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A BUSINESS-TO-BUSINESS PERSPECTIVE ON MOBILE APPLICATION STORES

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A BUSINESS-TO-BUSINESS PERSPECTIVE ON MOBILE APPLICATION STORES

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Abstract

Mobile devices, namely smart phones and tablets, have recently experienced remarkable proliferation. Beside private users, companies realize the potential of increasing the mobile productivity of their workforce. In this paper, we take a business-to-business perspective on mobile app stores by evaluating the potential of particular app stores for business-related apps. For this purpose, we first review the existing landscape of mobile app stores, and then assess their suitability for business-to-business purposes. For some mobile platforms there already exist alternatives to the official app store. We also judge if they could serve as model for B2B purposes. Overall, we highlight three distinct cases from this analysis: the “Google case”, the “Apple case” and the “Web case”. For all of them we show how the distribution of B2B could fit in. We then take a look at the specific aspects that should be considered for designing app stores for B2B needs. We suggest concepts for realizing these aspects. Some of the aspects, however, remain open. We discuss them and propose considerable potential for further work.

Keywords: App store, mobile business, B2B, business apps, user interface, mobile commerce

1 Introduction

A major reason why smart devices have become so successful in the past years is that related software (mobile applications or in short form, mobile apps) can conveniently be browsed, searched for, paid, downloaded, and run by users through a single portal: app stores for mobile apps (West and Mace, 2010). The increased prevalence of smart phones and tablets for employees, and the demand, also for business-related mobile apps, provide a vast potential to the business software industry (Kubach et al. 2012). Mobile apps allow for accessing business-related data on the go (e.g. sales orders) and thus enable the mobilization of business processes (Verclas 2012), as well as they enable completely new business processes. We can expect that mobile apps for business use will convert tablets and smart phones into productivity tools akin to the desktop computers and laptops we use today.

However, the distribution of business-related mobile apps remains a challenge. The distribution process of consumer-targeted applications is, in many aspects, very different to what is required for buying business software for mobile phones:

One challenge arises from the often centralized app stores on the mobile platforms (Holzer and Ondrus, 2011). What this centralization means for the distribution of mobile business-to-business software is so far an open question. Today's app stores are market places with individual, mostly private customers on the one side. On the other side there are individual developers or companies that offer their mobile software. The C2C and B2C scenarios are so well covered by today's app stores. For the B2B scenario there might be some issues that arise. In accordance with Timmers (1998) we regard the difference between mobile B2B and B2C software in their business model, which is in the first case aimed at organizations and in the second case at individuals.

One issue comes from the fact that the mobile landscape of companies usually consists of smart phones of several platforms (e.g., Android, iOS, BlackBerry). The buying process would be much simplified if the apps for all those platforms could be done through a single, platform-independent app store. Moreover, since business apps need to be available for any of these platforms, it is desirable that also the apps are platform-independent. Other issues arise from the user-interface of current app stores, because they are designed mostly for private users. For example, the browsing categories and filter options might not be optimal to find the desired app for employees of a company.

Companies often rely on business processes, and some of them might also apply for app stores. So the download and the payment of apps might not be as easy in a B2B scenario, because this could require an approval process or a purchase order that has to follow a company's processes. Other questions are, for example, who should be able to upload mobile business software to an app store, and what kind of review process they have to undergo prior to publication.

Another issue is that business software is often customized to individual business customers, and its adoption in a company needs consulting, training and maintenance. It is so far an open question how these services could be provided through current official app stores.

On the commercial side, app stores often require revenue sharing models with the platform providers; a new situation for business software providers. Today's licensing options might however not be suitable for business customers.

Motivated by all these issues, this paper aims at answering the following questions: Do the current app stores serve the need of the business-to-business scenario? If not, is there a need for a separate app store for B2B and what are possible functionalities that should be offered?

