THE STATE OF WINDOWS PHONE

Jan Dawson, December 2014

JACKDAW

About Jackdaw Research

Jackdaw Research is a research and consulting firm focused on the consumer technology market. We offer research subscriptions, which provide access to a range of content throughout the year, including:

- Company profiles, which provide an in-depth view of major consumer tech companies' offerings, business models, growth prospects, opportunities and challenges. Companies to be covered with profiles this year include Apple, Google, Microsoft, Google, Samsung, Amazon, Facebook, AT&T, and Verizon

- Market trend reports. These will cover topics such as the connected car, the smart home, wearables, and the future of TV and video.

- Quarterly trend presentation decks, covering major developments at the largest consumer technology companies and trends in the market.

These research subscriptions are offered to companies of all sizes at competitive rates. If you are reading this profile, it is likely that your company subscribes to our research.

To learn more about Jackdaw Research, you can visit http://www.jackdawresearch.com or contact Jan Dawson, Founder and Chief Analyst, at (408) 744-6244 or jan@jackdawresearch.com.

THE STATE OF WINDOWS PHONE

Jan Dawson, December 2014

Table of contents

Table of charts

Executive Summary

WINDOWS PHONE IS FAILING TO CATCH ON

Windows Phone is growing modestly in terms of shipments, but not enough to gain share. Both iOS and Android are growing faster, and although Windows Phone is now clearly the third ecosystem in the smartphone market, it remains a very distant third, with no immediate prospect of catching up. There are several key reasons for this failure to catch on, among them:

- The chicken-and-egg problem of user and developer appeal – developers won't develop for a platform with no users, and few users will choose a platform without key apps

- The lack of a recognizable flagship – Nokia and other OEMs have failed to produce recognizable, compelling flagship devices

- Windows Phone has been much more successful at the low end of the market, and is increasingly a low-end platform, dominated by devices sold at under $300, which will further limit its developer appeal

- Windows Phone doesn't have a clear differentiator in the market, with iPhone having a clear market position and Android mopping up essentially all other parts of the market

- An overuse of carrier exclusives and a lack of focus has limited the addressable market and diluted the focus of ad spend

- Carrier sales reps prefer to sell other devices, either because of incentives, customer preferences or worries over return rates.

MICROSOFT'S SOLUTIONS MAY NOT WORK

Microsoft clearly recognizes many of these issues, and has several solutions in the works, among them the unified OS approach of Windows 10, doubling down on the low end, more focused flagships, and discounts on Microsoft services. The doubling down on the low end risks exacerbating some of the current problems but deals with the reality that this is where the platform is finding traction. Windows 10 is unlikely to be successful in solving the key problem of apps on Windows Phone, and risks creating sub-par apps if it works at all. Discounting Microsoft services risks price-based competition and devaluing those services, and the appeal is being lessened by the increasing availability of Office and other services on other platforms for free.

KEY ACTIONS FOR MICROSOFT

Microsoft needs to do more to help Windows Phone to succeed. Among the major steps it needs to take are:

- Creating a compelling flagship, with commensurate investment in both product and marketing, and ensuring major carriers worldwide carry it

- Establishing clearer differentiators for Windows Phone as a platform, especially at the high end of the market

- Doing more to help developers create apps for Windows Phone, especially going beyond the initial development effort

Unless Microsoft does these things, and does them well, it will not achieve mass-market traction for Windows Phone in the near future, and it risks spending a great deal of money developing an OS and creating devices which never catch on in a meaningful way.

Introduction

The two dominant mobile operating systems, Android and iOS, get plenty of attention in the popular press, and there's much debate about which of them is "winning". Of course, the answer to that question very much depends on how you define winning in this context, and as a result there's no simple answer. However, what is clear is that these two platforms dominate the market, and what's equally clear is that Windows Phone is now firmly in the third place slot. That represents both progress (BlackBerry held that position for some time, and Windows Phone has now supplanted it) and the reality of being far behind the two major platforms by almost any measure. However, the exact position of Windows Phone in the market is discussed far less often, and when it is it's often done in overly dramatic ways, with many prematurely writing the platform off. This report aims to provide a balanced view of the state of Windows Phone and its position in the market, along with implications for Microsoft, Windows Phone OEMs and others.

Device sales

OVERALL MARKET SHARE AND SHIPMENTS

The best measure of the performance of Windows Phone in the marketplace is its shipments and market share, so we'll start there. A number of firms track this data, but IDC has consistently made its data available publicly, and so we'll use that data here. Two key things to remember here are:

• Firstly, this is a growing market, and as such a decline in share may not mean a decline in shipments;

• Secondly, this is a highly cyclical market, both overall and for individual vendors, so trailing 4-quarter shipments are a better guide to trends than quarterly numbers.

On that basis, then, here is the number of Windows Phone shipments on a four-quarter trailing basis over the last couple of years:

CHART 1 **WINDOWS PHONE SHIPMENTS, M, TRAILING 4 QUARTERS (IDC)**
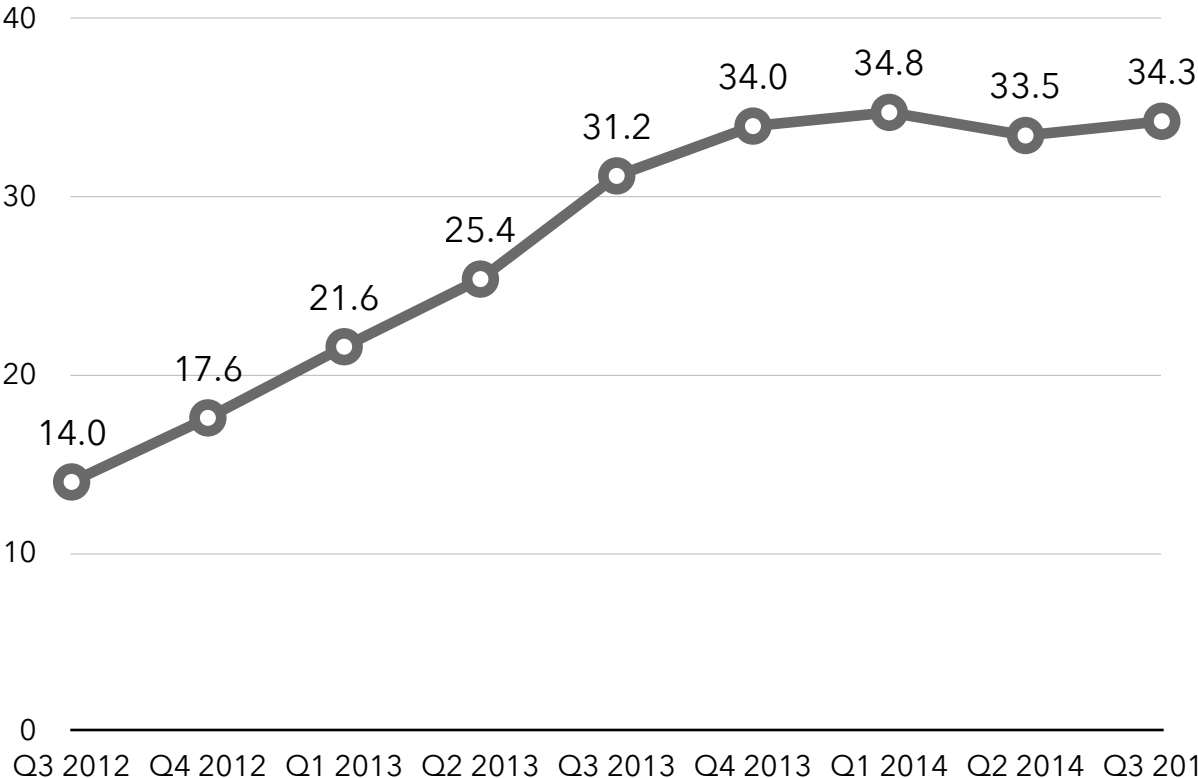
Source: IDC data, Jackdaw Research analysis

The shape of the curve here is clear: for almost two years, annual Windows Phone shipments rose strongly, but in late 2013 and early 2014 that growth slowed, and then reversed, as shipments briefly dipped in Q2 2014, only to grow slightly in Q3. How does this translate into market share? The following chart shows that number:

