



INTRODUCTION

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With four billion applications on just one mobile device platform (iPhone) and device purchasing set to outpace both types of desktop computers combined, there can be little doubt that mobile is moving into the mainstream. Given this rapid adoption, my hope is that this book is a discussion of and a foundation for learning how to build mobile applications and sites.

Mobile Device Usage

- ▶ By the year 2014, consumers will be buying more smartphones than PCs and laptops.
- ▶ Since the launch of the iPhone, more than four billion apps have been downloaded, with an average of 47 apps per user. Android and iPad app stats are also in the millions.

From "Internet Trends," PowerPoint Presentation at Morgan Stanley's CM Summit, June 2010 (http://www.morganstanley.com/institutional/techresearch/pdfs/MS_Internet_Trends_060710.pdf).

Mobile applications, apps for short, are stand-alone, dedicated pieces of software or web applications/sites that enhance our phones' or tablets' capabilities and access information in elegant, consistent ways, and are the means for creating new services for our mobile patrons. People want apps; they have been trained to expect apps for their mobile devices. Library software development must keep up with the demand. We can gain much in this pursuit. Among the possibilities are:

- ▶ new ways of browsing using location data,
- ▶ real-time, contextual search providing results about where a person is located,
- ▶ voice-initiated browsing and searching, and
- ▶ archiving images and documents from mobile cameras.

In many ways, our success in reworking traditional library web services into mobile settings will help define the direction of our profession.

The rise of the mobile platform can be traced to Apple's release of the iPhone on June 19, 2007. With the release of the iPhone, consumers now had access to a mobile computer in their pocket. The smartphone template introduced by the iPhone changed what people expected to experience in the mobile setting. It wasn't just about texting or phone calls anymore; here was a computer with a full web browser and optimized operating system built for computing in mobile settings with limited bandwidth and connections. Portable media browsing, media creation (images and video), full website viewing, and other actions commonly associated with desktop PCs were now a part of the mobile environment. And apps, those little pieces of downloaded software or optimized web applications and sites, became the conduit for services delivered to this new platform.

Given the relative newness of the mobile platform, the history of mobile development in libraries is brief, but growing quickly as one might expect. One of the first libraries to enter mobile development was the District of Columbia Public Library (DCPL). In early 2009, DCPL built an app for browsing and searching library materials and released it for the iPhone (<http://dclibrarylabs.org/archives/476>). The DCPL app was a first attempt to translate a traditional library service, the catalog search, into a mobile setting. Three years later, the move to mobilize the catalog remains the most frequent mobile app type coming from libraries. A next step for libraries was to recognize the local context and immediacy of place that could be applied to mobile development. To this end, in early 2010 North Carolina State University (NCSU) Library released WolfWalk, an app based around a historical walking tour with archival photos of the NCSU campus (<http://goo.gl/ga4YQ>). As the mobile platform has matured, other cultural organizations have begun to experiment with mobile development. The Smithsonian Institution has a complete mobile development arm that is building apps ranging from Leafsnap, a mobile app that uses the device camera to help identify tree and plant species, to Stories from Main Street, a crowdsourcing mobile app that uses device microphones to record local history stories from all over the nation.

► MOBILE DESIGN AND DEVELOPMENT

Not all libraries will have the types of development resources mentioned, but each of us can get started with a basic understanding of

the benefits and complexities of mobile design and development. First, mobile design and development can be liberating. Whitespace is necessary, and screen space is at a premium. Decisions about what to include in your mobile app or site need to be based on the core actions and utility your users need. This “limitation” of the small surfaces in mobile frees you from the complexity associated with the multiple links and entry points of desktop applications. Second, mobile design and development addresses an emerging need of our library audience: the ability to use library resources and get questions answered when the need arises. Mobile brings the dream of a portable library into reality. Third, mobile design and development can leverage existing skill sets. Many of the apps we build in this book will use HTML, CSS, and JavaScript skills that are already in place for many libraries. This “mobile web-centric” approach to mobile development offers a way forward that can make library resources truly cross-platform. Finally, mobile design and development and its simplicity aesthetic can inform physical library services. By forcing us to take a hard look at what is essential for a service to succeed, mobile can help us revise and reform current library services.

Even with these benefits, I’m not looking to trivialize mobile design and development. Creating simple mobile designs can be really difficult. Multiple devices and the growing fragmentation of the mobile market are huge design and development challenges. What works on one platform may not work on another. Additionally, having to choose a mobile platform—Apple (iOS), Android, BlackBerry—to provide library materials or to invest time learning a new software development environment can be cost-prohibitive or even run counter to the library mission of equal access for all. However, there are ways around these potential sticking points, and, whenever possible, I have looked to develop platform-neutral solutions for this book.

► WHO SHOULD READ THIS BOOK? WHAT CAN YOU EXPECT?

This book is for anybody looking to get a handle on what mobile means for libraries and related institutions. Readers should also have a keen interest in learning how to make decisions about a mobile strategy and getting their hands dirty with practical, applied mobile projects. At its core, this book is about the implementation of some exemplary mobile projects. These projects range from the simple to the complex, but all projects are written up in a tutorial, step-by-step manner. All you’ll need to follow along with the vast majority of

examples is a text editor and a web browser (recent versions of Internet Explorer, Chrome, Firefox, or Safari).

Over the course of this book, we will look at defining types of mobile apps, planning and project management for mobile development, negotiating the social mechanics of your library, marketing your apps and sites in this new and emerging mobile ecosystem, and discussing developing mobile trends. When we are finished, you will have a full sense of how to think broadly about mobile development and design. You will also have multiple working projects and examples of how to create mobile apps and websites for your library. Specific projects include:

- ▶ learning how to develop an iPhone application that features core library services,
- ▶ building a “Where’s My Library” location-aware Android application using Google’s App Inventor,
- ▶ mobilizing your library’s catalog using WorldCat and its associated developer’s tools, and
- ▶ creating a mobile website that can be viewed on smartphones.

There is something here for beginners and advanced developers, and the “cookbook” format will allow you to move from the simple to the complex. Let’s get started.