



MOBILE APP DEVELOPMENT
FROM
IMAGINATION TO REALITY

WHITE PAPER

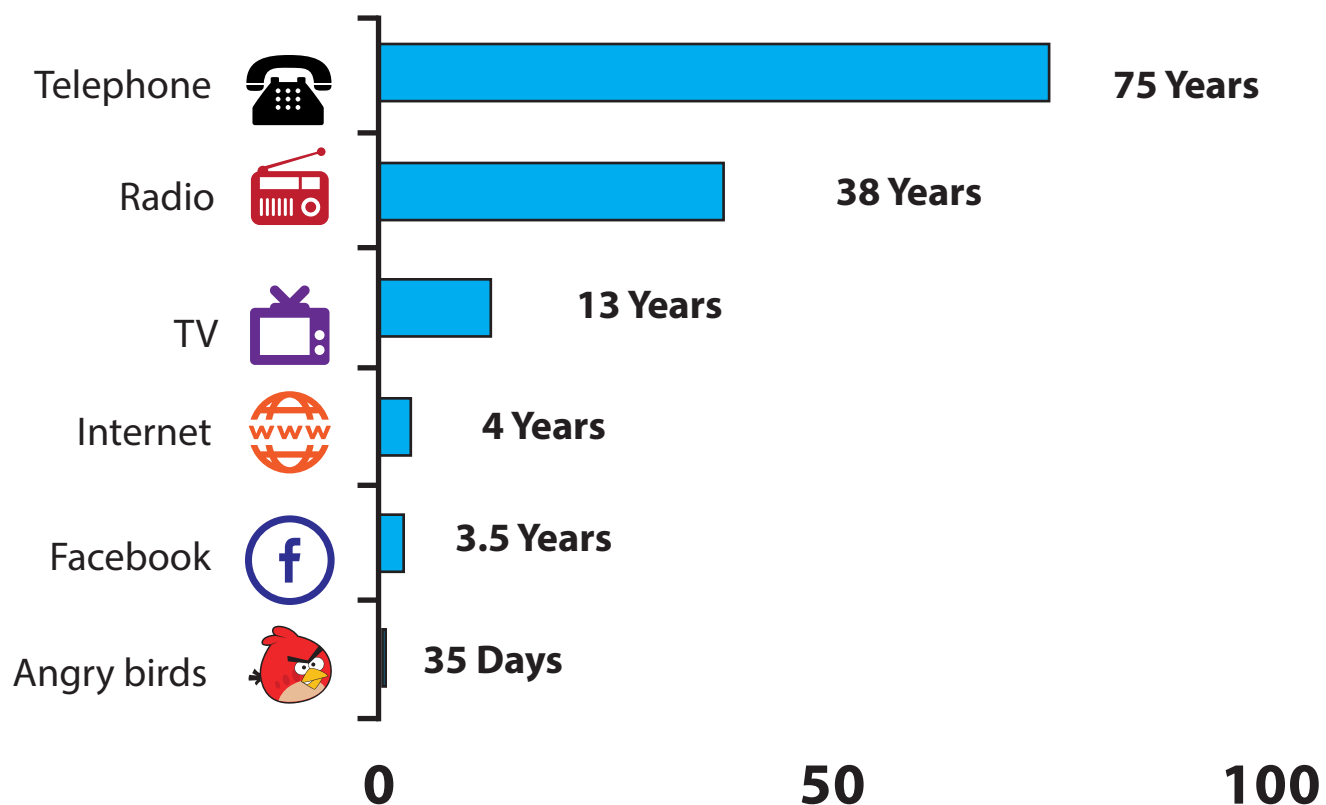
ABSTRACT

The mobile landscape has evolved and matured over time. Statistics show that 1 in 5 people globally own a smartphone while 1 in 17 owns a tablet (Source: BI Intelligence). The main reason mobile applications have become the need of the hour. The user not only turns to a mobile application but also gets engaged best on a mobile app.

A mobile app begins with an idea, which is then strategized to formulate the app and finally execute it. This white paper will take you through the whole process starting from ideation to actual execution of the mobile app. It will help you understand the different focus areas that you cannot miss out on when defining, planning and making your mobile app a reality.