CHART 2 **WINDOWS PHONE MARKET SHARE, TRAILING 4 QUARTERS (IDC)**
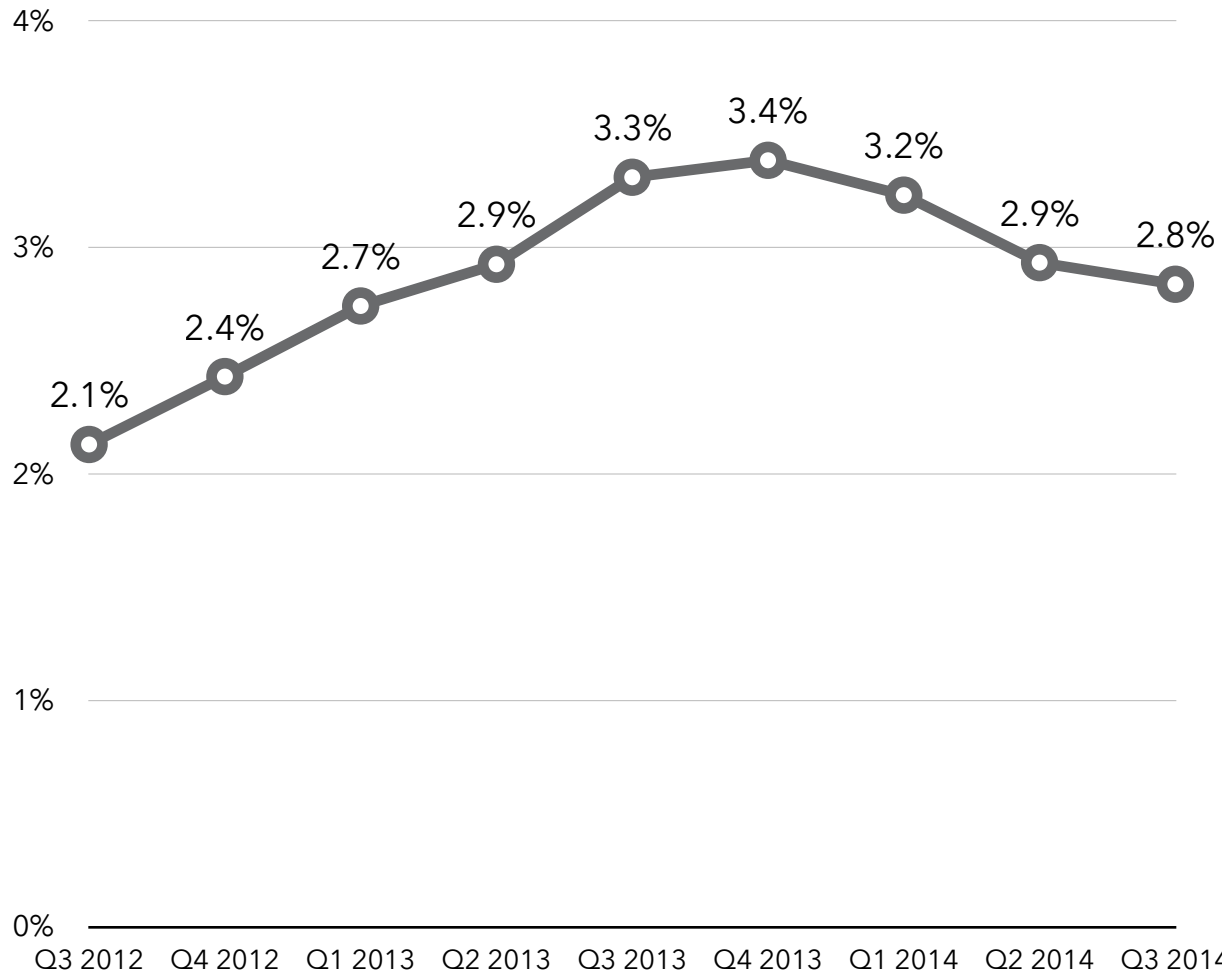
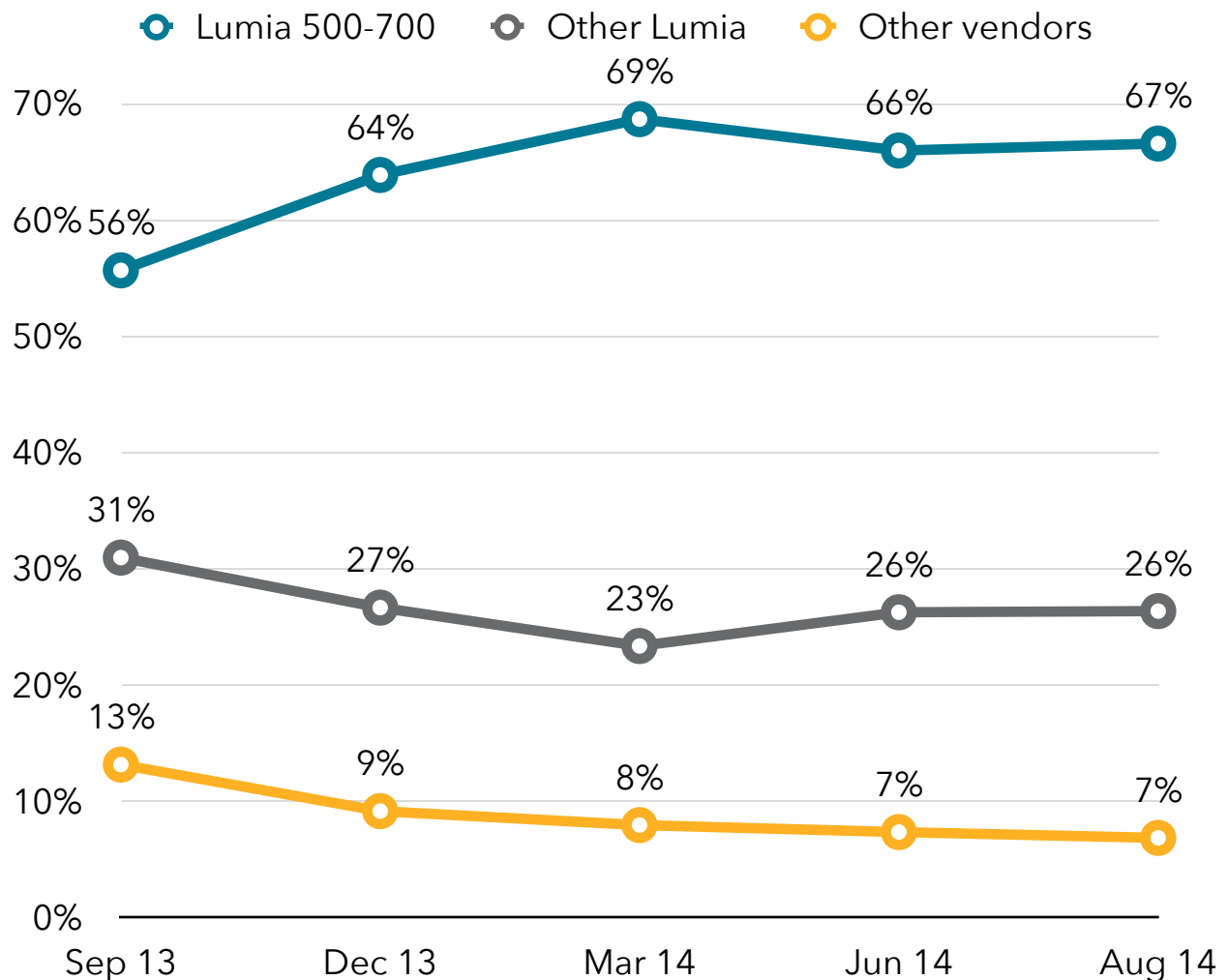Source: IDC data, Jackdaw Research analysis

Right away, there's an important difference in the slope and trajectory of the line between the two charts: market share peaked in Q4 2013 and began to fall in Q1, whereas shipments have continued to grow with the exception of the dip in Q2. Because the overall market is growing, Windows Phone's share started to fall even as its shipments grew. The next few quarters will show whether Windows Phone is able to grow consistently again following this brief stall in 2014, but what is clear is that its share of the market is falling rather than rising, which is obviously not good news for a platform looking to break into the mainstream.

PROFILING THE DEVICES SHIPPED

Windows Phone has become a low-end operating system

AdDuplex, one of the major ad networks specializing in Windows and Windows Phone devices, regularly provides figures on the base of Windows Phone devices ads using its platform are running on. The company has kindly provided us with exclusive data for this report, which highlights an important trend for Windows Phone: the platform is becoming to a great extent a low-end platform.

CHART 3 **WINDOWS PHONE BASE BY DEVICE, FROM ADDUPLEX, SEP 2013-AUG 2014**

Legend: ● Lumia 500-700   ● Other Lumia   ● Other vendors

Lumia 500-700: Sep 13 56%, Dec 13 64%, Mar 14 69%, Jun 14 66%, Aug 14 67%

Other Lumia: Sep 13 31%, Dec 13 27%, Mar 14 23%, Jun 14 26%, Aug 14 26%

Other vendors: Sep 13 13%, Dec 13 9%, Mar 14 8%, Jun 14 7%, Aug 14 7%
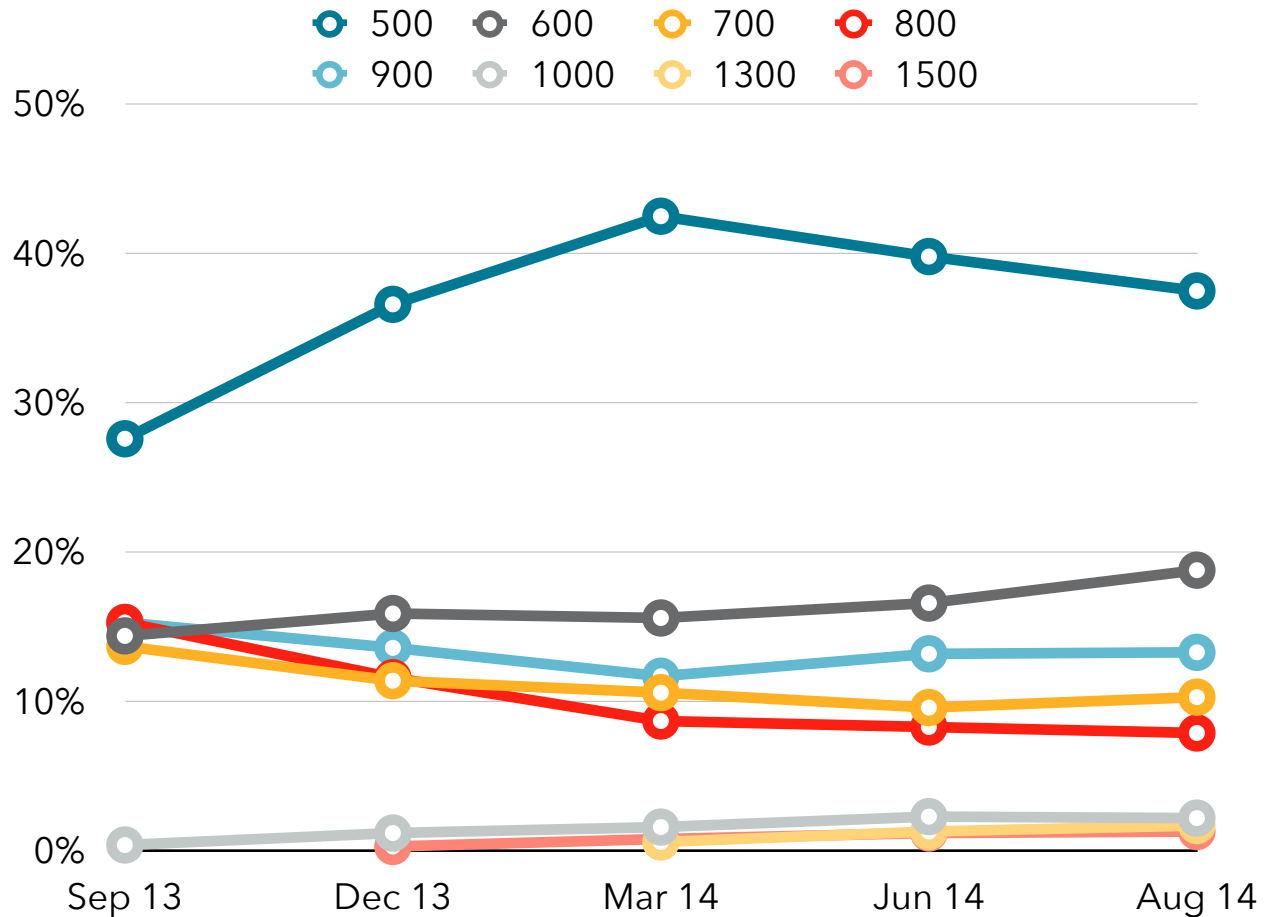
Source: AdDuplex, Jackdaw Research analysis

Two things are very clear from this data: firstly, that former Nokia devices are increasingly dominant among Windows Phone devices in total; and secondly, that the cheaper Lumias are making up an increasingly large proportion of the total. The 500-700 series devices now make up around two thirds of the Windows Phone installed base, according to the AdDuplex

data, and adding in the 800 series devices takes the total to almost 75%. Almost none of these devices, and almost none of the non-Nokia devices, could be considered premium or flagship phones. The 900 series and above make up just 25% of the installed base according to AdDuplex. A more detailed breakdown of the Lumia device ranges as part of the overall base is shown in the next chart:

CHART 4 **LUMIA RANGE AS A % OF INSTALLED BASE FOR WINDOWS PHONE, ADDUPLEX**

Source: AdDuplex, Jackdaw Research analysis

As the chart shows, the 500 series (the lowest-cost devices) is by far the dominant group, with almost 40% share of the installed base, with the 600 series (the next lowest-cost series) in second place, and rising. All other series have significant lower shares, and the highest end 1000+ series are all under 3%.

