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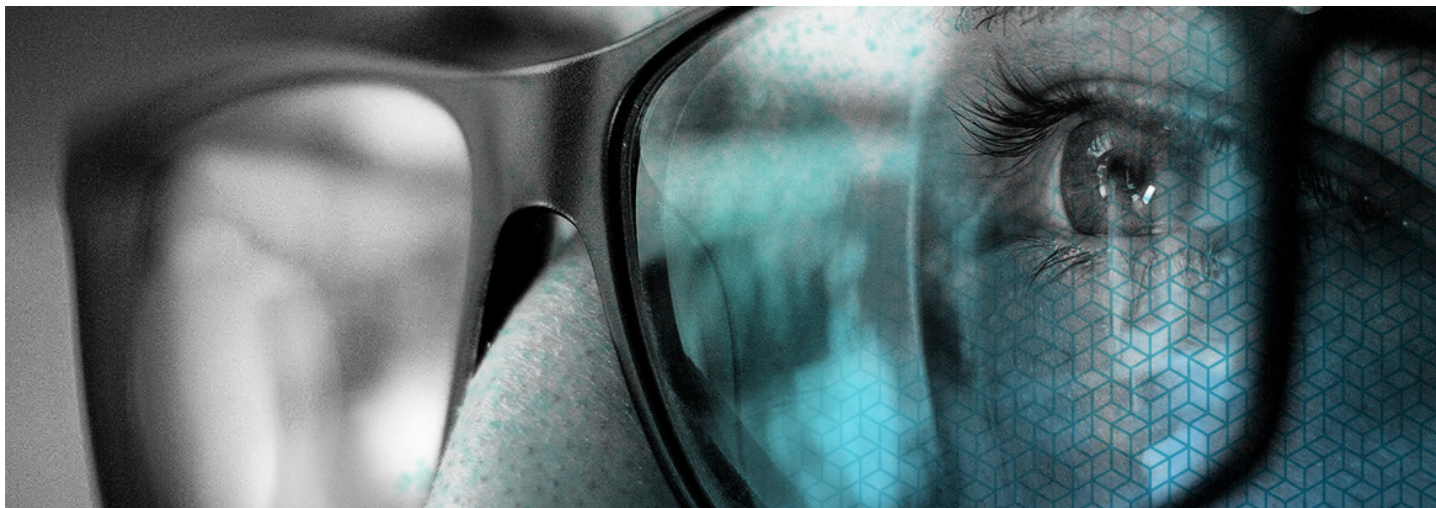
Connecting the enterprise with today's mobile-first consumer.

Introduction.

In today's busy, connected world, it is absolutely essential for organizations to ensure that their websites and digital experiences function correctly and quickly on mobile devices. People around the world are no longer tethered to desktop or even laptop computers. There are now around 3 billion smartphone users in the world, emphasizing this necessity. But simply working on a mobile device isn't enough. The mobile experience has to be fast and intuitive. Even a one second delay in page load speed results in a 7 percent conversion loss and an 11 percent drop in page views. For an ecommerce organization this can translate into millions of lost revenue. If your website doesn't load for a customer or a potential customer within two seconds, they're likely to give up and move on to a competitor.

So, what can you do to help ensure that this type of delay never happens? If you haven't already, you should be considering promising new mobile solutions that power enhanced digital experiences, such as Progressive Web Applications (PWA) and Accelerated Mobile Pages (AMP). AMP allows organizations to create websites in a straightforward way with an open-source library. It gives the user a smooth, near instant load experience. PWA allows a user to save an icon to their home screen, much like a downloaded app, and although they're on a website when using it, it functions like they're using an app on their mobile device. It is effectively an app without the need to download one and without the need to regularly update the app code.

A recent study of US smartphone users found that the majority (70 percent) have a clear preference for using company websites over mobile apps when making purchases online. The study, conducted by the The Center for Generational Kinetics and commissioned by WP Engine, surveyed over 1,200 US respondents aged 14-59 who currently use a smartphone.

This whitepaper explores the current status of the mobile web, the development and ongoing costs associated with these newer mobile solutions compared to traditional mobile apps, and then takes a deeper dive to examine both PWA and AMP in more detail.

