



Survey of Pros and Cons of Mobile Apps

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Abstract: In this paper, The mobile application field has been receiving astronomical attention from the past few years due to the growing number of mobile app downloads and withal due to the revenues being engendered. With the surge in the number of apps, the number of lamentable apps/failing apps has withal been growing. Interesting mobile app statistics are included in this paper which might avail the developers understand the concerns and merits of mobile apps. In this paper, we have developed a mobile application with the aid of traditional software development life cycle phases (Requirements, Develop, Test, Maintenance) and we have used UML, M-UML, and mobile application development Technologies.

I. INTRODUCTION

A mobile app, short for mobile application or just app is an application software designed to run on perspicacious phones, tablet computers and other mobile devices". An App makes sense or is desired if the goal is to have an interactive engagement with users, or to provide an application that requires working more akin to a computer program than a website. Apps are available via distribution platforms on concrete app stores. There are free as well as paid apps. There are few apps which initially are available for free, but minimum fee is required to relish premium benefits. The iphones' powerful software, revolutionary user interface, and powerful development platform had driven an almost overnight explosion of apps most widely used smart phones for the mobile apps are iPhone, BlackBerry, Android phone or Windows Phone. Originally mobile apps were offered for informational and productivity purposes that included email, calendar, contacts, calculator and weather information. With the rapid magnification in the technology and users' prospects the developer implements expanded into other categories such as mobile games, GPS, banking, ticket purchases, social media, video chats, factory automation, location based services, fitness apps and recently mobile medical apps. An app can extract content and information from the internet in a similar fashion to a website, but it can also download the content so that it can be utilized later in the absence of Internet connection which is a great advantage. Few disadvantages of the popularity of mobile apps has perpetuated to elevate, as their use has become more and more prevalent across mobile phone users.

II. REASONS FOR BAD / FAILING APPS AND SUGGESTIONS TO IMPROVE

According to 22% of mobile users utilize an app only once after downloading it from the app store. This number denotes that there is an immediate need to amend the quality and the functions provided by the app. If the app is

being used only once, then the app betokens that it is not engendering or integrating any value to the user. Several factors are influencing apps to fail and to be considered as deplorable. Some of the factors are listed below, and suggestions have been given that would avail in minimizing the number of deplorable/failing apps.

❖ App failure – Role of the developer

Developers should take enough care while building an app. In particular, engendering an app for an organization's brand/product/service requires supplemental attention. Mobile App is one of the paramount marketing implements for any product/service. It might build/eradicate the brand equity and brand adhesion, according to its performance. Additionally, further attention is required when developing critical apps like banking app since it is very arduous to convince customers regarding the security of such apps. There are various causes which include lack of expertise in terms of app development, minimal resources; minimum/no knowledge of user demands and expectations, no knowledge of target audience, and lack of communication between developers of app. Small things such as push notifications and alerts should be used carefully. They will keep the app top of mind when they are used responsibly to convey relevant content to the user. Developers should avoid having complex registration process. Many users return in between the process of downloading the app if the registration process is complex and consumes more time.

❖ App failure-Role of the User

Users/consumers own a significant role in the success/failure of an app. A Mobile App review survey was conducted by which had a sample of over 500 American mobile app users, aged 18 years or older. According to the results of the survey "96% of the American mobile app users say there are frustrations that



would lead them to give an app a bad review”, including the following:

- Application/system freezes – 76%
- Application/system Crashes – 71%
- Slow responsiveness – 59%
- High battery consumption – 55%
- Considerable amount of ads and promotions – 53%

❖ **App Failure-Role of Technical details**

Most Mobile app developers and vendors sometimes fail inefficaciously communicating the technical details of the app to the end users, the result of which is a substantial damage to the prosperity of an app. High end games can be efficiently played only on high end mobile devices, but due to the lack of technical details, users would download and endeavor to play the game on non congruous mobile device configurations. Such incompatibility issues would cause the phone to either freeze or crash or respond very gradually. This results in deplorable reviews from the users and damage is done to the reputation of the app.

