HTML
5

NATIVE

?

The HTML5 vs. Native Debate is Over and the Winner is...

Telerik Surveys 3500 People to Identify the
Latest Trends in Mobile App Development

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SURVEY

Kendo UI
THE BEST OF HTML5

Summary

In the latest iteration of its HTML5 Global Developer survey, Telerik once again posed questions to software developers from around the world. This time around, we took a closer look at the state of mobile app development as a whole. More than 3500 survey respondents ranging from developers to CIOs/CTOs and from companies large and small around the world chimed in with their perspectives, preferences--and, in some cases, assumptions--on the state of the mobile market.

Key Findings

- There are no 'one-size-fits-all' solutions for mobile application development. Many developers are finding mid-project that the approach they started with, Hybrid/HTML5 or Native, might not be the best approach, whether it's changing requirements or an improved understanding of the capabilities each mobile solution offers.

- Web and Hybrid approaches are becoming increasingly popular with developers.

- The Web Platform (HTML5 & JavaScript) is the top choice for building cross-platform apps.

Blurred lines & the rise of HTML5/Hybrid development

When Telerik first conducted its HTML5 survey just over a year ago, and the second survey four months later, the application development landscape was quite different. At the time, many questioned the validity of HTML5 as an option for web and mobile development. The hype around Facebook's abandonment of HTML5 in favor of native development was high, and many were unsure if HTML5's promise for cross-platform development would hold true.

A year later, the market has changed dramatically and HTML5 adoption has become much more than hype, it has become a reality. For example, 57% of those surveyed noted that HTML5 is either enterprise-ready today or will be in the next 12 months. These changes in perception bode well for HTML5's future as a fully recognized mobile development approach. In fact, it's becoming increasingly apparent that the perceived "lags" in HTML5 performance, when compared to Native, are more indicative of the surrounding ecosystem than of the technology itself.

A recent report by Vision Mobile, "How Can HTML5 Compete with Native?", notes 5 areas where HTML5 falls short in comparison to Native SDKs: **APIs** (access to hardware components and services); **Performance** (UI responsiveness and computational load); **Tools** (for debugging, editing, and profiling); **Education** (developer education on advantages and best practices of HTML5); and **Marketing** (app stores, monetization options and profits). As the market for HTML5 matures, however, many of these gaps will close.

In fact, Telerik's Kendo UI team recently built two apps and presented them to developers, asking which is Native, which is Hybrid, and why. In actuality, the apps were both Kendo UI HTML5/Hybrid apps. Yet not a single developer concluded that neither app could possibly be Native. This is a clear indication that the assumptions about HTML5 are just that, assumptions and not based on the realities of today

These indicators demonstrate that the lines between these approaches to mobile app development are blurring. Not simply in terms of the end-user experience, but the app development experience: many developers are realizing mid-project that their goals could have been met with the alternative approach.

What does this mean for mobile development at large?

Developers should take the time to really understand the advantages and best practices for both Hybrid and Native development. Only then will they be able to accurately assess which approach is best suited for their business needs. In cases where requirements change, as they so often tend to do, the market must provide solutions that enable developers to more easily make that mid-project switch from HTML/Hybrid to Native, or Native to HTML/Hybrid.

HTML, Hybrid, Native – Know your options

In the modern, multi-platform world many developers have quickly realized that--when it comes to choosing a development approach for their organization-they have options. While a native approach was perceived to be the best or only option a few years ago, the developer mindset has seen a significant shift since that time. In January 2013, when asked, "What is your preferred approach for developing apps that support multiple platforms, 36% called for pure HTML for all platforms, 32% preferred hybrid apps, 17% noted a single native platform with HTML as a catch-all for the rest and 15% said completely native. Today, survey respondents noted 41% prefer pure HTML for all platforms, 32% would take a hybrid approach, 19% wanted a single native platform with HTML as a catch-all and 8% went completely native. While those preferring a mixed approach remain relatively unchanged, in less than a year, the shift to HTML from native has become more prevalent.

What is your preferred approach to serving multiple platforms?

