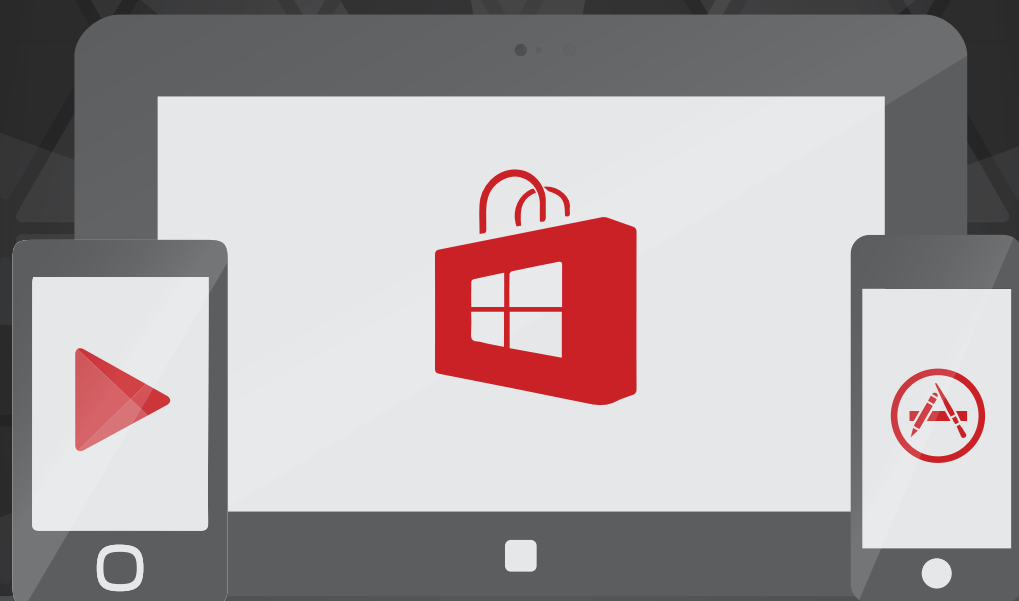


# Q4 2013 MOBILE TRENDS REPORT



THE VOICE OF THE NEXT-GEN MOBILE DEVELOPER



## FACEBOOK SETS THE MODEL FOR ENTERPRISE MOBILITY

### NSA CHANGES THE EQUATION FOR MOBILE DEV

Platform preferences: HTML5 slips

Testing the limits of three-tier web architectures

More, bigger, faster: demands for mobile scale

The future will be written in JavaScript

THE WORLD'S LARGEST MOBILE SURVEY OF 6,698 MOBILE DEVELOPERS

APPCELERATOR / IDC

## Q4 2013 MOBILE TRENDS REPORT

Appcelerator and IDC surveyed 6,698 mobile developers – the largest body ever – from November 14-30, 2013. The results show some surprises among developer priorities and concerns, as well as patterns for organizations looking to seize mobile leadership.

### KEY FINDINGS:

#### FACEBOOK'S MOBILE STRATEGY IS PAYING DIVIDENDS

In our Q3 2012 survey, 66% of developers said Facebook was at risk of being disrupted by a mobile-first startup. In this latest survey, just over a year removed, more app developers integrate with Facebook than any other major social media provider. Facebook's commitment to native, as well as a savvy mobile API strategy, seem to spell the difference.

#### PLATFORM PREFERENCES: HTML5 SLIPS

The number of developers reporting to be "very interested" in developing apps with HTML5 slipped to the lowest percentage in the (brief) history of the specification. Correlating this slip, 56% of those with experience building apps in HTML5 report a neutral or negative experience.

#### THE FUTURE WILL BE WRITTEN IN JAVASCRIPT

In ranking the relevance of development languages for mobile app development, JavaScript emerges as the clear winner: 47.2% of respondents ranked it first, more than ten percentage points ahead of the next closest language.

#### MORE, BIGGER, FASTER: FOR MOBILE DEVELOPMENT, THE WATCHWORD NOW IS *SCALE*

By almost every measure – average team size, number of apps under development, rate of release – mobile app development is industrializing. But demand is outstripping labor: finding the right skilled resources remains the top reported obstacle to timely release.

#### NSA REVELATIONS CHANGE THE EQUATION FOR MOBILE DEV BEHAVIOR

In light of the revelations of widespread digital surveillance by the U.S. National Security Agency, a full 64.1% of developers say they are re-thinking some key aspects of mobile app development.

