Modern life is mobile

We live life on the go, work where there is Wi-Fi and expect to consume the content we want, when we want, no matter where we are. This modern mobile revolution began with the advent of the internet but has been driven by the emergence of smartphones and mobile devices, which are now the dominant source of internet use accounting for almost 60% of traffic globally.

With the number of smartphone users set to exceed 7bn in 2024 – that's over 85% of the world's population – mobile's dominance of the internet is only set to continue. **It is vital therefore that businesses developing their digital platforms to ensure they mobile orientated**. This can be done by developing / adapting websites that are tailored to mobile use or by creating mobile apps. With the different benefits they offer, apps are growing in popularity - 62% of businesses have an app or are in the process of building one – but with over 200m active websites worldwide compared to just over 7m mobile apps across iOS and Android, optimising websites for mobile is still a big part of the market.

When evaluating the best mobile solution for your business, there are a number of important factors to consider. At TEC Agency, we have helped a range of businesses develop their mobile user experience and we've have tapped into the expertise of our digital engineers to provide this guide to the mobile landscape and the options for navigating it. We look at how developers have adapted to an increasingly mobile centric world, before analysing the different digital options available for presenting mobile content, the advantages and disadvantages for each and what you need to think about when choosing the best option for your business.

It was the launch of the iPhone in 2007 that forced website developers to really consider how websites worked on mobile. Over the 15+ years since, the market has seen a range of technological and design innovations that have precipitated a shift towards mobile first approach. These include:

➢ The **emergence of responsive web design** that ensures the layout and size of content adapts to different mobile screen sizes

➢ Factoring in the **opportunities and challenges mobiles present** when designing, e.g.:
• Having **"Touch-friendly" elements** that play to mobile's tactile nature
• Including **dark mode option** so easier to see on mobile screens
• **Voice User Interface (VUI) Integration** – optimizing content and navigation for voice search and commands.

➢ A focus **on optimising performance** – and therefore mobile user experience – by reducing page load times, optimizing images, and minimizing the use of heavy scripts.
➢ Advances in programming languages like CSS and JavaScript enabling more sophisticated and responsive design features.

Perhaps the biggest indicator of mobile's place in the internet hierarchy is that **search engines now prioritize mobile indexing for websites**, taking mobile sites as the primary version.

Mobile first

Responsive v adaptive

When considering how browser based content works on mobile, web developers have two design routes they can take – Responsive or Adaptive.

A **responsive design** approach is based on creating **a single dynamic layout** that intuitively adapts to the device screen size, using media queries to determine the site format. This is the most commonly used option but may not be appropriate if you want your mobile website to look like an app.

An adaptive design approach on the other hand is based on creating **multiple tailor-made layouts** for different devices. The site identifies the interface size and loads the custom layout adapted to that particular screen size. Adaptive design is a good compromise between responsive design and building an app – it lets you create an app like experience but without the costs.

Progressive Web Apps

A significant step in the evolution of mobile first thinking came with the creation of Progressive Web Apps (PWAs). Like responsive or adaptive websites and web apps, **PWAs are accessed through web browsers** but they can also be installed onto a device providing a quicker, more native app-like experience.

They are **designed to work offline and are better able to leverage device features** such as such as push notifications and GPS, without the need for plugins or APIs. They also function like an app in that, unlike website and web apps, they can be distributed via app stores, and they allow for automatic updates ensuring that users always have the latest version, even if they are using the app offline.

Browser based options

	RESPONSIVE WEBSITES	ADAPTIVE WEBSITES	PWAs
Advantages	• More cost & time efficient • Easier to maintain & update • Consistent UI experience across devices • SEO Friendly	• Quicker load times • More control of design elements • Ability to customize experience to each screen size	• Advanced functionality • Accessed via app stores • Can install on phones – quick to use and work offline
Disadvantages	• More coding / testing required • Longer load times • Less control of layouts on different devices	• Development takes longer / is more expensive as multiple layouts need to be created • Harder to maintain / update across multiple URLs	• Most costly / lengthy option of the three due to app store integration, increased functionality • More testing required
Most suited for	New, bigger websites	Smaller, existing websites that need to be refreshed	Businesses focused on creating app like experience, with more time and bigger budgets

Native v Hybrid

Just as the creation of smartphones caused developers to start thinking about mobile experience, it also saw the emergence of applications purpose built for mobile devices – the mobile app. Although built in games like the iconic "Snake" on Nokia phones can lay claim to being the first, mobile apps as we know them today properly entered the market when Apple opened the App Store in 2008. Interestingly, when the iPhone was launched a year earlier, there were only Apple apps installed and no opportunity for third party native apps – **apps that are built for a single, specific operating system** or platform, most commonly iOS or Android. The App Store changed this and together with Google Play and other Android app stores it has seen exponential growth in the native app options created for users.

