which attracts 64% of mobile Developer Mindshare in the region, almost as high as Android. These regions, comprising mostly of emerging markets, will have an important role to play in shaping ecosystem dynamics in the future, as local smartphone penetration rises and they become prime sources for global app consumption. As such they should not be underestimated by platform vendors but should instead be treated as targets for their mid-to long-term developer outreach strategy.

MOBILE DEVELOPER MINDSHARE BY REGION, Q1 2014

% of developers within each region using each platform (n=6,311)



% Highest regional Mindshare for the platform

Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

need more data? contact our analyst team: moredata@visionmobile.com

Windows Phone has picked up pace across all major smartphone markets (Asia, North America, Europe), gaining Developer Mindshare in each one of them, reflecting a rise in sales market share compared to last year. Its lowest Developer Mindshare score is in North America, where iOS and Android dominate sales by a very wide margin, leaving Windows Phone at around 5% of quarterly smartphone sales. While North America and the US in particular is a key region, it seems particularly difficult for Microsoft to break consumers' reluctance to buy Windows Phone devices. In light of this, Microsoft should focus on building its presence in other markets, such as South Asia, where it is stronger and which will fuel most of the growth in smartphones in the next few years. The trade-off is, of course, that the lower ASPs that Windows Phone devices will generate and potentially lower returns for developers that target these regions.

"The picture of platform priorities is split globally: iOS leads in North America and Western Europe while Android wins in every other region"

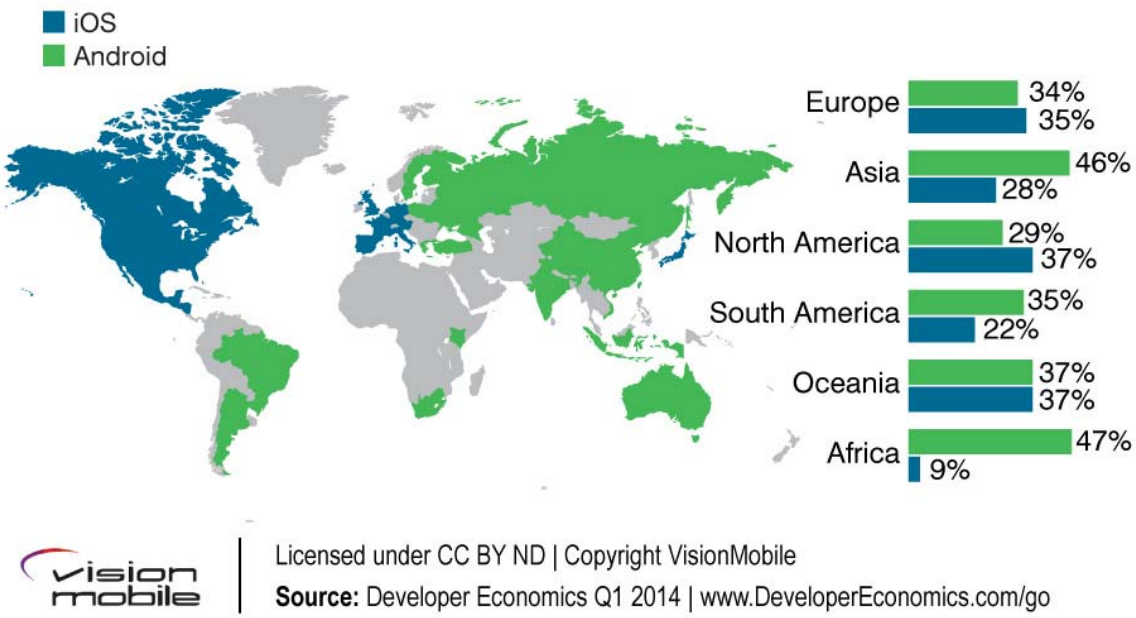
iOS first vs. Android first: a question of priorities

A common theme across the app economy revolves around the concept of "iOS first, then Android". In a recent note we showed that this is true only in some parts of the world and, in particular, the areas where iOS exhibits higher than average market share, especially North America and Western Europe.

The picture of platform priorities is split globally, as our Q1 2014 results show. Looking at the platforms that developers prioritise by region we find that Android and iOS dominate every single country. iOS leads in North America and Western Europe, while Android wins in every other region. The differences are more pronounced in Asia, where 46% of mobile developers prioritise Android vs. 28% for iOS. Considering the impressive growth of Android in these regions, Android is a key strategic target for developers. Even if iOS generates more revenue per user, the sheer difference in the user base makes Android the number one priority.

PRIORITY PLATFORM BY COUNTRY

iOS or Android dominate every market



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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South America, which used to be a stronghold for HTML5 development, is now turning towards Android, following the rising sales of the platform, which now commands over 70% sales market share in the region. HTML5 remains quite strong in the region, with HTML5 Developer Mindshare at 64% not far behind Android's 71%. We should note that the map contains only those countries where we had a sufficiently large sample to obtain reliable results.

"South America, which used to be a stronghold for HTML5 development, is now turning towards Android, which leads by 71% Developer Mindshare."

The popular perception of "iOS first, then Android", is only true for those parts of the world where iOS has a sufficiently large user base to justify higher investment than Android. Regional platform priorities are split, more or less along the lines of platform sales: Android is developers' priority platform in regions where it has a significant market share advantage over iOS. But in regions where iOS has a higher than average market share, it becomes the priority platform.

Prioritising the platforms that lead locally is a strategy used by developers across all regions, but it may not always be the best one. In Spain, for example, Android dominates in sales market share but iOS leads Developer Mindshare. i.e. developers are not building for the local leader but for the

"One of the mistakes we made with previous project is that we focused too much on our local market and did not expand internationally."
Giannis Zaoudis, co-Founder, Pollfish

platform that presents the best opportunities for them. We have previously reported that most app sales actually come from outside developers' own region. In light of this, developers should consider prioritising regions rather than platforms, targeting those regions that will bring better results, rather than the platforms that prevail locally.

CHAPTER THREE

3. The shoot-out: developer priorities and platform loyalty

The duopoly is here. For a large number of developers the key question is now about which platform to prioritise, not which platform to develop for.

Android offers an unprecedented user base that is comparable to the size of the global internet user population - 2.8 billion vs. over 1 billion Android estimated installed base at the end of 2013. Developers that do not target Android must certainly have a good reason not to do so, most likely a profitable niche market or lack of resources to expand. But while Android dominates handsets and developer minds, our research shows that iOS remains a top priority platform. Indeed, many top apps are releasing first on iOS and then on Android, as consumer spending is still much higher on iOS.

The technical side of a tech start-up is usually straightforward - it is the business and consumer side that are much more difficult.
Tim Ermilov, Independent App Developer