#### MOBILE IS STRAINING TRADITIONAL THREE-TIER WEB ARCHITECTURES

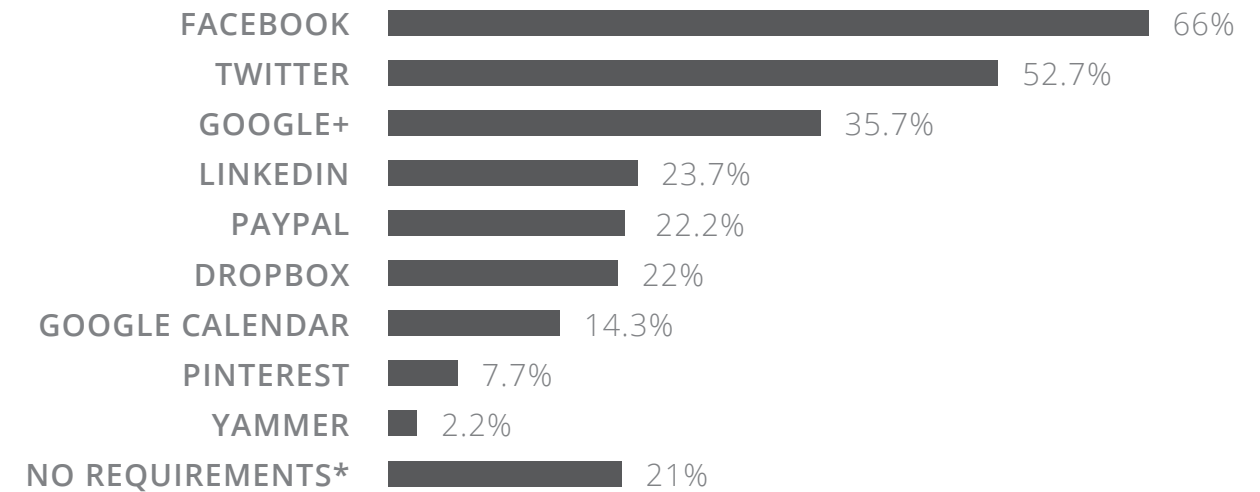
More than a third of developers find that traditional web architectures fail to meet the demands of mobile, with the web's bias toward legacy data formats (e.g. SOAP/XML) not optimized for mobile as a key limitation – but certainly not the only one.

# FACEBOOK SETS THE MODEL FOR ENTERPRISE MOBILITY

The success of Facebook's mobile pivot has been ratified by revenue and Wall Street. Developers attribute this foremost to the company's embrace of native apps over HTML5. But moving forward, it's Facebook's mobile API strategy that may pay the biggest dividend. The company's investment in creating readily available, mobile-optimized APIs to developers – via Open Graph or mobile BaaS (from the Parse acquisition) – scored well collectively.

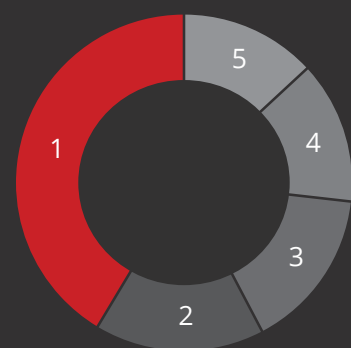
Bolstering this view, two-thirds of developers report connecting their apps to Facebook – tops among popular social services. The next most popular service, Twitter, was a full thirteen percentage points behind at 52.7%. This lead can't be chalked up solely to Facebook's authentication service. When asked how they were managing user authentication inside their apps, most developers reported relying on traditional web protocols (38.8%) or specific methods such as SAML or OAuth (21%). Social media services such as Facebook were third at 19.1%.

## WHAT TYPES OF DATA SOURCES ARE YOU CONNECTING MOBILE APPS TO?



\* No requirements to connect to public data sources

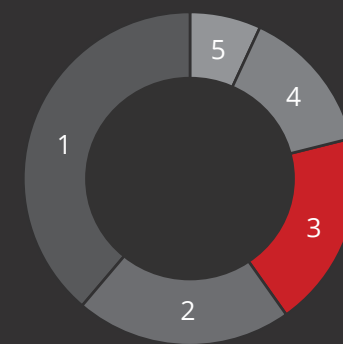
Taken together, Facebook's mobile strategy has involved switching from HTML5 to native apps, embracing mobile APIs, and building up its mobile analytics muscle (via the Onavo acquisition). Given the response of both the market and developers, it seems Facebook may have hit upon the trifecta necessary for any enterprise looking to lead in mobile innovation.