To approach these questions, this paper is structured as follows: we begin with presenting an overview of related works in the area of app stores and show how our work fits in. Then we give an overview of today's mobile app store landscape, and identify three distinct cases of how mobile app stores distribute apps. We propose how to fit or to integrate the business app stores to this app store landscape and show a concrete example of how this store could look like. We then analyze several

aspects that should be fulfilled in app stores for B2B scenarios. We divide the aspects in the following dimensions: user-interface, technical, commercial, and organizational. Finally, we discuss the points that remain open, and give an outlook for further research in these directions.

2 Survey of Current Mobile App Stores

In this section we give a survey of the current developments in mobile app stores. After highlighting related research on app stores we give a detailed overview over today's mobile app store landscape.

2.1 Related Research

App stores in today's form exist since the launch of the Apple iPhone in 2007. Relatively little research has therefore been done specifically on this subject. An analysis current app store business models is given by Müller et al. (2011). While researchers predicted a trend towards platform independence, similar to the tendencies we see on the Web (Blom et al. 2008), the trend now seems to go toward centralization and platform dependence, for example particular stores for iOS, Android, etc. (Holzer and Ondrus, 2011). Other researchers meanwhile proposed new functionality for app stores like social-network-enabled stores, allowing users to keep track of what mobile apps their friends use (Girardello and Michahelles 2010). Gonçalves et al. (2010) analyze the role of network operators in connection with app stores, and recommend which platform they should support. Gasimov et al. (2010) investigate the developer side of mobile apps while Holzer and Ondrus (2011) take a developer's perspective on modern app stores and analyze the levels of integration of the app stores. The rapid market development is eminent as RIM and Microsoft did not yet have app store integration in the time of their publication. One pertaining question is whether the number of market portals will decrease (Barnes 2002) or increase (Buelligen et al. 2004) over time. In relationship to the mobile platform providers, Kenney and Pon (2011) defined different levels of lock-ins in mobile devices: on the network, online services, native applications, the operating system and the handset. Another related question is whether there will be a reduction of search cost and therefore a consolidation to few or a single market place (Bakos 1997). On the business software side, a lot of research has been done on ERP software, for example on adoption or on implementation (e.g., Ngai et al. 2008, Bingi 1999).

In our work, we further analyze the situation and show the possibilities and restrictions in offering third party app stores. Building on these related works and the increasing attention for mobile business software (e.g., Kubach et al. 2012, Verclas 2012, Natchetoi et al. 2008), we extend the existing views from the developer, network provider, and platform provider with a B2B perspective.

2.2 Today's Mobile App Store Landscape

Today's most successful mobile platforms are iOS from Apple and Android from Google. Windows Phone is considered as a trending third player in this carousel¹. For company employees, BlackBerry devices play a major role, as it was the first platform that introduced push e-mail, making it possible to receive e-mails without having to frequently check (pull) for new incoming messages. Other players in the market are Samsung Bada and Nokia Symbian. The platforms differ however significantly when it comes to the realization of B2B app distribution. In the following we analyze this situation.

Apple iOS

Launched in 2008, the Apple App Store (iTunes) offers half a million apps for iPhone and iPad, of which two-thirds are paid apps. It has over 15 Billion downloads². Developers can sell their software

¹ "Gartner Says Android to Command Nearly Half of Worldwide Smartphone Operating System Market by Year-End 2012", Gartner, Nov 2011

² "Apple's App Store Crosses 15B App Downloads, Adds 1B Downloads in Past Month", <http://techcrunch.com/2011/07/07/apples-app-store-crosses-15b-app-downloads-adds-1b-downloads-in-past-month/>

through the store, and are involved in a revenue sharing model with Apple of which Apple gets 30% of the sales revenue (West and Mace, 2010). This success has motivated the other platform providers to pursue similar store strategies. Apple's store is the exclusive and tightly controlled distribution channel for iPhone, which according to Kenney and Pon's (2011) classification is a customer lock-in on the service level.