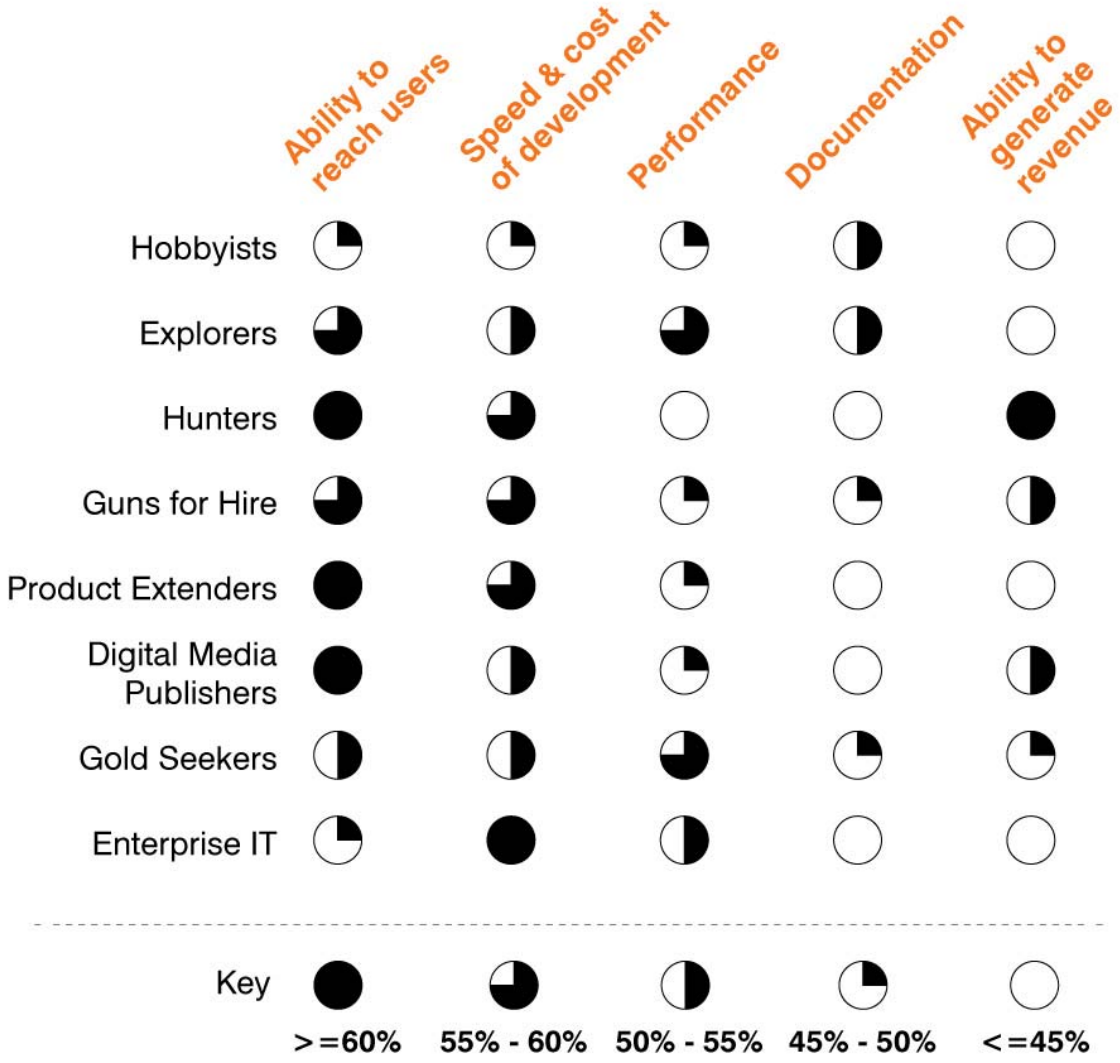
With Android and iOS together accounting for 84% of mobile Developer Mindshare, the question of platform selection has become less and less relevant for a lot of developers. The ability to reach users remains the single most important platform selection criterion, highlighted by 57% of developers as very important. Revenue potential comes in as the fifth most important selection criterion, marked as very important by 44% of developers. Many developers are just developing apps as a hobby, while other segments, such as Product Extenders for example, do not see mobile as a means for direct monetisation but as a means to promote their brand or acquire users onto an e-commerce business.

"Hunters care for revenue, Digital Media Publishers care for reach, Hobbyists care for documentation, Enterprise IT developers care for speed and cost. "

There is no such thing as an average developer. Priorities differ wildly. Hunters care for revenue, Digital Media Publishers care for reach, Hobbyists care for documentation, Enterprise IT developers care for speed and cost. Our developer segmentation model reveals how developers differ on the outcomes they want to achieve, and is based on the state-of-the-art segmentation research and our global surveys. The next chart reveals clear differences in the way developers select and prioritise platforms. For more details see VisionMobile's Developer Segmentation 2013-2016 report.

PLATFORM SELECTION CRITERIA VARY GREATLY ACROSS SEGMENTS

% of developers considering each criterion as very important (n=6,041)



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

Get our Developer Segmentation report or contact our analyst team: moredata@visionmobile.com

For developers that aim to monetise apps directly via app stores, i.e. the "Hunters", revenue potential is equally important to reach. This is reflected in Hunters' platform choice, most of whom prioritise iOS which offers better revenue opportunities. For developers that target contract work ("Guns for

Hire") speed and cost of development is equally important to reach: lower development costs mean higher profit margins while higher reach means more clients and contracts. Despite Android's greater reach, Guns for Hire also favour iOS. As Android extends its footprint, we believe that any business with a digital strategy will want to establish their presence on the platform, which will increase contract work on Android.

For Enterprise IT, speed and cost of development is clearly the dominant factor since the main target of enterprises with mobile is to increase operational efficiency and reduce costs. On the other hand, Hobbyists, while not having very strong opinions on what is important for platform selection, do have a preference for good documentation.

3.1. Getting your priorities straight

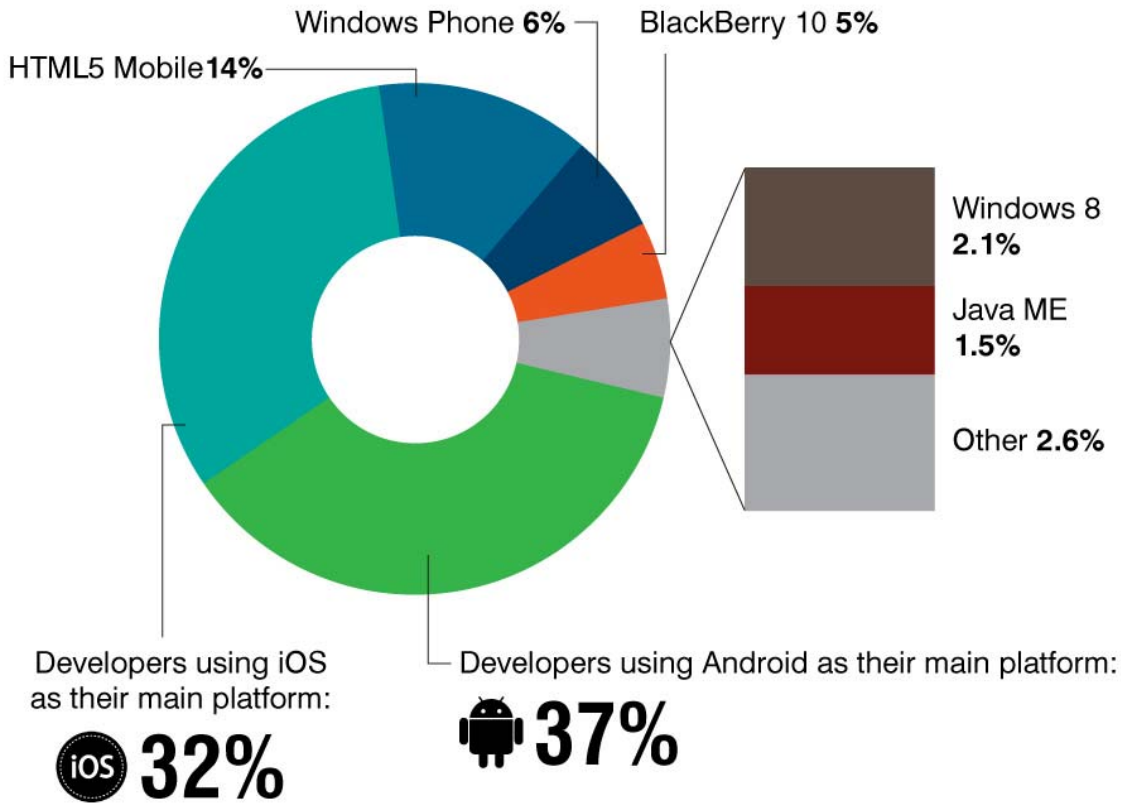
Our research found that 41% of developers develop on both iOS and Android; for these developers, the real question is "which platform should I prioritise" rather than "which platform should I choose". The way developers and organisations prioritise platforms is a critical health indicator for app ecosystems and has a direct impact on user experience. Platform priority determines which platform is the first to get new titles or major app updates and also has an impact on the quality of apps; development for lower-priority platforms is often outsourced.

"Performance is not the only issue we had with hybrid apps. Testing these apps on devices was a challenge due the different way webview works on each device. Android was a bigger challenge due to device/API fragmentation, although this has significantly improved following version 4."
Jared Siirila, Advisory Software Engineer, Mobile System Management, IBM

The Developer Economics Q1 2014 survey shows that 37% of developers now target Android as their primary platform, slightly up from 34% in Q3 2013. iOS remains at the same level in terms of priority, with 32% of mobile developers choosing iOS as their priority-one platform. HTML5 is the priority platform for 14% of mobile developers, down from 17% in Q3 2013. Although this slump is marginal, it is likely that developers that prioritised HTML5 previously have come to terms with the shortcomings of pure web approaches. Our research on HTML5 vs native apps in Q3 2013 showed that the key issue in HTML5 development, is not performance or API reach, but the lack of mature development tools.

DEVELOPER LOYALTY SPLIT BETWEEN IOS & ANDROID

% of developers using each platform as their main platform (n=6,311)



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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The biggest issue for HTML5 is the maturity of tools.

Robert Shilston, Director of FT labs, Financial Times"

The rest of the mobile platforms combined are prioritised by less than 20% of developers. This is indicative of the scale of the challenge facing platforms such as Windows Phone and BlackBerry 10: they are trying to build a competitive app ecosystem when most developer resources are allocated to the leading platforms, iOS and Android.

3.2.What's your companion platform?

We live in a multi-platform world. As a developer with a successful app, why limit your market to a single platform when you can get a good return on multiple platforms? Organisations that aim for scale and global reach need to be on more than one platform - just iOS or just Android may be good enough for startups on tight budgets but if you're in the millions of downloads you have to be on both - otherwise you may be leaving opportunities for disruption to competitors filling your platform gaps.

