



Mindtree

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Building Effective Mobile Apps

Introduction

Mobile apps play a quintessential role in realizing the digital strategy for modern enterprises. It is important to ensure that we adopt an effective strategy and ensure the best practices for designing, building and deploying mobile apps. We should also ensure that mobile apps are usable by end users.

In this whitepaper, we discuss the best practices for building effective and usable mobile apps.

Welcome to possible

A Mindtree Whitepaper

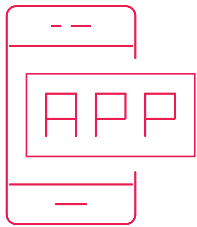
→ Key features of an effective mobile app

While there are millions of apps in various App Stores, users have only a day to use them. How do you make sure that people use your app? How will you make sure that your app will not go unnoticed – that your users are not using it or uninstalling after a few days of use?

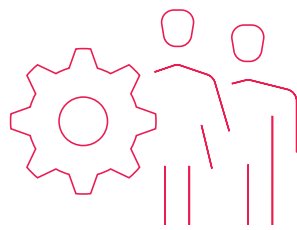
On an average, users use about 30 apps in a month¹. Obviously, the top ranks in this list are occupied by popular apps like Facebook, Twitter, Maps, Mail Apps and others. Hence, it is important for you to make sure that your app appears in the remaining part of this list, or at least, say within a range of 100 frequently used apps. What are the factors that need to be considered so that the user base is high for your app?

There is enough research data available on why a majority of the mobile apps fail². The objective of this whitepaper is not to debate this, but primarily revolves around ensuring that an app does not fall into the failure bracket.

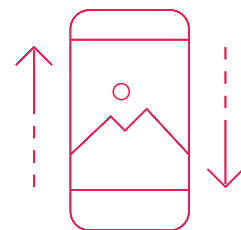
There are three key aspects one has to consider in order to make users use any mobile app:



Makes users to install the app by providing the relevant, intuitive features



Make users to use the app regularly through engaging with them



Ensure users does not uninstall the app after a few days/months of use

Let us discuss these aspects in detail.

→ *What makes users install your app?*

There are millions of apps, with the number growing every day. For any given use case, there are many apps already available in the store. One needs to ensure that key functionalities that a user may be looking for are being provided. Let us look into a few aspects which could help add more users.

Do you really need to develop an app?

Before developing an app, it is important to think whether there already is another application to address the problem statement. Not all use cases need to be in the form of mobile apps. We can evaluate the web application along with mobile app and progressive web app to identify the right fit framework. What are the added advantages you are providing than the (mobile) web?

A personalized user experience, high user engagement, ease of use, performance, convenience and using mobile-native features (such as swipe, gesture, pinch, zoom, tap) are important features that need to be incorporated. A fitment analysis can be done to ensure that the mobile app aligns with the business strategy. Compare various app strategies such as native mobile app, hybrid mobile app and web app and select the one that best suits the requirements.

Not too many apps

If you have other apps that provide similar or related features, try enhancing them instead of creating a new one. Do not have multiple apps doing similar jobs. Your objective should be to convince the user to install the app, rather than confusing them with multiple options. Try to provide more functionalities in one app rather than doling out multiple apps for each functionality. However, limit the number of features in an app to a certain limit; otherwise the app will become bulky – and this is the next point you need to consider.

Right number of relevant functionalities

Try to provide an optimal mix of relevant functionalities in the app. Not too less, or, not too many. If too less, the user may go for another app/web which provides more features. If too many, your app may create a bulky super application, which takes a longer time to download/install and also occupies a lot of storage space in the mobile. If a user uses only a few functionalities on a regular basis, then there is no need to provide the rest of them; you may simply redirect to a (mobile-friendly) website instead.

For example, if the app is about buying and renewing insurance policies, then a user may not use it all the time. How many times in a year or month people buy/renew policies? Hence, it would be optimal to provide more features related to insurance or safety aspects like security alerts, travel advisories or severe weather warnings. This information will help the user plan better, and may help reduce insurance claims as well. In essence, provide functionalities that really solve the problems that the user may be facing.

Provide only useful integrations that make sense

Mobile phones provide the ability to integrate your app with other applications and sensors (mainly on Android devices). Some may like it, and others may feel it as too intrusive or annoying. If some integrations are good to have, make them configurable. For example, lock screen access.

Not everyone likes their lock screens displaying irrelevant info. Make such features configurable, and let the user decide to enable or disable such features. In general, it would be a good practice not to clutter the phone's status/notification area or lock screens unless there is a huge value-add you are providing to your users. There are many apps that provide notifications for various purposes.

Hence, simply showing another notification may not draw the attention of the user unless they see value in it.

Screen shots

To market your app better, you can rely on the screen shots space in app stores. Try to provide more number of unique screen shots. By doing this, you are not only conveying the various functionalities of your app, but also giving the user a feel of the user experience to decide on whether to install it or not.



→ How to increase regular usage?

Once the user installs the app, it is imperative that they use it regularly. Why? As a service provider, it is essential to engage with your users on a continued basis. It could be to improve your sales or margins or simply keep your user base happy. It is important that your users should use your app regularly. The term 'regular' used here is relative, and depends on the use case what you are providing in the app. For example, a social networking app may be used on an hourly or daily basis, and one week could be a long time of non-use for these apps. Whereas, an emergency alert or support app may not be used at all, but still user may keep it installed in their smart phones. The other reason being, there are tools available to identify and uninstall rarely used apps. The user tends to use such tools often, especially when they run out of storage space or when their phone is cluttered with many apps. You do not want to see your app on this list.