CURRENT SCENARIO

The mobile movement is raging with about 1.7 Bn smart consumers ruling the digital space. According to a report posted by Kleiner Perkins, mobile applications are responsible for about 15% of the total Internet traffic. There has been a surge in the mobile market share, and the adoption of mobile apps is phenomenal. 65% of the smartphone users check their phones within 15 minutes of waking up while 19% of the consumers are dependent on smartphones to access the different online services. A look at the mobile consumption habits reveals that mobile web time accounts for 7.3 hours per week while the mobile app time accounts for 8 hours in a week. In fact, mobile search conversion is 93%, which is phenomenal. According to the statistics below, it took telephone 75 years to reach the people, while it took Angry Birds only 35 days to reach the people. That's how powerful an app is when it comes to reaching more people, and improving the adoption.



Source: Citi Digital Strategy Team

With a mobile app, you have the possibility of reaching out to more people in less time. If you want to maximize your reach, you may need to formulate a strategy for your mobile app development. There are various things you might need to consider before you embark on your mobile app development journey.

As part of this white paper, we will discuss the whole roadmap for mobile app development from imagination to execution. As part of the strategy, businesses need to think through user design and user experience to offer endless engagement and improve the ROI.

THE PLANNING PHASE

The whole process of mobile app development starts with an idea. It is the imagination or the idea that sets you on the roads towards your first mobile app. Planning is essential to executing mobile app development, and giving your business the ideal mobile app, as per the needs stated.

With planning, you will define the path for your mobile app. Which platform should you develop the mobile app? The first thing that you need to consider when developing a mobile app for your business. When considering the platform, you need first to list out the devices that you plan to support. The backend is another major consideration for your mobile app. You need to define if you will be creating your backend or, you will be working with PaaS (Platform as a Service). What kind of mobile app are you planning to develop would be the final question that you need to answer when planning your mobile app?

Native vs Hybrid App Development

When planning your mobile app, this should be your first step. Do you want to develop a native app or a hybrid app for your business? Before you choose either, it is important to understand the pros & cons associated with both native and hybrid app development.

Native apps are developed for the particular platform, using the language native to that platform. You would use the native code to develop the native app. Say the native apps for Android are coded using Java while the native apps for iOS are coded using Objective-C and Swift. The native apps for Windows are coded using C#.

Now that you are aware of native applications let's understand the pros and cons associated with developing native apps.

Native apps are known for their fast performance. They don't use up a lot of space on your phone either. One of the major advantages of going ahead with mobile apps for the native platforms. It gives you the benefit of retaining users, owing to the fast performance derived from these apps. You can customize the native apps with ease. Native apps have the ability to use the inherent functionality of the smartphone to their advantage.

Native apps are slightly expensive when compared to the hybrid apps. The whole app development process takes up a lot of time, as you have to develop and update multiple versions of the same app, for the different platforms. In most native apps, you will experience a desynchronization among the different versions created for the different platforms. This disconnect can affect your brand consistency.

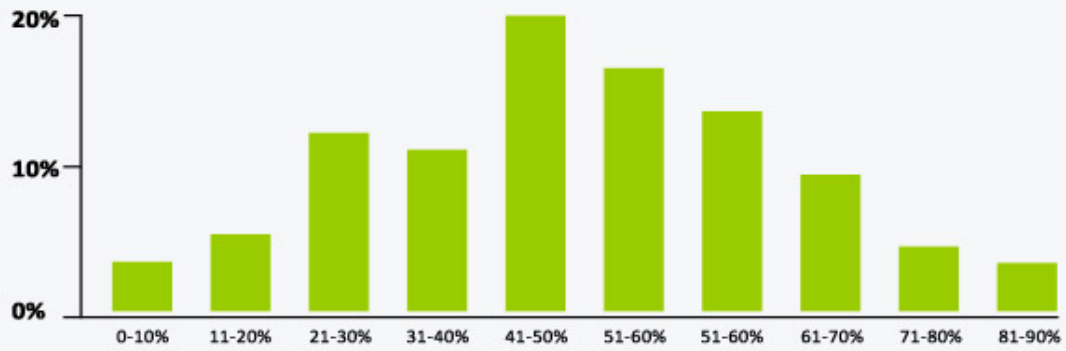
A mobile app that runs on several platforms is a cross-platform or hybrid app. The time taken to develop a cross-platform mobile app is relatively less. You can update the app with immediate effect with the cross-platform apps. These apps are compatible with different devices, operating on different platforms. Hiring a resource for cross-platform development is easy.