	January 2013	Today
Pure HTML For All Platforms	36%	41%
Hybrid Apps	32%	32%
A Single Native Platform With HTML	17%	19%
Completely Native	15%	8%
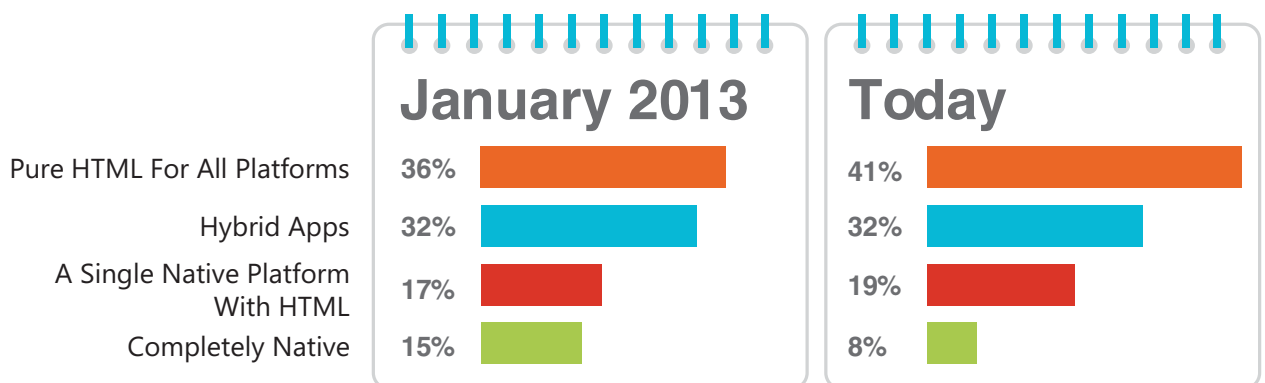
Base: all who develop for mobile, n=2309

To take this a step further, in our current survey, when asked, "Have you ever started building a native mobile app, only to realize that an HTML5 app would meet the business need?" 40% of respondents said 'Yes.' On the other hand, when asked "Have you ever started building an HTML5 mobile web or hybrid app, and realized you needed to switch to a native approach in order to meet the business need?" 31% selected 'Yes.' Both approaches can yield compelling user experiences. This finding highlights developers' need to adapt their approach easily and quickly, if they must make the switch between HTML5 and Native.

This is a clear indication that both approaches are appropriate, in context. Even more importantly, this finding highlights the need developers have to adapt their approach as they please. There is no "one size fits all" approach in the mobile development space.

Many developers are switching approaches mid-project

Have you ever started building a native mobile app, only to realize that an HTML5 app would meet the business need?

Have you ever started building an HTML5 mobile web or hybrid app, and realized you needed to switch to a native approach in order to meet the business need?
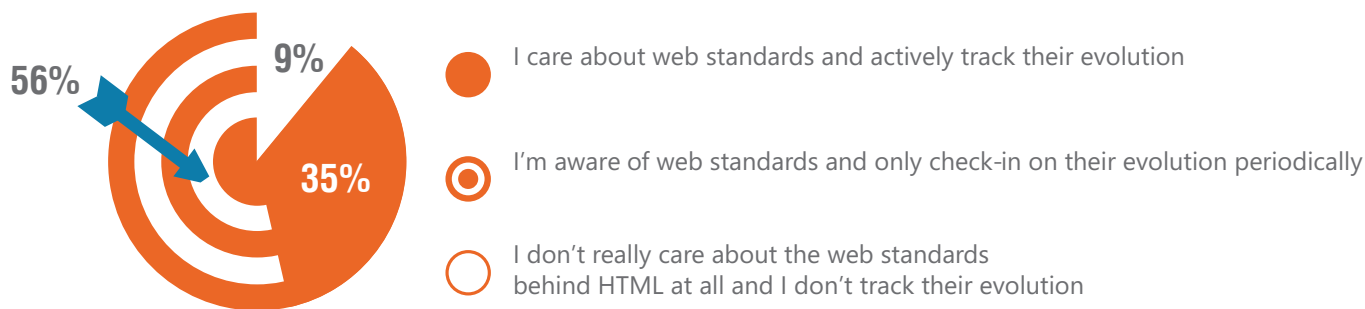
40%

60%

31%

69%

Yes

No
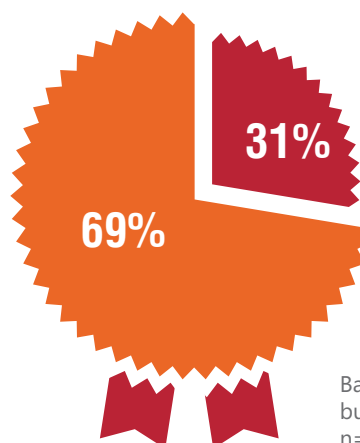
Base: all who answered I've never built a native app excluded, n=1731

Standards: Are they Important?
And what does it mean for HTML5 going forward?