### GOING NATIVE OVER HTML5 POWERS FACEBOOK'S MOBILE RISE

Facebook has shown impressive growth in mobile users (and ad dollars) since declaring that it would move beyond the web to embrace a mobile-app world. What do you think has been their smartest mobile bet?

- 1 Abandoning HTML5 for native to deliver richer app experiences (41.5%)
- 2 Open Graph (16.7%)
- 3 Investing in mobile analytics (via the Onavo acquisition) to give devs better insight into their FB apps (15.5%)
- 4 Native authentication (13.7%)
- 5 Investing in mobile BaaS (via the Parse acquisition) to encourage external dev innovation (13%)



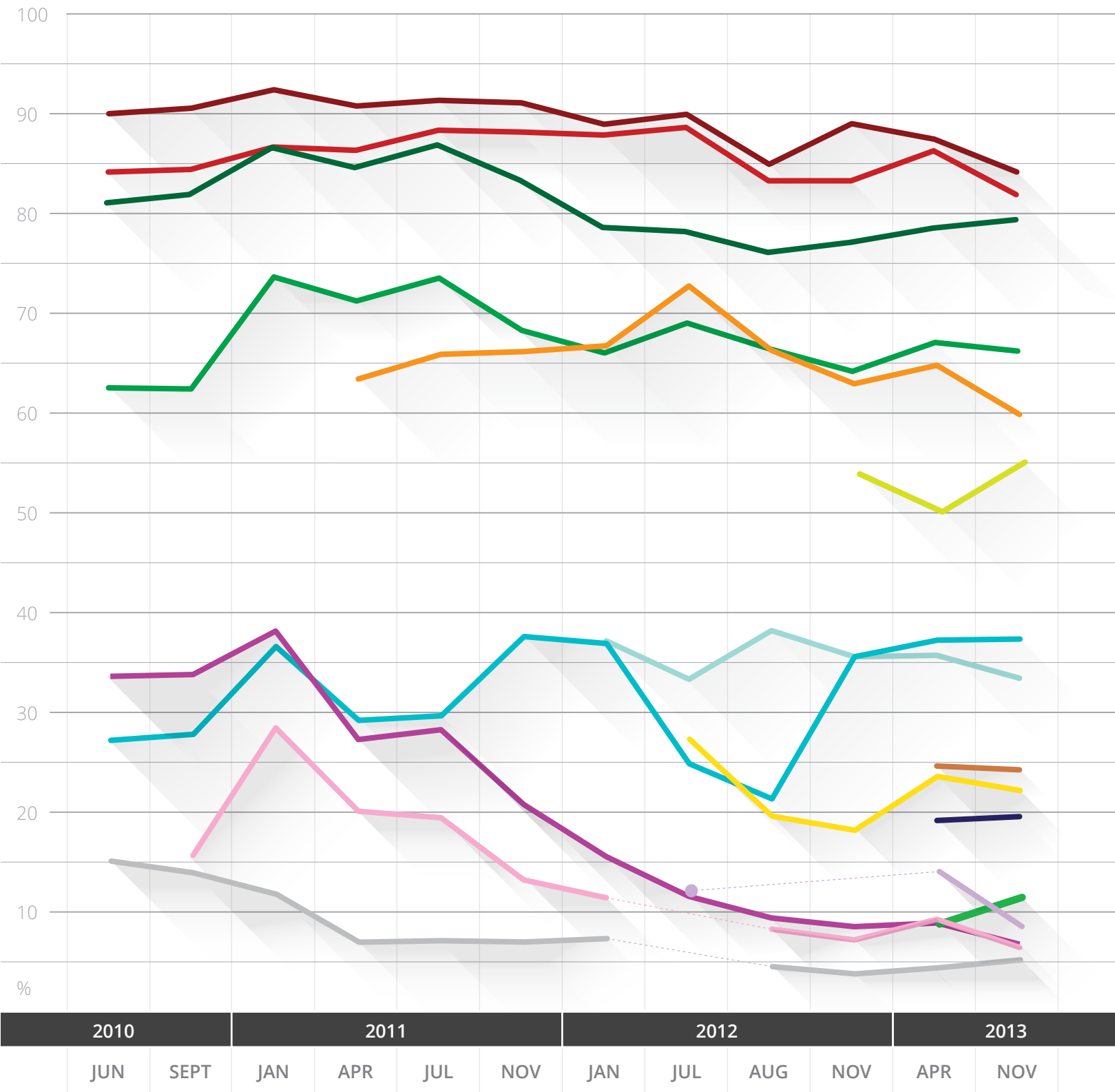
### FACEBOOK'S MOBILE SUCCESS IS ABOUT MORE THAN AUTHENTICATION

How does user authentication factor into your app development requirements?

