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Jergefelt, Mikael

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Mikael Jergefelt
Karolinska Institutet University Library, Stockholm, Sweden

Abstract
Native apps have become the norm of mobile interaction with digital services, but it's an expensive way to reach users. With responsive web design, a more inclusive and accessible experience can be crafted for all mobile users instead of just a majority. This article describes the move from a native library app to a responsive website, and why it is right for the future.

Key words: mobile applications; internet; web browser; forecasting.

Background

Smartphones are so associated with apps these days, that some of you might not even believe me when I tell you that the original iPhone launched in 2007 didn't have an app store. Steve Jobs' original vision for the smartphone was for developers to use modern web technology standards to write apps that run in the browser; so called "web apps". Instead, developers started hacking their phones to be able to write "native" apps that looked just like the preloaded ones, and Apple was forced to release an official software development kit and the app store the following year. The rest is history, but the discussion about what's better, native versus web apps, has been going on ever since.

Native apps are built specifically for the intended platforms, which means they are usually prettier, faster and what users most likely expect when tapping an icon on their home screen, but the web way of doing things got stronger around 2011 when "responsive web design" was introduced. This technique allowed websites and apps to share the same code for all different screen sizes instead of having separate websites for mobile and desktop. A typical example originating from this time was to have a native app for mobile, and a website made for desktop use. This was the case for us at the Karolinska Institutet University Library until earlier this year when we retired our native app in favour of a responsive website. This article describes how that decision came to be, and why I believe it's right for the future.

The app decline

Our "KIB Mobile" app for iOS and Android was introduced to users in April 2011 as a way to offer mobile access to our services and information. It was downloaded about 13,000 times during its lifetime (70% for iOS and 30% for Android), and updated to support and match the general look and feel of three new iOS versions and just as many new Android OS iterations.

In late 2012, we started the UX and pre-study work needed to build a new and improved website. When it was time to decide the technical details in 2013, "responsive web design" had become a strong trend that would've been too foolish to ignore, so the decision came down to building a website that would work just as well for small screens as for big ones. The experience of viewing and navigating would be optimal no matter if it was viewed on a desktop computer, tablet or a phone.

We also wanted to try and find a better workflow for the app, which organisationally was tied to our website, from where it was pulling data and information. Content was made specifically for the app because of differences in visual and technical design. This situation with very little content parity

made the app difficult to work with for staff, and users still had to rely on the website designed for desktop computers to get some things done from their small screen phones.

Maintaining an app takes time and effort to keep up to date with the latest hardware and software. To support new operating system versions there's also a big risk you need to drop support for older ones to keep development practical. Using a development framework that supported shared code between the different phone platforms made a huge difference for us and saved a lot of hours and manpower. The original plan was to leverage this even further for content with a responsive website, but when it was time to deal with the app specific parts in the website development phase, it became painstakingly clear the app was superfluous.

All of a sudden, the app's only advantage was that it was a native app. It loaded faster, and was streamlined for certain tasks, but there was nothing you could not do just as well on the responsive website, which now also contained the full library experience on a mobile device, compared to the selective features of the native app. This motivated the decision to discontinue the app instead of putting time and resources into updating it to work alongside the new website. There was no way to justify having two different solutions for one problem. In our case, mobile access to the library's content and services was now clearly best solved with a responsive website, which as a bonus also made us more future friendly.

Being future friendly

"Future friendly" in this context is a phrase coined by a group of web and UX designers who released a manifesto in 2011 about web standards, content strategy and responsive design among other things to tackle the accelerating pace of technological change. They meant that our current processes and standards have reached their breaking points and wanted to start a discussion about how to adapt and deal with the increasing device diversity like desktops, laptops, tablets, smartphones, feature phones and smartwatches etc. Their solution is "future friendly thinking" and involves acknowledging and embracing unpredictability when creating content and contexts in which users interact with digital products and services (1).

Well-structured content is an essential part of future friendliness since you can never know how it will be consumed in the future. Brad Frost, one of the creators of the manifesto, writes: "Instead of chasing down the platforms du jour, we should recognize the fact that our content now needs to reach a lot more places and turn inward to invest in our content infrastructure" (2). He also emphasises, "get your content ready to go anywhere because it's going to go everywhere" (3).

With "KIB Mobile", iOS and Android were the only supported platforms because that's what most of our users had on their phones. Reaching users of another platform such as Windows Phone with a native app would have required us to develop and maintain yet another version built on top of additional proprietary software and technology out of our control. Compare this to our responsive website that has a single code base, is built on open web standards, and supports pretty much any smartphone out there, even if it's running ageing systems such as webOS. We also put ourselves in good position to support possible future consumer products with Tizen, Jolla or even holograms. If it's got a web browser, it will be viewable. It might not be as fast and pretty as a native app, but it's inclusive and accessible for all mobile users instead of just a majority. The great thing about building things with standard web technologies is that you don't need to know exactly what the future will look like. It's pretty future proof to assume web technologies will still be present in anything that's connected to the Internet.

Conclusions

Being future friendly was never something that affected the decision to move away from apps, but it's what makes me believe we made the right choice for the future. Instead of focusing on an exclusive majority of our users with a couple of native apps, we can now offer a relatively full and true mobile experience for everyone without breaking a sweat using responsive web design. We're currently in the process of deconstructing our second app, Swedish MeSH, previously featured in JEAHIL (4), which will have even more to gain from taking future friendly routes when it comes to focused design and agnostic content to be able to stay relevant on as many future devices as possible, for as long as possible.

The more I think about it, the more I believe in Steve Jobs' original vision for the smartphone. Web apps and websites may not have been what people expected or wanted to use on their phones in 2007, but a very sympathetic initial direction for the future, that perhaps just was introduced before its time.

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