Apple strictly reviews app submissions before publishing them on the app store. On one hand this enables quality control for the store. On the other hand, editorial policies and choices restrict which apps are allowed. It is not possible to publish apps with offensive material, or apps with similar functionalities as Apple's official ones (e.g. browsers). This also applies for a potential business app store. The apps can only be installed through the app store channel. Consequently the only way is to offer a catalog user-interface. There is however no guarantee that such user-interface passes Apple's review. To the best of our knowledge, no alternative app stores exist today for iOS.

Consumers can use Apple's Appstore over the Web and through their mobile devices. They can browse, search for, rate, download and pay apps. Already during registration of the iPhone/iPad, they have to register with valid payment method, usually a credit card.

For business purpose often mass licenses are required rather than individual licenses. Apple offers this option through the "App Store Volume Purchase Program". Apple is so far the only platform provider offering this kind of licensing in their official app store. However Apple does not offer the support needed for business apps (such as the approval processes), or any direct contracts for maintenance and consulting for the sold apps.

Google Android

Google's increasingly popular Android platform and its Android Market have a similar revenue sharing model with the developers as in the Apple case. Developers have to pay a one-time fee to be able to submit apps to the Android Market. Compared to Apple however, the distribution channel is not a lock-in, meaning that it is possible to install software without using the Market. Hence Google does not control what software is allowed to be installed on the Android devices. This leads to two alternatives regarding the extension or substitution of the Market: 1) offering a UI that links the technical and sales aspects to the Android Market, and 2) offering a completely distinct app store, including, UI, technical, and sales aspects.

Examples for the first alternative are AppBrain³ and AppAware⁴ that add a layer above the original Google Market, and extend it with new functionalities like social networks or different browsing functions. They do not perform the installations themselves, and access the same app repository as the Android Market. Example for alternative two is the Amazon Appstore. Amazon⁵ establishes a disjoint distribution channel, and because of its similar revenue model it imposes a direct competition to the Android Market. This example shows the possibility to establish an alternative app store on Android through all aspects: a separate user-interface, a separate app repository and therefore a separate backend. Amazon's existing sales infrastructure is re-used for the app store, which makes it especially easy to set up for existing Amazon customers. A strategy taken by Amazon to attract more users is to offer an otherwise paid app for free every day. Apps in the Amazon Appstore undergo a similar review process as in the Apple Appstore.

³ <http://www.appbrain.com>

⁴ <http://www.appaware.com>

⁵ <http://www.amazon.com/gp/feature.html?ie=UTF8&docId=1000626391>

Windows Phone, Symbian, BlackBerry, Bada

Microsoft has a long history in handheld platforms, ranging from Windows CE to PocketPC, to now Windows Phone (WP). The 2011 announced collaboration with Nokia makes WP a serious competitor in the mobile segment. Windows CE and PocketPC allowed users to install apps from any source, and offered no single dedicated app store. With Windows Phone 7 however, Microsoft follows a similar strategy like Apple. The Windows Phone Marketplace is the tightly controlled and exclusive distribution channel for apps. Like in the Apple App Store case, developers have to pay a fee to be able to submit their apps to the store. The only possibility for third party stores is therefore to create a catalogue, and link for the technical and sales aspects to the WP Marketplace.

Regarding the Nokia/Microsoft collaboration, it is questionable if Nokia's Symbian platform remains significant. The concept of Symbian is more open than the current WP, and the app store has the same characteristics as the Android Market.

Another major player, especially relevant for business customers is RIM BlackBerry. Recently RIM offers an app store called "BlackBerry App World". Like in the Android case, it is however possible to have a separate business app store, with all the UI, technical, commercial and organizational aspects.

The last player is Samsung with its self-developed, but open-sourced Bada platform. The official app store is called "Samsung Apps", but the platform has the possibility to launch a distinct app store.

Platform-independent stores

An interesting approach is to bring in platform-independence to app stores. The independence can come in two forms: platform-independent app stores, or platform-independent apps.