- 1 We use traditional web authentication (e.g. HTTPS) (38.8%)
- 2 We have implemented an authentication method specifically for our apps (e.g. SAML, OAuth) (21%)
- 3 We use a social media service (e.g. Facebook, Twitter, LinkedIn) (19.1%)
- 4 Our apps don't require user authentication (14.2%)
- 5 We are using pre-built authentication provided by a BaaS or PaaS (6.9%)

DEVELOPER PREFERENCES 2010-2013 COMPARISON

% "Very interested" in developing for each platform



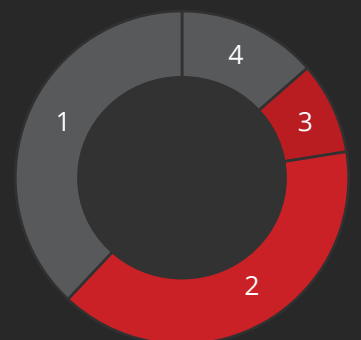
- iPhone
- iPad
- Android Phones
- Android Tablets
- HTML 5
- Google Nexus
- Windows Tablets
- Window Phone
- Firefox
- Kindle Fire
- BlackBerry Phone
- Ubuntu
- BlackBerry Tablet
- BlackBerry 10
- Tizen
- Symbian Phones

# PLATFORM PREFERENCES: HTML5 SLIPS

There was little material change in developer interest among the mobile platform leaders. The iPhone (84.2%) and iPad (81.7%) still capture the most interest, with Android phones (79.4%) and Android tablets (66.1%) next in line.<sup>1</sup> However, the number of developers reporting to be "very interested" in building apps on HTML5 fell to 59.9% – the lowest level since we began tracking the specification in April 2011. Interest in HTML5 peaked in July 2012 at 72.7%, and has shown an uneven but downward slope since.

This decline may be attributable to developer pragmatism. HTML5 has had several years now to break away from the pack and has failed to do so. Most respondents were neutral on HTML5, agreeing that it had its place for certain kinds of apps, but couldn't be looked to as a cure-all for the challenges of multi-platform development. 13% reported no experience with HTML5; when looking only at the cohort with experience, 56% were neutral or negative on the standard.

The recent launch of iOS 7, which was riddled with problems for HTML5, also served as a reminder that support for the specification isn't a priority for platform vendors, who understandably want to differentiate the capabilities of their own operating systems rather than write to a generalized mean.<sup>2</sup> This, coupled with the fact that the differential in feature support across browsers may be as high as 30%, point to a future in which HTML5 is but one more tool in the toolkit, not a silver bullet.<sup>3</sup>



### NO SILVER BULLET

What has been your experience using HTML5 to build mobile apps?

- 1 **POSITIVE:** delivers engaging apps that work well across platforms (38%)
- 2 **NEUTRAL:** has its place for certain kinds of apps, but its not a cure-all (39.5%)
- 3 **NEGATIVE:** delivers poorer user experience than native, while still requiring optimization for each platform (9.5%)
- 4 **NO EXPERIENCE** (13%)

<sup>1</sup> The sizable gap in interest between Android phones and Android tablets was a subject of our [Q2 2013 report](#).  
<sup>2</sup> Krill, Paul, and Galen Gruman. "Bad News: iOS 7's HTML5 Is Full of Bugs." *InfoWorld*. InfoWorld, 27 Sept. 2013. Web. 30 Sept. 2013.  
<sup>3</sup> "BII REPORT: Why Facebook Defriended HTML5-For Now." *Business Insider*. N.p., 24 Oct. 2012. Web. 27 Sept. 2013.