Research scope

WP Engine commissioned independent technology market research specialist Vanson Bourne to undertake the research upon which this whitepaper is based. This research investigates organizations' current websites and mobile solutions, with an in-depth exploration into Accelerated Mobile Pages (AMP) and Progressive Web Applications (PWA).

A total of 450 IT, Engineering/R&D and Marketing decision makers, who are involved in developing, designing, marketing or managing their organization's websites, were interviewed in June 2018 across the UK, US and Australia. The respondents were from enterprise organizations in the private sector with at least 1,000 employees. The majority (64%) of respondents' organizations have at least 3,000 employees on average. And the average global annual revenue of all respondents' organizations totalled $2.8 billion.

Interviews were conducted online using a rigorous, multi-level screening process to ensure that only suitable candidates were given the opportunity to participate.

Key findings.

The digital experience opportunity

Less than three in ten (29%) respondents think that their organizations' customers would rate their digital experience as superior to their competitors.

The need for speed

Two seconds is the threshold for ecommerce website acceptability, according to Akamai. Yet, only 17% of respondents' enterprises have an average website load time on mobile devices of under 2 seconds. In fact, 31% admitted it takes an average of 5 seconds or longer for their website to load.

The mobile solution landscape

From a current mobile solution standpoint, Android apps are the most commonly used (56%) among respondents' organizations. Less than half use iOS native apps (49%) or have responsive Web pages (46%). AMP followed closely with 45% adoption and PWA came in at 42%. The usage of AMP was surprising when you consider:

- Almost all (99%) respondents believe there are benefits to their organization using AMP
- AMP was among the least expensive solutions to implement ($189,991 on average), requires the shortest time and the fewest developers
- Top benefits anticipated included improved security (44%), increased traffic from mobile users (41%) and improved conversion rate (40%)

Over eight in ten (85%) believe that all forward-thinking organizations will be implementing AMP and PWA within the next year:

- Almost seven in ten (68%) think that PWA could mean an end to the App store
- Four in five (81%) think that development costs of a native mobile application are higher than for a PWA

Content management system leaders for a mobile-first web

In terms of the content management system (CMS) that works best with various mobile solutions (including iOS and Android apps, PWA and AMP), WordPress (54%) and Adobe (54%) were neck-and-neck as leaders for the CMS that powers more than half of all these mobile solutions.

For those who integrate AMP with WordPress and Adobe, respondents cited strong integrations and ease of use as the main benefits. However, WordPress users also called out site performance improvements including site loading speed and search engine optimization (SEO) impact as main reasons why WordPress works best with AMP.

For those building PWAs, more people are building with WordPress because the open source platform is already in their technology stack and it is easier to build on than Adobe. That said, both WordPress and Adobe users highlight the increased performance impact across the two technologies, which also demonstrates a significant advantage for WordPress as the savings from licensing allows for budget efficiency and/or increased spend for new innovations.

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Current mobile web & CMS status.

With the right CMS in place, organizations can quickly and easily publish content to their websites. While more than half (51%) of respondents' organizations use WordPress as their CMS, Adobe is still the most commonly used (61%). However, both WordPress and Adobe are a long way ahead of the competition, with less than a quarter (23%) currently using Sitecore, the next most commonly used CMS. This is in line with the WP Engine research conducted in 2017 that investigated multiple CMS use.

Looking holistically at the digital experience organizations are currently offering their customers, does it provide an overall satisfactory user experience? Less than three in ten (29%) respondents think that their organization's users/customers rate their digital experience as superior.

But how much of the digital experience is mobile? Respondents estimate that approaching half (44%) of their organization's website traffic comes from mobile devices, on average. While this is a low average compared to other research indicating that mobile traffic is now the majority of web traffic, we need to remind ourselves that the organizations that we're interviewing are across all sectors, not just from the sectors that make up the majority of the Web (such as social media, entertainment and retail), which accounts for this difference.

In any case, mobile traffic has been steadily rising over the last few years and is likely to continue to rise. This means that organizations need to ensure that they have the right tools in place for their websites to be not just mobile device friendly but increasingly think with a mobile-first mindset.

Mobile solutions come in many forms, from native mobile apps to the use of AMP combined with PWA functionality, all of which are intended to deliver a superior online customer experience.