Our Q1 2014 research found that, on average, developers use 2.5 platforms at the same time (median=2), which is down from 2.9 in our Q3 2013 survey, pointing to consolidation. This is not surprising in a duopoly market as most developers will flock to where the opportunities are. At the same time, low barriers to entry into mobile development are attracting new developers that tend to start from a single platform. We find that the number of platforms used is highly correlated to the size of the organisation. Larger organisations can throw more resources into new platforms and use approximately three platforms on average, while solo developers use 2.3.

"In other words, to adopt Firefox OS, Windows Phone, Windows 8, Tizen Jolla, or Ubuntu platforms, 69% of developers first have to abandon Android or iOS."

The next chart reveals how developers mix and match platforms. Android dominates as a companion platform (i.e. not used as the primary target) among developers prioritising iOS and HTML5 although it's not as popular among those that prioritise Windows Phone (22%), Windows 8 (24%) or BlackBerry 10 (30%).

HTML5 is a very popular companion platform, across all primary platforms. Our survey shows that HTML5 it is used as a complementary technology to some extent: among those developing primarily on iOS or Android, about 19% use HTML5 to display limited web content in their apps, for example documentation or elements that may require frequent updating. At the same time around 10% of developers targeting Android or iOS use HTML5 to develop hybrid apps, using tools such as PhoneGap.

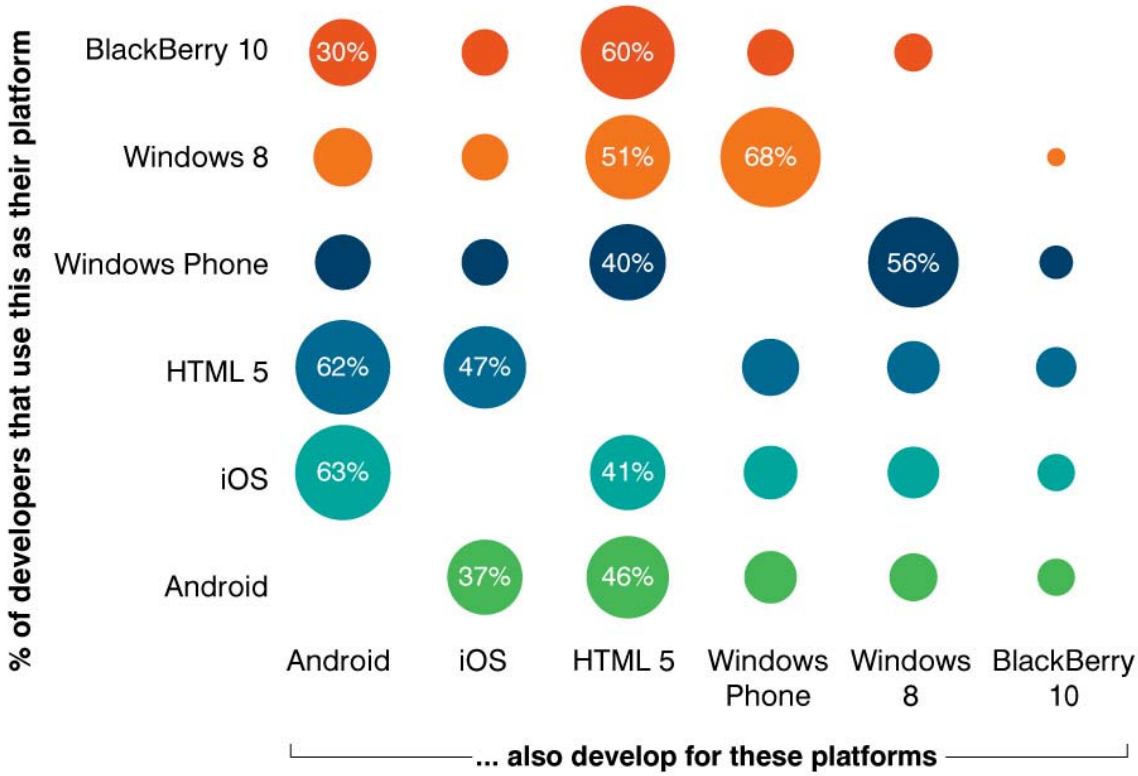
"The best strategy for me was to target: Android for number of downloads, iOS for monetisation and WP/W8 as a 3rd option."
Serafino, Mobile app developer

Not surprisingly, there is a big overlap between Windows Phone and Windows 8 developers: 56% of developers that prioritise Windows Phone also develop for Windows 8. There are strong synergies between Windows Phone and Windows 8, supported by a common toolchain which allows developers to reuse extensive parts of their code across the two platforms

and the fact that Windows 8 is necessary for Windows Phone developers that want to make their apps available on tablets. HTML5 is also quite popular among Windows platforms and in particular Windows 8 which provides native JavaScript support for HTML5 development.

MULTI PLATFORM DEVELOPERS: HOW THEY MIX AND MATCH PLATFORMS

% of respondents using each platform, by primary platform (n=6,311)



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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3.3. A question of platform loyalty

Platform prioritisation is an indicator of developer loyalty. Our research of 7,000+ mobile developers found that iOS commands the most loyal developers with 59% of developers that target iOS prioritising it over any other platform they target, at the same levels as our Q3 2013 research. This makes sense from a business perspective: while developers may target a number of platforms, a healthy business requires a healthy bottom line and for most developers there is more opportunity to achieve this on iOS than on any other platform, as we will see later in the revenue section.

"iOS commands the most loyal developers with 59% of developers that target iOS prioritising it over any other platform they target, at the same levels as our Q3 2013 research."

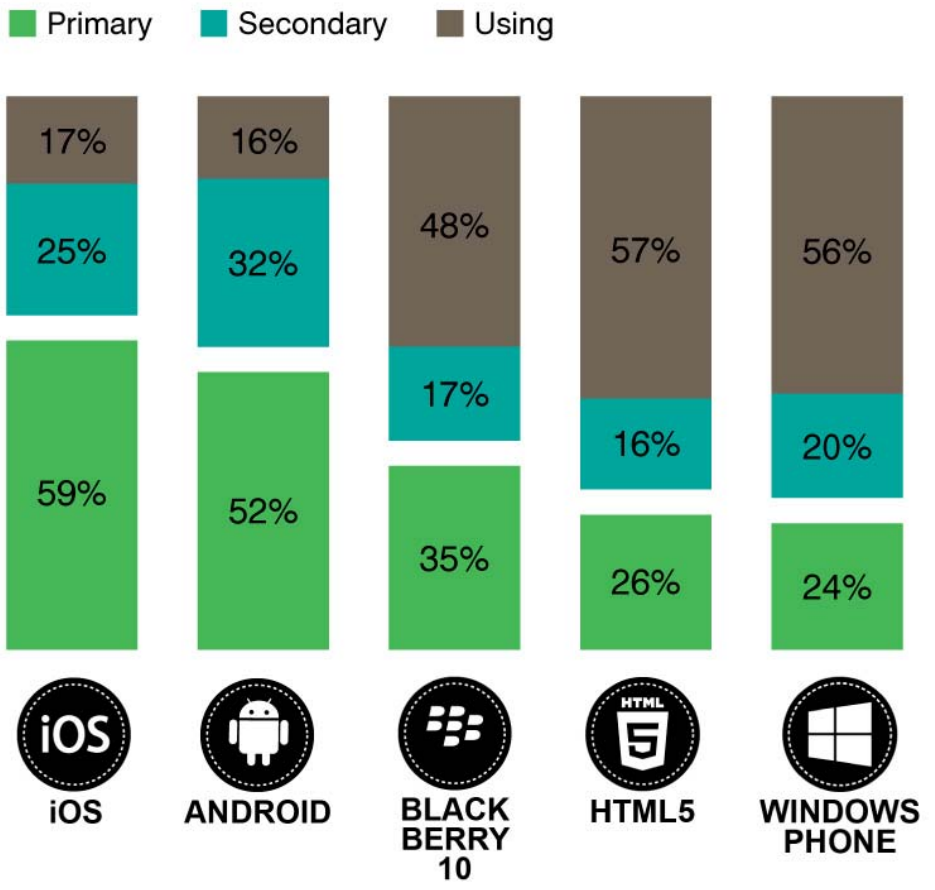
Android loyalty has been on the rise, gaining 2.5 percentage points to reach 52% in Q1 2014. A significant number of developers that prioritise Android (17%) are Hobbyists, who consider the platform to be an easier entry point into mobile development because of lower barriers to entry. Such barriers are, for example, registration fees to publish apps, and hardware costs for development equipment and device costs. In contrast, iOS has much lower traction with Hobbyists as a priority platform (7%). Android's traction with Hobbyists is likely to have positive effects in the long term as these developers build experience and start creating success stories that draw developer masses to the platform.