A platform-independent app store comes in the form of a website, preferably with HTML5 functionality that allows accessing certain functions of the mobile phone like geolocation services that would otherwise only be available natively. Appia⁶ is an example for this approach. It presents a white label solution for app stores, so that their customers can offer apps for multiple mobile platforms through the same catalogue. The website automatically detects the mobile platform and shows only the compatible apps. In case of Android, the paid apps are directly sold over the store, and the app can directly be downloaded. In the restricted cases of iOS and Windows Phone, Appia is however only able to redirect to the official app stores of the platforms.

In the case of platform-independent apps, there are two approaches: running apps in a virtual machine like Java ME on the device, or running the apps completely on the server-side. In the latter case, the only requirement is a mobile browser capable of standards like HTML5. In this case the sales and the backend could be provided by any app store provider. We believe this is especially interesting for business software providers who do not have their own mobile platform. As their corporate customers potentially use different mobile platforms, the server-side apps avoid duplicate development costs while still being able to support all mobile platforms, given that they support common web technology.

3 Mobile App Store Characteristics

Having analyzed today's mobile landscape, we discover three distinct patterns that are relevant for business software provider's view. The first one is the "Apple case" with a tightly restricted, native environment that does not allow for independent technical infrastructure or sales. However with its

⁶ <http://www.appia.com>

volume purchase program Apple allows partial integration of B2B licensing requirements. The same pattern of a tightly restricted platform can also be observed in the latest version of Windows Phone (version 7). Compared to Apple, the WP Marketplace currently does not provide any volume licensing options.

The second pattern is the “Google case”, with a native environment, but possibilities to operate a distinct app store with own technical infrastructure, sales, and organizational integration. The lack of volume purchasing options makes the official app stores here less suitable for B2B purposes. This can however be circumvented by offering an alternative sales channel on these platforms. The same characteristics hold for RIM BlackBerry, Nokia Symbian and Samsung Bada.

The third pattern is the “Web case” which does not depend on a specific platform. For business software providers, this pattern has the advantage of being able to offer the apps for any mobile platform through the same app store.

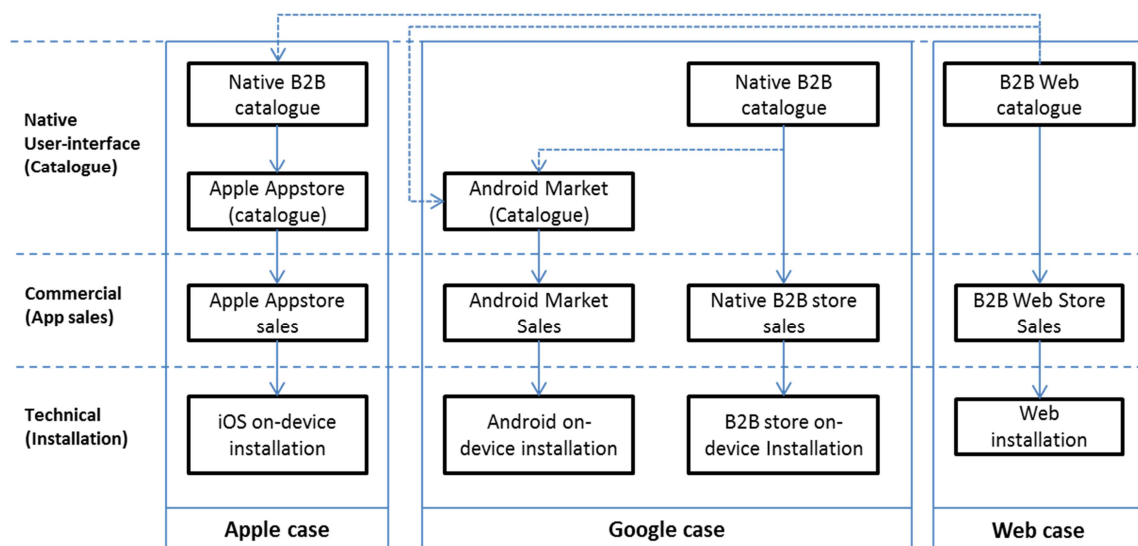


Figure 2. How a business app store could fit in the “Apple case”, the “Android case”, and the “Web case”.