Last year, there was much a-do about standards bodies – W3C versus WHATWG. At the time, the Telerik survey showed that developers were not depending on the standards bodies to make decisions about HTML5 - 35% demonstrated little-to-no concern and 38% were unsure if the standards bodies would impact decision making. Today, it seems the tides have shifted in favor of standards bodies. In fact, 35% of respondents are actively tracking the progression of standards and 56% are not only aware, but periodically checking in on progress. Only a small 9% indicate they don't care about HTML standards.

56%

9%

35%

● I care about web standards and actively track their evolution

◉ I'm aware of web standards and only check-in on their evolution periodically

○ I don't really care about the web standards behind HTML at all and I don't track their evolution

Vision Mobile's report, How Can HTML5 Compete with Native?, notes that "Browser Politics" have hindered browser adoption of W3C APIs thus far. They recommend: 1) "Use developers as lobbyists on the need for browser vendors to implement missing APIs," and 2) "Make sure that missing APIs become a competitive metric for browser vendors. Create a leaderboard for shaming browsers for missing APIs." The shifting tide in favor of standards and bodies suggests that it will not be long before developers act on Vision Mobile's recommendation, thereby creating an ecosystem in which HTML5 can reach its true potential as a mobile development option, minimizing, if not eliminating, the current gap between it and Native.

Is HTML5 Enterprise-Ready?

While the choices of HTML/Hybrid or Native are being weighed more equally, the idea that HTML5 has a place within the Enterprise is increasingly obvious. When asked "When do you see HTML5 being enterprise-ready?" more than half of respondents answered "Immediately" or "Within the next 12 months," while only 6% believe that HTML5 will never be enterprise-ready.

When do you see HTML5 being enterprise-ready?

Immediately	**31%**
Within the next 12 months	**26%**
12-18 months	**16%**
18-24 months	**9%**
2-3 years	**12%**
HTML5 will never be enterprise-ready	**6%**
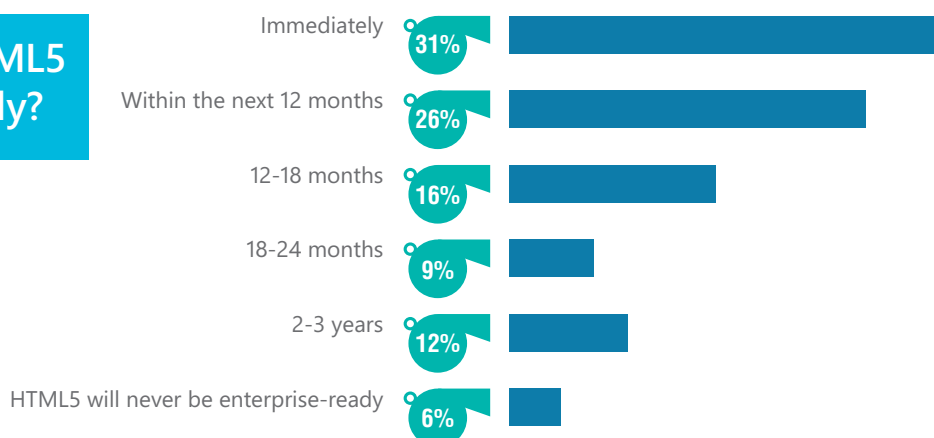
Similarly, in September 2012 Telerik asked "When do you think HTML5 will be important to your job," 51% of respondents already regarded HTML5 as important, and an additional 31% indicated that it would be important for their job within the next 12 months. Only 1% felt that HTML5 would never be important to their jobs. In the current survey, when asked, "Are you actively developing with HTML5," a whopping 91% of survey respondents noted they are actively developing with HTML5.

When do you see HTML5 being enterprise-ready?Are you actively developing software with HTML5?