"Android is definitely trying to mature as a platform, trying to make it easier to develop for and fix fragmentation. Most of the challenges that the developer sees are not fixed by Google Play Services – things like screen sizes and pixel densities which we are constantly battling with."
Jesse Attas

On a head-to-head comparison, among those developers that develop on both Android and iOS, iOS still has the edge: 49% prioritise iOS while 33.5% prioritise Android, a gap of +15.5% in favour of iOS. The gap has increased considerably since Q1 2013 when iOS was leading by +11%.

PLATFORM LOYALTY CHART

% of developers that use a platform as first, second and third choice among all developers using the platform (n=6,311)



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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Android also leads among developers that aim high: the "Gold Seekers" in VisionMobile's Developer Segmentation model, are the developers whose main goal in app development is to raise funding in order to grow their business. The number of Gold Seekers that prioritise Android is almost double of that for iOS, although there are regional variations. The reason why most of these developers target Android is related to scale: raising funds is easier when you can show impressive numbers to investors - Android offers a much larger user base to target and more opportunities to leverage deep platform APIs and develop innovative solutions due to the loose app publishing policies. While Gold Seekers account for just over 3% of

developers, this is a key segment as it attracts funding, while success stories generate press coverage and raise the profile of the platform.

Apple's iOS shows higher incidence among segments that are critical to an app ecosystems' health, such as "Hunters", i.e. developers that aim to generate revenue via app downloads, "Guns for Hire", that mainly undertake contract work and "Digital Media Publishers", the content producers or aggregators. These segments represent a major portion (43%) of all mobile developers and their work is driving a significant part of mobile app ecosystems. As such, wider support by these segments is one the competitive advantage that iOS currently holds over Android and other platforms.

"I like Android because of its openness. On the technical side it's evolving very fast and is more advanced than iOS in innovation. What is holding it back is lack of maturity and poor app discovery which makes iOS a more suitable platform for businesses."
Tim Ermilov, Independent App Developer

While HTML5 is very close to iOS in terms of developer mindshare, usage of HTML5 as a primary platform is quite low, indicating that the majority of HTML5 users view it as a companion, rather than a priority platform. Lacking large-scale discovery, monetisation and distribution functions, HTML5 continues to be a technology platform rather than a fully-fledged app ecosystem. Its appeal as a priority platform for app development is therefore restricted to those use cases where it excels: cross-screen and cross-platform deployment. HTML5 is popular with Product Extenders who aim to extend existing products and services to mobile and Enterprise IT developers, aiming to reduce IT costs and deploy a consistent experience for enterprise services across screens and devices.

THE PLATFORM SHOOTOUT

	ANDROID	iOS	HTML5 MOBILE	WINDOWS PHONE	BLACK BERRY 10
Sales market share (smartphones, Q3 2013)	81%	13%	-	4%	2%
Mindshare	71%	55%	52%	26%	14%
Priority	37%	32%	14%	6%	5%
Loyalty	52%	59%	26%	24%	35%
Most popular in	Asia	North America	South America	Asia	South America
Median revenues	$150	$750	$150	$25	$75
Differentiating selection criterion	Open Source	Revenue potential	Ease of porting	Choice of development environment	Documentation/ Access to hardware APIs
3rd party tools index	2,8	3,1	2,5	2,5	2,3
Top revenue model	Advertising	Contract development	Contract development	Advertising	Pay per download
Segments with a strong preference to the platform	Hobbyists, Gold Seekers	Digital Media Publishers, Hunters, Guns for Hire	Product Extenders, Enterprice IT	Hobbyists, Explorers	-

Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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3.4. The long tail of screens

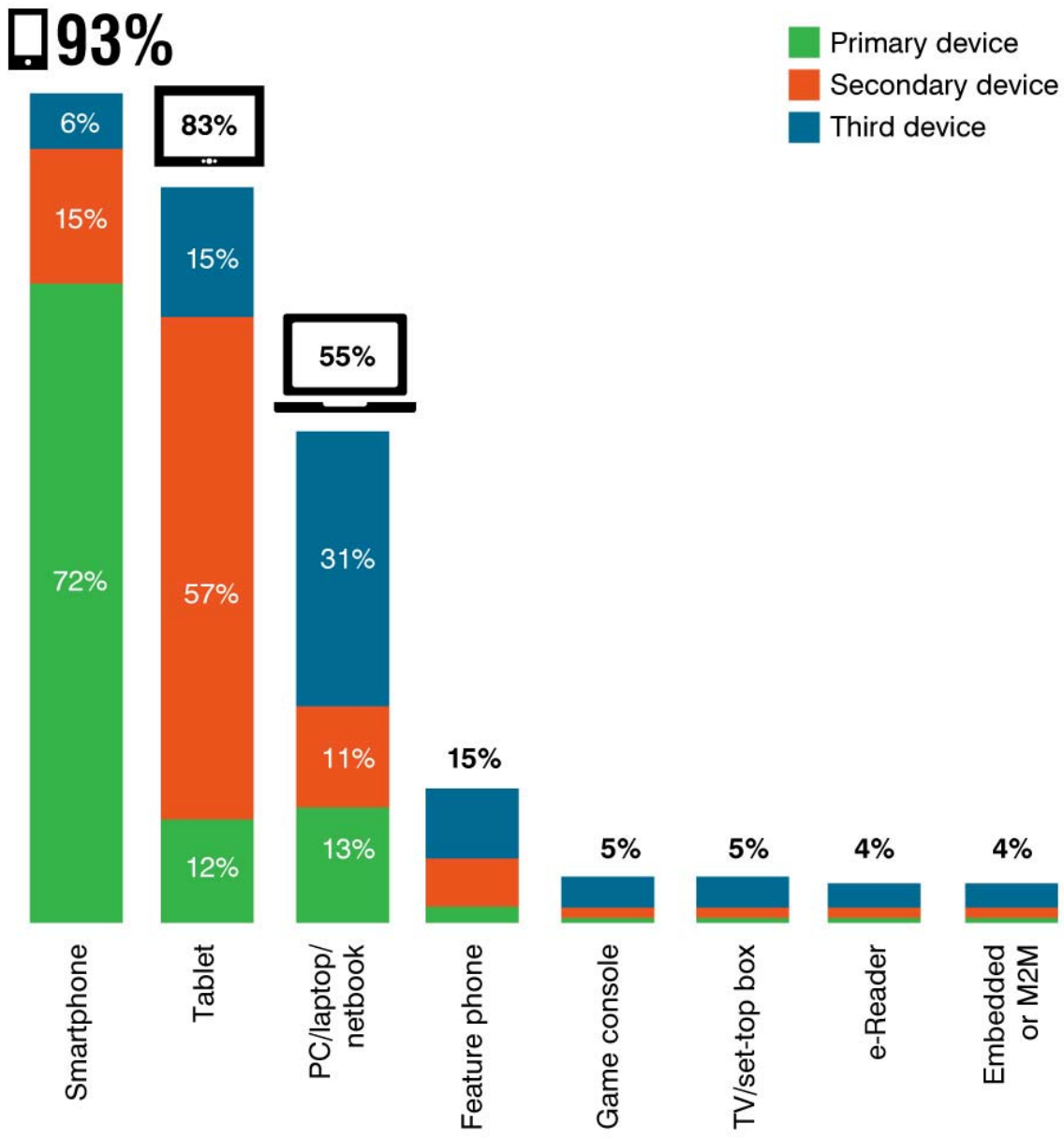
Despite the buzz around watches, TVs and the Internet of Things, smartphones are, and will remain in the foreseeable future, the primary target for app developers. The sheer number of smartphone sales and installed base makes every other screen a niche market. Tablets are very much a "companion" development option; tablets attract 83% of app developers but only 12% of developers target tablets as their primary development screen, as shown on the next chart.

"The appeal of HTML5 as a priority platform for app development is therefore restricted to those use cases where it excels: cross-screen and cross-platform deployment. "HTML5 developers target 2.8 screens on average, more than Android or iOS."

Our research found that 53% of mobile developers target PCs/laptops. This form factor is of course very popular with Windows 8 developers but also with those who develop mobile HTML5 apps. Windows 8, being a platform that has evolved from the desktop, naturally attracts many developers who have come from a desktop environment. HTML5 on the other hand allows developers to target several screens at the same time - HTML5 developers target 2.8 screens on average, more than Android or iOS.

CONNECTED DEVICE MINDSHARE, Q1 2014

% of developers developing for each device (n=5,774)



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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Feature phones are, as expected, in decline with dwindling opportunities, signaled by smartphone sales surpassing those of feature phones for the first time, in Q1 2013.

Despite increasing noise coming from areas such as Internet of Things and automotive applications and the push into these markets by Android and all other major platforms, we have yet to see a surge in the number of mobile developers that develop for these devices above the 5% mindshare level.