A visualization of how a business app store fits in those three patterns is provided in Figure 2. In the Apple case, any third party app catalogue has to link to the official app store, while in the Google case, the UI, sales and installation can be created disjoint to the Android Market. In the Web case, there is no need for technical considerations on the mobile device itself, because the app store and the apps run on the web. Note that the WP case is analogous to the iOS case; whereas the BlackBerry, Symbian and Bada cases are analogous to the Android case.

4 An Outline of an App Store for B2B Scenarios

In this section we give an outline of the issues that arise if app stores should be used for B2B scenarios. We divide the app store into four aspects: the user-interface, the technical, the commercial, and the organizational aspects. A summary of the issues that we discuss is given in Table 1.

Let’s start with a brief overview of what kind of apps could be offered through an app store for B2B. They could be split in 1) general purpose apps, 2) apps relevant for certain industries, and 3) apps relevant for certain business units. General purpose apps should be useful for most employees.

Examples for this category are apps for managing the timesheet, for approving or requesting business trips, for looking up the other employees of the company, or for managing business expenses. Other applications depend on the industry where the company operates in. For the logistics industry, it might be a useful application would be to monitor the goods and visualize where they currently are, or to trace them back. For companies in compliance-sensitive industries like health care, it is important to trace and monitor their goods. Modern mobile devices make these tasks easy to manage on the go. Finally, the business apps could be relevant for certain business units of the company. For example, the HR department may need a business app to plan interviews on the mobile device.

Table 1. Summary of user-interface, technical, commercial, and aspects of B2B scenarios for app stores

User-interface aspects	Technical aspects	Commercial aspects	Organizational aspects
browsing categories, search function, free app download, paid app download reading/writing reviews, publishing apps	user management, on-device installation, on-device updates, backend capabilities, platform (in)dependence	pricing and licensing, revenue sharing, developer fees, payments	customization, consulting, maintenance, business process integration, standard operating procedures (SOP)

4.1.1 User-Interface Aspects

The part of app store that is exposed to the end-user is the user-interface. The main functionalities provided through the user-interface are the following:

Browsing categories and filters: Current app stores provide browsing categories for making it easy to find desired apps. A category usually found and important for business use are the productivity apps. Usually current app stores already provide other categories that should also be useful for business use: sorting by the most downloaded free and paid apps, by the time added to the app store, by rating, and by trending apps.

Options that are currently missing are to browse the apps by the industry in which an employee works, or by the business unit or division of his company. A concrete example of how these categories could be implemented is shown in Figure 1. Other useful options would be to filter by the employee's company, his job description, or even by his individual company profile.

Searching for mobile apps: An alternative to browsing is to discover apps through the search function. Search is usually used for more determined discovery tasks (White and Drucker 2007). Once the amount of apps in an app store reaches a critical mass, the search function becomes essential and is therefore implemented by all existing app stores. In a business app store, an additional requirement is to filter the search results individually by the profile of an employee, similar as described for the browsing task. Each employee should be able to register to the app either with his individual account, or with his company or job profile's account, so that the search results can be adjusted accordingly.

Downloading free apps or buying paid apps: App stores usually distinguish between free and paid apps. For paid apps, the user is instructed with a payment process. On the iOS platform, the user has to pre-register his credit card information while setting up the iPhone or iPad, so that he can easily purchase apps. For business app stores, free-app downloads do not need to substantially differ, apart from a potential approval process before a download. For paid apps, the payment process in business app stores will be different as many companies have attached a process around their purchasing decisions. The specific process would have to be implemented in the business app store.

Reading or writing app reviews: An important factor for increasing the success of mobile apps, and making it easier for users to discover high quality apps, are online reviews (Duan et al. 2007). Usually

apps can be rated on a one-to-five star scale, with an additional possibility to write a rating text. For business app stores, the choice of apps for employees is probably more restricted. The assistance from the reviews in discovering new apps is therefore more limited. Nevertheless, the app reviews will give the app providers valuable feedback of how they can improve the apps.