Mobile	36%	13%	28%	23%

Desktop	55%	10%	16%	19%
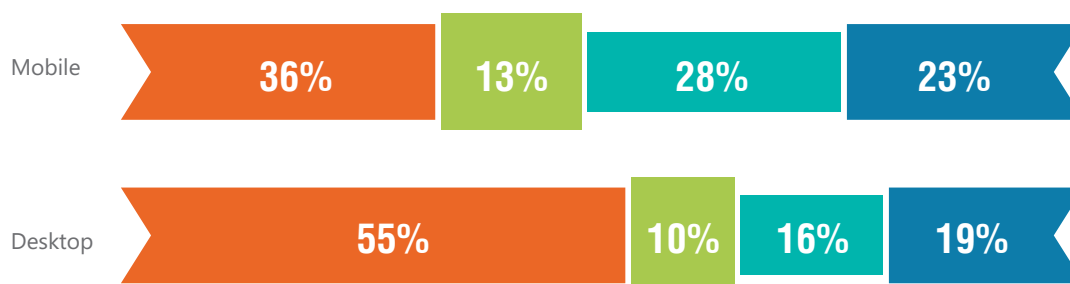
In fact, when asked, "How many apps do you plan to build using HTML5 by mid-2014, most survey respondents noted they're going to focus on 2 to 3 apps on average (34%). 24% will build five or more in the first half of the year.

How many apps do you plan to build using HTML5 by the middle of 2014? Open ended

1	12%
2	18%
3	16%
4	7%
5	12%
6-10	8%
11+	4%
n/a	24%
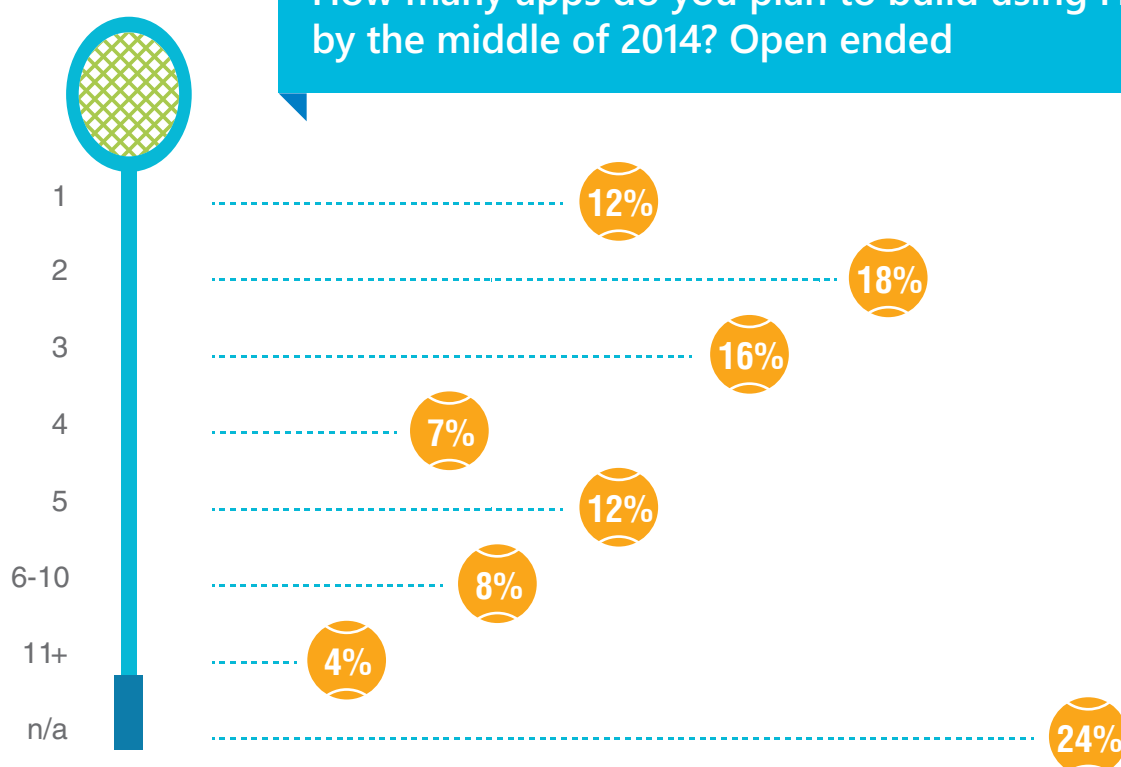
Developer priorities – what are they building?