The good news is that organizations realize the importance of mobile, with 40% of current web strategy being committed to it on average. In fact, almost all (99%) respondents' organizations have at least some of their web strategy committed to mobile, further emphasizing how critical it is for organizations to get this right for their customers.

The bad news is that, on average, it takes almost three and a half seconds for a page to load on a mobile device from respondents' organizations' websites. For the mobile user, this is simply unacceptable. And according to WP Engine's own speed test calculation, this three and a half seconds delay means a

typical organization could miss out on an average of 40% of their revenue. While the average mobile web page is almost two and a half megabytes in size, only 17% of respondents say that it will load in less than 2 seconds, the maximum time before customers will start to give up and look elsewhere.

While many respondents feel that their organization's digital experience is above average compared to the competition, this slow loading speed is proving otherwise.
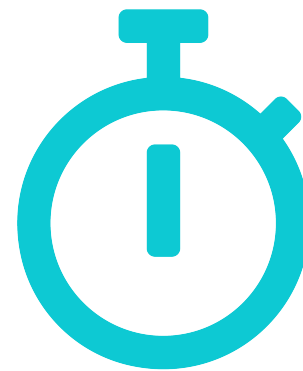

3.47 secs.
Average load time on mobile devices

Mobile solutions.

Implementing various mobile solutions can help an organization reduce the time it takes for a page or app to load on a mobile device. More than eight in ten (85%) respondents believe that all forward-thinking organizations will implement AMP and PWA in the next year. Combining both AMP and PWA in many cases will help organizations achieve a much faster load time for their websites on mobile devices, ideally bringing the average load time down to under two seconds while providing the experience of an app.

But AMP and PWA aren't yet the most commonly used solutions. Native mobile apps for Android are the most commonly used (56%) mobile solution among respondents' organizations, followed by native mobile applications for iOS (49%). It is only the minority who have already implemented AMP (45%) or PWA (42%). However, in the US, organizations are ahead with their use of AMP, with the majority (56%) of US respondents' organizations already using this mobile solution. Respondents in Australia report similar use of AMP (42%) and PWA (43%) to the global

average, while organizations in the UK are lagging in their use of both AMP (33%) and PWA (39%).

85%
agree that all forward thinking organizations will be implementing AMP and PWA in the next year
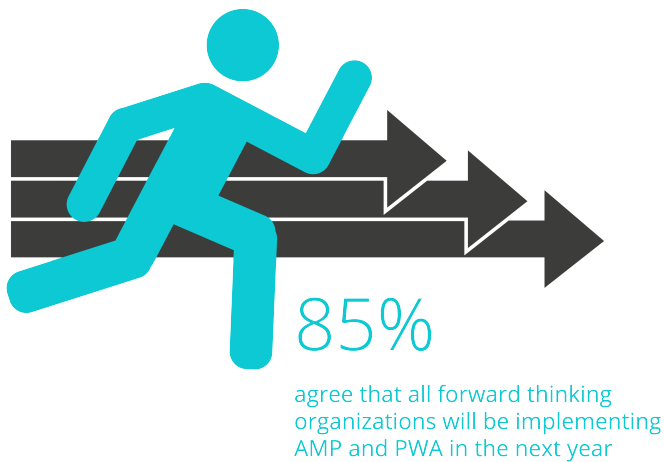
The reasons that organizations pursued a particular mobile solution varies quite extensively, with respondents identifying up to four different reasons why it was chosen. In general, the most common reasons for using the current mobile solutions are for reach (42%) and support and maintenance (40%). But among respondents from organizations that already use PWA or AMP, these reasons are even more pronounced. AMP users are among the most likely to say that they use AMP for reach (58%), while PWA users are the most likely to say that they use PWA for support and maintenance (54%). Another key reason for PWA usage is for conversions (51%) or compatibility across devices (50%). Similarly, around half (49%) of respondents from organizations using AMP say they use it for compatibility.

When it comes to what mobile solution is currently used vs. what solution was originally used, there is little difference. Android apps were most likely (28%) to have been pursued first in respondents' organizations. In most cases, the current mobile solution and the first mobile solution are one and the same. This is most likely to be true for iOS apps (39%), Android apps (38%) and PWA (38%). However, those currently using AMP are most likely (30%) to have started with PWA. This is the only mobile solution currently in use where a different solution was most likely to have been used first.