Publishing apps: Besides the end-user side, app stores enable the developers to offer and to upload their apps. Usually the developers need an account that induces a one-time or a yearly fee. Before an app is published to the app store, it often undergoes a review process by the platform provider. In the case of business app stores, app providers are usually companies rather than individuals. Hence there has to be the ability to publish apps under the providers' name. Especially in business environments, a review process could be crucial for ensuring a high quality of apps in the store.

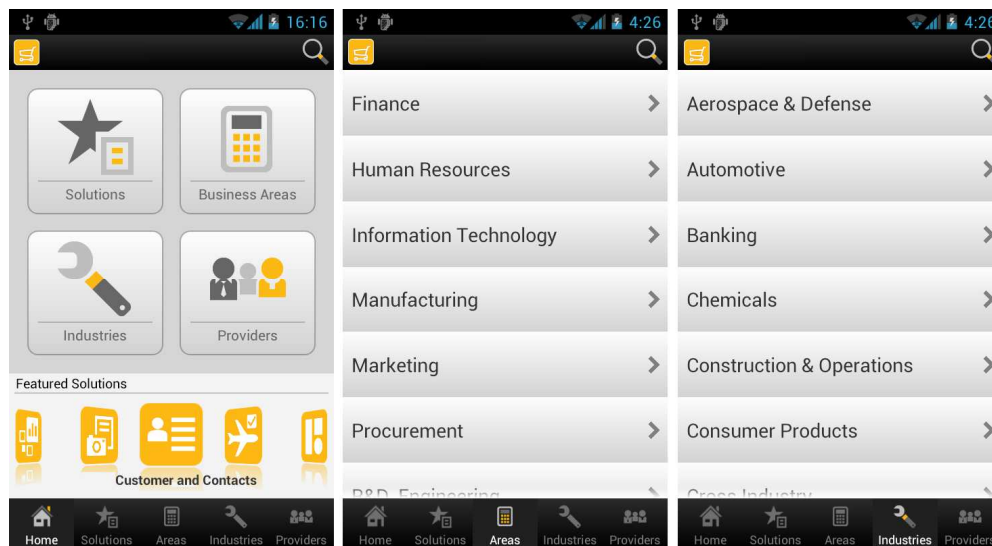


Figure 1. Proposal for additional browsing categories for app stores for business: browsing by business unit and by industry. We note that instead of the platform-dependent Android implementation in the screenshots, those categories could also be offered through a web interface.

Updating apps: App stores contain functionality to install updates of apps that have new features or fix possibly severe bugs. This can happen automatically in the background if the user gives the permissions, or the user has to manually initiate the update. The latter case can be assisted by push notifications. In the business environments, it is crucial to rapidly fix bugs. Updates should therefore preferably be installed automatically.

4.1.2 Technical Aspects

On the technical side of the business app stores, we should consider the following:

User login: Employees of a certain company should be able to quickly access mobile applications relevant to them. The most straightforward option would be to provide an option to login to the business app store with the company login credentials. A single-sign-on (SSO) solution would make manual entry of login data dispensable, and in the ideal case the relevant apps will be filtered for individual employee. An easier solution would be to let the employee select the company in which he works at, after which only apps compatible to the company's backend are displayed. This would also help to avoid showing duplicate apps for the same task, customized for other companies, or incompatible with the company's backend. In current app stores, none of these points are currently fulfilled.

On device installations and updates: Mobile platforms differ in the permissions they give to apps to access the file system and to install the apps directly on the device. Not having this permission implies that the app store cannot manage the content of the apps. The functionality of a business app store will in this case be limited to browsing, searching, and rating apps, while for installation the store has to redirect the users to the official app store of the platform. For B2B purposes it would be useful to launch updates and installations remotely by an administrator. An app store should provide this functionality with a secure remote management option.