# THE FUTURE WILL BE WRITTEN IN JAVASCRIPT

## 2014 PREDICTIONS

■ VERY LIKELY ■ LIKELY ■ NOT LIKELY

### Developers see a bright future for JavaScript

JavaScript will increasingly dominate both client and server side development



In ranking the relevance of development languages for mobile app development, JavaScript emerges as the clear winner. 47.2% of respondents ranked it first, more than ten percentage points ahead of the next closest language, Java (35%). Objective-C was third at 32%.

Originally developed as a browser-agnostic scripting language, JavaScript appears to be becoming the lingua franca for mobile development. Its ability to render rich results from lightweight, simple-to-learn language has made it a natural fit for mobile's speed of development. There is also mobile's partner in crime, the cloud, where JavaScript's role is fast becoming just as central: witness its swift adoption as a backend technology platform via Node.js. More than 88% of developers found it "likely" or "very likely" that in 2014 JavaScript would increasingly dominate both client- and server-side development.

## JAVASCRIPT REIGNS

For mobile app development, how would you rank the relevance of the following languages?

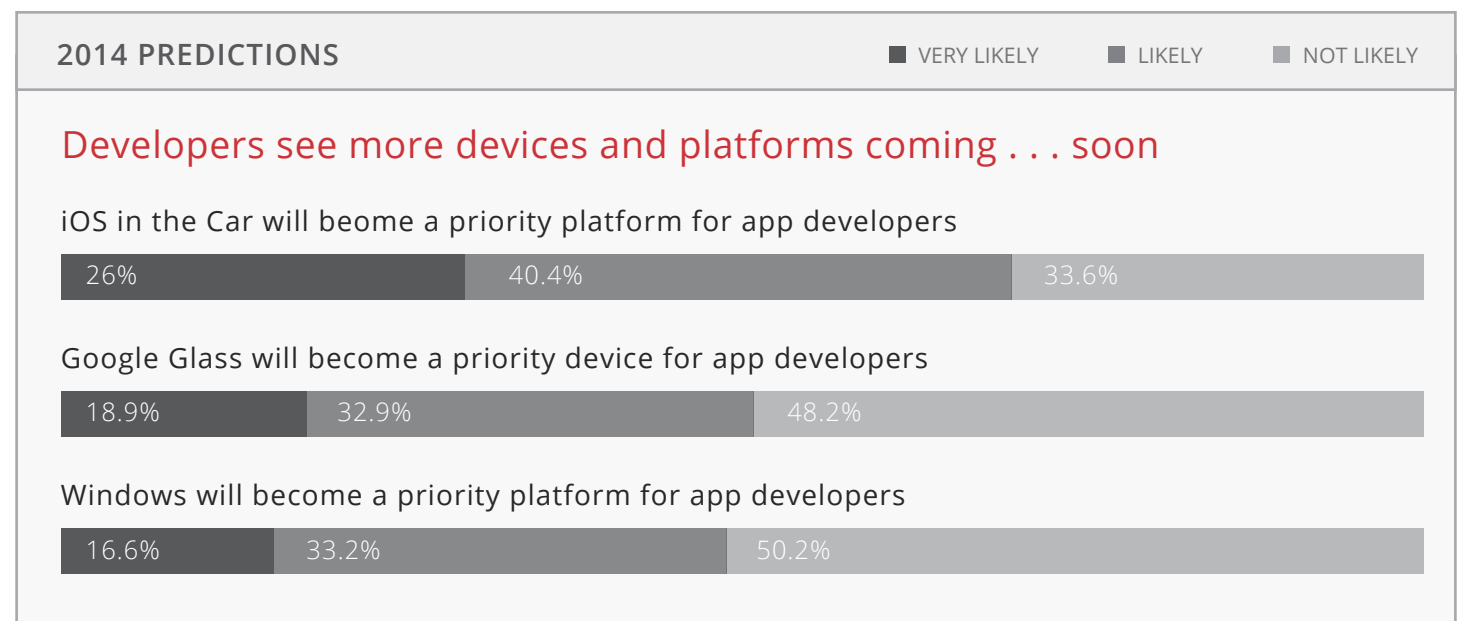
	1	2	3	4	5	6
JAVASCRIPT	47.2%	21%	15.7%	8.6%	4%	3.5%
JAVA	22.8%	35%	22.1%	10.2%	5.7%	4.1%
OBJECTIVE-C	19.7%	25.9%	32%	12.9%	6.4%	3.1%
C#	4.4%	7.8%	14.1%	43.1%	22%	8.7%
RUBY	2%	4.2%	6.9%	12.6%	44.7%	29.5%
C / C++	3.9%	6.1%	9.3%	12.6%	17.2%	50.8%

# MORE, BIGGER, FASTER: FOR MOBILE DEVELOPMENT, THE WATCHWORD NOW IS SCALE

Mobile app development has rapidly become a must-have for any enterprise, brand or emerging vendor. Virtually everything a company does – from customer interaction to order fulfillment to employee collaboration and engagement – will be mobilized over the next 2-3 years.