All this data on the installed base is mirrored by data provided exclusively for this report by Counterpoint Research, which tracks sell-in by vendors in a variety of countries around the world. According to Counterpoint Research:

• For the past 24 months, the Lumia 520 was by far the best-selling Windows Phone device, outselling the next most popular model (the Lumia 625) by almost double.

- The Lumia 925, 720, 920 and 820 were the next-best sellers after the 520 and 625, with not 1000+ series devices (or non-Nokia devices) making it into the top six.

- These six devices together accounted for over 50% of sales in the 24-month period, hence their dominance among the installed base.

- In the last six months specifically, certain other models have joined these six among the top sellers, including the 630, 635, 930 and 1320.

Again, with the exception of the 1320, the best-selling devices have been largely from the lower end of the range. Counterpoint further reports that in 2013, 21% of Windows Phone devices had an ASP below $150, but in the first half of 2014, this number had risen to 27%.

To summarize, Windows Phone is increasingly dominated by lower-end handsets, with the very lowest-cost handsets, the 500 series, being the most popular both in the installed base and in current sales, and little sign that any of the company's premium devices are selling above very small numbers. So why is this?

The clearest explanation appears to be that the low end is the one area where Windows Phone has really found a way to set itself apart, as a low-cost but not low-quality alternative to cheap Android devices. Both Microsoft and Nokia have effectively articulated their key selling points against the other major platforms at this end of the market, and they've had significant success there as a result. Cheaper Android devices have often felt like plasticky, low-quality, poorly-performing imitations of premium Android devices like the Samsung Galaxy S series and the HTC One. Windows Phone devices, by contrast, have still boasted high build quality (part of Nokia's legacy) and software that performs perfectly adequately on the low-spec hardware.

Significant risks ahead as low-cost Android improves

However, this strength for Windows Phone is a double-edged sword. Although it has been able to set itself apart effectively as a platform at this low end of the market against Android, it faces increasing competition from better devices running that operating system even at the low end. The Moto G and Moto E from Motorola are great examples of Android devices which mimic the benefits of low-end Windows Phone, with quality hardware running the software well. And even as Google sells Motorola to Lenovo, it's ramping up its efforts on the software side with Android One, an attempt to get better, stock-version Android onto cheap handsets in India and other emerging markets.

We saw earlier the slowdown in Windows Phone device sales, and it's quite likely that part of the reason is that the core value proposition for Windows Phone is being eroded at the low end. Kantar Worldpanel provided us with exclusive data which shows that in Brazil Nokia was the largest source of new users of Motorola phones, while in Mexico it was the second largest source, even as Samsung and other Android vendors also lose share to Motorola.

Developers and apps

PROGRESS ON THE NUMBER OF APPS AVAILABLE

Microsoft has made good progress in increasing the number of apps available for Windows Phone:

CHART 5 **APPS AVAILABLE IN WINDOWS PHONE STORE, THOUSANDS**
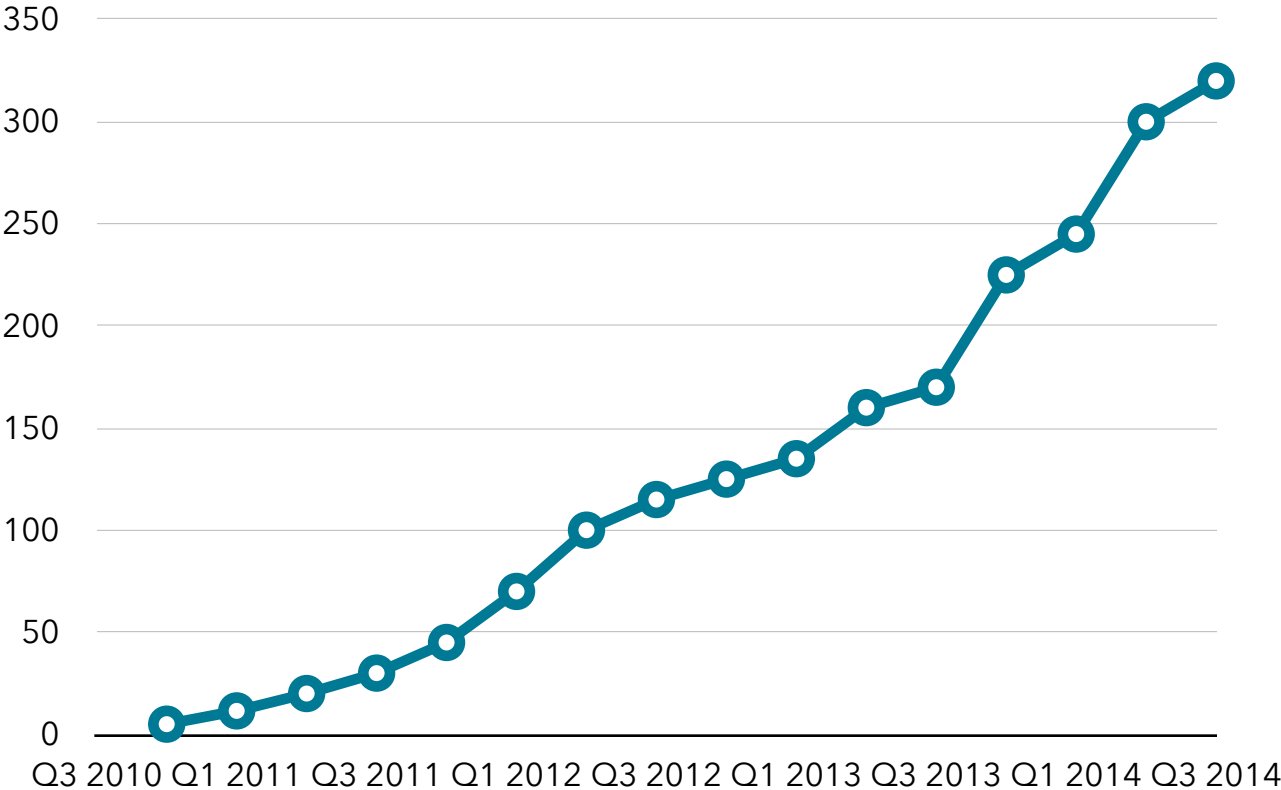
Source: Microsoft, Jackdaw Research estimates and analysis

This is an enormous achievement in many respects – to go from zero to 320,000 in under four years is remarkable, given that it took Apple two and a half years with a much larger base of devices.

However, it's also worth noting that Windows Phone as an operating system, and with it the Windows Phone store, launched several years after the iOS and Android stores. So it's also useful to compare how these three stores have performed on the basis of quarters since launch, as a way to see what sort of trajectory the Windows Phone store is on compared to the two dominant platforms:

CHART 6 **APP STORE PERFORMANCE IN FIRST FIFTEEN QUARTERS FROM LAUNCH, 000s**
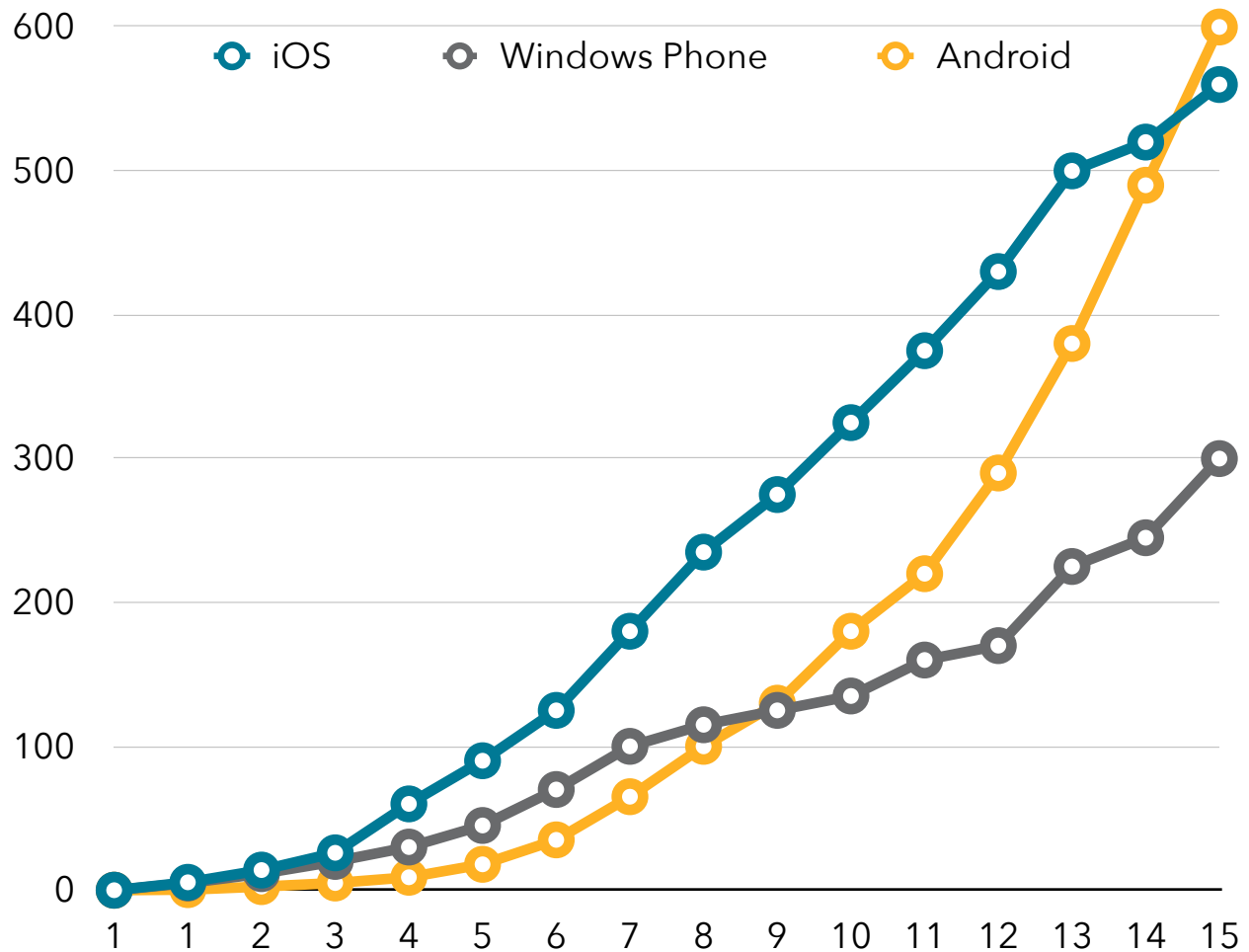
Source: Apple, Google, Microsoft, Jackdaw Research estimates and analysis

What we can see here is that Windows Phone actually performed better than Android over its first two years, adding apps more quickly, and reaching the 100,000 apps milestone faster than Android did (though more slowly than iOS). However, after the first year, which was boosted by intensive efforts from Microsoft to get apps in the store, growth tailed off significantly, while Android actually accelerated as the platform gained traction in the market and developers began to see a significant revenue opportunity. Windows Phone's growth in apps available has picked up now, but remains far behind that of both iOS and Android in their first four years.

