PUSH TECHNOLOGY

Mobile Financial Apps: 8 Ways to Improve Your App

Build, run and manage financial services mobile apps that are fast, scalable and efficient

Contents

Overview

To help provide an overview of the impact mobility is having on the financial services industry, consider this:

- Consumers now engage with financial institutions on average 30 times per month vs. one to two times per week in the pre-digital age.

  Net Finance, The Future of Financial Services in a Mobile World

- Consumers are much better equipped than their financial advisors when it comes to accessing financial information at any time. This has put advisors at a disadvantage, one especially apparent in client meetings, as consumer expectations for getting real-time responses to their questions have risen sharply.

  Aite Group, Top 10 Trends in Wealth Management

- … financial institutions need to change. "We can't be the financial institutions of the past, telling the consumer how to do business with us. We have to react much faster – we have to react at the pace the consumer wants us to react."

  Net Finance, The Future of Financial Services in a Mobile World

- When asked about the threat of non-traditional competitors gaining material share from traditional banks, 56 percent of those surveyed said they were either concerned or very concerned. This demonstrates how much banks need to innovate to prevent loss of market share.

  Net Finance, The Future of Financial Services in a Mobile World

- …Charles Carroll Financial Partners, a wealth management and financial planning firm with offices in Boston and Washington…is using its mobile app…to transform five or six pounds of paper into an electronic format that is easier to carry and share. The application was built specifically with the intention of allowing the firm to share informational and account documents with clients or prospects, which helps cut travel costs for Charles Carroll even while allowing it to get updates and follow-up documents out more quickly.

  ZDNet, Mobile app helps small financial services firm share information

- Forrester analyst, Peter Burris, talked recently at a seminar on the mobile mind shift, "the expectation that any desired information or service is available on any appropriate device in context at your moment of need."

  The Financial Services Mobile Mind Shift

Consumers are much better equipped than their financial advisors when it comes to accessing financial information at any time. This has put advisors at a disadvantage, one especially apparent in client meetings, as consumer expectations for getting real-time responses to their questions have risen sharply.

What types of financial service apps are we talking about?

Here are some examples with some top rated real-world apps:

- **Accounting - Xero**
- **Accounts payable**
- **Accounts receivable - Bills & Account Manager - Manilla**
- **Bank reconciliation - Zoho Books**
- **Bill of materials**
- **Budget management - Enterprise**
- **Budget management - Consumer - Mint.com**
- **Credit card process - enterprise**
- **Credit card access - consumer**
- **Expense tracking - Zoho books**
- **Financial aid - StudentAid.gov**
- **Financial modules**
- **Fixed assets**
- **General ledger for bookkeeping**
- **Mobile payments**
- **Multi-currency - Cash Passport**
- **News - Bloomberg**
- **Payroll - Intuit, Wave**
- **Personal Finance - BillGuard**
- **Project accounting**
- **Remote Data capture**
- **Sales and operations - FinancialForce**
- **Stock market updates - Scutify**
- **Tax software - Quickbooks**

Mobile has transformed the financial services industry – it has reinvented banking, revolutionized communications with customers and increased the expectations that organizations can deliver instant information. Similar to the industrial revolution, we now face changes that are transforming our way of life. The financial services industry must quickly react to this and create apps that help to generate revenues and increase loyalty; otherwise they will negatively impact the business.

Research shows that the issues consumers and employees complain about most are the speed, the capabilities and the information available when using an app. If you've created a bad app unintentionally, what impact does it have on your business? It could be that you've spent millions developing a budgeting app that your employees don't use. Or it could mean that consumers are downloading your app, trying it once, having a poor experience, writing a bad review and then deleting it. How much time, resource and viral marketing dollars did that waste?

This paper outlines eight ways you can improve your mobile app to positively impact your financial service organization. It offers tips on how to build, run and manage your mobile application to deliver fast, efficient data that's also scalable.

8 Ways to Improve Your Mobile App

Mobile application performance is quickly becoming the most important differentiator when it comes to application adoption, use, and abandonment. Microsoft said that a performance delay of 250ms will cause a consumer to select one website over another. Literally, in less than a blink of an eye, you will lose a user due to poor performance. Other industry data also shows that after three seconds, 40 percent of users will abandon a mobile site if it has not loaded. After 10 seconds, 60 percent of mobile users will not only abandon that site or app, but also never return to it again. There will be no second chance to show improvement. One bad performance experience and the typical mobile user is done1. Mobile application performance is clearly a competitive differentiator.

You must maintain great app performance because five star apps can become one star apps overnight, when poorly performing software erodes consumer confidence. Here are eight ways to improve your app.