3.5. The king of tablets

Our research shows an important disparity in platform choices between smartphone and tablet app developers. Among developers that mainly target smartphones, 40% choose Android as their main platform while 31% choose iOS. In contrast, 52% of developers that mainly target tablets, prioritise iOS, with Android coming in a distant second at 28%. This reflects the iPad's maturity, which still presents the strongest business opportunities for developers despite the rapidly rising market share of, mostly cheap, Android tablets.

"Despite the flood of Android tablet sales, 52% of developers that mainly target tablets, prioritise iOS, with Android coming in a distant second at 28%"

The inertia of tablet developers in supporting Android is very much of Google's own doing. While iOS features a dedicated tablet app store and guidelines, Android has been slow in promoting tablet-first apps, only recently announcing new changes to this effect. These changes include labelling apps as "designed for tablet" if they meet certain guidelines and promoting these apps on Google Play when accessed via an Android tablet.

Most apps on Android tablets continue to be optimised for smartphones, resulting in a poor user experience when viewed on a tablet. **While sales of Android tablets have now exceeded those of the iPad (67% Android, 30% iPad), this can be attributed to the cost differential rather than Android being a true substitute product.**

"Sales of Android tablets have now outgrown iPad sales almost by a 2:1 factor, but this is due to the cost differential rather than Android being a true substitute product."

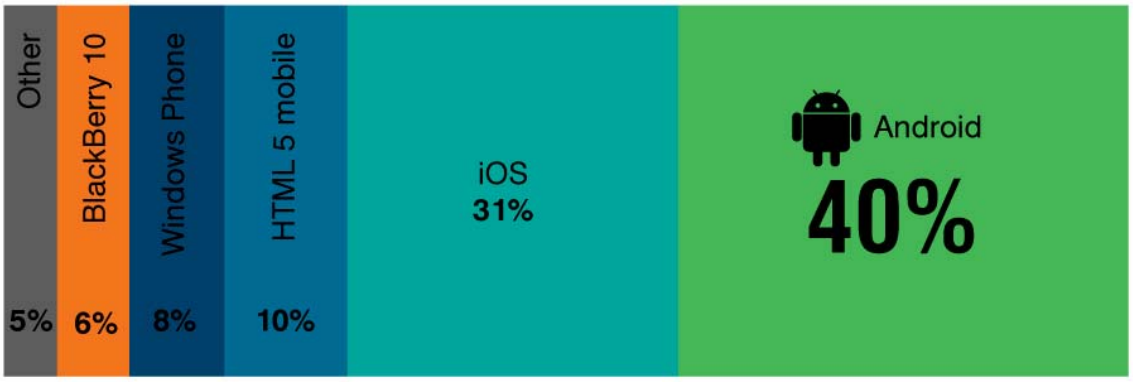
Google has been far too reticent towards supporting tablets as a first class citizen of the Android ecosystem. **While people browse on smartphones, they buy on tablets.** Despite the lower user base of tablets compared to smartphones, tablets are a key element of mobile ecosystems: according to research by IBM Digital Analytics Benchmark that tracked Black Friday 2013 sales on 800 retail websites in the US, online sales via tablets were twice the size of online sales via smartphones, despite accounting for less than 60% of the traffic compared to smartphones.

IOS REMAINS THE PREFERRED PLATFORM ON TABLETS

% of developers prioritising each platform, by priority screen (n=6,311)

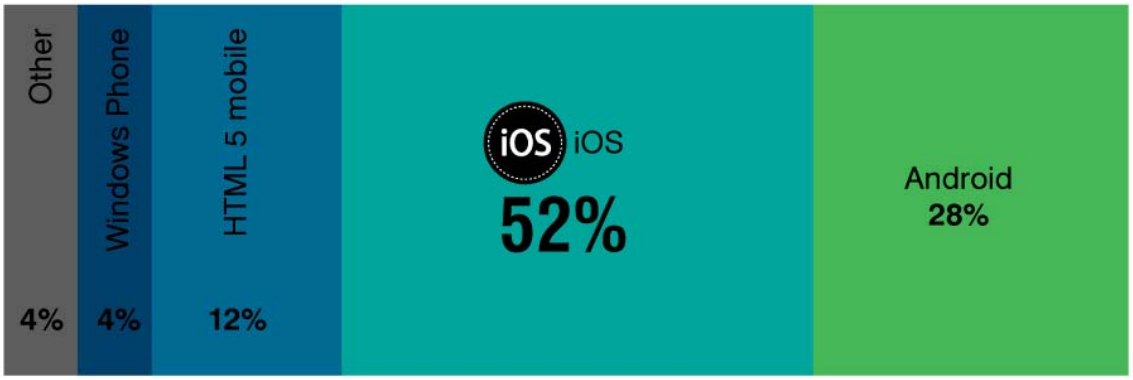
Main Target:

Smartphone (72% of mobile developers)



Main Target:

Tablet (12% of mobile developers)



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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CHAPTER FOUR

4. Where's the money?

The explosive growth in smartphone adoption, from zero to a billion unit sales, has created opportunities for developers and organisations of every shape or form: massively successful apps are being built by garage entrepreneurs and established software houses alike. This, and the relatively low barriers to entry into mobile development, have attracted hundreds at thousands of developers to the app economy. With the exception of some developers that "are not in it for the money" (as indicated by 16% of our sample), most developers or organisations that invest in mobile are in fact looking for a return on their investment.

"60% of app developers are below the "app poverty line", i.e. earn less than $500 per app per month"

But while some are making it big, the majority are not seeing the returns they were expecting. Our latest Developer Economics survey shows that 60% of developers are below the "app poverty line", i.e. earn less than $500 per app per month. So while there are opportunities, app monetisation suffers from the same income inequality that is evident across so many industries.

4.1. Apps as a product vs. apps as a channel

With rising maturity in the app economy, business models have become sophisticated, too. There are two dominant types of business models that we see:

- Apps as a product, which call for direct monetisation, via paid downloads, in-app purchases, or contract development
- Apps as a channel. which aim for indirect revenues via cross-app promotion, brand promotion and e-commerce.

"In-app advertising is the low-hanging fruit and as such remains one of most popular revenue models at 26% of app developers"

Contract development is responsible for 56% - over half of the app economy for 2013 as we found in our App Economy Forecasts report. More importantly, it's risen as the most popular revenue model, with 26% of app developers now developing apps on commission. As tens of thousands of brands extend their digital footprint into mobile apps, developer talent is in shortage. This is clearly reflected in the median revenues of $1,500 per app/month that are much higher than any other direct revenue model. Commissioned apps are also a much lower risk option for developers than app store sales.

In-app advertising is the low-hanging fruit and as such remains one of most popular revenue models, at 26% of app developers, particularly strong on platforms where demand for direct purchases is weak, such as Windows Phone and Android. Ad revenues are only rewarding on apps with a user base in the millions: while revenues on superstar apps may be very high, the median revenue for developers using advertising is $150, among the lowest across all revenue models.

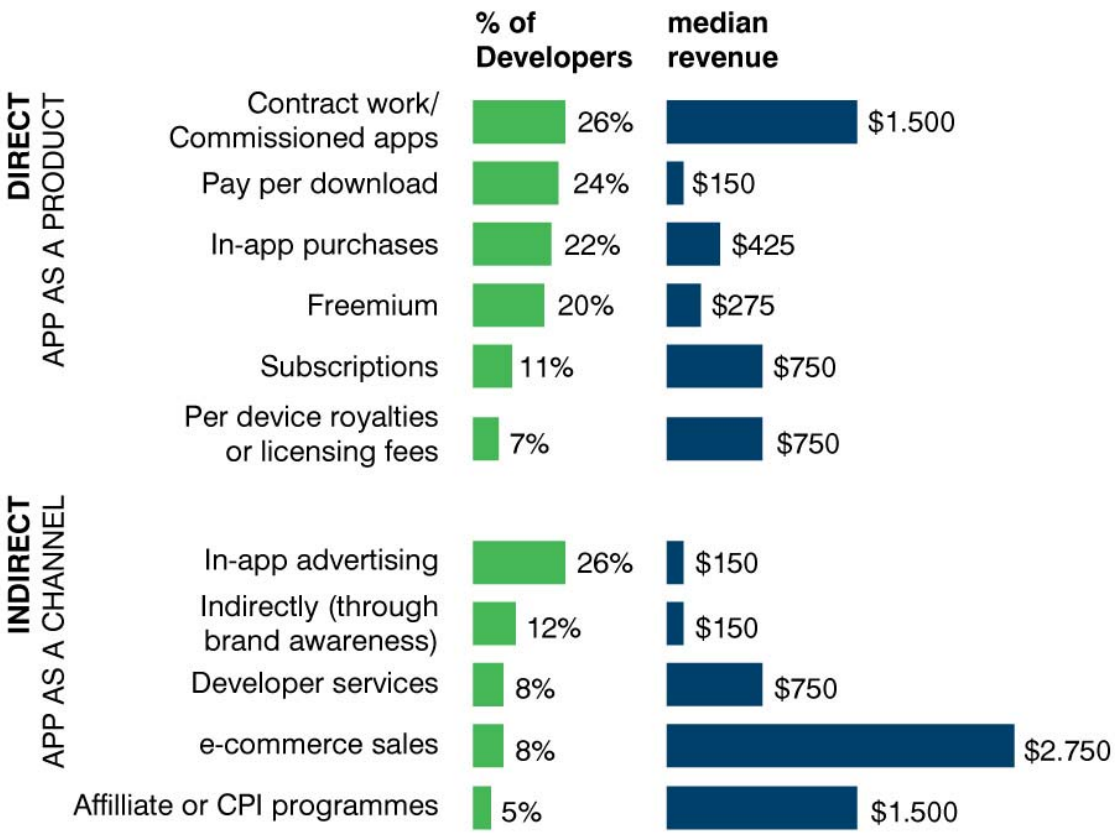
Pay-per-download (PPD) has dropped considerably in overall popularity. It remains quite strong on iOS (adopted by 27% of developers that use iOS as their main platform) but has slipped below in-app purchases (IAP) used by 30% of iOS developers, while median PPD revenues are also lower than IAP revenue. The in-app purchase model continues to gain in both popularity and revenues, as users find it more comfortable to pay for apps during use, i.e. as they derive value from them and not based on what the app says on the box.