And of course, Windows Phone today isn't competing against Android and iOS several years ago. It's competing against those two platforms today, both of which have extended their leads significantly since:

CHART 7 **APPS AVAILABLE IN MAJOR APP STORES, THOUSANDS**
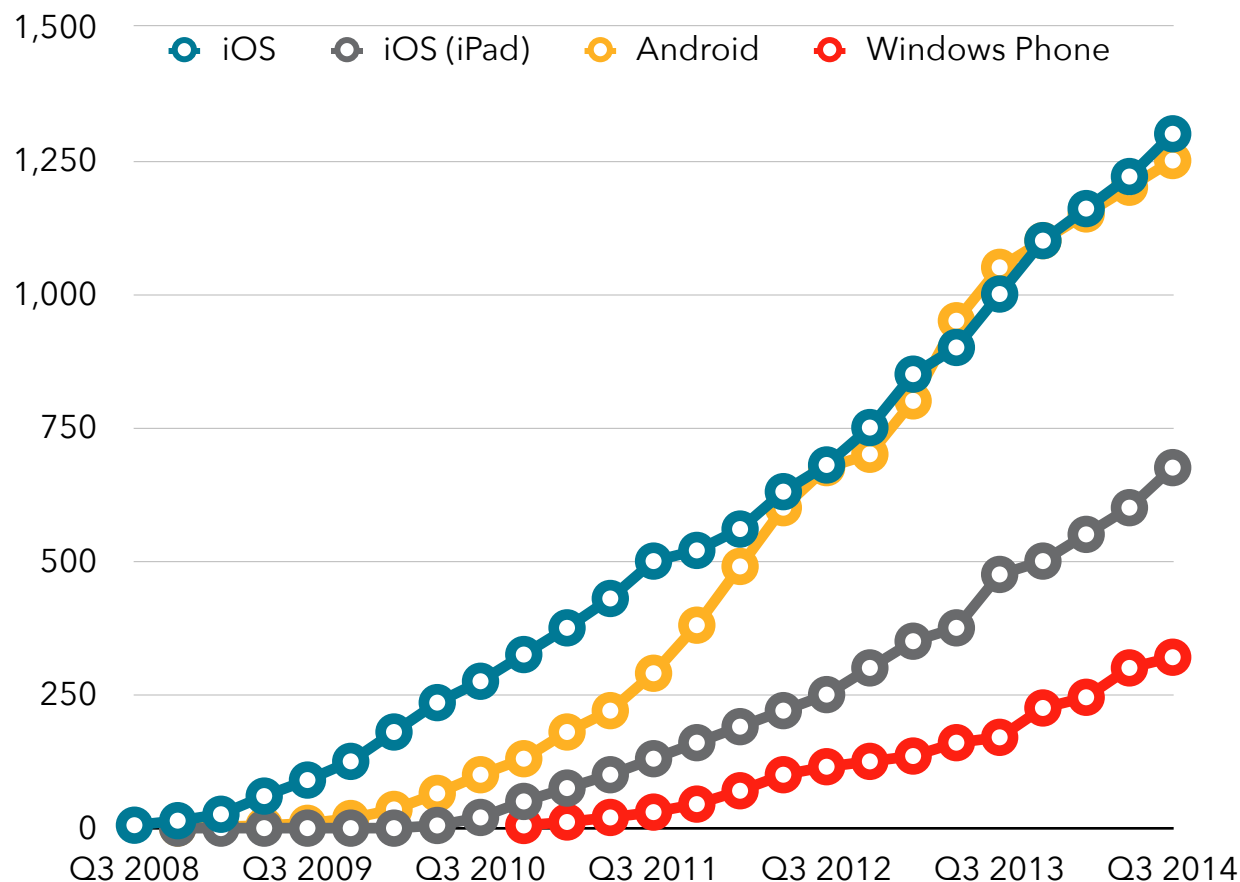
Source: Apple, Google, Microsoft, Jackdaw Research estimates and analysis

iOS and Android are pretty much neck and neck at this point, though it's hard to know exactly what the total number is on Android, as it's one of several data points the company has only released sparingly in recent times. However, there are fewer Windows Phone apps by some margin than there are iPad-optimized apps, and about a quarter as many Windows Phone apps as there are iOS or Android apps in total.

QUANTITY ISN'T EVERYTHING, BUT THE QUALITY STORY ISN'T BETTER

Microsoft – and, before its acquisition, Nokia – have frequently countered such narratives by talking about quality rather than quantity. Often using a fairly useless category as a straw man, they point out that the Apple or Google app stores have hundreds of entrants in a category no-one cares about, and yet these get counted as part of the total of over a million apps. The focus should be on quality and not quantity, they suggest. There are two ways to measure

that: the first is looking at the apps actually in stores as a whole and seeing whether they as good as or better than those in competing stores, and the other is to look at the most popular apps in stores – the ones users really care about – as a test of how well a platform meets the needs of its users.

Overall quality is dragged down by large numbers of counterfeit and substitute apps

Measuring overall quality is the hardest thing to do, because short of looking at every app in an app store, there's no way to categorize the overall base of apps. However, one can take subsets of apps and look at results for specific searches as a proxy for overall quality, and here Windows Phone comes out poorly. The chart below shows a breakdown of the top 100 apps on the Windows Phone Store by five major categories:

- **Cross-platform** – apps which are also available on one or both of the other two major app stores and therefore have strong cross-platform appeal. These make up the bulk of the top 100 apps on the other two major platforms.

- **Generic** – apps which serve generic needs (such as flashlights, MP3 downloaders etc) but aren't from name brands, and aren't available on the other major stores. These make up a smaller percentage of apps on iOS and Android.

- **Substitute** – apps which provide substitutes for apps which either don't exist at all on Windows Phone or where the current versions available are meeting a need so poorly others spring up to fill the need, e.g. 6tin (a Tinder substitute) or Snaptastic (a Snapchat substitute). These tend not to exist on iOS, and exist in specific niches on Android.

- **Ripoff** – a strong word, but used only where a competing app directly uses the name of an existing brand and/or uses the company's logo without permission in promoting itself. This is particularly egregious in the case of YouTube apps. These are present on the other two major platforms as well, but tend not to make it into the top 100 lists.

- **Microsoft** – apps which Microsoft itself develops.

CHART 8 **APPS IN TOP 100 ON WINDOWS PHONE STORE BY CATEGORY**
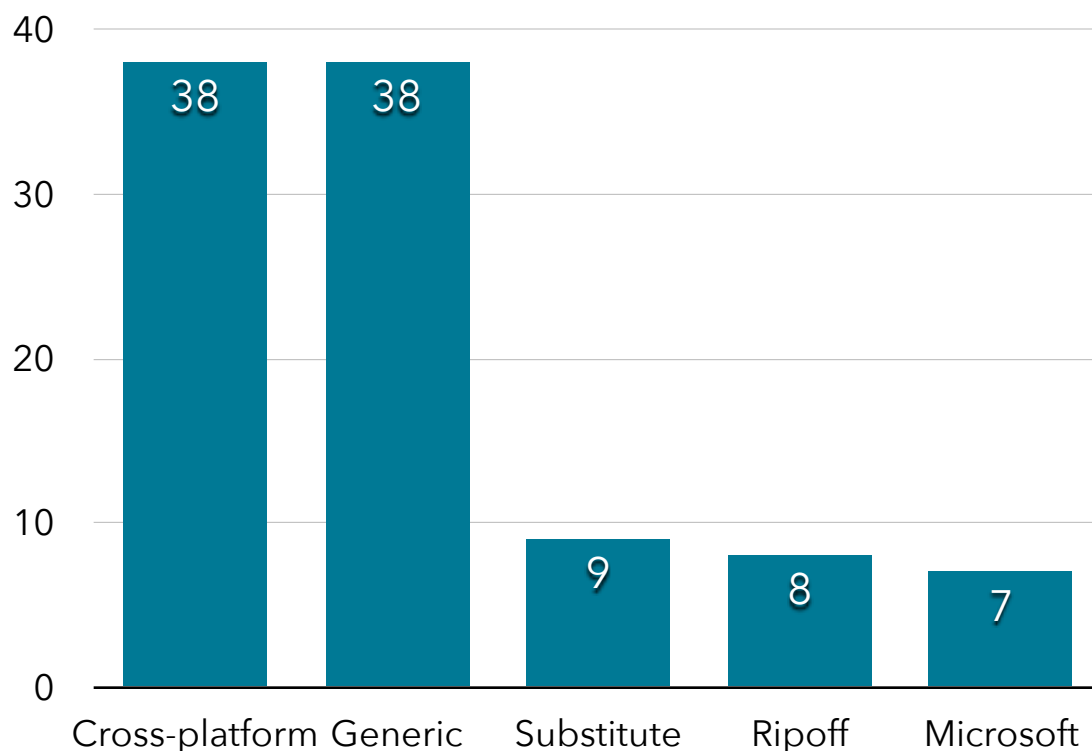
*Source: Windows Phone Store, Jackdaw Research research and analysis*

The picture is somewhat grim even in the top 100. Just over a third are apps also found in the other two major app stores, far lower than the equivalent percentages for iOS and Android. Another third are generics, many of them music downloaders, flashlights and the like (one or two of which also appear in the top 100 on Android and iOS). Nine are substitutes for popular apps not available (or not available in ideal form) on Windows Phone, including Snapchat, Tinder, Instagram, Google Maps and YouTube. Eight are what we've called Ripoffs, almost all of them YouTube apps, but also including counterfeit Gmail, Google Chrome and Wikipedia apps. Lastly, seven are developed by Microsoft itself. Using the top 100 as a barometer for the overall Windows Phone Store experience is not all that promising.