However, given the split globally between iOS and Android users and the need to ensure you can reach customers across all devices, a second hybrid option was created. Hybrid or cross platform apps harness a lot of the core benefits of a native platform but utilise flexible web frameworks such as React Native or Flutter **to build with a single codebase, capable of adapting to different mobile environments.**

Mobile app options

|	NATIVE APPS	HYBRID APPS
Advantages	• **Better performance** as optimized for a specific platform • Seamless, **purpose-built user experience**. • **Better access to device's hardware and software features**, allowing developers to create more feature-rich, integrated applications. • App Store Optimization - Native apps can take advantage of platform-specific app stores (e.g., Apple App Store, Google Play Store), making them more discoverable to users.	• **Faster Development** working with a single code base deployed across multiple platforms • **More cost-effective** than creating multiple separate native apps. • **Unified updates & maintenance**, reducing the workload and making it easier to manage.
Disadvantages	• **Development takes longer** as working with separate codebases for iOS and Android versions • **Highers development costs** due to the need for specialized skills for each platform. • **Making updates takes longer** as each platform requires separate updates, and the approval process in app stores may result in delays in releasing new features or bug fixes.	• **Slightly lower performance** as they operate in a layer above the native code. • **Access to native features may be limited** by cross-platform frameworks • **Not full native user experience** - subtle differences that discerning users may notice.
Most suited for	Businesses prioritising native user experience over budget and development time	Businesses with greater priority on costs and speed to market

What to go for?

Against a backdrop of increasing mobile sophistication, businesses have a number of options when assessing how they engage their customers. They can build / convert their website for mobile or create a mobile first application that is either native, web based or a combination of the two.

When selecting the right option for them, businesses need to evaluate their project priorities and the characteristics of the audience they are looking to each. How important is budget? How do they weight user experience against time to market? What functionalities do their customers need?

If budget and speed of development are key and there is little need for device specific functionality, then a mobile website is the best option for you. If budget is a consideration but you want an enhanced more native app-like user experience, then either a PWA or a Hybrid app is the way to go. If your priority is developing the best mobile experience possible for each user over costs, then Native apps are the best fit.

There are also marketing / commercial considerations regarding brand visibility and monetization. Browser based solutions like mobile website and progressive web apps are discoverable on search engines affording your business better visibility and greater traffic. Mobile apps on the other hand, while they require the user to look for them on an app store, require download and so provided a constant branded presence on the user's device. They also enable greater monetization options in the form of in app-purchases.