Looking to the future, a majority (51-58%) of respondents' organizations plan to use their current mobile solutions more in the future than they currently do. And as most respondents think all forward-thinking organizations will use PWA and AMP in the next year, we can expect the use of these two solutions to increase soon.

Development and maintenance of mobile solutions.

Given this increased focus on mobile solutions and rising traffic from mobile devices, it's worth noting the expenditure in time and resources required to implement and maintain them.

Different mobile solutions have varying levels of difficulty and cost when it comes to both implementation and upkeep. According to those using each solution, organizations are most likely (90%) to find AMP the easiest mobile solution to implement. iOS app implementation is the least likely to be easy.

The length of time needed to implement mobile solutions and the number of people involved in the project also varies depending on the type of mobile solution being implemented. On average, it took 6-8 days to implement each mobile solution, involving 4-5 developers per solution. AMP, as well as being the easiest to implement, took the least amount of time (6 days) and fewest number of developers (4) to implement in organizations.

AMP is the second cheapest mobile solution to implement. On average Responsive Web design was the cheapest ($187,500) in respondents' organizations who have implemented them. But AMP is not much more expensive than this, at $189,911 on average. Considering this is the easiest and takes the shortest time and fewest developers to implement, AMP seems the best option for organizations to take if they are looking to quickly enhance their customers' mobile experience.

Additionally, four in five (81%) think that development costs of PWA is lower than for mobile apps. While PWA ($214,439) cost respondents' organizations slightly more to implement than Android apps ($211,089), on average, it cost less than the implementation of iOS apps, which are the most expensive to implement ($237,030). But as most organizations will likely implement both iOS and Android apps to ensure both audiences are covered, PWA will work on both platforms, meaning the cost is almost halved by going with PWA alone.

COST OF IMPLEMENTING MOBILE SOLUTIONS

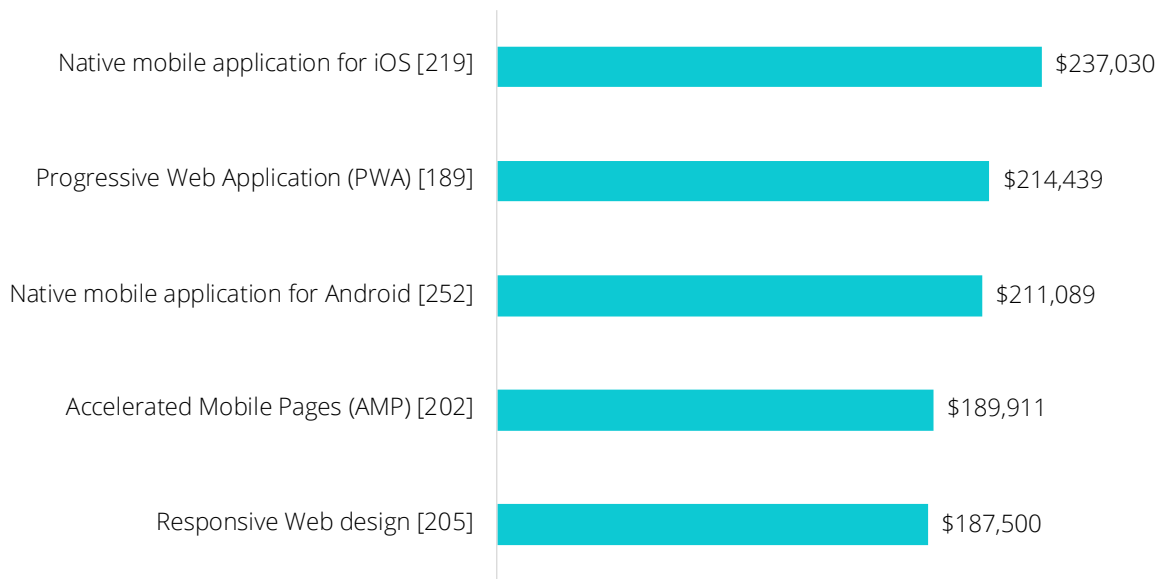| Mobile Solution	Cost
Native mobile application for iOS [219]	$237,030
Progressive Web Application (PWA) [189]	$214,439
Native mobile application for Android [252]	$211,089
Accelerated Mobile Pages (AMP) [202]	$189,911
Responsive Web design [205]	$187,500

