

Chapter 5

Adapting Agile Practices to Mobile Apps Development

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ABSTRACT

Mobile app markets have experienced remarkable growth during the last year. The increasing number of apps available on the market and the revenue that developers and companies obtain is significant enough to seriously consider the way apps are developed. The ever-changing environment in which apps are developed makes agile methodology convenient to follow. Although agile methodologies allow the development team to quickly adjust the requisites to the new customer's needs, there is a lack of research on how they can be explicitly adapted to develop mobile apps. There are many Websites that explain how to code a mobile app, but there is not enough information about other stages in the development process. Adapting an agile methodology for mobile apps would provide development teams with a clear guide to successfully develop an app without missing any step in the development process. This chapter proposes an agile mobile app development process, including processes and activities to be followed as well as the roles involved in these activities. Marketing issues are also considered in the proposed development process as they are necessary to publicize the mobile app. This process has been applied for over two years in the development of the institutional apps at Carlos III University of Madrid.

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1. INTRODUCTION

Currently, mobile app development is booming to satisfy the rapid growth in demand for apps, according to data from the Gartner research group (2012). Although there is a great deal of information about coding apps for mobile devices, there is very little information on how to complete the entire development process.

Agile methodologies are often adopted for mobile software development because of their characteristics. The development of an app should be relatively quick and straightforward. Small teams must deliver upgraded versions in short periods of time to meet customers' needs and expectations (Abrahamsson, 2007).

These agile methodologies, however, attempt to strive for universal solutions as opposed to situation appropriate solutions. As a consequence, they usually lack significant aspects that are specific to mobile apps, such as the co-joint management of a portfolio of apps to develop; mechanisms to involve end-users in the process of validating and upgrading the apps; or marketing-related practices to differentiate the app as a product, identify the target customers and consider other activities to publicize the app and follow up the marketing efforts.

To tackle all these problems, a development process based on agile methodologies was tailored specifically for mobile apps. We decided to use agile methodologies because they adapt quickly to changes, which is very important in the highly dynamic and competitive market of mobile apps. The inclusion of marketing activities in the proposed development process is considered innovative because agile methodologies do not usually include marketing phases in their processes.

This chapter aims at showing how agile methodologies are used in a mobile app development project. Different processes to be followed throughout the entire project are further described along with their corresponding activities and the appropriate roles for each one of these activities.

Thus, the apps produced following the process proposed in this chapter are likely to be better developed and have greater success in the mobile apps market.

2. BACKGROUND

Agile methodologies have been applied since the 90s for software development. Due to the growth of light applications oriented to mobile devices, agile is currently one of the most adopted methodologies for mobile software development (Shen, Yang, Rong, & Shao, 2012).

The characteristics of all agile methodologies are based on the Agile Manifesto (Agile Alliance, 2001) which emphasizes: individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, and responding to change over following a plan.

There are also twelve principles behind the Agile Manifesto. The first one states that the highest priority is to satisfy the customer through early and continuous delivery of valuable software, as working software is considered the primary measure of progress. Another cornerstone of agile development is to welcome changing requirements because agile processes harness change for the customer's competitive advantage. Agile methodologies also encourage motivated individuals working in self-organizing teams composed of both business people and developers. The team should be able to maintain a constant pace indefinitely, paying continuous attention to technical excellence and good design, and reflecting on how to become more effective. To do so, good communication is key and agile methods consider face-to-face conversation as the most efficient and effective method of conveying information to and within a development team. Finally, agile principles state that the team should choose simpler solutions until more complexity is needed because simplicity

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