This rising ubiquity of apps is driving new demands for scale. A number of response statistics point to the expectations and complexities of scaling delivery for mobile apps. Nearly half of all respondents (48.5%) report app release frequency at monthly or faster, while 81% build apps to run on at least two mobile operating systems. This underlines the new math companies are confronting as they move to support a multi-platform, multi-device world:

$$(number\ of\ apps) \times (number\ of\ supported\ OS's) \times (number\ of\ releases\ per\ app) = scale\ of\ delivery$$



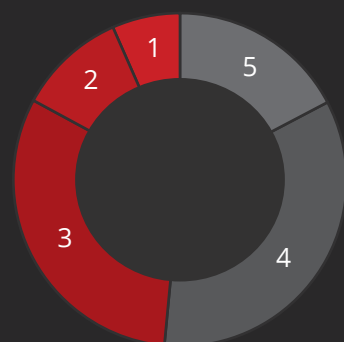
In the days of the Wintel monopoly, the middle variable held steady at one, with the last variable also being one or perhaps two. But mobile has changed the equation dramatically.

One interesting through line was how the use of mobile analytics appear to be helping developers manage these scale demands. When we compared the cohorts of those who reported using some form of mobile analytics against those who didn't, we found:

**GREATER RELEASE VELOCITY:** 53.5% of those using mobile analytics report releasing monthly or more frequently as compared to 44.2% for those who use no analytics.

**BROADER PLATFORM SUPPORT:** 28.6% of those using analytics support three or more platforms versus 21.1% for those without analytics.

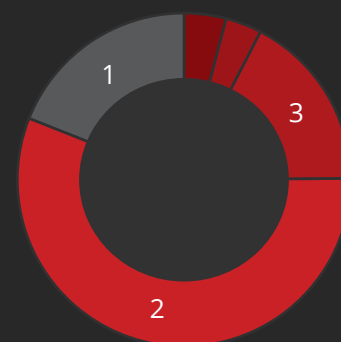
Already it would seem that savvy delivery teams are relying on analytics to separate them from the competition – either by flagging inefficiencies in the delivery process or by diagnosing app adoption rates and usage patterns across target platforms, or both.



## A NEED FOR SPEED

What is your average release velocity?

- 1 Weekly (6.6%)
- 2 Bi-weekly (10.5%)
- 3 Monthly (31.4%)
- 4 Quarterly (34.2%)
- 5 Yearly (17.2%)



## THE WINTEL MONOPOLY IS DEAD

How many mobile operating systems (e.g. iOS, Android) do you typically build your apps to run on?

- 1 (19%)
- 2 (56.7%)
- 3 (17.3%)
- 4 (3.5%)
- 5+ (3.5%)



# NSA REVELATIONS CHANGE THE EQUATION FOR MOBILE DEV BEHAVIOR

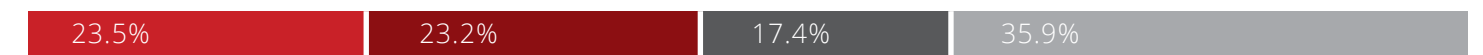
In light of the revelations of widespread digital surveillance by the U.S. National Security Agency, 64.1% of developers worldwide say they are re-thinking some key aspects of mobile app development. When taken by region, the number is notably higher in Latin America (70.7%), Africa (74.2%) and Asia (75.5%). The number of U.S. and European respondents planning change was significant if comparably smaller – about 60% in each region.

Of those planning change, a slim majority (23.5%) pointed to more rigorous data encryption. Wariness of public cloud services was a close second at 23.2%.

HOW HAVE THE RECENT REVELATIONS OF WIDESPREAD DIGITAL SURVEILLANCE BY THE UNITED STATES NATIONAL SECURITY AGENCY (NSA) INFLUENCED YOUR APPROACH TO MOBILE APP DEVELOPMENT?