Figure 1: Analysis of the average cost to respondents' organization of implementing the above mobile solutions. Asked to the respondents from organizations that currently have each mobile solution, base is shown in chart [x]

Spend on mobile channels is set to increase in the next year. Currently, respondents' organizations spend an average of 38% of their marketing budget on mobile channels. This is predicted to increase to 42% next year, which may help organizations begin to implement newer mobile solutions, such as PWA and AMP, to help reduce the load time on mobile devices and stretch their budgets.

Some of this spend will go toward the maintenance of existing mobile solutions. AMP is the cheapest ($216,794) mobile solution for ongoing annual investment. Between AMP's low cost of implementation and the fact that it has the lowest total cost of implementation, it's the most cost-effective mobile solution for organizations to use.

As with implementation costs, iOS apps are also the most expensive ($297,279) mobile solution to maintain on an annual basis. Three quarters (74%) agree that the ongoing costs of PWA is lower than for mobile apps. And, in line with the implementation costs, PWA ($284,425) is more expensive than Android apps ($256,630) to maintain, on average, but still cheaper than iOS apps.

Since many enterprises will have both iOS and Android apps available for customers, which combined means adding all the Android and iOS implementation and maintenance costs together, the total costs are over $1 million for the first two years. Oftentimes, this will mean those solutions will cost more than double that of a PWA, which will work across all platforms.

By comparison, the first two years for PWA would likely cost less than $500,000. Switching from apps to PWA will result in significant savings in the long run.

When it comes to return on investment, it is felt across all mobile solutions, with no single solution demonstrating higher return on investment for the customer lifetime value (CLV) than the others. Almost half (48%) of respondents whose organization has iOS apps says that this mobile solution is responsible for driving the highest ROI. However, as we've seen, this mobile solution is by far the most difficult to implement and the most expensive to implement and maintain.

Switching from apps to PWA will result in significant savings - halving costs in the first two years

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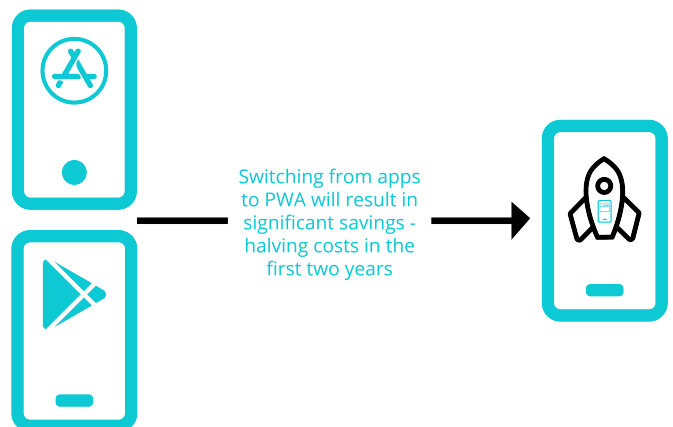
A deep dive into accelerated mobile pages (AMP).

Virtually all (99%) respondents can see benefits for their organization to use AMP. The most likely benefits anticipated are improved security (44%), increased mobile traffic (41%) and improved conversion rates (39%).

Respondents from organizations that already use AMP are more likely to say that each benefit is one their organizations have either already achieved or anticipate. This suggests that non-users are underestimating the benefits that can be achieved with AMP. Half (50%) say there is an improved conversion rate and 45% say that there is an increase in monthly unique visitors.