Specific searches yield more examples of the Ripoff and Substitute categories in large numbers. Below is a screenshot of a search for YouTube, which highlights two separate issues: the large number of Ripoff and Substitute apps, and the lack of clarity as to which is the official app (it's number eleven on the list):

CHART 9 **SCREENSHOT OF YOUTUBE SEARCH RESULTS ON WINDOWS PHONE STORE**

Apps+Games results

Source: Windows Phone Store, Jackdaw Research

The official YouTube app is also poorly reviewed by users, which is likely one reason it isn't the first on the list here. That, in turn, stems from a long-running dispute between Microsoft and Google.

Below is another screenshot, this time showing results for a search for "Swing Copters," a game recently released on iOS and Android, from the creator of the viral game Flappy Bird.

CHART 10 **SEARCH RESULTS FOR SWING COPTERS ON WINDOWS PHONE STORE**

Source: Windows Phone Store, Jackdaw Research

To be clear, this game isn't available on Windows Phone, but there are lots of examples just in this first page of apps that share the name and/or the logo. On both the iOS App Store and

Google Play, there is only one app with an even vaguely similar logo, and the name is different. Just how many of the 320,000 apps on the Windows Phone store are in the same vein as these faux YouTube and Swing Copters apps is very hard to tell, but there's clearly a problem. It's especially bad in a case like this, where there is no official version available, but no shortage of counterfeits presented to users.

Performance on most popular apps is poor too

The other tack Microsoft and Nokia have taken in defending against accusations that the Windows Phone store doesn't measure up is to talk about the most popular apps, and the companies have talked up releases of big names such as Instagram, Vine and Uber in recent months. However, the store falls short on these measures too. The chart below shows what percentage of the top 50 free apps available in each of the other two major stores in that platform's app store. In other words, what percentage of the top 50 free Android apps are also available in the iOS App Store, and so on.

CHART 11 **AVAILABILITY OF COMPETITOR TOP 50 FREE APPS IN MAJOR APP STORES**
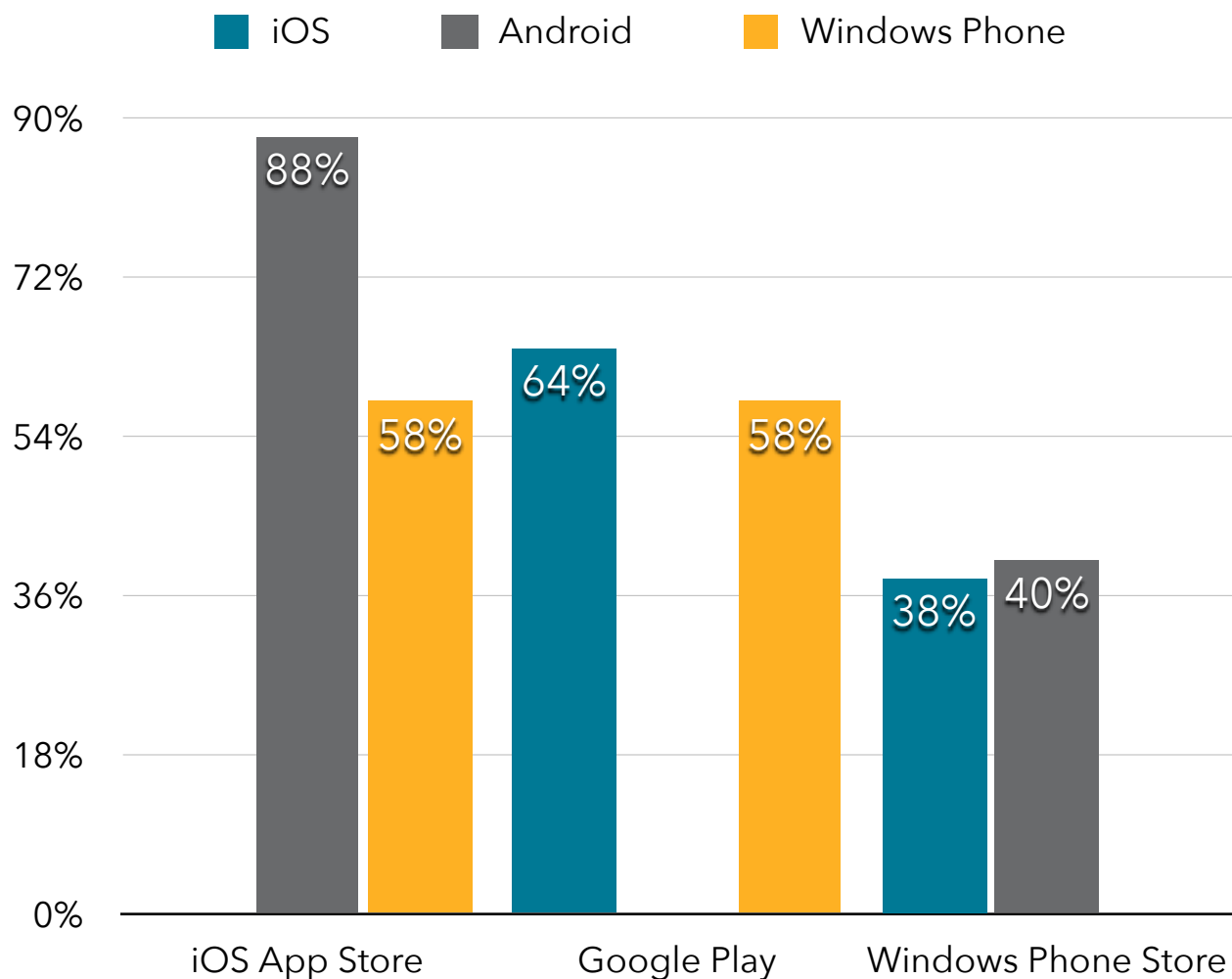
Source: Apple, Google, Microsoft, Jackdaw Research

As the chart shows, the iOS App Store has the highest percentage of competing platforms' apps at 88% of the Android top 50 free apps and 58% of the Windows Phone top 50. Android has 64% of the top 50 free apps on the iOS App Store, and also has 58% of the top 50 apps on the Windows Phone store. However, Windows Phone has just 38% of the top 50 iOS apps and 40% of the top 50 Android apps, lagging both of its competitors significantly. This number has likely improved over time (we don't have good historical numbers) but it's still a poor showing overall.

Time lag for major popular apps makes the situation even worse

What's even worse is that, even though Windows Phone now boasts certain popular apps it formerly lacked, those apps have been a long time in coming, and in a couple of cases carry a "beta" label their iOS and Android counterparts don't (including Instagram and Pinterest among the top 100). The table below show the time lag between certain key apps being released on iOS and Android and their Windows Phone counterparts.

CHART 12 **TIME LAG FROM IOS AND ANDROID TO WINDOWS PHONE APP LAUNCHES**

	Launch on iOS	Lag vs iOS	Lag vs Android
Yelp	July 10, 2008	851 days	336 days
Pandora	July 11, 2008	1714 days	1281 days
LinkedIn	August 21, 2008	1362 days	403 days
eBay	September 23, 2008	758 days	245 days
Skype	March 31, 2009	1063 days	909 days
Zillow	April 29, 2009	1171 days	848 days
Spotify	August 27, 2009	802 days	792 days
Dropbox	September 29, 2009	Not available	Not available
SoundCloud	November 10, 2009	Not available	Not available
Twitter	April 11, 2010	201 days	182 days
Uber	May 31, 2010	1514 days	1358 days
Netflix	August 26, 2010	81 days	-178 days
Instagram	October 6, 2010	1142 days	597 days
Path	November 14, 2010	1160 days	932 days
Tumblr	March 22, 2011	763 days	982 days
Snapchat	July 13, 2011	Not available	Not available
Fitbit	Oct 19, 2011	1013 days	859 days
Nike FuelBand	January 19, 2012	Not available	Not available
Venmo	March 15, 2012	Not available	Not available
Tinder	September 22, 2012	Not available	Not available
Vine	January 24, 2013	292 days	162 days
Dots	April 30, 2013	Not available	Not available
BBM	October 21, 2013	277 days	277 days
Beats Music	January 21, 2014	9 days	9 days
TwoDots	May 29, 2014	Not available	Not available

Source: Jackdaw Research

Three things are worth noting here:

- The Windows Phone platform didn't launch until October 2010, so in the case of apps which landed on iOS and Android before that time, October 2010 is the very earliest they could have become available on Windows Phone, and several key apps (including Twitter, eBay and Yelp) were indeed available from day one on the new platform.

- In almost all cases, there is a significant delay between iOS and Windows Phone launches – for example, for recent success stories Instagram, Vine and Uber, the delay was 1142 days, 292 days and 1514 days respectively from iOS launch to Windows Phone launch. As such, though it's good news that these apps are now available on Windows Phone, it's taken far too long for them to get there.

- In quite a number of cases, apps simply still aren't available: notable examples include Dropbox (launched on iOS September 2009), SoundCloud (November 2009), Snapchat (July 2011), Venmo (March 2012) and Tinder (September 2012).

Though Windows Phone is perpetually "closing the gap" on some well established apps, it's still rarely in the first round of platforms for new apps, and this remains the key problem. Beats is a rare exception where Windows Phone launched almost immediately following iOS and Android launch, but the situation is still far too frequently that Windows Phone launches weeks, months or even years after its iOS and Android counterparts. Android used to suffer from a similar problem, but as the chart below shows, that gap has shortened considerably, even as the iOS-to-Windows-Phone lag remains long. Only in very rare cases do apps launch on Windows Phone before Android – the only example in the chart below is Netflix.

