Chapter 10
Theory and Practice:
Designing for Effective Mobile Content (Service) Delivery

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ABSTRACT

Design of mobile applications to deliver reference content and services is a new grand challenge. We present a template of design considerations, ranging from the general theory of content restructuring to strategic planning and tactical execution.

INTRODUCTION

Conventional reference materials such as sprawling Web pages and large documents do not work on the tiny screens of mobile devices. A new design approach, which frees facts from these busy, large scale formats, then hyperlinks them into a coherent mobile structure, is described below. Key theoretical features are new modes of selection, clustering, and compression of factual reference content. New approaches to structure and navigation are also discussed.

Following this scene setting, the conversation shifts from mobile design theory to business practice, zeroing in on strategic planning considerations and following with steps and tips governing tactical execution. Questions are raised and responded to, which include: What makes mobile content delivery fundamentally different? What are the key considerations for content providers to review before embarking on a mobile development project? Tactics and implementation steps are examined from service, content, business, and development perspectives. A concise summary ties theory and practice together

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The objective of this chapter is to provide reference content providers with step-by-step issues that must be addressed in any mobile application project.

BACKGROUND

Web-like applications for the smartphone and other portable devices are a new medium of reference communication that has arrived. Often called simply "apps," this medium is an alternative to the familiar Web page, but with very different design requirements. The reference community has myriad projects going to explore and develop apps that will provide access to its many resources and collections. It won't be easy and it won't be quick, but it is happening.

Apps have taken off with the phenomenal growth of smartphones and similar hand held computers. Apple alone has hundreds of thousands of apps for its iPhone; some are free, but many are for sale. App development is now a major industry, and several federal government agencies, such as NASA, have fielded popular apps.

There are really two very different kinds of apps, although they may look and feel the same. The standalone or native app is one that runs on the mobile device, as a piece of native software. Common examples include games, a scheduler, a dictionary, or other reference works, photo albums, et cetera. No outside connection is required to use these apps, although they are typically acquired by downloading from the Web. The content of these apps is typically static, except for user inputs.

Then there is the Web app, which is really a Web site designed for the tiny screen of the mobile device. The Web app is viewed using the device's Web browser, so no special software is required. As with any Web site, the Web app requires the user to be online when it is used. And as with many Web pages, Web apps can have dynamic content. Common examples are similar to Web uses, such as news, weather, or search engines. However, there is also a hybrid kind of app, which runs in standalone mode, but which is updated via the Web.

It is estimated that the volume of mobile access to the Web is now greater than desktop computer access. However, the vast bulk of Web pages are still designed for large format desktop and laptop computer screens. Thus, the vast bulk of accessible reference material is still not designed for mobile access. It is this challenge that we address below.

THEORY: GOING FROM FORMAT TO STRUCTURE

Restructuring Reference Content for Mobile Applications

Our objective here is to present a systematic design method for restructuring reference content, to make this content work well when presented on mobile devices. The rapid rise of mobile devices presents reference content providers with a grand challenge. Traditional content designs, especially Web pages, simply do not work on the tiny screens of mobile devices. The typical computer screen is 50 or more times larger than the typical mobile device screen, from 200 to 300 square inches for the computer, compared to just four to six square inches for the mobile machine. As a result, traditional Web based content designs are virtually unreadable on the tiny mobile screen. The solution is to radically restructure content, presenting it in a way that works.

What is needed is to break content down into tiny pieces, freeing the facts from the format, then organize and hyperlink it for effective presentation to the user. But the organization will not be on the screen as format, as it typically is with Web pages. Instead, the key to effective presentation of factual material will be in the linkages among the tiny pages, of which a great many will be required. We call this principle of design "going from format to structure."