1. Increase Speed

You already know speed is of the essence in the financial industry. But now, as consumers, we are more impatient than ever before. Faster broadband, instant search results and immediate downloads mean we do not need to wait in our personal or professional lives – and we won't. Consider some non-app related stats:

- Amazon.com makes about £41 million in sales every day. It could lose £1 billion in sales per year over a 1 second web page delay.
- 50% of web users abandon a page that doesn't load in ten seconds. Three out of five won't return to that site.
- 47% of users expect a web page to load in 2 seconds or less.
- 88% of online shoppers are less likely to return to a site after a slow experience.
- Google engineers found that 400 milliseconds — literally the blink of an eye — is too long to wait for a website to respond.

[1] *http://apmdigest.com/apple-says-mobile-application-performance-matters*

When your app doesn't download quickly, doesn't load information and data quickly or crashes, do you think consumers or employees are going to use it? In the case of employees, they are most likely to stick it out longer because that's what the company mandates, but what impact does this have on potential trades, for example?

For customers, if you are unable to deliver timely information to apps impacting the overall performance, get ready for bad reviews and the delete button.

Consider financial trading apps – how will a broker consult with a client if the figures are wrong? Does your employee have real-time information?

Not all apps require real-time data, but for many of them they do. Consider financial trading apps – how will a broker consult with a client if the figures are wrong? Does your employee have the information they need, and in real-time? What about real-time consumer budgeting apps like Mint.com? If the app cannot aggregate data, in real-time, from other sources, that app would get a bad review.

Up-to-the-moment information makes an app more appealing, more usable and more likely to succeed which equals more revenue opportunities. Your business needs to interact with end-users via apps in real-time because research shows that's what consumers want. To do this, data should be distributed back and forth extremely quickly so you can engage with your customers and employees.

If your app doesn't have the capability to support two way communications in real-time, what revenue are you missing out on now and in the future?

2. *Ensure Security*

Unfortunately, staying competitive and speed to market often means that one institution's mobile innovation pressurizes other institutions to rush out and develop similar functionality, circumventing security safeguards in the process.

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Many banks have failed to keep pace with the design and implementation of sound security measures, leaving them vulnerable to security breaches that will prompt customers to switch financial institutions and cause reputational damage. In addition, financial services institutions are prime targets for criminals with their global operating models, data flowing to third-party service providers, and big payoffs from stolen data[2].

Furthermore, financial services firms such as banks and brokerages are subject to data security regulations, such as the Gramm Leach Bliley Act and the Payment Card Industry Data Security Standard, which call for the protection of certain types of personal financial data via security measures. The addition of mobile devices to the mix can complicate efforts to ensure data protection and regulatory compliance.

As a result, mobile app security becomes front of mind as mobile apps increasingly access protected and sensitive information. If you are developing apps that consumers are accessing cardholder information on or that send and receive personal information, is your mobile app putting putting your organization or personal information at risk? Are you opening the door to Trojan horses? Do you even know?

The financial services industry is one group of mobile apps that need to be secure, but unfortunately mobile banking and trading apps are not necessarily secure. A study found that 90% of mobile banking apps from top banks have serious security vulnerabilities that could potentially compromise sensitive user data. Security researcher Ariel Sanchez of IOActive recently published these findings after investigating home banking iPhone and iPad apps from 40 of the 60 top banks in the world.

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This incredibly worrying study brings to light a very serious problem for the banking industry — and for consumers, of course — that will only become more severe over time as mobile banking app usage grows. Sanchez notes in his report that the various security vulnerabilities he identified could allow malicious hackers to intercept sensitive data, install malware or even seize control of a victim's device.

"Home banking apps that have been adapted for mobile devices, such as smart phones and tablets, have created a significant security challenge for worldwide financial firms," Sanchez stated in his conclusion. "As this research shows, financial industries should increase the security standards they use for their mobile home banking solutions."

3. Support consumers and the BYOD trend across all platform and devices

Are you able to support the numerous devices, brands and smartphone apps coming into the market every day? Developers are constantly trying to create more innovative apps for giants like the iPhone and Android and brands such as Nokia, HTC, Samsung and so on. But to do this, you need developer resource and that can get expensive fast, impacting your profits. It might not be necessary today to support customers across all platforms, but it will be tomorrow. Your business must therefore ensure that your app is open to all these platforms. To avoid expensive development projects per app, your developers should have an environment that enables them to write once and deploy anywhere, whether it's for the browser, or for iOS, Android or Windows phones or tablets.

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4. Speed Up App Development

Time to market is important. Financial services have been notoriously slow to the table because of long-drawn out projects or security issues. But as the quote earlier suggests, "We can't be the financial institutions of the past, telling the consumer how to do business with us. We have to react much faster – we have to react at the pace the consumer wants us to react."