WHAT IS THE BIGGEST DRIVER OF HYBRID APPS?

Developers estimate 30-90% cost Savings using hybrid vs. native

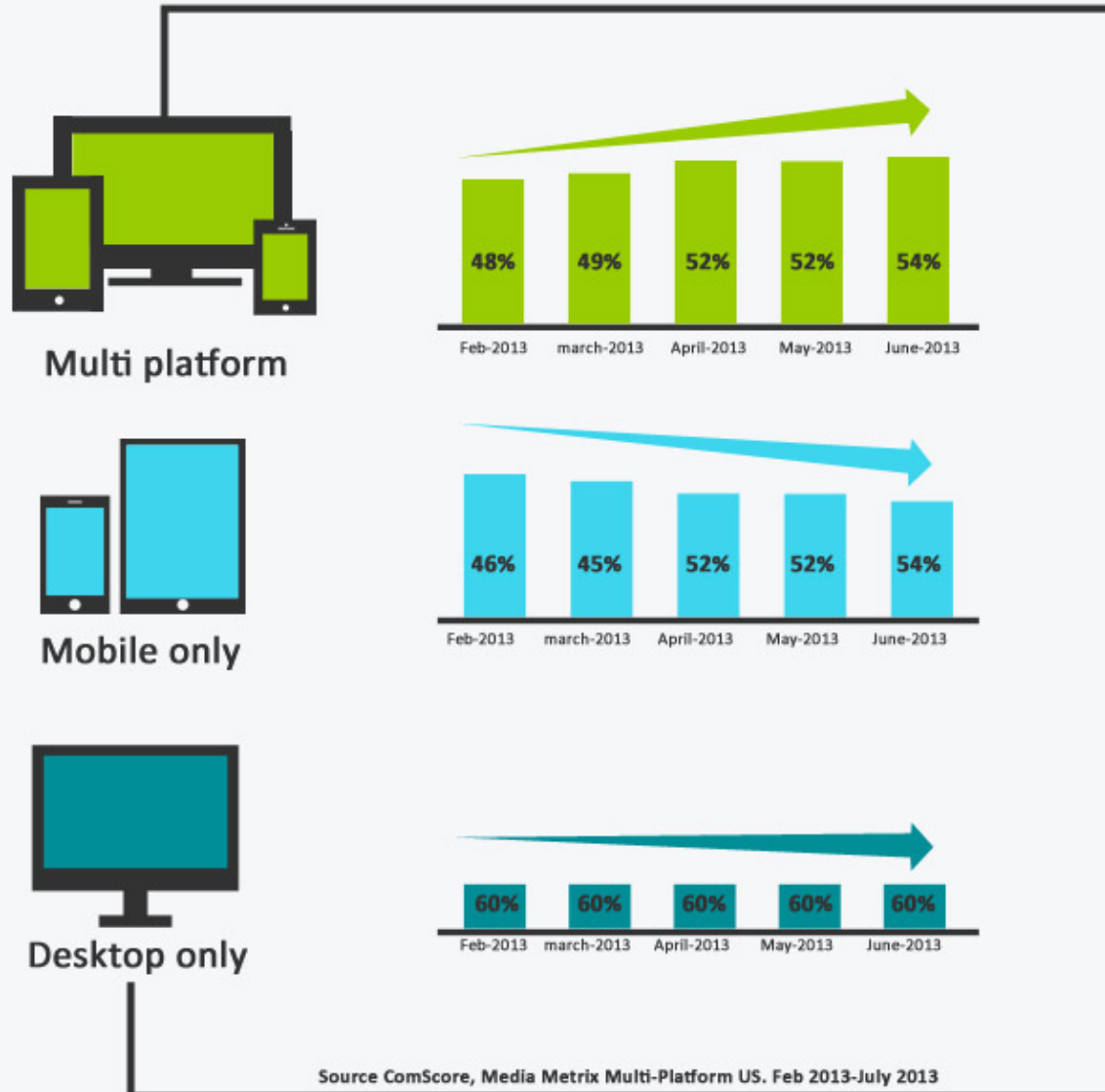
30-90%

What are your estimated savings when developing with hybrid vs. native



Built using	Objective-C, Java, .NET	HTML, CSS, JavaScript (in native wrapper)	HTML, CSS, JavaScript
Device Features	★★★★★	★★★★★	★★★
Development Cost	★	★★★★★	★★★★★★
User Interface	★★★★★	★★★★★	★★★★
Speed	★★★★★	★★★★★	★★★
App store Access	✓	✓	✓

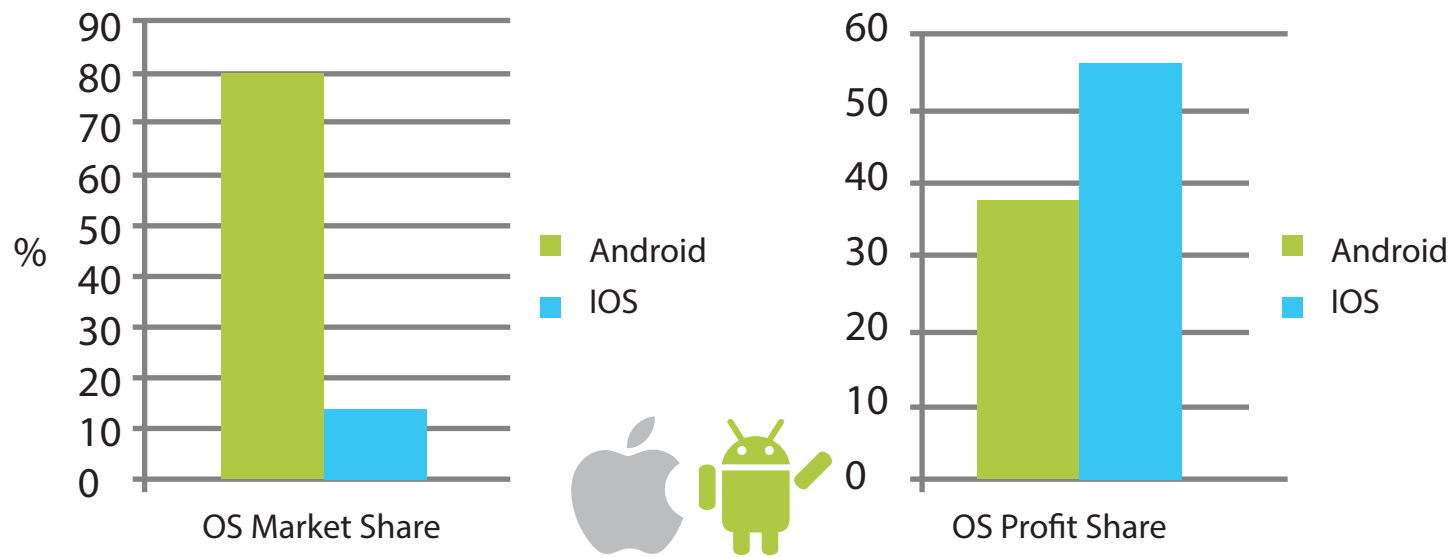
Share of total digital population by platform usage



In case, you have a cross platform app for your business, and wish to translate it into a native app, and then several solutions can help you convert immediately. Appcelerator, Titanium, PhoneGap, etc. offer native-like experience by turning your cross-platform app into a native application. You can also get the rich user experience with these tools on the native app.

Android vs. iOS

Apple Store and Google Play Store are different ecosystems that have different ways of adopting an app, and processing it ahead. If you are planning for Apple store, you may have to undergo the strict and manual review process before releasing the app to the store. On the other hand, Android is agile and developer friendly, which makes the review process slightly easier and faster. The high-end pricing for Apple store is \$999 while for the Google Play Store it is \$200.