CHART 13 **TIME LAG FROM IOS TO ANDROID AND WINDOWS PHONE APP LAUNCHES**
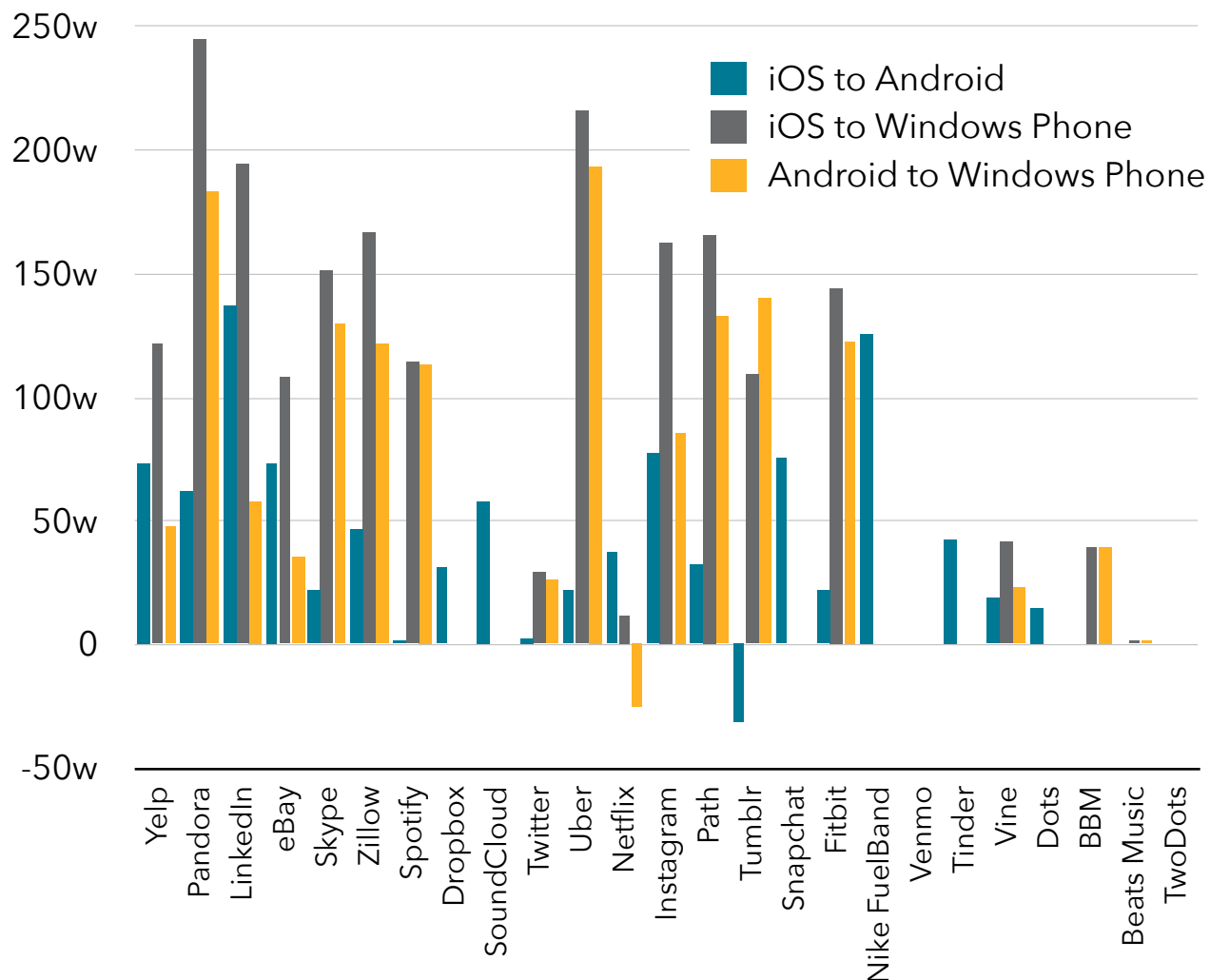
Source: Jackdaw Research

Substitute apps are only a partial solution

Microsoft has adopted two strategies to solve this particular problem: encouraging and in some cases paying developers to port their apps to Windows Phone, and encouraging third parties to create substitute apps where first-party developers refuse to do so. The former strategy has helped in some cases, including a number of Microsoft's big wins. But it hasn't solved the problem entirely, and it has encouraged certain developers to fill the gaps. At the Build developer conference in 2014, Microsoft highlighted a "Star Windows Phone developer," Rudy Huyn, who is best known as the creator of several of these substitute apps, including 6tag (Instagram), 6tin and 6tindr (Tinder), 6snap (Snapchat), 6sec (Vine), Cloudsix (Dropbox) and others. It is precisely because of Huyn, and others like him, that the top 100 list features so many Substitutes, and several of them are his alone.

WHY DEVELOPERS WON'T DEVELOP FOR WINDOWS PHONE

Our conversations with developers who create apps for iOS and Android but not Windows Phone have highlighted several key barriers to entry:

• Lack of demand from users – Windows Phone users simply don't seem to be clamoring for their apps in large numbers, in comparison with Android and iOS users

• Platform opportunity too small – developers simply don't feel there is enough revenue opportunity from developing for Windows Phone

• Up-front payments to port an app are not enough – developers tell us they anticipate spending at least as much money maintaining and refining an app after launch as they will pre-launch, but Microsoft has only offered them money to cover the initial port.

As such, third party developers play a uniquely important role in the Windows Phone ecosystem, and one that has helped paper over the cracks left by the lack of commitment from first-party developers to bringing their apps to Windows Phone. But it doesn't solve the problem entirely, as such apps often occupy uncertain ground, and are subject to legal action and/or withdrawal of support from the first party app owners.

THE CHICKEN AND EGG PROBLEM OF APPS

The biggest challenge for Windows Phone is the same problem that faces all new mobile operating systems in the post-iPhone era: the vicious circle between app availability and platform appeal:

CHART 14 **THE USER/APP VICIOUS CIRCLE**
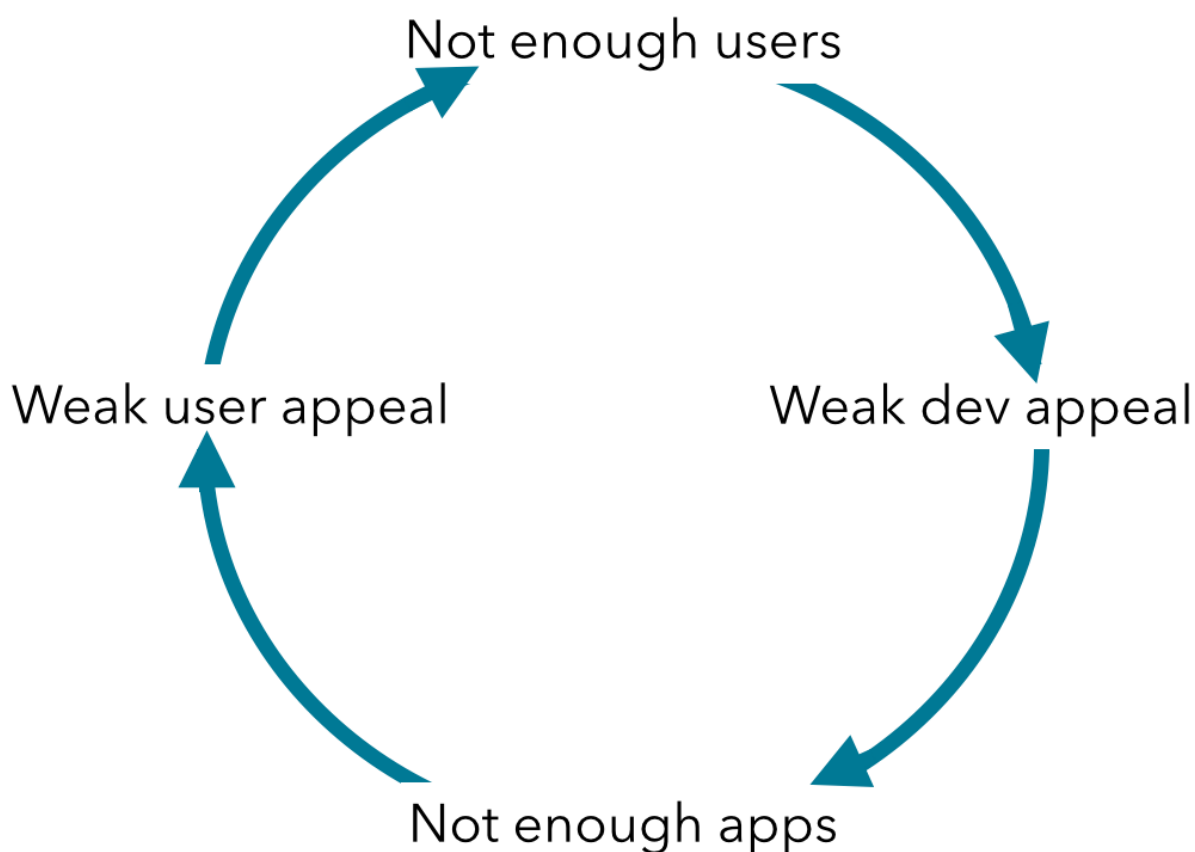
Source: Jackdaw Research

In short, a modern smartphone platform needs apps to be attractive to users, and a would-be smartphone app developer needs to know his or her apps will be used. As such, when there are no apps, there are no users, and when there are no users, there are no apps. Any new smartphone platform has to break through this cycle somehow, by goosing one side or the other of this equation: either gaining many new users without having the number of apps that would normally be required, or getting many new apps for the platform without the otherwise requisite user base. Microsoft has made significant progress in increasing the number of apps, but in relative terms it still lags the two major platforms significantly in number, quantity and timeliness of key apps.

The other problem is that each of the other two platforms have a key value proposition: Apple may not have as large an installed base as Google (though it is at this point very large), but its users spend significant amounts on apps. Android users, meanwhile, spend relatively little on apps on average, but there are far more of them, so the volume makes up some of the difference. Both bases are therefore attractive to developers for different reasons. However, Windows Phone is neither fish nor fowl in this respect, sharing the less desirable aspects of both competing platforms, being both considerably smaller than the two leading

platforms, but also attracting an even more low-end focused user than Android, as shown in the chart below. This chart plots rough installed base size against average device selling price as a proxy for users' propensity to spend on apps (the red arrows indicate the current trajectory).