In 2013, ABI Research predicted that the mobile app market would be worth $27 billion. There is a huge opportunity to make money via your mobile app. Now, some people might believe that apps won't make them money. We disagree. It might be that you are not gaining revenue from the apps, but what you are gaining is customers and customer loyalty. If evaluating convenience when deciding who to bank with, if you allow users to remotely deposit checks with a phone, you might just win that customer. If you expand services to include this capability via your app, you might just gain loyalty.

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It is not, however, just about getting to market; it is also about ensuring your app works properly. How you develop and the speed at which it takes becomes important to your business. Therefore, you need the ability to rapidly develop and deploy modern, highly responsive and interactive web and mobile applications that can handle fast, real-time events, while retaining the ability to fix a problem and deploy again quickly to react to customer feedback.

5. Test Thoroughly

If you haven't already received the message from the above, if you create a bad app, it won't survive against the millions of other apps in the market. However, the accelerated delivery cycles of mobile applications requires fast and effective test cycles. So what are you to do? Whether developing native, or hybrid applications, you need to validate that mobile app works as expected across multiple platforms and hundreds of devices in the market at any time – each with its own form factor – otherwise you risk releasing poorly performing software which will inevitably lead to customer frustration and lack of confidence. Accomplishing this task can often require large teams to undertake tedious and time-consuming manual test processes on every target platform and device, slowing your time to market. But testing is important and a necessary part of the traditional development process.

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Your business should replace tedious and time-consuming testing by using an integrated, cross-platform mobile app testing capability. Developers or testers should have the ability to simply press a button to record a sequence of actions on a mobile device. Once captured, it can become the basis of an intelligent, resilient and code-less test case that can be played back on demand on any iOS or Android device – and even on simulated devices.

6. Get Your Own Corporate App Store

You've spent all this time to develop a corporate app to improve your employees productivity, order intakes or finances for example. You've now tested it so it's time to deploy it and you want it easily available. Your choice however is to deploy it to a public app store such as Apple App Store, Google Play or Amazon Appstore, but this costs money, wastes time and you don't necessarily want it available outside the business.

For enterprise applications or service providers who wish to create their own private app store, what about a corporate app store?

For enterprise applications or service providers who wish to create their own private app store, what about a corporate app store? Having the functionality that employees have come to expect within their consumer apps – such as featured apps, ratings and reviews – in a completely brandable way will help adoption. You can then use your corporate app, available in your own app store without the expense of getting into a public app store and without having to wait for app approval for inclusion within that store. This helps you benefit from your apps purpose much faster. You can then extend the app, within your corporate app store, to sales teams, partners or consultants based on what's right for your business. It also allows you to see how well your apps are servicing the intended audience with the ratings and reviews. It will help to prioritize areas where an app might need improvement.

7. Meet Customer Demand

You've deployed your app, it's up and running and suddenly there is an event that is driving usage – the stock market is crashing or you have issues with your credit card security and consumers want to monitor in real-time transactions. Whatever the reason, has your app been developed with scalability in mind? Of course you can fire up servers in the cloud to support demand, but what about the bandwidth capacity and the load balancing? This doesn't necessarily solve the problem of intelligently getting the right data to the right person in real-time.

Has your app been developed with scalability in mind?

When developing your app you should incorporate the ability to elastically scale up and down to deliver data intelligently, while delivering a high quality user experience. And because performance means nothing without the ability to meet demands of end users, scalability is a key part of developing complex applications.

8. Overcome Network Pressure, Constraints and Quality of Service Inconsistencies

As end users are increasingly connected at home and with their mobile devices, and as home broadband and mobile network technology has improved and got cheaper, expectations on usability and performance of apps has correspondingly increased. But we all know that the Internet has issues. With network pressures and constraints, we can experience slow load times or dropped signals amongst others. However, your users expect to receive the same slick and responsive experience using your app when they're out on the road connected over a 3G network as they do when they're using their laptop at home or at work. The problem is, this often isn't the case.

When developing your app you must keep in mind that Internet connections can be unreliable and disconnection and reconnection can occur without warning.

When developing your app you must keep in mind that Internet connections can be unreliable and disconnection and reconnection can occur without warning; Internet connection speeds can vary between different clients and devices and different Internet connected devices vary hugely in performance, form factor and technology support.

Some enterprise organizations are extending their internal applications used in the office to web and mobile applications using legacy technologies, such as SOAP that uses large XML documents to pass application data around. The problem is that these applications are slow and cumbersome. They can consume large amounts of data bandwidth particularly if the data is repeatedly requested by the app, even if only one element of it has changed.

