

Chapter 5

How Cross-Platform Technology Can Facilitate Easier Creation of Business Apps

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ABSTRACT

Applications for mobile devices – apps – have seen unprecedented growth in importance. Ever better apps keep propelling the proliferation of mobile computing. App development is rather easy, particularly if it is based on Web technology. However, implementing apps that are user friendly and useful in the long-run is cumbersome. Thereby, it typically is expensive for corporate developers. Nonetheless, business apps are embraced by enterprises. To overcome the overhead of developing separately for multiple platforms and to mitigate the problems of device fragmentation, cross-platform development approaches are employed. While many such approaches exist, few have found widespread usage. In this chapter, we argue what the path towards future solutions could look like. We thereby take a rather technological look, but always keep business-orientation in mind. Our findings suggest that much effort is needed to enable the next generations of business apps. However, such apps will provide many merits and possibilities. Moreover, they provide the chance to master several of today's challenges.

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1 INTRODUCTION

Applications for mobile devices – apps – have seen an unprecedented growth in importance over the course of the last years (Rivera & van der Meulen, 2014a). An increasing number of companies embrace mobile computing (Majchrzak & Heitkötter, 2014). They employ the capabilities and versatility of apps to support business processes as well as to provide tools to connect with (existing and future) customers (McLellan, 2014). Even if technological progress was stalled in terms of device hardware, ever better apps would likely keep propelling the proliferation of mobile computing. App *development*, however, is cumbersome considering the multitude of mobile platforms that need to be supported (Heitkötter, Majchrzak, & Kuchen, 2013).

Developing apps is, in general, facilitated by rather easy to use software development kits (SDKs) released by the mobile platform vendors (such as Apple for iOS (Apple, n.d.) and Google for Android (Google, 2016a)). *Platform* in this context refers to the operation system for a mobile device along with the accompanying ecosystem of SDK, frameworks, tools, means of distribution etc. Moreover, Web-based development is widely used: Either webapps are chosen as a kind of least common denominator or, alternatively, cross-platform tools such Apache Cordova (Apache, n.d.) are employed. In addition, numerous frameworks exist that intend supporting development activities. Nonetheless, creating good apps is both complex and expensive.

It can be witnessed that app development even in companies with experience in software development differs from traditional development activities (Majchrzak & Heitkötter, 2014). Team sizes are often smaller – frequently, app development is a single-person project (Heitkötter, Majchrzak, Wolfgang, & Kuchen, 2012). While developing an app in general requires just a few steps, implementing sound concepts requires knowledge, experience, and arduous work. Unsurprisingly, there is an endless stream of complaints about low app quality in app stores (cf. e.g. Khalid, Shihab, Nagappan, & Hassan, 2015) as well as a daily emergence of security-related news, typically reporting breaches (cf. e.g. Chia, Yamamoto, & Asokan, 2012; Mansfield-Devine, 2012; Wang, Lu, Lu, Chung, & Lee, 2013). Even without serious flaws, it is hard for companies to leverage the potential of mobile computing if development is more expensive than it should be.

Despite the problems, companies virtually cannot avoid apps. Investigating the possibilities provided by modern mobile computing ought to be a task every company should pursue, almost independent of size, sector, and corporate culture (Majchrzak & Heitkötter, 2014). For many enterprises, so called *business apps* will provide benefits, or at least promise to facilitate future improvement to process management, workflows, and customer relations. Business apps are typically based on

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