For the current survey, we focused solely on mobile apps being developed with HTML5. By quite a large margin, Business apps were the primary focus (57%) followed by Finance and Productivity (21%). Music/Audio, Games and Travel held the smallest margin (5% and 7%, respectively).
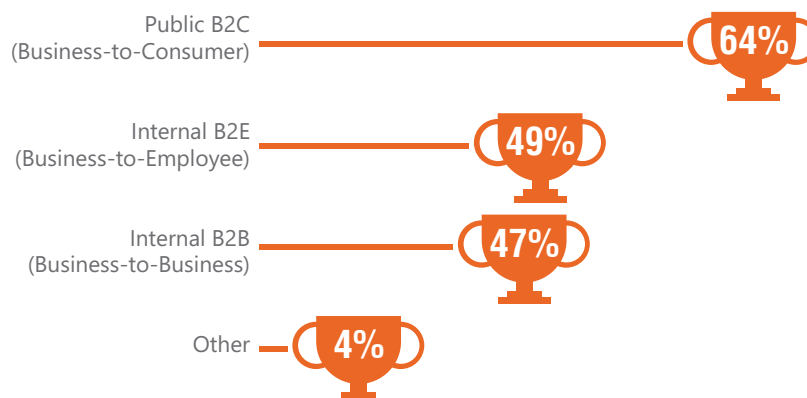
What categories of mobile apps are you building using HTML5?

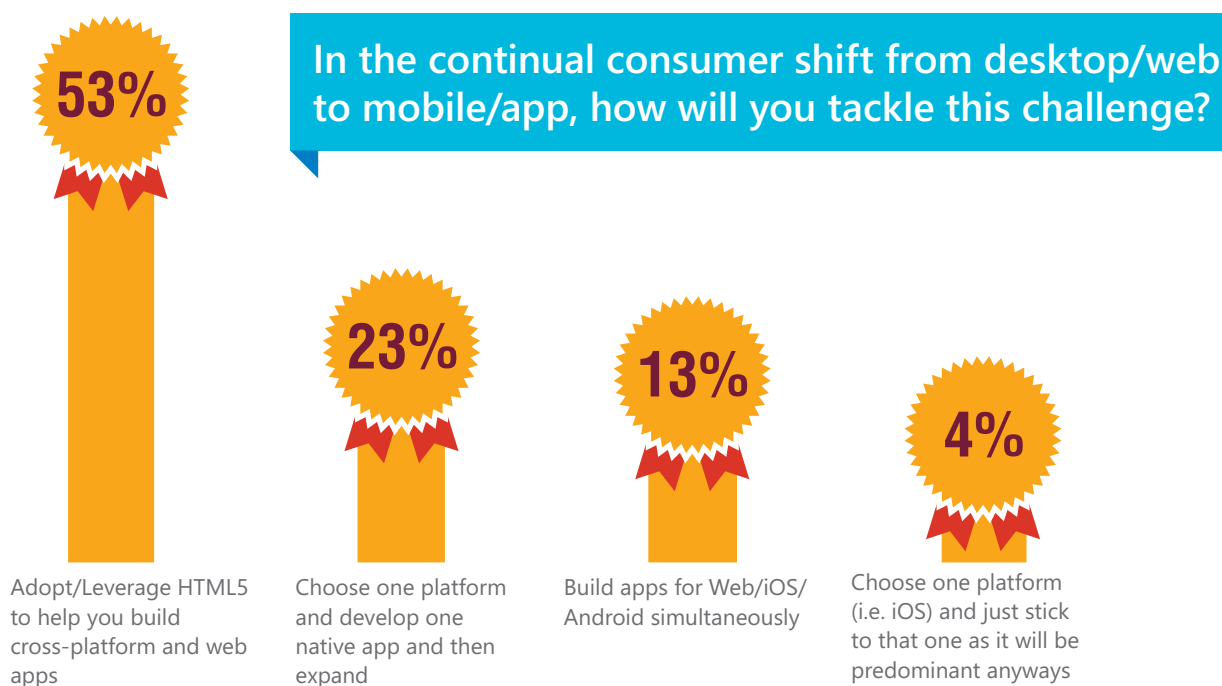| Category	Percentage
Business (Ex. Job Search, FedEx Office, Square)	57%
Finance (Ex. Chase Mobile, PayPal, Mint)	21%
Productivity (Ex. Dropbox, Evernote, Adobe Reader)	21%
Education (Ex. Monkey Preschool, TED, Babbel)	16%
Communication (Ex. Skype, WhatsApp, Yahoo! Mail)	12%
Health & Fitness (Ex. Nike+ Running, WebMD, My FitnessPal)	11%
Social (Ex. Facebook, Instagram, Twitter, Vine)	11%
Navigation (Ex. Google Maps, NYC Subway Map, Central Parking)	10%
Books & Reference (Ex. iBooks, TED Books, Marvel Comics)	10%
Media & Video (Ex. YouTube, SketchBook, Snapchat, Panorama)	9%
News (Ex. NYTimes, WIRED. Google Currents)	9%
Lifestyle (Ex. Groupon, AllRecipes, Starbucks)	8%
Travel (Ex. FlightTrack, Kayak, Yelp, TripAdvisor)	7%
Games (Ex. Candy Crush Saga, Words with Friends, Zombie Farm)	7%
Music & Audio (Ex. Pandora, Shazam, iHeartRadio)	5%
Sports (Ex. ESPN ScoreCenter, NFL Mobile, Yahoo! Fantasy Sports Football)	3%
Weather (Ex. Accuweather, The Weather Channel, RadarScope)	3%
Other	18%