Backend abilities: Developers usually have to upload the app executable and the app description to the official app store. This implies that all data is stored on the backend of the platform provider, and the installation process is bound to the official app store. Business software providers are however used to distribute their software over their own backend. This enables them to configure an app according to the business customer's requirements. For example, it could be checked which ERP software version the customer runs to pre-configure the app accordingly. Alternatively, if the customer does not yet possess compatible ERP software, an app could be configured to run in a demo mode, so that its potential can be demonstrated prior to an ERP software purchase. As the official app stores do not provide this functionality, there is a potential for a dedicated app store for business.

Platform independence: One of the characteristics of today's popular mobile platforms is that apps developed for one platform only run on this platform. If the apps can only be installed over the official app store, one can argue that there is not only a platform-dependence, but also an app store-dependence. In the pre-iPhone era, there was a trend toward platform-independent development with Java ME (Blom et al. 2007). Today however, any major platform has its own native development environment that makes app development dependent to a single platform. There are platform-independent frameworks like PhoneGap⁷ that let the developer use the same code for several platforms. While in this case the development is platform-independent, the app itself is not platform-independent because at the end, the code needs to be compiled to native code.

For business apps, a deciding factor of mobile development is the duplicate efforts needed for programming the same app for different platforms. HTML5 is an interesting platform-independence option for the future. In today's desktop environments there is the trend of application outsourcing to the web, or to the cloud (Kubach et al. 2012). This makes local installations obsolete. The increased availability of mobile Internet means that it is possible that this trend will spill over to the mobile environment. The technical role of app stores today is to manage native apps on the mobile platform itself. If however apps in the future do not run natively on a device anymore but outsourced to the cloud, the role of app stores will change. The technical role of app stores in this case would only be to provide the user with the permissions to access an app in the cloud.

Business software providers have to consider that not all employees own smart phones of the same platform. Consequently, business software companies should aim at providing their own store of mobile apps for all relevant platforms. To avoid duplicate development efforts and to improve maintainability, platform-independence is clearly in the interest of the business software providers.

4.1.3 Commercial Aspects

Pricing and Licensing: The licensing options of current app stores are often tailored to individual consumers. In the B2B scenario however customers are businesses and they need other licensing options, like volume licensing, monthly payments or pay-as-you-use. An app store suitable for B2B should therefore be able to offer these payment and licensing options.

Revenue sharing: Revenue sharing models that involve the platform provider would significantly influence the revenue models in the business software case. Let's consider today's situation of

⁷ <http://www.phonegap.com>

business software sales, and what contributes to the revenue: Usually the sales of the software itself only contributes to parts of the revenue. The other parts of the revenue come from the software customization, maintenance, training, and consulting (Bingi et al., 1999). If mobile business software is distributed over the platforms' official app stores, the mobile platform providers would naturally ask for a portion of the revenue. Players in the B2B market should therefore decide whether revenue sharing with platform providers is acceptable. If not, an option is to launch an independent B2B app store.

Developer fees: Most of today's app stores require developers to pay a fee to be able to publish apps on the app store. This might be a one-time fee, a yearly fee or a fee per published app. Especially fees per published apps would increase the cost for the provider, because business software often need to offer several apps with about the same functionality, but customized for an individual company. For B2B needs, an option like one single fee per app that includes customized versions would be desirable.

4.1.4 Organizational Aspects

Business process integration: Business software normally needs to be adapted to an individual company's business processes (Ngai 2008). As the business processes differ significantly among companies, many business apps need to be individually crafted and customized. A B2B app store should be able to deliver customized versions that have been adapted to the processes of a company.

SOP: Compared to private use, IT and mobile phone usage in companies is often regulated with standard operating procedures. They may not allow employees to use their company-smartphone for private purposes. A distinct distribution channel in the form of a business app store would in this case be recommended. On desktop computers and laptops, companies often restrict permissions like for installation of individual and maybe private software. Installation of new software could even require an approval process. The official app stores of mobile platform providers currently do not offer any functionality to take those organizational policies into consideration. A careful integration of individual companies' SOP would so be recommended for a B2B app store.