- We are more rigorous with data encryption (both at rest and in transit)
- We are more rigorous about secure coding practices
- We are more wary of public cloud services
- No change

## GLOBAL



## AFRICA



## LATIN AMERICA



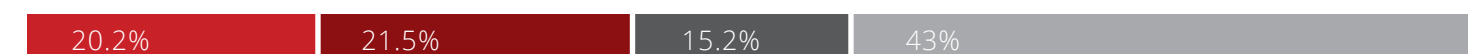
## ASIA



## EUROPE



## UNITED STATES



# MOBILE IS STRAINING TRADITIONAL THREE-TIER WEB ARCHITECTURES

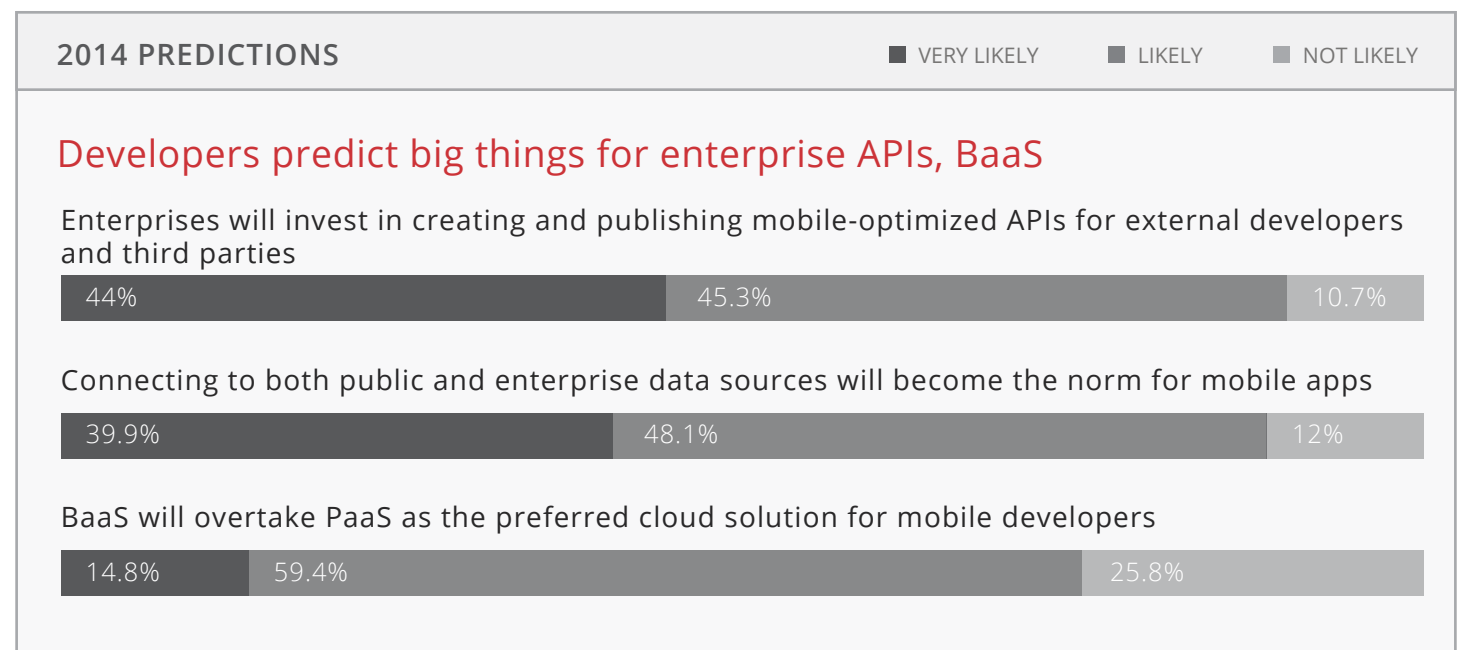
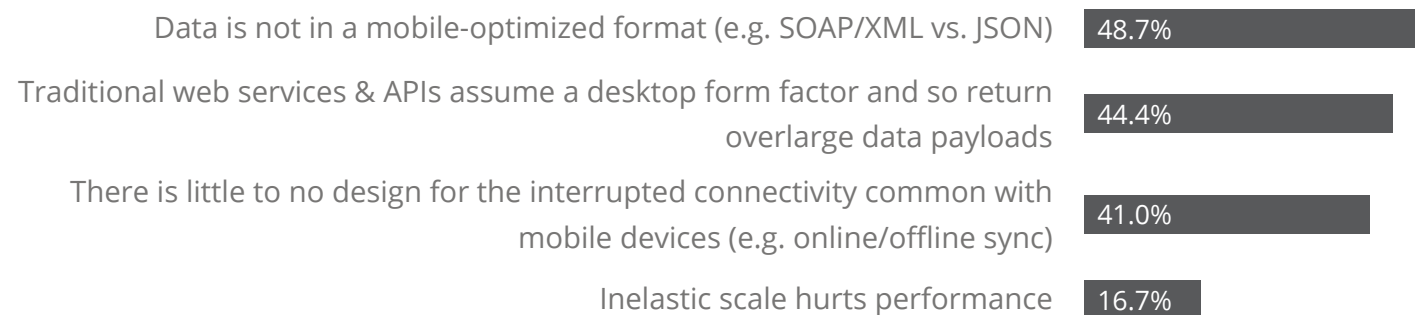
One of the most eye-opening findings is the frustration mobile developers report with traditional three-tier web architectures. When asked directly whether existing web infrastructures met the demands of mobile, a full third of developers said “No.”