CHART 15 **MAJOR PLATFORM POSITIONING FOR DEVELOPERS**
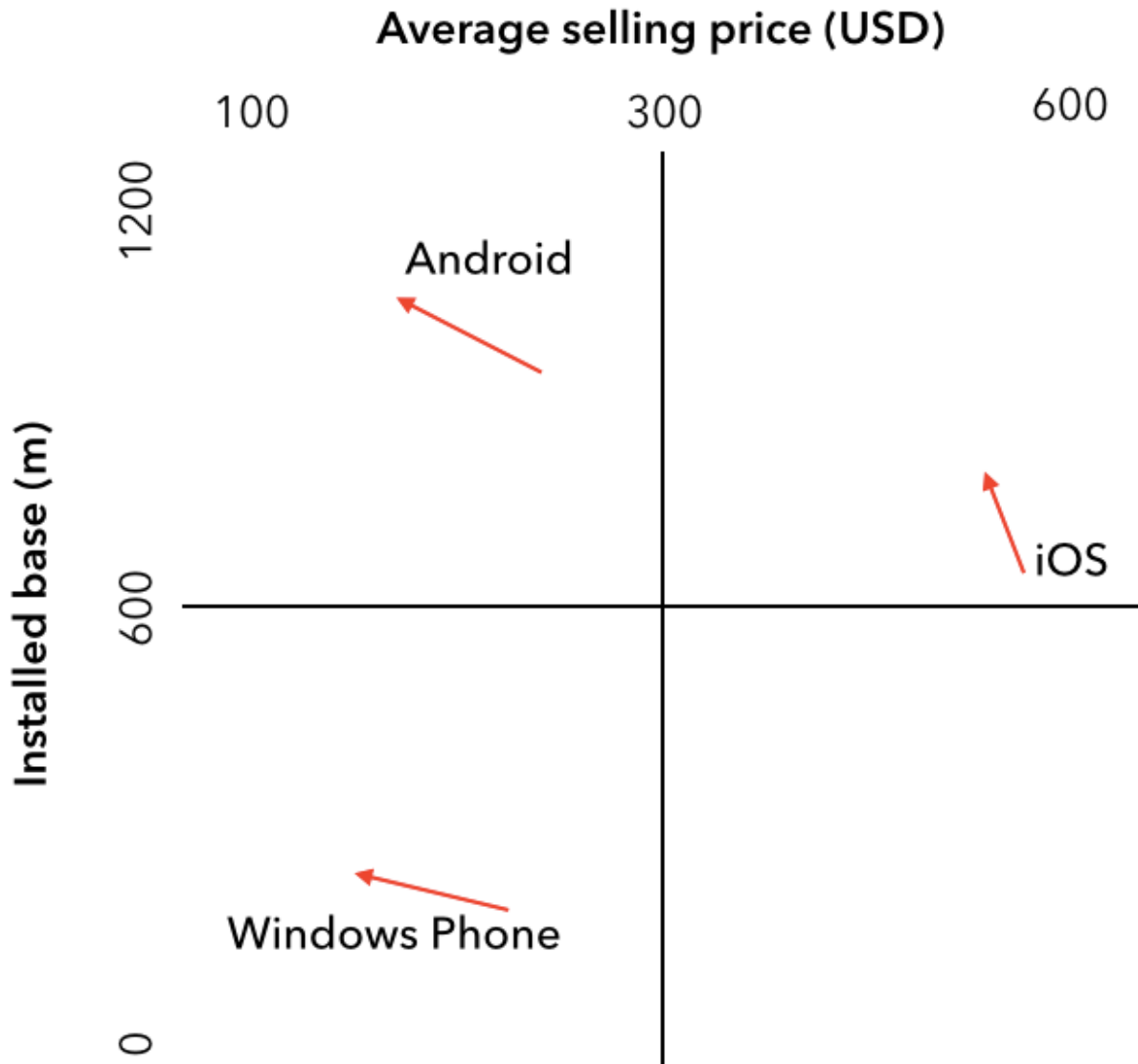
Source: Jackdaw Research

In addition to the classic vicious circle of user and app adoption discussed earlier, then, Windows Phone also suffers from a particular combination of small base and low-spending users, which makes it particularly tough to attract developers who want to drive revenue from app and in-app purchases.

Why is Windows Phone Not Growing Faster?

To summarize our key messages to this point:

- Windows Phone shipments have grown reasonably strongly, but not entirely consistently or enough to gain market share. In fact, market shares are slipping

- Much of the growth in Windows Phone has come from low-end shipments, because this is where Windows Phone is most compelling, but this further limits the attractiveness of the platform for developers

- Because of both the chicken-and-egg problem and this low-end focus, the number and quality of the apps available on Windows Phone continues to significantly lag both iOS and Android, and major apps have arrived on the platform very late if they've made it at all.

So, let's return to the question we asked earlier – why hasn't Windows Phone been more successful, especially with the backing of a well-funded company such as Microsoft, massive marketing spend, strong carrier support, and Microsoft's long history of successfully attracting both developers and users? The chicken-and-egg app problem is certainly part of the answer, and is arguably the most-often cited reason, but it's far from the only answer. Here are five additional explanations:

- Second ecosystems struggle, third ecosystems struggle for relevance – there's a long history of operating system battles, and while second ecosystems have often found sustainable niches, third ecosystems have rarely succeeded to any great extent

- Windows Phone lacks a recognizable flagship comparable to the iPhone or high-end Android smartphones such as the Samsung Galaxy S5 or HTC One, which serve as standard-bearers for the platform

- Windows Phone has failed to give people a reason to choose it over the other platforms – there is nothing Windows Phone does noticeably better than other platforms

- The major sales channel in big markets such as the US is carrier stores, and competitors have given salespeople stronger reasons to sell their product than Windows Phones

- Carrier exclusives have diluted focus and traded ad spend for broad reach.

SECOND ECOSYSTEMS FIND NICHES, THIRD ECOSYSTEMS STRUGGLE FOR RELEVANCE

Though extrapolations from the history of PC operating systems to the smartphone market have been overdone in the past, there is some applicability here, which is worth recounting briefly. There is no device category in which multiple consumer-facing operating systems

have ever co-existed with significant market shares for any length of time. The PC market suggests a model in which one player dominates the market, a second takes a niche position, and all others struggle for relevance. Macs and Mac OS have taken that niche position in the PC market, and iOS has arguably taken the same position in the smartphone market. The difference? iOS market share is far higher than Mac's share ever has been, because even though the value propositions are similar, the subsidy model has enabled Apple to reach far more of the market in smartphones than it ever did in PCs. iOS, of course, was also first to market, and enjoyed a significant lead over Android for quite some time. But Apple's exclusive agreements with single carriers in key markets like the US gave competing carriers an enormous incentive to promote Android, which led it to catch up in functionality within a few years. Verizon's backing in the US, along with the Droid franchise, was what gave Android its early boost, and it has gone from strength to strength since, quickly overtaking iOS in total market share globally, and extending its lead in the interim. Windows Phone launched several years later, with a weak initial value proposition, which has been slow to evolve and catch up with the major players. It is unclear that any such market can support three players with significant operating systems, but the third place player must both offer compelling devices and a compelling value proposition if it is to succeed at all.

LACK OF A RECOGNIZABLE FLAGSHIP

The iPhone's value proposition has always been very simple – a single current device that represents the best iOS and Apple have to offer in the smartphone market (a proposition clouded only slightly in 2014 with the simultaneous launch of the iPhone 6 and 6 Plus). The latest iPhone always boasts the latest hardware and software features and acts as the standard-bearer for iOS and for Apple in the smartphone market. Android, as an open platform, operates slightly differently, but at least every vendor has a flagship – Samsung's Galaxy S and to some extent Note series, HTC's One, LG's G series, and the Moto X from Motorola. Each of these vendors has a recognizable flagship which boasts the best their platform has to offer, and Samsung has arguably acted as standard bearer for Android as a whole as well.

With Windows Phone, however, there has never been a clear flagship. The Lumia 800 was one of the first attempts in this category but was clearly inferior in a variety of ways to the existing flagships on the market from other vendors. Nokia did better with the 900, adding LTE, increasing the size and otherwise closing the gap on key features, but it still fell short. Since then, there hasn't been a clear flagship device – the 1020 could have filled the role, but its oversized camera made it divisive rather than mainstream in its appeal. Nokia's numbering system has in the past suggested that the higher the number the more premium the device, but the 1520 doesn't seem noticeably more high end than the 900 series, and the 1320 is particularly odd as a cheap phablet. It will be interesting to see whether Microsoft adopts a more useful naming system in future, but that's a side note: Microsoft needs to produce a compelling, easily identifiable flagship. The closest anyone has come recently is HTC, with its

One (M8) running Windows Phone, but the core value proposition with this device is that the hardware is identical to the Android version, hardly a way to set the platform apart.

LACK OF A CORE VALUE PROPOSITION

The biggest issue afflicting Windows Phone, though, is the lack of a core value proposition. iPhone offers the tightly-integrated hardware, software and services approach Apple is famous for, upgradeable every year with new software and annually or less frequently with new hardware, with the best cameras and the broadest range and highest quality of apps, all at a premium price. Android offers the alternative, with a much wider range of form factors and price points, from a variety of vendors, with a more open platform, but with a very similar range and quality of apps. But what does Windows Phone offer that's unique and different? How does it offset its app deficiency? What does Windows Phone stand for?

As we've already discussed, Windows Phone has a clear value proposition at the low end of the market: the cheap phone that doesn't feel cheap. But it lacks an equivalent value proposition for the high-end user, especially because that high-end user is more likely than most to feel the absence of the latest and greatest apps. Some of Nokia's devices in particular have boasted great cameras, but not all, and they've often required a fair amount of work for the best results, in contrast to the iPhone's point-and-shoot approach to photography. The built-in apps are not notably better in any category, especially with full versions of Office coming to iOS. Microsoft's content services offer narrower ranges of content in fewer countries than Apple's or Google's platforms. And Cortana has been a late addition in a world that saw the launches of both Siri and Google Now several years ago, even though some of its features are quite advanced.

And here lies the critical problem for Microsoft and Windows Phone: it's been playing catchup from its inception, and catching up is particularly hard to do when you're simultaneously trying to match competitors' features while developing a differentiated value proposition. It's incredibly tough to engage in competitive box-checking while also outperforming the competition. Windows Phone has failed to set itself apart as the platform for any particular sort of user, and specific phones have failed to make their own cases as to why they're the best option for premium users beyond those very focused on photography.

THE CARRIER CHANNEL FAVORS OTHER DEVICES

Lastly, even when Microsoft and its partners have been able to put together a somewhat compelling value proposition, their strategy has often fallen down when it comes to the major channel phones are sold through in many markets: carrier stores. In these stores, two major factors drive customers to purchase other phones: the customer already knows what they want when they walk in the store, and sales reps are heavily incentivized to sell particular devices, especially those made by Samsung. Even when a customer doesn't have a strong existing preference and when incentives aren't an overwhelming driver, sales reps will choose

a phone the customer is likely to stick with and not return, because returns affect commissions. Windows Phone devices have had higher return rates than many other popular devices, in part because of the app selection, and therefore reps often prefer to sell other phones.