Maintenance, consulting and customization: The other organizational aspects are software maintenance and consulting. Business software providers offer long maintenance periods which can be up to decades. The current app stores hardly provide services for maintenance agreements. Moreover, since a large set of enterprise software is customized, it will be beneficial to provide consulting services for mobile applications. The official app stores are limited in providing these options. A dedicated app store for business would allow offering these services directly at the point-of-sale.

5 Discussion and Further Work

Having proposed an outline for a potential app store for B2B scenarios, there still remain uncertainties. Especially for mobile platforms following the "Apple case", the official app store is the only possible distribution channel. There it remains the platforms provider's decision to implement the proposed points from our outline. Looking at today's estate, issues like B2B-compatible licensing, customization of mobile business apps, or the distribution of platform-independent apps could only hardly be realized. Furthermore the current revenue sharing models for sales through app stores would significantly influence the revenue streams for business software.

In the "Google case" however, the issues could be solved by providing an own app store for B2B-needs. Here the discussed points from the previous section could be implemented. We note however that while we gave an overview over possible issues, there might be other points that remain completely open.

We think that businesses should take into consideration the trade-offs in which channel of app distribution channel they choose. Offering mobile business software through platforms' official app stores allows leveraging on existing infrastructure where users are already well used to. In the future,

platform providers might be interested in implementing the business aspects to their app stores. If we consider that not all business aspects are fulfilled in today's official app stores, it is however more likely that businesses prefer to have a distinct app store for business apps.

For further work it is interesting to observe in the future how business apps and app stores develop. In the following we highlight the potential future research in electronic markets and in information systems research.

Especially for open platforms like Android, it is interesting to investigate whether minimizations of search costs in electronic markets (Bakos 1997) will lead to one app market. Alternatively, mobile business software could constitute the long tail (Brynjolfsson et al. 2011) and therefore an app store for business software could be successful.

Most research on electronic markets far has been done on non-restricted markets on the Internet. As we have shown in this paper, app markets are tightly restricted in mobile platforms like iOS or WP, and we see it as being worth to focus electronic market research on mobile app markets.

For the behavioral IS discipline, a promising research question would be how the use of app stores has become habitual. At the IS adoption stage, IS initial use is primarily determined by behavioral intention (Ortiz de Guinea and Markus 2009). At the IS continuance stage, as the use of a particular IS becomes habitual, the less cognitive planning it involves (Limayen et al. 2011). In a study one could determine whether the initial use of an alternative app portal like one for business is primarily determined by behavioral intention or by habit of using personal-app portal.

6 Conclusion

In this paper, we extended the existing mobile app store landscape by a B2B view. We discovered that existing app stores don't or only partially fulfill the needs of a B2B setting. We believe that in the near future there is further research and development needed to fill this gap and to make app stores suitable for B2B. With our paper we took a first step in this direction, analyzed the existing app stores for their business suitability, and proposed an outline of points regarding user-interface, technical, commercial and organizational aspects that should be implemented in an app store for B2B.

One contribution to research is that we identified three cases: the "Apple case", the "Google case", and the "Web case". For all those cases we elaborated the business aspects. The main differences between the cases are the level of dependence of the businesses on the mobile platform providers, and the restrictions in offering a separate channel for the mobile business software distribution.

For practice, we recommend businesses to examine the three cases before deciding on how to support the platforms. We think that the "Web case" is especially suitable. Although the current trend still goes toward platform-dependent native apps, we believe that apps in the future will run more and more directly on the web. The implied platform-independence is beneficial for businesses, as they would be able to distribute all apps over a single app store that runs on the web. This would reduce duplicate development efforts for each platform and would enable to implement all business aspects.

We note that this work mainly focused on giving possibilities to extend and fit B2B aspects in today's app store landscape. This could in future work be empirically validated. Future research could further elaborate on whether there are other, disjoint distribution channels for B2B especially suitable for business and commercial aspects.

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