Some factors that will ensure regular usage are:

User experience is pivotal

Do not expect every user to know how to use the app or work on complex or highly visual navigation gestures. Apps should be simple and intuitive to use. Follow guidelines and go with the simple approach - make every functionality easily accessible even for a novice. However, this aspect depends on what user base you are targeting; thus, there isn't a single approach for all apps.

You may want to consider easier navigation and optimize the design for one-handed operations. Haptic/visual feedback is essential for key user actions, and show activity indicators when the app is waiting for some response from a remote system. An experienced user experience designer would be able to provide all these best practices pertaining to the domain and user base.

Use the screen real-estate judiciously

Cluttering too much information in a single screen or small piece of information on an entire screen creates bad user experience. A screen full of unrelated information is also a bad idea. So, it is essential to carefully decide what information needs to be shown at what screen/instance, and make it accessible to the user when they need it.

Provide importance to performance, stability, privacy and security

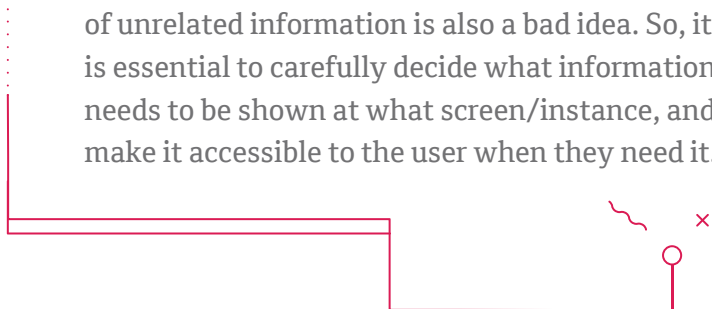
Slow and CPU-intensive operations may make the user impatient. Ensure that the main functionality of the mobile app performs well. Wherever possible, provide the offline capability to ensure smooth transition. Never collect any data that is not relevant. Even if collecting relevant data, ask for user consent. Clearly indicate why the data is collected and how it is stored and protected. In some countries, there are governing laws that mandate user data protection, and you must adhere to the local laws all the time.

Timely notifications

Provide timely notifications. Do not annoy the user with frequent rating/feedbacks, notifications, ads/purchases, etc.

Personalization

Do not ask the user to login, unless you are providing personalised content. If the content can be provided without login, it would be optimal. Once the user logs in, we can provide recommendations based on their past actions. By using analytics to understand user behaviour and interests, personalized push notifications can be sent based on the user's interest. Tracking users purely from an analytics and data capture perspective is not a good approach, and may not be compliant with the app store policies.



Regular fixes and updates

Provide regular updates and bug fixes. Provide support for new OS releases and new devices/phones without fail.

Accessibility

If you are targeting special users who need support with assistive technologies, that is an important aspect to consider as well. We can augment the traditional keyboard features with voice assistance, text enlargement, visual cues, documentation and others to make the functionality more accessible. Provide details about the privacy policy, and data usage and data sharing policies and get explicit consent from the user.



→ How to make sure the user does not uninstall the app

We have listed a few patterns that can make the user uninstall the mobile app. These are aspects that could be considered while designing mobile apps to avoid user uninstalls.

App is too intrusive

If the mobile app intrudes too much into the activities unrelated to its primary objective(s), it will end up frustrating the user. For example, the app sends too many notifications, asks too many privacy questions that are irrelevant, provides frequent advertisements and promotions etc.

Excessive resource consumption

Be conservative about the resource usage. A mobile phone is a computing system with limited resources – storage, RAM, CPU power, storage and battery backup. There are specific tools available to find out which app uses more storage or consumes a lot of battery power. A frustrated user may uninstall the app that consumes a lot of system resources. Some of them could be excessive CPU/battery usage, creating lot of junk/usage of storage, unnecessary notifications, too much nagging for in-app purchases, installing other apps etc.

Always running in the background

Ensure that the app is not always running in the background. There are tools available which can identify this, and kill the app. The user may uninstall if your app runs frequently for no reason.

Asking too many permissions

Do not ask for permissions which are not required for the given functionalities of the app. For example, a claims reimbursement app asking for the geolocation access (may be for sending promotional offers). Geolocation may not be required for submitting and claiming the reimbursements.

Conclusion

While the success of a mobile app will depend on various factors depending on the type of the app, targeted users and the business case in particular, the above mentioned aspects are common across most apps. Hence, it would be pertinent to consider them during the conceptualization and development stages. One should primarily be mindful about the end users with respect to value additions for them. Probably, a design thinking exercise from their perspective would help before starting to develop the app. We hope the above mentioned points act as general best practices and thumbrules, which can be used for most mobile app developments or re-write initiatives.

References

1. <https://buildfire.com/app-statistics/>
2. <https://www.fyresite.com/how-many-apps-fail/>

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Jayantharaja Patla is a Program Architect, leads the Mobile Applications Center of Excellence (CoE) at Mindtree, comes with over 23 years of IT experience. He has vast industry experience including the Mobile Apps Development, Mobile Phone Software development, and Embedded Systems Development. He has actively contributed to build the National Occupation Standards on Web and Mobile Development for the National Skills Development Corporation, in collaboration with NASSCOM. He is also a member of the Technical Sub-committee at C-DAC Mohali, and designed a course on iOS App development for C-DAC. He has published one research paper and submitted one Patent. He has successfully architected several digital-mobility engagements for various clients in different industry domains across the globe. He can be reached at Jayantharaja.patla@mindtree.com



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