In looking more closely at the business app breakdown, 64% are focusing on public B2C apps, followed by internal B2E apps (49%) and then internal B2B apps (47%). These numbers suggest that not only are developers seeing HTML5 as a viable option for mobile enterprise development, but they are already building the business apps to prove it.

What kinds of apps do you build for mobile?

Public B2C (Business-to-Consumer) — **64%**

Internal B2E (Business-to-Employee) — **49%**

Internal B2B (Business-to-Business) — **47%**

Other — **4%**

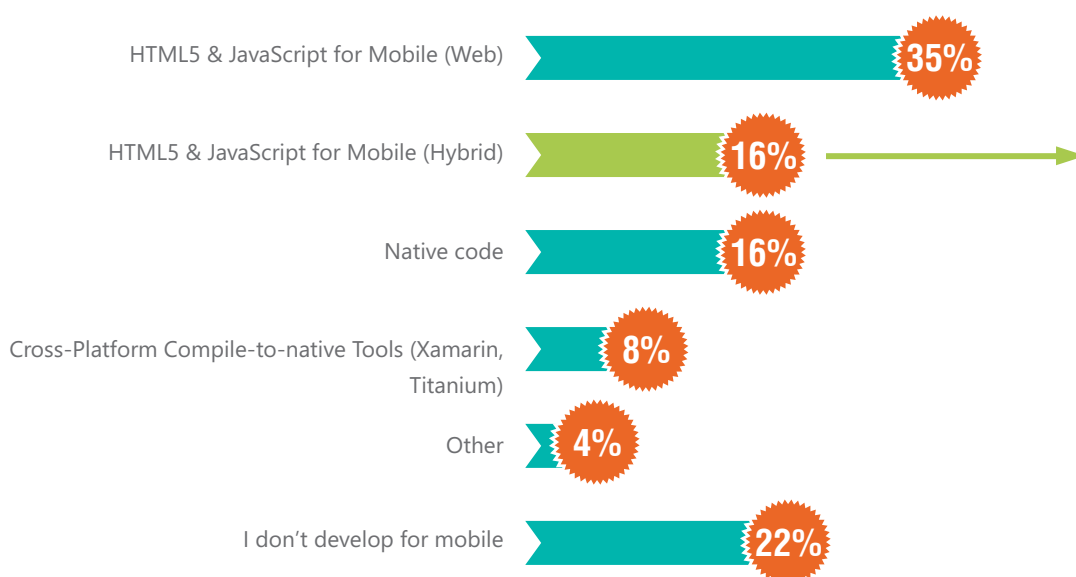## Capturing the mobile opportunity with HTML5?

