Emory Mobile App Development

Background

This page is intended to help Emory faculty, researchers, physicians, and administrators interested in implementing mobile apps in support of Emory's education, research, and healthcare missions.

Emory University and Emory Healthcare have developed over twenty-five mobile apps since 2013. The number of apps and their complexity is expected to increase given the popularity of mobile apps and trends in higher education, research, healthcare, and information technology. Emory has implemented key policies, mobile app infrastructure, foundation components, and identified consulting resources to prepare to meet the increasing demand for mobile app development.

Estimating Effort and Cost of Mobile Apps

Mobile apps are more costly to develop, test, and maintain than many think. There are many reasons for this, but the basics are:

1. Most mobile apps require both a front-end user interface (what you see and interact with) as well as back-end services for logic, storage, and integration with other applications. Few mobile apps turn out to be stand-alone apps. Even basic content apps often require an integration with a content management system to maintain the content efficiently and effectively.
2. Mobile app platforms are complex and evolving constantly, requiring frequent testing and often rework of apps to work on new releases of mobile operating systems and devices.
3. The mobile app development tools and developer ecosystems are constantly evolving and changing. This means that mobile app developers and deployers must stay on top of things.
4. Often administrative mobile or web features are required for administrative users or other roles that may not be foreseen in the functional design goals for end users.
5. Security is paramount for apps with a back-end exposed to the internet, and at Emory if the data is subject to compliance policies this may prescribed very specific security measures and audit requirements that must be implemented.

It is not uncommon for a simple mobile app for iOS and Android to cost $50,000 to develop and $20,000 per year to maintain and operate. A complex application can easily range in hundreds of thousands to implement and maintain annually. For this reason it is imperative to get meaningful estimates for your project from the beginning. Useful estimates help in preparing budgets for grant proposals or allocating institutional funds for the project.

One of the primary challenges for mobile apps at Emory has been funding. This challenge has three dimensions: funding meaningful estimates to start, funding development and implementation, and funding on-going operations and maintenance of the app. The challenge of funding meaningful estimates is that under 15% of the projects LITS has helped estimate have been funded by either research grants or institutional resources. So in performing initial analysis and effort estimation to adequately prepare proposal budgets, the institution effectively does this work for seven projects although only one project is ever funded and implemented.

To address this challenge LITS has developed a method to reduce the effort estimation process while still producing enough artifacts to make a meaningful estimate that can be validated by other developers. For apps from low to medium complexity this process usually involves three or four 90-minute meetings with a project team and approximately twenty hours of effort between meetings for a total of about 25 hours of effort. LITS is working with preferred mobile app development firms to duplicate this type of assessment process at a reasonable cost. The market rate for 25 hours of effort for these assessment resources is roughly $4,000. LITS has been offering these assessment free of charge, but has limited capacity to provide them. LITS produces written use cases, data structures, and in some cases user interface wireframes are required for novel aspects of the app. For more details see the method of estimating cost and effort for mobile apps.

To request a mobile app cost estimate, complete the LITS request form. LITS will either work with you directly to prepare the estimate or help put you in contact with the preferred contractors best suited to help you. At the same time LITS can help you make important connections with the Office of Technology Transfer, Compliance, and Security, who are all critical partners in implementing and distributing any mobile app.

Mobile App Development Resources

Based on our experience, mobile application development projects that are staffed with personnel who are well versed in Emory's technical practices and security standards as well as experienced in the programming apps subject to security and compliance requirements have the highest rate of successful delivery. In these cases, teams understand how to create a secure mobile app based on Emory's standards, have gone through the appropriate sign-offs and not been delayed because of an "unknown" requirement, and have built the mobile app using quality coding practices and techniques.

As demand for mobile apps increased beyond the ability of LITS to assist with every project, Emory has identified, vetted, and on-boarded several mobile app development consulting firms with the following attributes:

1. Have a medium to large sized team consisting of IT architects, developers, project, and account mangers
2. Executed confidentiality and mobile app development agreements with Emory
3. Understand Emory's mobile app distribution policies and practices for internal and public distribution
4. Have access to Emory source code version control, VPN, wiki, and other critical infrastructure to develop, deploy, and document mobile apps in a secure and sustainable way for Emory
5. Know Emory's architecture, security, and compliance requirements, patterns, and foundation components such as how to implement authentication, authorization, access back-end web services at Emory, perform HIPAA audit logging, etc.
6. Work with Emory teams to create meaningful cost estimates at a reasonable price as described above

The current market rate for resources from firms that meet these criteria is between $110/hr and $175/hr and Emory has negotiated advantageous rates with two firms and is evaluating several more. Current program participants are:

1. Surge, LLC

2. Catalyte

To engage the services of these companies, please complete the request for a mobile app cost estimate. Not all participating vendors are ideal for every project. Each has their own specialization, strengths, and weaknesses. IT Architecture can help with quick triage analysis of your project to help match your project to the best vendor. All of Emory's preferred vendors have a track record of success on Emory projects that match the vendor's strengths.

Support for Mobile Apps

Three models for ongoing operational support and maintenance of apps have emerged at Emory.

1. Emory application owner contracts with the vendor who develops the application for some aspects of support. In this model the Emory application owner typically implements end user support and calls upon the vendor or contractor to help with tier 2 and or tier 3 support. Examples: ReliefLink, ReadyVax, Emory Health Magazine, Total: 23 or 61% of the portfolio
2. Emory application owner supports their own app when that is appropriate. Examples: SugarRX, Surgical Anatomy of the Liver, AMoSS, Healthy Aging App, Total: 11 or 29% of the portfolio
3. LITS assumes operational support for the app after the build (usually for compliance reasons or the critical, enterprise nature of the app) and splits operational support and maintenance of the app along some lines with the app owner and developers. The separation of responsibilities is typically determined with the ITSMO as part of the service launch process. Examples: Emergency Codes, Safety Reporting, MTP, Liver Transplant, Total: 4 apps or 10% of the portfolio

Planning and budgeting for operational support and on-going maintenance of the app is a critical part of estimation and implementation process. LITS and EHC IT operational support and maintenance resources are limited and presently focused on apps with specific compliance requirements or enterprise-wide scope. For other apps it will be necessary for an app owner to contract for operational support and maintenance or otherwise staff themselves to provide it.