99%
can see benefits for their organization to using AMP

BENEFITS OF USING AMP

Benefit	Total	Currently has AMP
Improved security	44%	49%
Increased traffic from mobile users	41%	51%
Improved conversion rate	39%	50%
Increased page views per visit	38%	43%
Reduces time lag for users	37%	42%
Increased click through rates	35%	39%
Increased monthly unique visitors	35%	45%
Improved average session length	30%	38%
Increased visits per monthly unique visitor	30%	33%
Changes in SEO (search engine optimization) ranking	23%	29%
Lower bounce rates	22%	24%
There are no benefits to my organization using Accelerated Mobile Pages (AMP)	1%	0%

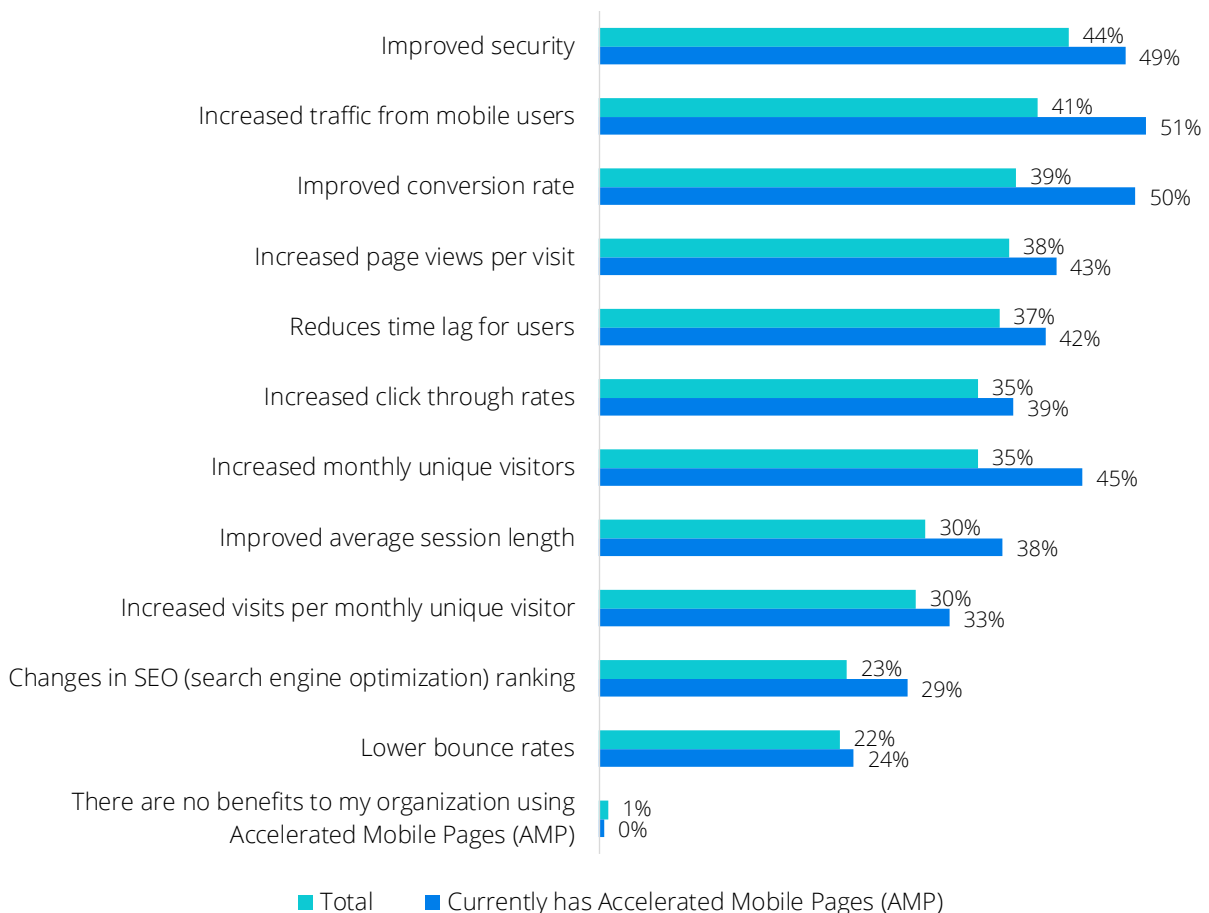■ Total   ■ Currently has Accelerated Mobile Pages (AMP)

Figure 2: "What are (or would be) the benefits of using Accelerated Mobile Pages (AMP) for your organization?", asked to all 450 respondents, also showing the 202 respondents whose organization currently uses AMP

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Almost all (97%) respondents from organizations that use AMP either already use or plan to use plugins. The most popular plugins are all for social media, with around seven in ten (71%) using or planning to use a Facebook plugin. The most common non-social media plugin used, or planned to be, is ecommerce (47%). On average, AMP using organizations use or plan to use four different plugins alongside AMP.