The chief limitation reported is the bias of legacy web infrastructures for SOAP and XML data formats; mobile apps require a device-optimized format such as JSON. However, the lack of payload optimization and the inability to gracefully manage connection interruptions were virtually tied for second highest frustration (44.4% and 41%, respectively).

These are not small matters. Traditional three-tier architectures were built to feed large data sets to a powerful, persistently connected, big screen client device – the computer. The mobile age breaks virtually

**34.7% said their existing, three-tier (web) infrastructure did not meet the demands of mobile.**

## WHAT DO YOU FIND TO BE THE LIMITATIONS OF TRADITIONAL THREE-TIER ARCHITECTURES?



every old assumption about data, including its store location (behind the firewall, SaaS-based, public), format, payload size, transaction volume, etc.

Mirroring mobile developer frustrations with legacy web architectures is the shift to client-side coding. Unlike the web era, when virtually all development was server-side, today’s mobile developers concentrate increasingly on client-side development. More than half of respondents report the majority of their mobile development work – 70% or more – to be client-side. Mobile’s emphasis on user experience makes good client design and development paramount. This shift in focus likely explains why nearly three-quarters of developers predict that BaaS will overtake PaaS as the preferred cloud solution for mobile development. Mobile developers expect simplicity on for backend services, versus the legacy ways of contending with web servers, database servers, app servers, scaling scripts, and so on.

## MOBILE’S CLIENT SERVICE

What percentage of total mobile app development time do you spend on client-side development vs. server-side development?

CLIENT	SERVER	PERCENTAGE
100	0%	4.9%
90%	10%	8.7%
80%	20%	15.8%
70%	30%	24.2%
60%	40%	15.5%
50%	50%	15.7%
40%	60%	6.8%
30%	70%	5.2%
20%	80%	1.7%
10%	90%	.9%
0%	100%	.6%

## Q4 2013 MOBILE TRENDS REPORT

Appcelerator and IDC surveyed 6,698 mobile developers – the largest body ever – from November 14-30, 2013 on their perceptions about current debates in mobile as well as their development priorities. Developers were individually invited from Appcelerator’s user registration database to complete a web response survey. A raffle for a free iPad mini was made and only one response per user was allowed. Respondent’s answers were given freely with no other incentive or compensation for their participation.



### ABOUT APPCELERATOR

Mobile apps are fast replacing web applications as the way we buy, share, search, learn and collaborate. Appcelerator® helps companies solve for this new mobile reality: delivering native cross-platform apps at the speed of web, mobilizing any data source, and driving success with real-time analytics – all from an open, cloud-based platform. Appcelerator also provides an award-winning open source mobile development environment, Titanium™. With over 60,000 mobile apps deployed on over 185 million devices, Appcelerator’s solutions are backed by the world’s largest mobile ecosystem, including more than 530,000 mobile developers and hundreds of ISVs and strategic partners, among them SAP, Cognizant and CSC. It serves as the mobile platform of choice for companies like eBay, TUI Travel, Merck, Mitsubishi Electric, ZipCar, and Pay-Pal.

For more information, visit [appcelerator.com](http://appcelerator.com).



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