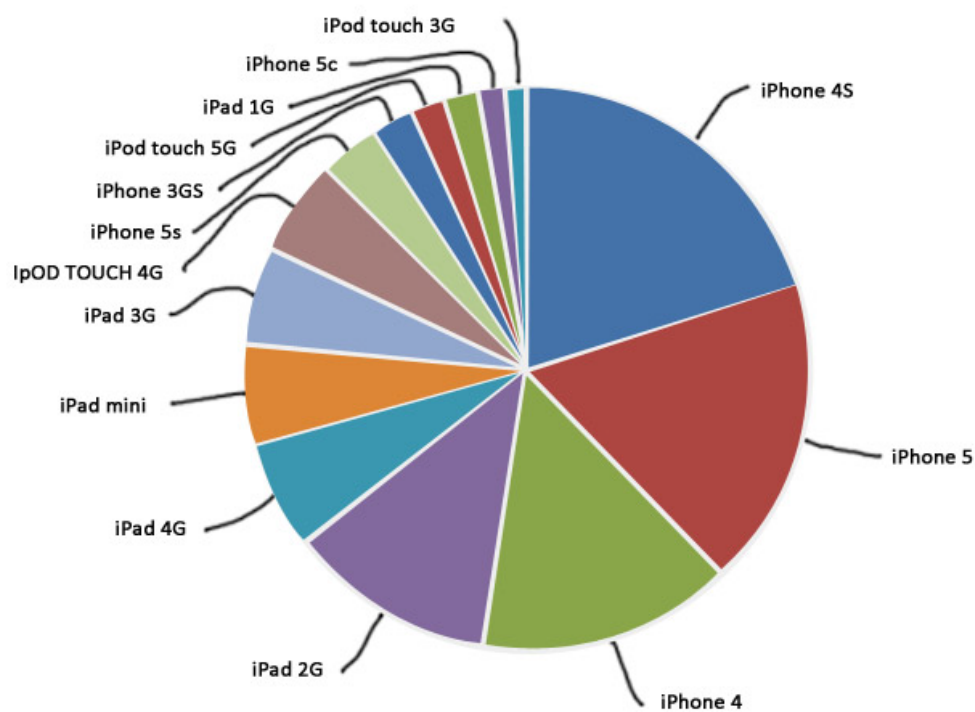


Though the market share for Android is higher compared to iOS, the revenue generated by iOS is higher when compared to Android. The two stores differ in the regulations enforced by them on the developers. The censorship and quality requirements are higher for Apple as compared to Android. Google is a developer friendly platform with a polished app submission and distribution process. Both iOS and Android have about 100+ devices together and have been gaining more than a billion app downloads.

If your business is controlled by traction and revenue that you receive from the mobile app, then Apple iOS is the platform you should consider as it will help you maximize output with minimal resources and time investment. It is good to remember that in the top earning apps league, you will observe close to 10,000 failures.

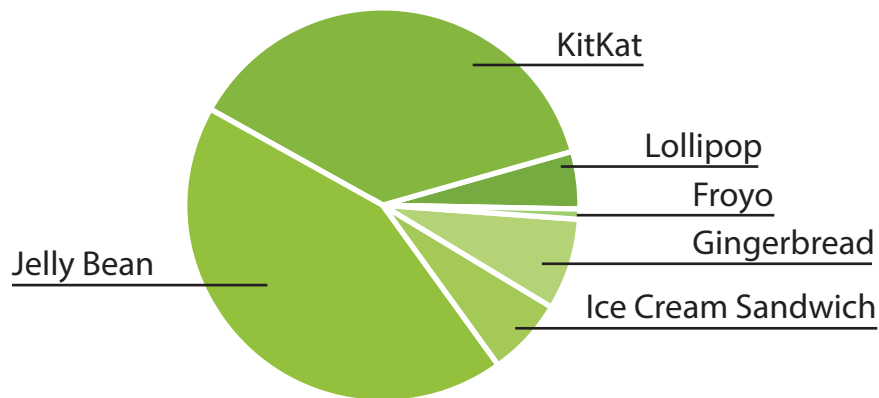
After you have decided the platform you want to develop the app for, you will need to choose the devices and versions your app will support.

