

Chapter 6

Using the Web While Offline: A Case Comparison

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ABSTRACT

Whilst access to the internet is becoming increasingly ubiquitous in highly populated, urban areas, for much of the planet web connectivity is still largely absent. This is mainly due to geographic remoteness, but bad connectivity or governmental controls might also prevent web users from accessing desired resources. The authors have previously outlined a general approach to cope with such situations, which they termed “Web in your Pocket” (WiPo). WiPo assumes that the user has a smart device to which appropriate data, ideally in curated form, can be pre-loaded so that it remains accessible offline. In this chapter, the authors present the potential usability of WiPo by considering three important use-cases (tourism, health, and search and rescue) demonstrating the vast potential of WiPo. The chapter concludes by considering the practical issues that need to be overcome before it might be implemented in real-world situations.

INTRODUCTION

Online data is both superabundant and growing at an unprecedented rate. It is also being used for an increasing number and variety of contexts and use cases, which can easily be verified in many applications in both the private and business domains. In less than 10 years we have become almost completely reliant on cloud-based services for entertainment, information, education, and communication and increasingly

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businesses are favoring cloud applications and platforms over local installations. Accessing “The Cloud” however is only possible with the availability of a reliable and efficient Internet connection. While this is indeed the case most of the time in western, urban contexts, situations remain where a user or an application cannot access the Web, due to server unavailability, bad connectivity, or access restrictions. In this chapter, we consider the case where Web access is (temporarily or permanently) unavailable due to various reasons, yet a user desires the most relevant and up-to-date Web data appropriate to their needs. To achieve this, we build upon the Web-in-your-Pocket (WiPo) architecture presented in Dillon, Stahl, & Vossen (2013a) and present a detailed proof of concept for its future application by studying how the WiPo concept can be applied to three distinct use cases.

WiPo is based on the concept of having access to a specialized data service that has been configured precisely to a user’s needs that automatically sources, curates, and delivers data in a subject-centric way. This user-tailored data service is available online, but is unique in that it can also be made available offline on mobile devices. This latter “application” we name as “Web in your Pocket” or WiPo for short, shares some of the characteristics of digital newsstands such as Zinio or digital notebooks such as Evernote. A key feature of WiPo is the ability to obtain automatic updates of highly dynamic data as and when internet access is available. Unlike search engines, which “pull” information from the Web following a manual, user-initiated ad-hoc query, WiPo takes the form of a service from which information can be obtained from various public (open) and private (closed) sources that follows a (more or less detailed) specification of what is desired and which has undergone some form of curation.

As we have outlined in Dillon et al., (2013a) use cases can be distinguished by various dimensions, most notably by (1) the type of application, i.e., profit or not-for-profit, (2) data provision frequency, i.e., one-off data access or continuously refreshing/updating or something in between, and (3) data broadness, i.e., the number of data sources consulted (singular or multiple). The use-cases we present in this chapter have been selected as they provide a diverse range of applications that demonstrate these dimensions and are not solely business-profit-focused. The first case address the tourist scenario utilizing a private WiPo application where the user is interested in up to date data coming from a variety of relevant sources, before travelling with intermittent Web access. Next is a health application which is both for-profit and not-for-profit (potentially used by both medical practitioners and patients), requires regular data updates, and relies on a number of public and (importantly) private data sources. Finally, the very specific case of Search and Rescue is considered. In this application, data needs to be continually updated as Web access allows, where multiple, predominantly private, sources are employed.

The objective of this chapter is to clearly articulate practical real-world applications of the WiPo concept. This will be achieved by firstly summarizing relevant related work giving particular attention to well-established and relevant technologies on which WiPo is founded. The chapter then presents brief overview of WiPo. These two sections are intentionally brief as a more detailed description is provided in Dillon et al., (2013a) and the reader is encouraged to read this. We then demonstrate the potential of WiPo through the consideration of the three carefully selected use cases. The general characteristics of these cases are highlighted to demonstrate the flexibility and application breadth of WiPo. Following that we collect several considerations regarding an implementation of WiPo. Finally, directions for further research and development of the WiPo concept are outlined, in particular in the direction of coping with today’s information overload. For more specific discussion of the WiPo concept, as well as some basic consideration of issues pertaining to security and pricing, the reader is directed to Dillon et al., (2013a).

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