"Commissioned development has risen as the most popular revenue model, with 26% of app developers now developing apps on commission"

The shift in revenue models from pay-to-buy to pay-as-you-use has first appeared in apps but we believe it will also extend to other digital goods. Early examples are e-books (pay as you read) and physical goods (e.g. pay as you drive insurance). We expect that the Internet of Things, i.e. the ability to digitally connect physical objects, will be the agent of change that will cause a massive shift from pay-to-buy to pay-as-you-use revenue models for many physical goods.

CONTRACT DEVELOPMENT IS THE HIGHEST-GROSSING DIRECT REVENUE MODEL FOR MOBILE DEVELOPERS

Revenue model popularity and median revenue per app per month (n=5,715)



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

need more data? contact our analyst team: moredata@visionmobile.com

"New formats and strategies will emerge in the next 5 years that will be unique to mobile and that could become the dominant ways of monetising mobile content going forward."

Jim Vitek, Founder & CTO, AppKey

Subscriptions remain a lucrative revenue model with a median revenue around $750 but, as we've highlighted in previous reports, this is a revenue model that is viable only for organisations that can deliver a compelling value proposition with the right content or service that will justify an ongoing subscription. On top of that, asymmetric competition, in the form of free services undercutting paid-for services is always a risk for those offering subscription-based services.

Turning apps into e-Commerce dollars

Our research found that e-Commerce sales grew significantly in popularity as a revenue model from 5% in Q3 2013 to 8% in Q1 2014. The rise in e-commerce is a clear indicator that app ecosystems are evolving beyond apps and digital content into fully fledged e-commerce platforms. According to research by IBM Digital Analytics Benchmark, on Thanksgiving and Black Friday 2013, 25.8% and 21.8% of online sales in the US were completed on a smartphone or tablet, respectively, while mobile traffic accounted for 39.7% of all online traffic. More importantly, our Developer Economics Q1 2014 survey found that the median revenues of organisations involved in e-Commerce are $2,750 per app/month, by far the highest among all app revenue models that we track.

e-Commerce is becoming a critical component of the app economy as mobile sales soar year after year. While e-Commerce revenue was only 11% of the app store sales in 2013 (see our App Economy Forecasts report) our Q1 2014 research points to a very fast growth. The growth of app-enabled e-Commerce business is signaling a shift in the role of developers from innovators to value-adding resellers. Amazon is driving this shift with its Mobile Associates API, which allows developers to sell physical goods and earn referral fees via their apps, allowing easy access to a new revenue stream for developers. Apple and Google may soon follow suit.

"Our research found that iOS has a larger "middle class" than Android. Among developers that generate $500 - $10K per app per month, 37% prioritise iOS vs. 25% Android."

4.2. Revenues reveal class inequalities

The ability of mobile platforms to help developers monetise has always been a contentious issue, not least because any single metric cannot reveal the entire truth. The consensus has always favoured iOS. In our App Economy Forecasts Report 2013 - 2016 we forecast that total revenues generated on the Android ecosystem will catch-up with iOS revenues by the end of 2014. Even in this scenario, average revenues per developer on Android are not likely to exceed those on iOS due to the larger number of developers that have to share the pie. But the scale of Android means that some top publishers are currently generating higher revenues on Android than on iOS.

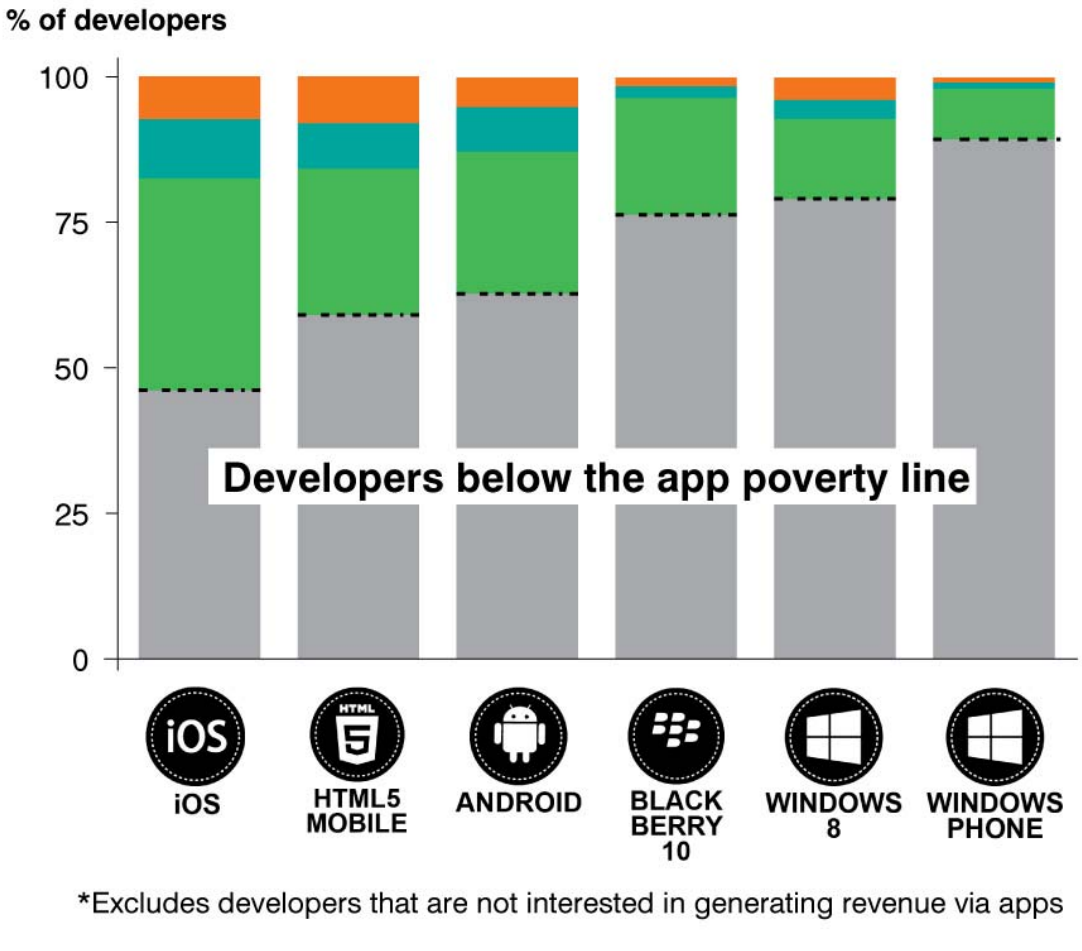
"The growth of app-enabled e-Commerce business is signaling a shift in the role of developers from innovators to value-adding resellers"

Our research found that iOS has a larger "middle class" than Android. Among developers that generate $500 - $10K per app per month, 37% prioritise iOS vs. 25% Android. iOS also has a larger upper-middle and upper class than Android. The share of developers generating a viable income on

iOS (54%) is larger than on Android (38%). For these estimates we have excluded developers that do not aim to generate income via mobile apps - the presence of which is much stronger on Android.