Usage by Device



<http://david-smith.org/iosversionstats>

Version	Codename	API	Distribution
2.2	Froyo	8	0.4%
202.3-2.3.7	Gingerbread	10	7.4%
4.0.3-4.0.4	Ice Cream Sandwich	15	6.4%
4.1.x	Jelly Bean	16	18.4%
4.2.x		17	19.4%
4.3		18	6.3%
4.4	KitKat	19	39.7%
5.0	Lollipop	21	1.6%



<http://david-smith.org/iosversionstats>

THE DEVELOPMENT PHASE

Both iOS and Android are mature frameworks that help you develop ideal mobile apps for your business. Github is one of the open source communities that have helped develop many Android & iOS based applications. There are libraries such as AFNetworking, RestKit, SSToolkit, etc. for iOS while GreenORM is one of the finest libraries for Android operating system.

Developing the Backend

The backend is an important consideration when developing the mobile app. You need to choose whether you want to develop your mobile app integrating the existing backend, or you wish to develop a new backend for the mobile app.

If you plan to develop a new backend, you should consider whether you want to go for the existing mobile cloud like Parse, Stackmob, and Kinvey. You can develop new applications efficiently using the APIs that allow you to write custom code, store the user & app data, manage the push-based notifications, and the analytics data offered by these APIs. In some cases, you will need to integrate the existing application data to your mobile's user experience. The choice Platform as a Service or Infrastructure as a Service will help understand the issue that you wish to focus upon. It depends on whether you want to focus on the application development, or on the flexibility you can offer regarding infrastructure.

Streamlining Online & Offline Experience

There are numerous considerations that you may need to take care of when developing a mobile application. You need to develop keeping in mind the low latency Wi-Fi connections, high & low speeds, the high latency 2G connections, or the offline mode when developing the mobile app. You need to consider the different devices, form factors, CPU speeds, as well as memory variability to give consistent experience both online and offline.

THE LAUNCH PHASE

Launching an app is the most critical phase of your mobile app development. The app is ready, and it is time to load it to the app store for users to begin the download. The first impression is the biggest support for the businesses launching their mobile app. If your app does not create an incredible first impression, you may face harsh reviews, which in turn impacts the app's growth as well as adoption. Before you launch the app, you need to test the app for the load it can take and the experience it offers to the users.

In the case of mobile apps, you will need to adhere to the third party processes and procedures, which makes the whole process of testing tedious. Here are a few things that your mobile app will need to go through before you launch it.

Testing Native Applications

When it comes to testing a mobile application, you will find it increasingly difficult as there are a number of devices and versions that you will need to test your mobile app on. Very few services tend to make it easy and flexible for the developers. Most mobile device labs are not only expensive to setup but also pretty difficult to maintain. Instead of getting the tools and setting your mobile device lab, you can use the different testing platforms such as Apphance to complete the trial.

When testing, you should plan for the capacity so that your app does not fail after launch. You need to realize how much traffic your website can handle, which is why you need to plan the capacity and the limits of your app. You need to allow scalability of the app and plan for the number of concurrent users which can help plan the capacity of your app.

Beta Testing

The final step for quality assurance of your mobile app is Beta Testing. There are different platforms such as Testflight, HockeyApp, etc. which help distribute your mobile application to a select group, and get their feedback on the same. You should ideally test your app on a large audience base with a broad range of devices for a better outcome. This way you will get a clear idea of what will work with the audience, and what won't.

Type of Launch

After the Beta Testing, you need to consider the type of launch you want to indulge in? Do you wish to go for soft launch or hard launch for your application? If you are planning a hard launch, you just need to adhere to the app store regulations and upload the app.

Things are slightly different for a soft launch. You need to consider a market other than the one where you are launching. Once you have zeroed on a market, you can launch it there first and get the feedback. The last step of your beta testing will win you relevant feedback on the whole app. The soft launch will result in a more polished app.

Know the App Store Rules

Before loading the app to the app store, you need to be fully aware of the rules that the app store adheres to. It is important to allocate enough time to app release as well as marketing. You should ensure you have adhered to the quality expected from the app. It is important to give your app the apt description, and title to ensure it attracts enough users. The pricing for the app as well as the regions you want to market the app

You should be prepared to wait for the approval; it may take longer than expected. Apple Store takes about two weeks to approve and release the app. The time taken is relatively less for Google Play Store. An update of the app takes the same amount of time in Apple store.