There are many advantages to using apps. Three in five (60%) respondents say that their organization uses mobile apps/PWA to give their customers a better user experience. More than half say this for increased sales (53%) and/or enhanced customer service (51%). While push notifications can be useful on apps, only around a third (32%) of respondents say that their organization uses apps/PWA for direct communication, such as push notifications.
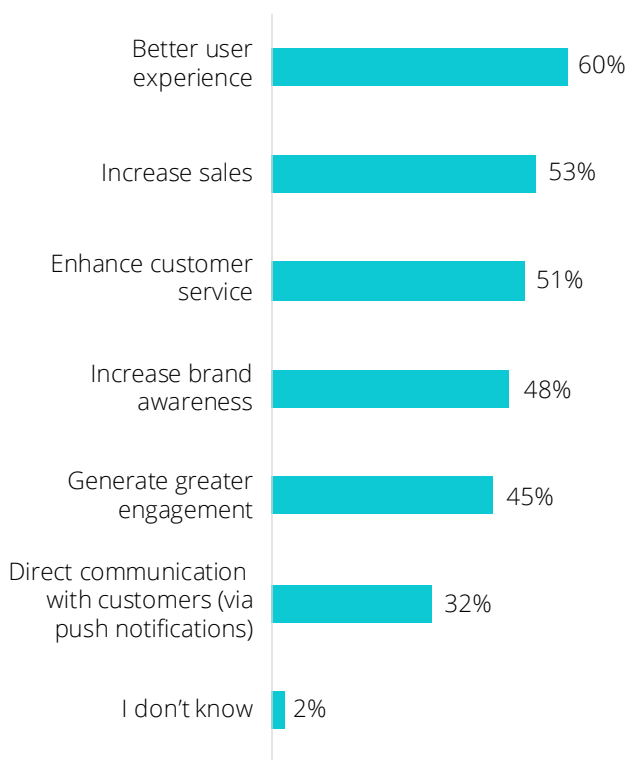
WHY BUILD MOBILE APPS/PWA

Category	Percentage
Better user experience	60%
Increase sales	53%
Enhance customer service	51%
Increase brand awareness	48%
Generate greater engagement	45%
Direct communication with customers (via push notifications)	32%
I don't know	2%

Figure 3: "Why did your organization decide to build a mobile app/Progressive Web Application (PWA)?", asked to the 387 respondents from organizations that currently have a native mobile application for iOS, native mobile application for Android and/or Progressive Web Application (PWA) mobile solutionsorganization currently uses AMP

The many benefits and uses of mobile solutions.

With the many advantages of apps/PWA comes many uses for them too. The most popular (61%) use of mobile apps is social engagement. This is closely followed by mobile commerce (60%) and using mobile apps for content (53%). With social engagement being the most popular use of mobile apps, it isn't surprising that social media are the most popular plugins for AMP, as seen earlier.

While push notifications may not have been the most likely reason organizations have set up an app or PWA, it is the most common (72%) capability of PWA in use among respondents' organizations. Background sync (68%) and caching (56%) capabilities are also used by the majority.

With PWA having lower ongoing maintenance costs than both Android and iOS apps, will PWA replace applications moving forward? The majority (68%) of respondents believe that PWA could lead to the end of the App Store. With similar functionality to apps, PWA gives organizations the opportunity to stop incurring the high ongoing costs of maintaining their iOS and Android apps, and instead switch to the cheaper alternative that PWA offers.