CARRIER EXCLUSIVES DILUTE FOCUS

The last major factor affecting Windows Phone sales is the large number of carrier exclusive phones and contracts, especially in the US. Even as almost all other vendors and the two major platforms have moved away from long-term carrier exclusives, Windows Phone continues to go down this route. The iPhone has always been a single device on each carrier, although Apple used exclusive arrangement with carriers earlier in its history, while Samsung and other vendors have slowly consolidated their efforts around single consistent flagships rather than carrier-specific variants. But Windows Phone continues to see different variations on the same device show up on different carriers at different times, which dilutes focus and prevents the sort of concerted mass-market ad campaign competitors have benefited from. The benefits in terms of carrier ad spending don't seem to be outweighing the disadvantages in terms of this lack of focus and the attendant narrow reach of device launches tied to single carriers.

Microsoft's apparent solutions

Microsoft is keenly aware of many of these challenges, and appears to be working to solve at least some of them. Below are some of the initiatives Microsoft is currently working on.

WINDOWS 10 AS A UNIFIED OS ACROSS DEVICES

Microsoft's apparent solution to the developer / user vicious circle is to fold Windows Phone into Windows 10 as just one instantiation of a broader, cross-device operating system. The benefit here would be Microsoft's ability to tap into the much broader historical base of Windows PC developers as potential developers for Windows Phone. By unifying the code base and allowing developers to create apps once that can run in different forms on different devices, Microsoft is apparently hoping that it can goose the developer side of the equation and boost the number of apps. That sounds reasonable on the face of it, but there are two major reasons why the thinking is flawed.

Firstly, the kind of apps Microsoft needs on Windows Phone aren't the kind of apps that exist on Windows PCs today, so simply porting over PC apps won't solve the problem at all. Almost all the most popular smartphone apps on other platforms either don't exist at all on the desktop (e.g. many of the games), or exist solely as websites in the desktop environment. In other words, this effort will do very little to solve the underlying problem of too few apps on Windows Phone.

The second problem is that this kind of cross-platform development approach often leads to a lowest common denominator issue. In other words, different platforms and devices need different UIs, layouts and interaction metaphors, and cross-platform developer tools often do a poor job of allowing apps to truly shine on each platform and device. Often, they rely on oversimplifications and a lack of specialization, and this approach risks creating apps which exist but aren't optimized for smartphones or tablets. Microsoft's tools are clearly intended to minimize the amount of work required to port an app from the desktop to mobile environments, but they risk making it too easy and creating a flood of sub-par apps for smartphones. In some ways, Microsoft may be inviting developers to make the same mistake it made itself in Windows 8: overly blurring the lines between what are still very different environments.

DISCOUNTS ON MICROSOFT SERVICES

One of the biggest problems with Microsoft's increasing ownership of hardware manufacturing is that it makes it hard to tell which kind of company Microsoft wants to be: one that makes services which are differentiated by working equally well on all platforms, or one which makes devices which are differentiated by running its services better than other devices do. As long as it pursues the former goal, it will be tough for Microsoft to differentiate

its devices, and if it pursues the latter goal its claim to provide the best cross-platform services will be undermined. Microsoft appears to be seeking to resolve this tension by trying a third tack: providing favorable commercial terms for Microsoft services on Microsoft devices, such as the Surface and Lumia lines. For example, Microsoft might bundle a free year's subscription to Office 365 into a Lumia sale, or offer unlimited Skype international calling for a year with a Surface purchase.

This strategy does appear to create a third option between a pure focus on differentiated devices and cross-platform services, but it risks effectively competing on price, which could be particularly damaging when Microsoft makes no direct revenue from the sale of third party devices licensing the Windows Phone OS for free. It also risks devaluing the very services it wants to promote by giving them away on a promotional basis. This may not be such a bad thing if Microsoft decides to start giving away more of that functionality in general, as some of its recent moves around Office on iOS and Android suggest, but that in turn reduces the attractiveness of those discounts. Some competitive differentiation may come from these moves, but they don't seem like sustainable strategies.

DOUBLING DOWN ON LOW-END

We've outlined the problem with Windows Phone's low-end focus in this report, but it appears that Microsoft will be doubling down on this approach rather than trying to rectify it. It is continuing to drive down the prices of the lowest-cost Lumias while also maintaining the former Nokia feature phone business as a way to create future Lumia customers. Both of these strategies are efforts to increase scale, which is critical both from a manufacturing margin perspective and from the perspective of building a user base to attract developers. But as we've already seen, the low-end user base Microsoft is building is much less likely to spend heavily on apps, so this approach may backfire. In addition, Microsoft's aggressive moves in emerging markets such as India are focused on markets where even ad spend per user is much lower than in almost any other market, so even non-purchase revenue opportunities for developers will be limited. And none of this, of course, solves the problem of driving the kind of high-end users who can really build a brand.

FOCUSED APPROACH TO FLAGSHIPS

To that end, Microsoft will also be taking a more focused approach to flagship devices, creating a clearer and smaller number of high-end devices which will be the focus of its efforts to differentiate in the premium space. It's not clear yet whether this will mean fewer carrier exclusives, though it should, but it will likely mean a smaller number of devices in the 900+ range on the Lumia side, and better, more focused promotion around those. It's critical that these devices also be more clearly differentiated than previous devices have been, and it's not yet clear how Microsoft will achieve that objective.

Recommendations for Microsoft

CREATE A SINGLE COMPELLING FLAGSHIP

More than anything else, Microsoft needs to beware the increasing low-end focus of Windows Phone, which will hurt not only its appeal to developers but also the branding of the platform. If it becomes known as a platform for cheap phones, it will be tough for Microsoft and its OEMs (including Microsoft Mobile) to generate significant margins from the platform or to attract key developers. As such, the most important strategic priority for Microsoft is to create a single compelling flagship for the Lumia line and plough significant resources into making it a truly compelling alternative to the iPhone and high-end Android devices, marketing it heavily, and getting it sold by every possible carrier, especially in the US. It needs to move away from carrier exclusives around Lumia 900 and above devices especially, and convince these carriers (especially holdouts such as Sprint) to carry flagship devices and promote them heavily.

CREATE TRUE DIFFERENTIATION AROUND WINDOWS PHONE

Microsoft needs to figure out what Windows Phone stands for. Ever since the earliest ads for the platform, Microsoft has missed the mark with what the platform does uniquely well. When the iPhone has a clear value proposition and Android effectively mops up everything the iPhone doesn't do well, it's not clear what Windows Phone's place in the market is. Productivity is a major focus area for Microsoft as a whole, and yet it is steadily diluting the unique appeal of Windows Phone in this regard by releasing more and more Office functionality for free on both iOS and Android devices. Productivity as a slogan also fails to capture so much of what people do with their smartphones in their personal lives – the fun side of their lives – and Microsoft needs to find a way to create differentiation on this side too. Some of the Lumia devices have focused on photography, but have done poorly in creating ways to share and manage photos, and Microsoft should invest here too.

FIND NEW WAYS TO ATTRACT DEVELOPERS

Solving the chicken and egg problem of developers and users is taking too long, and Microsoft needs new approaches to attract developers to the platform and get the best apps on the platform quickly. Simply offering to pay for initial development of apps isn't working, and Microsoft needs to provide better ongoing support for app developers it wants to entice across. It also needs to better demonstrate that these developers will actually be able to make money on the platform, while weeding out the plethora of bad apps on the Windows Phone

store. This may well dent the overall number of apps available, but it has the potential to dramatically improve developers' perception of the kind of experience Microsoft is trying to create for both users and developers.

Recommendations for others

DEVELOPERS – FIND A NICHE OR GO ELSEWHERE

Windows Phone, like all smaller platforms, has some profitable niches for developers. Some, like Rudy Huyn, have made a good business out of creating apps to plug the gaps left by developers unwilling to port their apps to Windows Phone. Others will focus on specific audiences currently underserved by Windows Phone or which have disproportionately high users on the platform compared to iOS or Android. This may include regional content for markets where Windows Phone has sold better, or tools to manage Windows Phone-specific features or shortcomings. But most mainstream developers will continue to be best served by developing for iOS first, Android second and Windows Phone only if they see significant demand. This may change in time, but for now the combination of the smaller base and low-end focus make Windows Phone an unattractive platform for most developers.

OEMS – KNOW WHY YOU'RE DOING THIS

Now, more than ever, OEMs creating devices running Windows Phone need to be very clear why they are doing so. To be clear, there are some reasons why Windows Phone may now be more attractive than it was: license fees have been reduced to zero, and Google is exerting increasing control over Android, both of which reduce some of the advantage Android has enjoyed in the past. However, with Microsoft now owning by far the largest Windows Phone OEM itself, and thereby dominating the market with approximately 95% share, every other OEM needs to be very clear why it is still developing for Windows Phone. Lumia devices have to a great extent become synonymous with Windows Phones in many markets, and Microsoft's range of devices dwarfs any other OEM's range of Windows Phone devices. Standing out in this environment will be very difficult. There are two possible niches that may be worth pursuing: firstly, regional brands in markets such as India may find it easier to gain traction than Microsoft itself in those markets; secondly, some Android OEMs may choose to release versions of their Android hardware running Windows Phone, as HTC did recently with the HTC One (M8). This requires minimal hardware customization and therefore leverages shared scale. But many other OEMs have put their Windows Phone plans on hold or dramatically reduced their investment in the platform, and this seems sensible.

GOOGLE – WATCH FOR VULNERABILITIES

Windows Phone has successfully made inroads into the low end of the smartphone market by providing a high quality experience for a low price. While some Android OEMs including Motorola have successfully adopted a similar strategy, many of the low-end Android devices in the market continue to feel as cheap as they are, and Android risks losing share at the low

end if Microsoft is successful in spreading this model both into new markets and down to new price points. At the same time, Microsoft's removal of the license fee for Windows Phone, and Google's own increased control over Android, reduces some of the advantages Android has previously enjoyed, and may lead more OEMs to take Windows Phone seriously. Google needs to watch carefully to ensure that Windows Phone doesn't end up disrupting Android at the low end, even as Apple becomes even stronger at the high end.

APPLE – MAINTAIN HIGH-END FOCUS

As this report shows, Windows Phone is particularly strong at the low end of the market, but continues to be weak at the high end, where Apple is firmly positioned. To the extent that Apple remains focused at the high end, there is little short-term threat to its business from Windows Phone. To the extent that Windows Phone enjoys higher share in some markets, it is almost exclusively in those markets where the premium share is very low. In time, it's possible that Microsoft and its partners will create more compelling flagship smartphones that present a greater threat to the iPhone, but it still remains more likely that Android will suffer more than iPhone if this possibility pans out.