For consumer apps, REST APIs are all the rage as they make writing apps simple with easy to use and intuitive Uniform Resource Identifiers (URIs) for accessing data. These work well for one-off or occasional requests, such as "Give me the latest European economic forecast?". Where the information is subject to change, such as "Give me the latest bid and offer to EUR/USD", then this information must be polled using a REST API. Polling is inherently inefficient on two levels:

1. It wastes bandwidth if there is no new information.
2. It doesn't deliver the information "as it happens", which makes the app feel less responsive. Not to mention the required web-tier infrastructure and data center bandwidth required to support continuous polling from many consumers using the app.

Some apps might seem suitable for REST. However, when timeliness is important REST falls short. Financial service apps need to deliver real-time information like stock updates to thousands of concurrent users hitting it. REST falls short when users need to regularly poll information for timely information.

By carefully examining the type of data used by the app and using more efficient data streaming techniques, such as publish/subscribe, you can develop your apps to not only be much more efficient, but also deliver a far more responsive and immersive user experience.

Build, Run and Manage Applications that are Fast, Scalable and Data Efficient

You can achieve significant business and development benefits using the guidance above to improve your app.

- Quickly build and deploy quality multi-platform mobile applications
- Create an app that interacts in real-time
- Optimize the mobile experience to build loyalty
- Extend the enterprise to mobile through application integration
- Deliver excellent consistency of service
- Support BYOD and a smarter workforce
- Oversee security, risk and compliance
- Cope with real-time events
- Seamlessly connect rich mobile apps to enterprise data and services
- Deliver superior quality of service at scale handling network back pressure

To develop successful apps that will benefit, not hinder, your business, you need to do all of the above, NOW. You need fast development cycles that include quality checks embedded in the development cycle, for quick turnaround times.

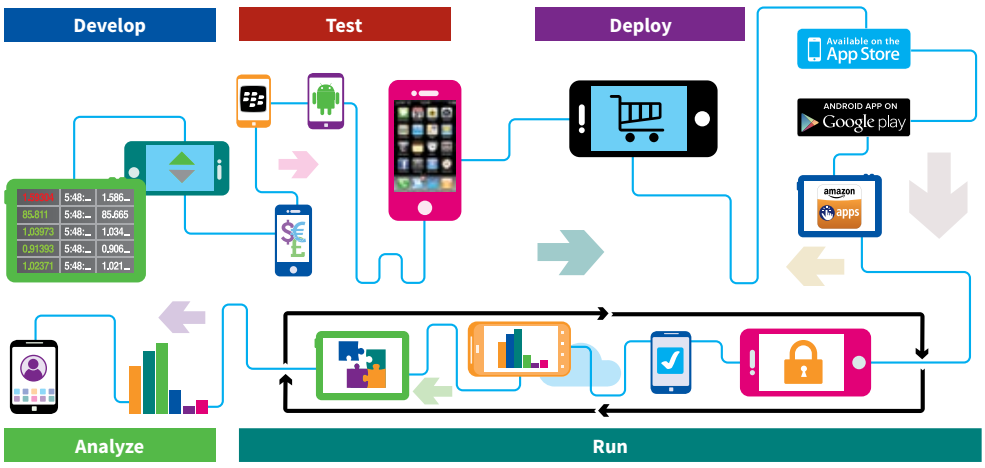
Push Technology Diffusion MAP

Learn more about Diffusion MAP

Diffusion Mobile Application Platform (MAP), a joint proposition from IBM and Push Technology, combines the power of Worklight™ and **Diffusion** to solve mobile application development challenges, quality of service and scalability problems.

With **Diffusion MAP,** application developers can easily build and deploy high-performance multi-platform mobile applications that can scale across devices and platforms, interact in real-time and manage and optimize mobile devices, data and costs. **Diffusion MAP** also extends the enterprise to mobile through application integration and oversee security, risk and compliance.

Developers can build and test an application once and then deploy it across all current and future mobile operating systems. The **Diffusion MAP** platform will provide real-time data communication and quality of service, allowing vast amounts of live data to be sent to and from the application, regardless of the quality of the mobile network.



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We make the Internet work for our mobile-obsessed, everything-connected world. Leading brands like 888 Holdings, DAB Bank, IBM, and William Hill leverage our technology to power applications critical to revenue growth, customer engagement, and business operations. Learn how to deliver apps at scale and speed at **www.pushtechnology.com**

About IBM Worklight

IBM® Worklight software helps enable organizational leaders to transform their business and become a mobile enterprise. This software provides an open, comprehensive and advanced mobile application platform for smartphones and tablets, helping organizations of all sizes to efficiently develop, test, connect, run and manage mobile and omni-channel applications. Leveraging standards-based technologies and tools, Worklight software provides a single integrated platform that includes a comprehensive development environment, mobile-optimized runtime middleware, a private enterprise application store and an integrated management and analytics console—all supported by a variety of security mechanisms.

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