68%
believe that PWA could lead to the end of the App Store

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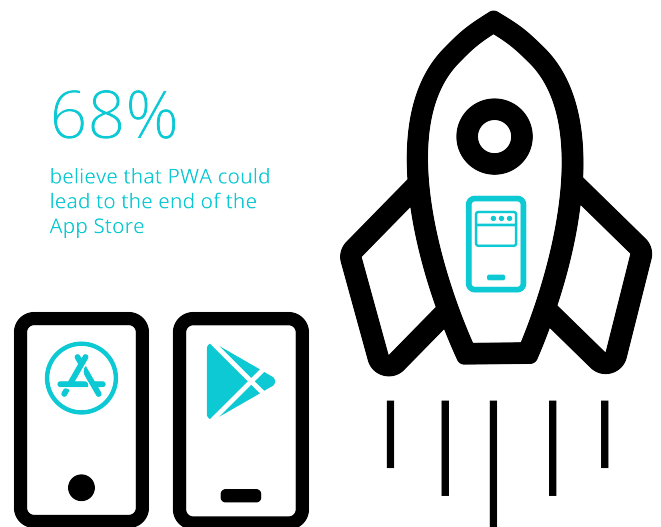
Conclusion.

Few enterprise organizations believe they are delivering on the promise of a superior digital experience for their customers. These experiences simply take too long to load on users' mobile devices, resulting in the loss of valuable customers and revenue.

Forward-thinking enterprises will be making considerable investments to capitalize on these opportunities and to improve the digital experience for a consumer with an increasingly mobile-first and soon, mobile only mindset.

Mobile solutions abound between native mobile apps, Accelerated Mobile Pages and Progressive Web Applications in order to meet or exceed consumers' expectations.

While some of the newer mobile solutions aren't yet as widespread as native apps for Android and iOS, it is clear that using PWA and AMP in place of these apps has the potential to save organizations considerable money in the long run while also improving speed for users.

Most IT, Engineering/R&D and Marketing decision makers realize that forward-thinking organizations will be implementing AMP and PWA within the next year.

But perhaps most importantly, the content management system that is most likely to power more than half of these mobile solutions - whether iOS or Android apps, PWA or AMP - will be WordPress and Adobe.
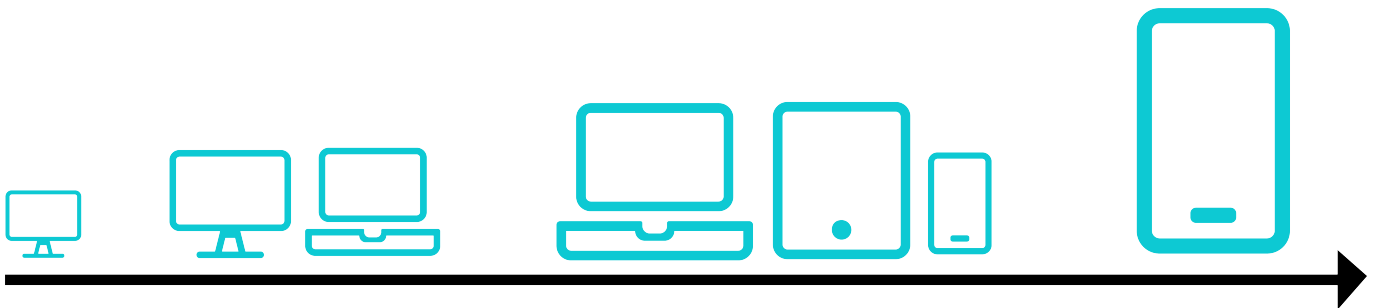
About Vanson Bourne

Vanson Bourne is an independent specialist in market research for the technology sector. Their reputation for robust and credible research-based analysis is founded upon rigorous research principles and their ability to seek the opinions of senior decision makers across technical and business functions, in all business sectors and all major markets.

For more information, visit www.vansonbourne.com
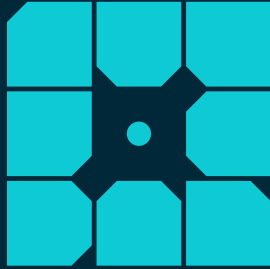
About WP Engine.

WP Engine is the world's leading WordPress digital experience platform that gives companies of all sizes the agility, performance, intelligence, and integrations they need to drive their business forward faster. WP Engine's combination of tech innovation and an award-winning team of WordPress experts are trusted by over 70,000 companies across 130 countries to provide counsel and support, helping brands create world-class digital experiences. Founded in 2010, WP Engine is headquartered in Austin, Texas, and has offices in San Francisco, California; San Antonio, Texas; London, England; Limerick, Ireland, and Brisbane, Australia.
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