THE MONITORING PHASE

It is not enough to launch the mobile app. You need to monitor continually the app to remove errors, bugs or to avoid crashes. Analytics is also an important part of the monitoring phase, as it helps make informed decisions.

Crash & Error Reporting

This crash & error reporting is critical for application development as well as testing and production perspective. There are tools like Crashlytics, BugSense, Testflight, etc. that help in getting the crash & error reports. These reports help track issues that have affected the users. This monitoring is essential to avoid bad reviews. Of course, this is no replacement for proper testing.

App Analytics

Metrics are important to make informed and transparent decisions. With the plethora of smart tools and data-driven projects, you can rely on this app analytics to help you get an idea of the parameters crucial to your business to make relevant and informed decisions. The metrics are more or less related to the audience, the platform they prefer using and the reasons for abandoning the app.

Kissmetrics, Localytics, etc. offer app analytics that can help gain insights on your users, and continually improve your app.

Application Performance

It is equally important to monitor the performance of your application from the mobile as well as server side to know how it is faring from the usage perspective. There are several tools available that help in understanding the performance of your mobile app on the mobile device as well as along the server-side. With Application Performance Monitoring (APM) you get a better understanding of the application topology, third party dependencies, the performance of the production application on the client as well as server side. With solutions like AppDynamics, you can track the crashes & errors, as well as the performance of the frontend and backend of your mobile application. You can account for the user experience attained on your mobile application. If and when the performance of your app begins to deteriorate, you would be able to nurture it back to health by being proactive.

End user experience is critical when it comes to monitoring the application performance. AppDynamics, Crittercism, etc. are solutions that help oversee the end user's experience.

LOOKING AHEAD

Looking at the way enterprises are growing, having a web presence is not enough to garner attention towards your brand. You need to work on creating a mobile presence. Many businesses are going mobile first in their approach, and devising ways to establish the mobile presence. Planning your mobile presence is crucial towards creating a strong user base, and generating more revenues.

It is a strategy that will help you deliver the ideal user experience that your users aspire. The strategy should include a lot of latest trends and use the brilliant tools that are available to create the perfect mobile app for your business.

DELIVER BEST PRODUCTS, SOFTWARE SOLUTIONS AND SERVICES, ON TIME WITH QUALITY, AND AS PER CUSTOMER EXPECTATIONS

About SilverTouch

Founded in 1992, Silver Touch Technologies Ltd. with its industry knowledge, in-depth technology expertise, and a complete understanding of the business processes helps businesses achieve a collaborative workforce and innovative solutions which pave the path for the future. The company has over 23 years of experience and has spread its wings in more than 20 countries around the world including US, UK, Europe, Middle East and Australia.

SilverTouch is actively engaged in Offshore Development solutions for Enterprise Software Development, Mobility Solutions, Internet of Things (IoT), Cloud Computing & Big Data Solutions as well as Bespoke Software Solutions to meet your business requirements. We have large pool of skilled

resources for iPhone, iPad, Android, Windows Phone, .NET, PHP and Open Source technologies. We also offer solutions for Enterprise Content Management Systems, Document Management, and IT Consulting Services.

With CMMi Level 5 (Process), ISO 9001:2008 (Quality) and ISO 27001 (security) standards accreditation, we deliver quality solutions that helps achieve desired results. SilverTouch has partnered with industry leaders like Microsoft, Apple, Cisco, IBM, Oracle, SAP, Java, Dell, VMWare, Symantec etc. which helps provide a competitive edge over other industry peers. We deliver solutions based on thorough understanding of your business needs, thus ensuring satisfaction in scalable, performing and secure applications.

For more information, please visit www.silvertouchinc.com www.silvertouch.com or email info@silvertouch.com

Why Silver Touch?

Established in

1992



20+

Years of
Experience in IT



CMMi

Level 5
Company



2500+

Projects Delivered
Successfully



1000+

Highly Skilled
IT Professionals



100+

e-Commerce
Websites Developed



1200+

Clients all over
the world