So, there are lots of valid mobile solutions to choose from depending on your business case. Even if you choose to build a mobile app, you should still be thinking about how to optimize your website for mobile, to ensure the user experience of your brand and content is the best it can be no matter what channel they choose to engage with.
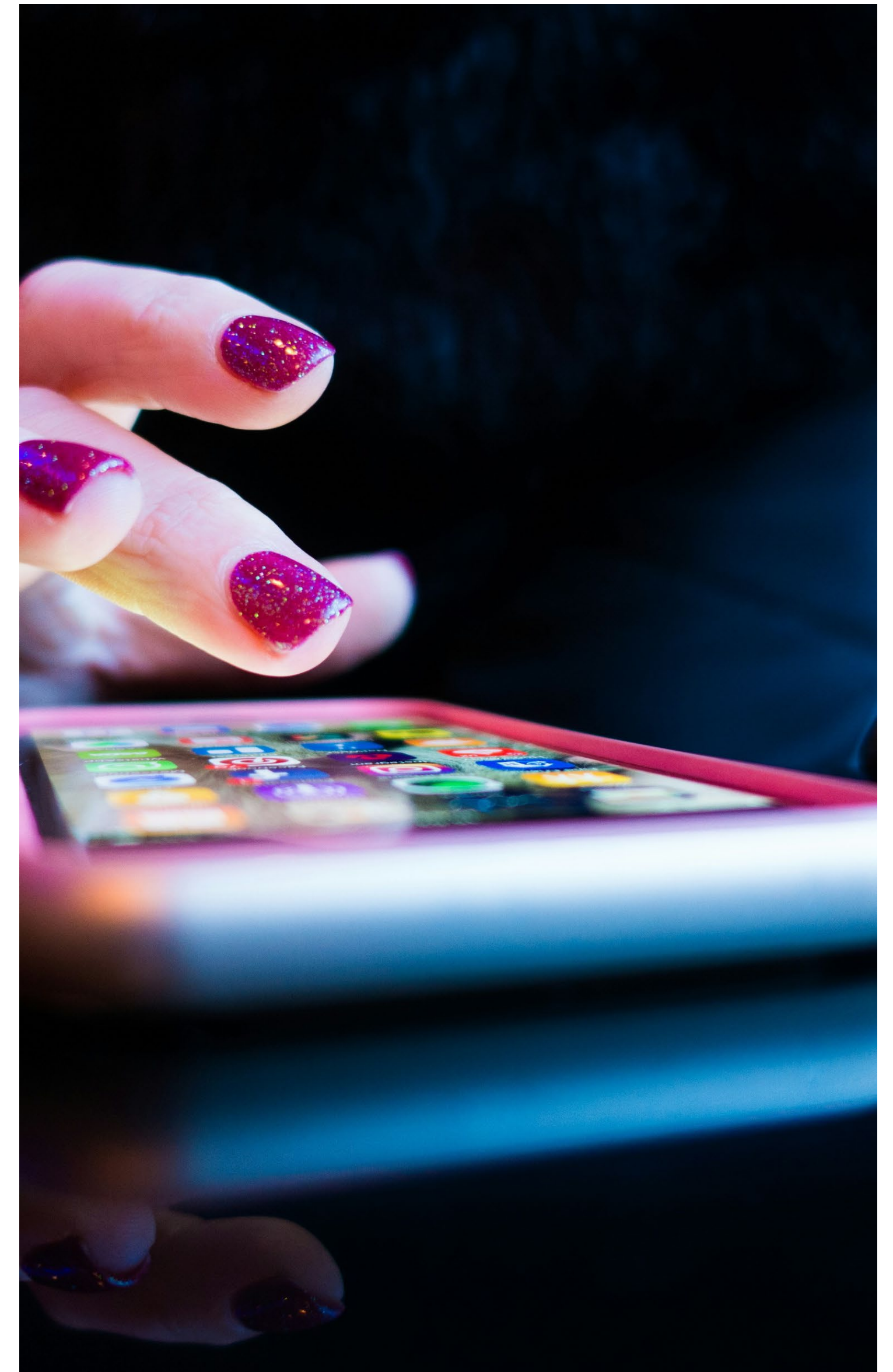
What do we know?

At TEC, we have worked alongside leading sports rights holders to evaluate the best mobile solution for them and then make their choice a reality. **Working with renowned golf federation, The R&A**, we helped to build a new website for their premier tournament, The Open Championship in 2018. With research on their user personas at the time showing an older, less tech-savvy demographic, the website was initially tailored for desktop use. However, ongoing audience evaluation highlighted a shift towards mobile and TEC was tasked with helping them pivot to a more mobile first focus for the website. The site was made responsive by adapting, image sizes and component layout and modifying how video was featured.

Working with a leading international sports federation, who wanted an app for their VIP guests to manage their hospitality experience at their major tournament, TEC built a cross platform solution so they could leverage features like working offline and enhanced notifications. As a Hybrid app it also worked across all devices, minimising the resources required to build and manage the app for the event.

TEC also have experience building native apps. After creating a bespoke player data management platform for **a Premier League football club**, they approached TEC about developing a mobile solution for their scouting module which was predominantly engaged on the go. TEC built them a native iOS app to optimise the experience and functionality for their users.

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If you're considering what the **best mobile solution** is for your business, **we'd be happy to help.**

Get in touch

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