IOS OFFERS A MORE EQUITABLE REVENUE DISTRIBUTION

% of developers in each revenue



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

need more data? contact our analyst team: moredata@visionmobile.com

The picture is not encouraging for the average developer on challenger platforms: on BlackBerry 10, around 70% of developers that prioritise the platform are below the "app poverty line". The same figure for Windows Phone is at 79% and even higher on Windows 8 (89%) reflecting the large share of Hobbyist and Explorer segments using these platforms. The income inequality on these platforms is so profound that developers consider it too risky to prioritise these platforms, i.e. to invest more resources into these than on either Android or iOS.

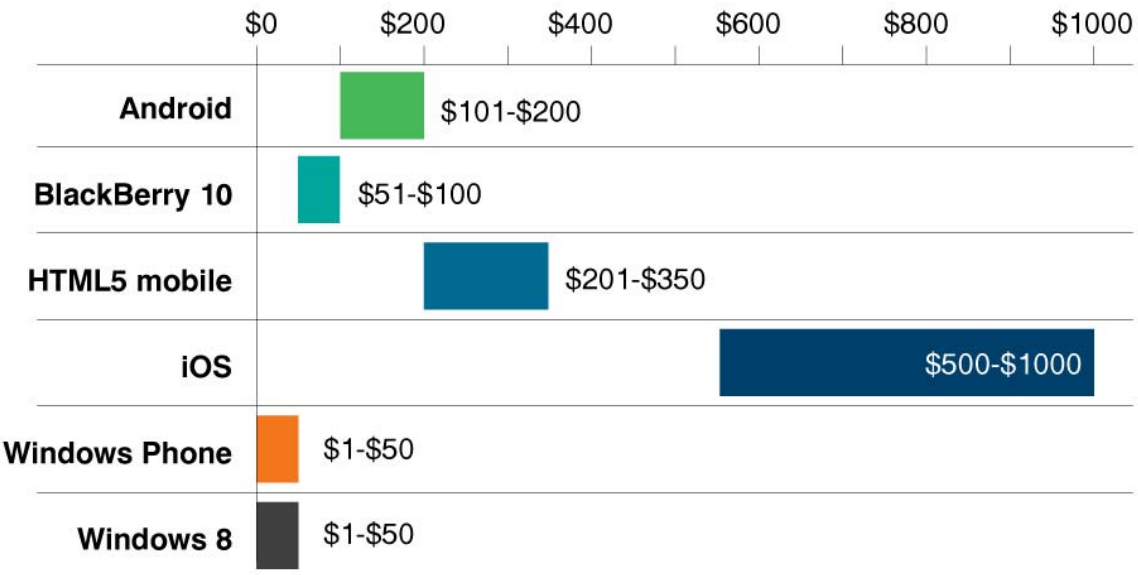
"In terms of developer revenues per capita, iOS maintains its momentous gap to Android"

HTML5 sits between iOS and Android in terms of developers below the app poverty line (59% below the line) and has a middle class that is roughly equal to Android. However, it boasts the largest share of publishers that generate very-high revenues (over $50k per app/month).

In terms of developer revenues per capita, iOS maintains its momentous gap with median revenues between $500 and $1000 per app / month, which is much higher than the median revenues of Android developers ($100 - $200 per app / month). As Android continues to grow in mid- and low-end handset segments, we don't see the median revenues for Android developers catching-up with iOS anytime soon.

FOR MOST DEVELOPERS IOS CONTINUES TO PAY BETTER

Median revenue per app, per month (n=2,425)*



**As most developers use more than one platform, besides their primary platform, part of these revenues may be generated on platforms other than the primary. However they are indicative of the revenue potential of each platform. These figures exclude developers who are not interested in generating revenue.*

Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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The advantage of iOS is also illustrated by IBM's Digital Analytics Benchmark which estimates that iOS generated 5 times more sales than Android in 2013. The huge difference in monetising e-Commerce opportunities comes down to a demographics gap - implying that iOS and Android are really competing in different consumer markets. iOS is the upmarket mall while Android is the outlet.

Developers targeting Windows 8 and Windows Phone generate the lowest revenues, with the median being between $1 and $50 per app per month. This indicates that Microsoft's focus on app catalogue size has attracted a hoard of Hobbyist and Explorer developer segments. Revenues on Windows Phone are affected by the popularity of lower-end devices which are boosting the platform's sales but diluting the average purchasing power of its user base.

CHAPTER FIVE

5. Developer tools: better, faster, more

Competitive app developers don't need to reinvent the wheel: third-party developer tools and services can take you further, with less effort.

From cloud storage (Dropbox, Amazon S3) and back-end services (Parse, StackMob) to monetisation (AdMob, inMobi), prototyping (FluidUi), beta-testing (Testflight) and user support (Helpshift), there is a tool for almost every job in app development. For app developers, these are the tools of the trade and 80% of developers leverage at least one. This is reflected in a growing "SDK economy", comprising 1000+ tools and services vying for developer attention. Competition is becoming fierce - for every 1,000 app startups there is a developer SDK startup.

5.1. What goes in the SDK box

Tools are the competitive arsenal of app developers. Developers need business and technical support to survive and thrive and platform vendors provide just a small fraction of what's available. Our earlier research indicated that developer tools also correlate with higher developer revenues. We also found that more experienced developers are more frequent users of third-party tools and services including cross-platform tools and user analytics services.

"The quality of app store apps have become very high. To reach those standards requires a lot of investment in time and resources, which is really difficult for a solo developer."
Konstantinos Kontos, Software Designer - Lead iOS / OS X Engineer

Our developer tools tracker shows User Analytics services, such as Flurry, used by 40% of mobile developers. These services are about knowing your customers - they allow app publishers to track user behaviour and adapt their apps or marketing campaigns accordingly. User analytics' traction is particularly high on iOS, with over 50% of developers that use iOS as their main platform adopting such services. This suggests that iOS developers pay more attention to user behaviour than developers of other platforms, a fact that may contribute to the higher quality of iOS apps and better monetisation potential as opposed to, Windows Phone or BlackBerry 10 for example, where just 21% of developers use such services.

Cross platform tools (CPTs) are used by 30% mobile developers. CPTs such as PhoneGap, Xamarin or Appcelerator suit multi platform developers. For example, use of CPTs is much higher among HTML5 developers (50% of developers that mainly use HTML5).

Game developers have a range of tools available at their disposal, ranging from wide purpose cross-platform tools such as Marmalade and Corona, to 3D engines like Unity 3D and Unreal and social gaming platforms such as Scoreloop. Such tools are utilised by 22% of developers.

"a competitive tools portfolio is vital for a platform to attractive key developers segments - particularly Guns for Hire, Hunters and Digital Media Publishers - that will then drive a healthy app catalogue"

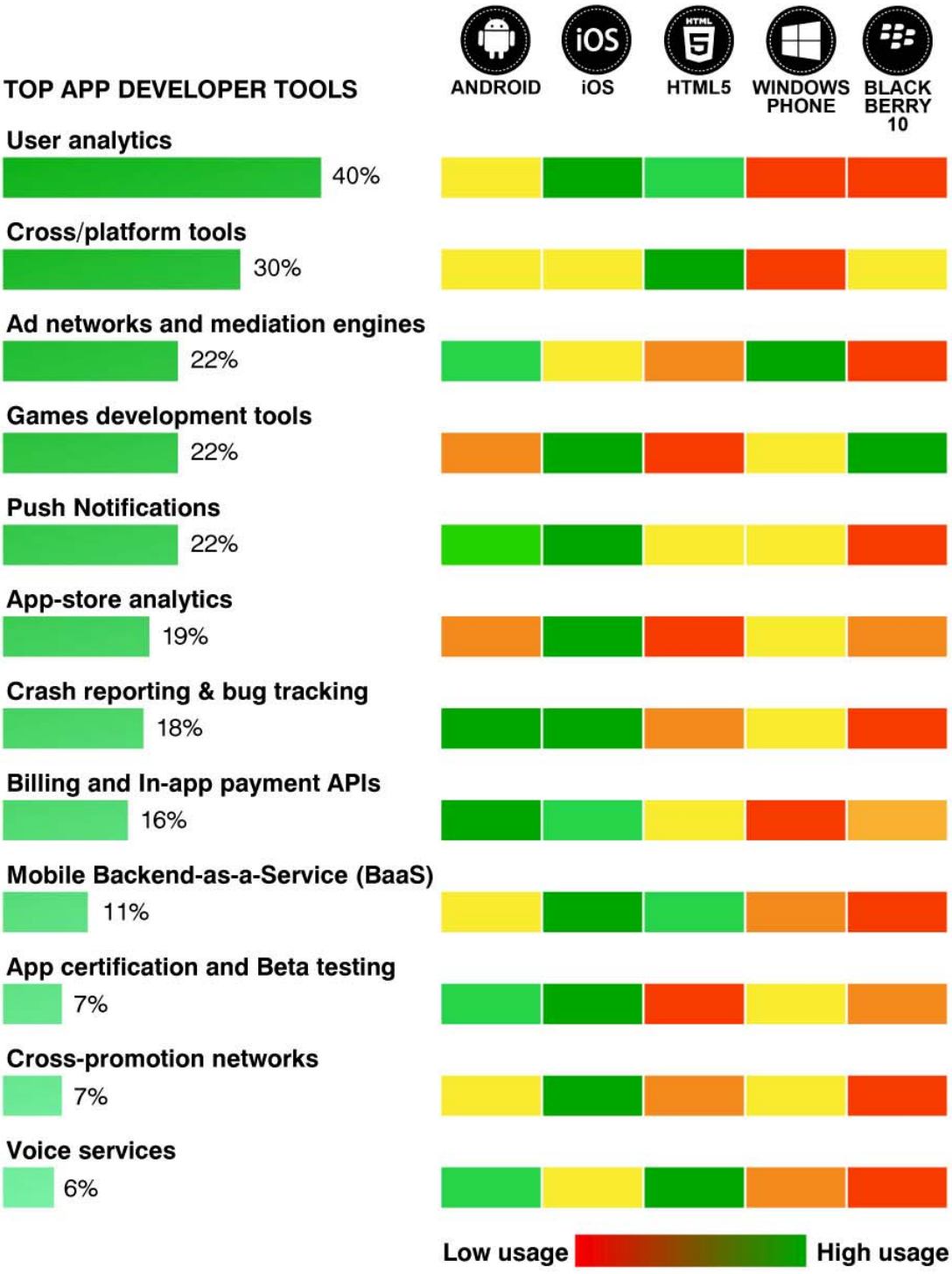
As the next chart shows, platform tooling differs greatly among platforms. iOS is far more advanced, with developers using more tools - 3.1 on average - than any other platforms' developers. iOS also exhibits the highest usage across most tool/service categories suggesting a higher level of sophistication among iOS developers. This provides a significant competitive advantage for iOS since developers can leverage the innovation, features and capabilities beyond what Apple provides.