Given the opportunity mobile development is presenting, Telerik asked, "How will you tackle the challenge of the mobile movement?" Fifty three (53%) of the surveyed software developers noted they will adopt and leverage HTML5 to build cross-platform apps.

53%

In the continual consumer shift from desktop/web to mobile/app, how will you tackle this challenge?

23%

13%

4%

Adopt/Leverage HTML5 to help you build cross-platform and web apps

Choose one platform and develop one native app and then expand

Build apps for Web/iOS/Android simultaneously

Choose one platform (i.e. iOS) and just stick to that one as it will be predominant anyways

Cost-Benefit Analysis

In addition to the ease-of-use benefits, developers indicate significant cost savings when using HTML5 as a cross-platform strategy. When asked how much--in time and human resources--they estimate saving by adopting a hybrid approach, the response was 52%, on average. Many development and IT departments need to justify cost expenditures at every turn, making this savings is a compelling differentiator of the hybrid approach.

When developing for mobile, do you primarily build in:

HTML5 & JavaScript for Mobile (Web)	35%
HTML5 & JavaScript for Mobile (Hybrid)	16%
Native code	16%
Cross-Platform Compile-to-native Tools (Xamarin, Titanium)	8%
Other	4%
I don't develop for mobile	22%

How much cost savings (time and human resources) in % would you estimate you get from developing by using Hybrid approach instead of Native?

0-10 %	3%
11-20 %	5%
21-30 %	13%
31-40 %	12%
41-50 %	20%
51-60 %	16%
61-70 %	14%
71-80 %	10%
81-90 %	4%
91-100 %	3%
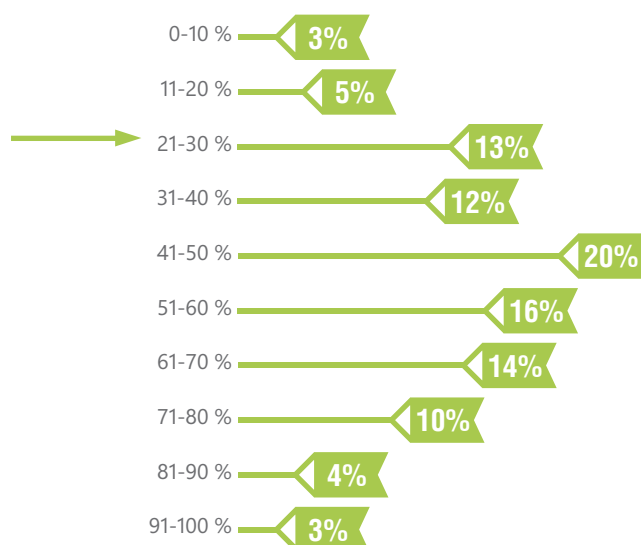
Conclusion

While the mobile market continues to be a major focus and huge opportunity for developers and businesses alike, the best way to approach it is hotly debated. The trends in this most recent report indicate that HTML5/Hybrid is increasingly a viable option for mobile development, even within the enterprise. It does not, however, suggest that HTML5/Hybrid will, or ever should be, the only option. Both Native and HTML5/Hybrid technologies offer advantages that are better achieved with the development best practices specific to each. Understanding the advantages, and the best practices, is crucial to selecting the right technology for one's mobile strategy and business needs. That said, business needs change, and sometimes quickly. That is a reality that the vendor market must address by providing HTML5/Hybrid and Native solutions that not only enable developers to optimize either approach, but allow a smoother transition between the two-when the need arises-via the delivery of complementary tools.

Kendo UI
THE BEST OF HTML5

ABOUT KENDO UI

Kendo UI (www.kendoui.com) is a complete solution for JavaScript and HTML5 developers that provides web and mobile developers with all the necessary components for building HTML5 and JavaScript mobile apps and sites. Based on jQuery, Kendo UI delivers a rich UI for the web, HTML5-powered data visualizations, and tools for building Native mobile apps with HTML5. This leading edge framework delivers everything in a unified, compact package, backed by industry leading professional support.

ABOUT TELERIK

Telerik (www.telerik.com) is the market-leading provider of end-to-end solutions for application development, automated software testing, agile project management, reporting, and content management across all major Microsoft development platforms. Telerik is trusted by more than 100,000 customers worldwide for its innovation and industry best technical support.

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