❖ **App failure-Role of Marketing**

With so many developers building new apps each day, it is becoming extremely difficult to acquire/attract, retain and monetize customers and to develop brand equity and loyalty. Developers and apps are similar to brands that need to be marketed. Marketing and social efforts are required to keep consumers engaged after the app is downloaded to their device. Insufficient marketing efforts and marketing strategies will lead to decline in return on investments and hence will result in disappointments and frustrations. 70% of developers are frustrated with the current state of app marketing.

III. ROLE OF APP DEVELOPMENT LIFE CYCLE

- The statistics of mobile apps in terms of revenues and number of apps being developed, but very few or none of them talk about neither good quality slow quality apps nor the factors that cause neither low quality apps nor the solutions to surmount those shortcomings.
- The reasons for low quality apps from SDLC point of view is the first and foremost reason is that the app developers are not conforming to the development life cycle phases.
- Not enough testing is done. App developers are more fixated on functional aspects of the app and hence they sometimes ignore security and performance testing, which are the key components of any app.

❖ **Unified Modeling Language (UML)**

Grady Booch, Ivar Jacobson and James Rumbaugh developed the “Unified Modeling Language (UML)” at Rational Software in the 1990s. Unified Modeling Language is an object modeling and specification language used in software engineering. In the field of

software engineering, the main advantage of UML is that, it creates visual models of system/ object oriented software intensive systems. UML contains a large set of graphical representation techniques.

❖ **Mobile Unified Modeling Language (M-UML)**

For modeling mobile agent-based software system, UML cannot be used as it does not possess the mobility requirements. The mobile agents carry an executable code and data within themselves. An extension to UML has been defined by KassemSaleh and Christo El-Morr for mobile agent systems, which is known as Mobile Unified Modeling Language (M-UML) Mobile agents became more feasible due to the advancements in remote evaluation, process mitigation, distributed object computing and mobility.

❖ **Mobile App Development Phase**

Developing a web application/traditional software application involves certain kinds of actions which include finding the right/appropriate technology (programming language) and choosing a specific platform (such as Windows, Linux, Mac). Development of mobile app is similar traditional software application development with some challenges and complexities involved due to software and hardware constraints evolving tremendously and hence academic researchers and platforms and programming tools for the mobile app development.

❖ **Mobile App Testing Phase**

Mobile app testing plays a vital role in determining the quality and performance of the app. in order to deliver superior quality apps, efficient techniques and testing tools. Each platform provides a certain set of testing tools by default. Apart from the default tools, there are plenty of tools available in the market for testing mobile apps. Analysis reports from market statistics suggest the following four important testing aspects to avoid low quality apps. Functional testing (black box testing), Code testing (white box testing) and, performance testing using emulator tools or by using a real mobile device (phone/tablet), security is testing.

❖ **Mobile App Maintenance Phase**

After the development and testing of the mobile app, vendors release the mobile app into the market for mobile users. There is a high probability that users might face few issues that were not identified during the mobile app testing phase. This is a very mundane scenario that transpires in most software product releases, for various reasons, including device compatibility, software and hardware constraints, and, network problems. Maintenance phase deals with fixing the issues that were fronted by the mobile users and also involves in developing & releasing new features, which can be implemented using mobile application development life



cycle. Integrating new requirements in the mobile use cases, projecting, developing and finally testing improves the overall caliber of the app when a systematic procedure is being implemented.

IV. SUMMARY AND FUTURE WORK

With the App Store is such a phenomenal success, mobile apps have become an essential part of the user's daily life. To obtain prosperity in the current mobile world, merely developing an app is not just enough. Thus, the goal of the developer is to keep an open mind and embrace innovative procedures that can avail amend the life cycle (gathering requirements, design, development, testing, and maintenance) of an app while enhancing user satisfaction. New technologies are emerging every day, and hence developers should always be well apprised about current trends, requirements, and events in the mobile technology field.

V. CONCLUSION

It is a big fact that cell phones are helpful to people. After all, they are created with a good purpose in mind, but many individuals are failing to know how to use them in a proper way.

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