For Android developers' tool usage is lower, particularly in the "User Analytics" and "App-store analytics" categories that are critical for informing the business side of app development. To some extent this is justified by the strong presence of Hobbyist developers among those prioritising Android, a segment that is much less, if at all, interested in app development as a business.

The imbalance in the use of developer tools across challenger platforms highlights an important issue facing challenger platforms: that a competitive tools portfolio is vital for a platform to attract key developers segments - particularly Guns for Hire, Hunters and Digital Media Publishers - that will then drive a healthy app catalogue. Therefore a major strategic objective for platform vendors should be to garner support for their platform from major tool vendors.

DEVELOPER TOOLS AND SERVICES TRACKER

% of developers using tools or services (n=4,953)



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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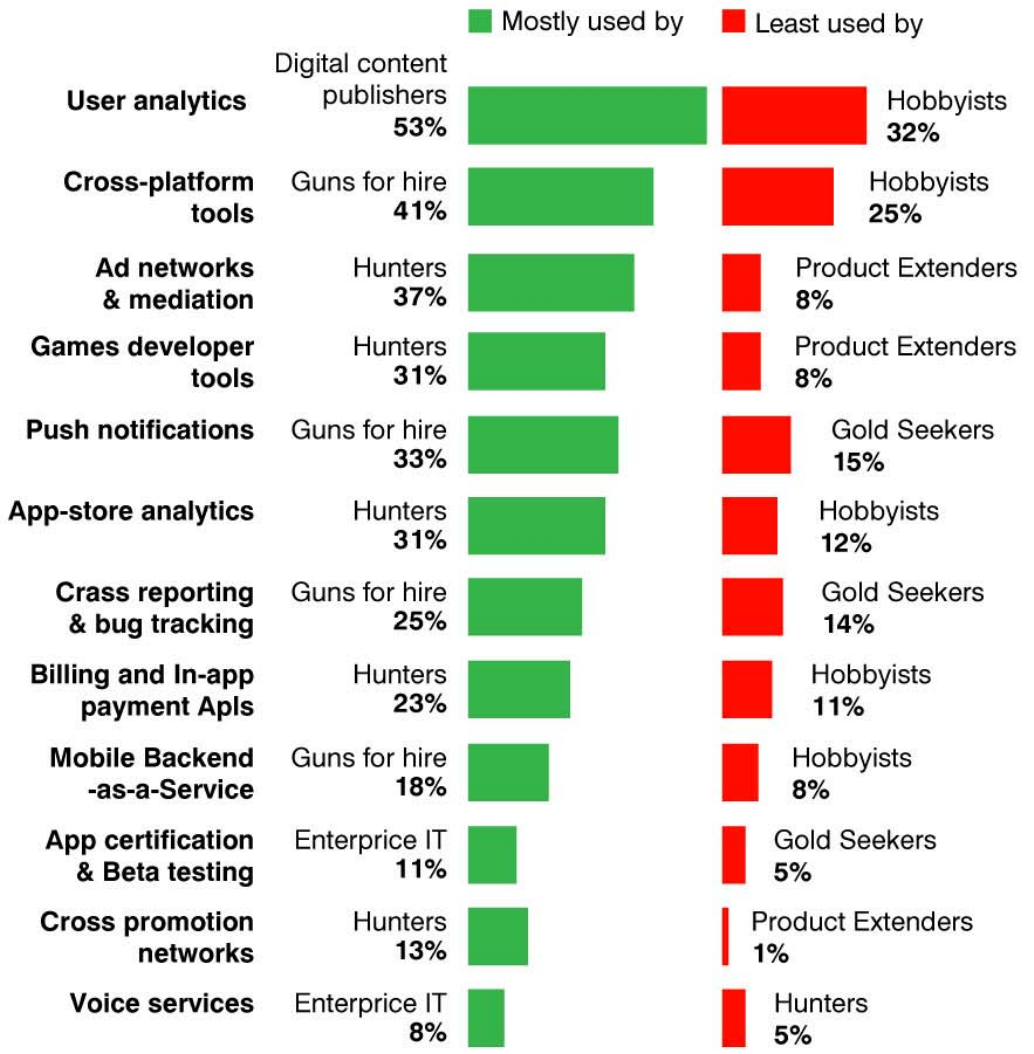
It's not just platforms that differ in terms of their competitive tools advantage. Developer segments, as defined in our Developer Segmentation Model, exhibit very different behavior in the way they leverage third party tools and services.

"There is a gap in white label social tools (user management plus follower like features). Enterprise apps can't leverage Twitter or Facebook because of security concerns, so they need third party tools."
Ben Reed, Heading Mobile Development, Mubaloo

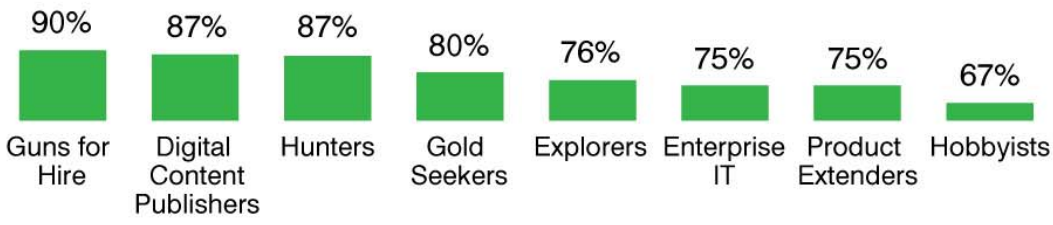
Guns for Hire, i.e. developers that target contract work, make the most sophisticated use of tools with just 10% of them not using any tool at all. This should come as no surprise since these developers often have to deal with time constraints and a variety of client requirements and app categories that necessitate the use of off-the shelf solutions. On the other end of the spectrum are the Hobbyists for whom a number of third -party tools categories may not add great value, particularly if they do not aim to monetise their apps.

GUNS FOR HIRE, HUNTERS: AVID USERS OF DEVELOPER TOOLS

% of developers in each segment that use each tool category (n=4,953)



% of developers in each segment using at least one third-party tool or service



Source: Developer Economics Q1 2014 | www.DeveloperEconomics.com/go

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Overall Guns for Hire and Hunters are the two segments leading most of the third-party tools & services by usage. Hunters are those developers targeting direct revenues via app stores and need to have a well-stocked tools arsenal in order to compete in the increasingly crowded app store markets.

For game developers, game engines such as Unity or Cocos and social gaming services such as Scoreloop and Papaya are often indispensable. At the same time, we found that games developers are among the most frequent users of advertising and cross-promotion services but the least frequent users of Crash reporting and Beta testing services, with just 16% of games developers leveraging these tools. This is surprising considering the competition in the Games category and the intolerance of gamers to buggy or frequently crashing games. This suggests that games developers are missing opportunities to consistently improve their ratings.

distilling market noise into market sense