Mobile Application Management

There's no question that mobility is taking over in the enterprise. But employees today don't only want to use the mobile device of their choice to do their jobs, they also want a full complement of well-designed mobile apps. This trend is putting pressure on IT departments to find the time, resources, and talent to develop, manage, and support mobile apps. These apps must meet user requirements for ease of use and speed, take advantage of mobile platforms, and match the performance and security standards of traditional applications.

In this eGuide, InfoWorld along with sister publications CIO, CSO, and Computerworld examine the state of mobile app development and management in the enterprise. Read on to learn the latest advice and newest approaches to making mobile apps work for your organization.

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New Relic.
A MOBILE POWER SHIFT IS HAPPENING RIGHT NOW.

Everyone from chief marketing officers to business managers to citizen developers is seizing mobile app and content controls away from the CIO in the enterprise. Mobile software vendors, too, are lining up to deliver simple-to-use tools in the cloud that cater to this new less-technical customer.

All of this is breaking open the floodgates to rogue IT.

The power-shifting trend was hammered home recently when mobile device management software developer MobileIron trotted out a new offering called Anyware, a cloud-based mobile management service that lets businesspeople manage and use iOS and Android apps in minutes.

Anyware has already received rave reviews for its end-user simplicity. The critical point, though, is that it was designed for nontechie admins to manage mobile apps and data. MobileIron’s Anyware effectively allows a sales manager to decide what documents and apps a salesperson should have without getting IT approval, prompting technology writer Ryan Faas at CITEworld to proclaim: No IT department required.

All Signs Point to Renegade Tech Buyers

“LOB [line-of-business] is increasingly taking the reins to move projects forward and acting as small businesses in themselves,” says Stacy Crook, program manager of mobile enterprise research at IDC.

Last spring, Forrester came out with a somewhat unnerving report—at least to CIOs—entitled “Tracking the Renegade Technology Buyer.” The report sheds light on the growth of tech spending outside the formal IT budget. Forrester found that business leaders who already make a lot of renegade tech purchases are 50 percent more likely to increase their spending than low-spending business peers and IT.

There are many reasons behind the emergence of the business-leaderturned-tech-buyer, among them:

• Technology is too important for the business not to be involved.
• Business executives’ understanding of technology is increasing so they can interact more effectively with IT.
• Business leaders’ use of consumer technology has changed their expectations of how IT should be used.
• IT does not have enough funds to meet the business group’s needs.

Salesforce.com Leads Mobility-as-a-Service Charge

One of the best-known tech companies in the business community, Salesforce.com, is leading the way to put mobile control in the enterprise into the hands of businesspeople.

MobileIron’s Anyware, for instance, is integrated with Salesforce.com and available on Ap-
pExchange, Salesforce.com’s business apps marketplace. Salesforce.com admins can use Anyware to distribute, manage and secure employees’ mobile apps directly from the Salesforce.com administration console. The partnership empowers Salesforce.com users to go mobile without taxing IT resources, says MobileIron. In other words, it’s a workaround for mobile app management.

In the same spirit as the MobileIron Anyware integration, Salesforce.com also struck a pact with Exadel, a professional services company specializing in mobile. Exadel will offer Salesforce.com customers its cloud-based mobile app development tool, called Appery.io, that lets non-technical people build mobile apps. This essentially frees business units from the IT department’s skills and capacity constraints, Exadel says. In other words, it’s a workaround for mobile app development.

“Our customers have embraced the cloud and social, and now they’re racing forward with mobile,” says Adam Seligman, vice president of developer relations at Salesforce.com. “We check our phones and use them 150 times a day, but the business apps haven’t shown up for the party.”

With Appery.io, everyone from business users to English majors—“citizen developers,” as Seligman calls them—can build business apps quickly. In order to do this, business managers need more control over the development and management of mobile apps.

While MobileIron’s Anyware and Exadel’s Appery.io don’t necessarily cut out IT completely, they certainly diminish IT’s role. Mobility’s ability to loosen IT’s grip is not an initiative, Seligman adds, “It’s a revolution, a renaissance... that needs to happen.” •
When it comes to application security within organizations, there’s a significant gap between executives and practitioners, according to a study by the Ponemon Institute and Security Innovation.

While a majority of executives (67%), directors (64%) and managers (58%) believe their company’s application security program is mature, less than a third of technicians (27%) and staff (33%) buy into that perception, according to the study. Executives see their organization’s application security program as far more mature than those at the managerial level and below, the study found. “This may be due to poor communication and collaboration among the different roles involved in application security. Such misalignment of priorities makes it difficult for practitioners to obtain the resources necessary to invest in application security and make it an integral part of the overall risk management strategy,” the study said.

The disconnect in perceptions means organizations may not always get the best bang for their security buck. “It may be why we’re spending more dollars on areas of lower risk,” Larry Ponemon, founder and chairman of the Ponemon Institute, said in an interview.

“For example,” he continued, “network security is still the largest ticket item in the security arsenal and application security is relatively low, even though many practitioners view the application layer as presenting a higher risk than the network layer or other parts of the security infrastructure.”

Ed Adams, president and CEO of Security Innovation, an application security company, said the software layer, by far, has the most security vulnerabilities – more than the network layer, more than the operating system layer.

“Yet, you’ve got the majority of the IT security spend going into firewalls and intrusion detection systems and intrusion prevention systems,” Adams said in an interview. Perception discrepancies may help explain why security problems constantly nag applications used by companies, he added. “You’ve got the folks who are actually doing the work saying two out of three times, ‘No, we do not have a mature applications security program,’” he said. “Yet, the executives and directors who own the budget, two out of three of them think they do have a mature application security program.

“This perception gap is, to me, telling of why we have so many problems with software applications continuing to be hacked,” Adams said. “You’ve got management not really having a clue of what’s going on with software development.”

A similar perception chasm appears relative to training. Most exec-
executives (71%) and directors (66%) said they believed their organization’s internal training and education programs were being updated to ensure that development teams can handle the latest threats, application security policies and best practices. Only one in five technicians (19%) and staff (20%) agreed with the brass on that subject. “There may be a training program being rolled out,” Adams said, “but it’s clearly ineffective for the folks that are getting trained.”

“Given the changing pace of technology, it’s imperative that you keep your teams up to speed with respect to security issues,” he continued. “The technical teams clearly feel like they’re getting left behind and not trained, whereas executives and directors think everything is fine in that respect.”

In their study, the researchers identified five stages in the development of application security in a typical organization. It starts with “no focus on security,” moves to reacting to security problems as they rise and ends up at standardized and defined policies, threat modeling and continuous process improvement based on risk metrics and analysis of discovered vulnerabilities. “Companies that invest in people and process mature through those five levels faster and with fewer computer incidents than organizations that first invest in technology and tools,” Adams said. “That’s a data point that I’d like to shout off every roof top and get in front of every CEO and CFO, because they’re the ones making those budget decisions.”•
How to Support Mobile App Development in Your Organization

As consumers eschew desktops and laptops for smartphones and tablets, organizations are increasingly tasked with developing apps for those mobile devices

By John Moore, CIO

Spotlight Ticket Management’s path to mobile software development is perhaps somewhat smoother than what other enterprises experience.

The 3-year old Calabasas, Calif. company, which helps corporations manage and track the sports tickets they provide to clients, lacks the years of legacy software development that an older company would need to address. “We are a young company, nimble enough to pivot into mobile without having to turn the Titanic,” says Tony Knopp, CEO and co-founder of Spotlight Ticket Management.

That said, the company still needed to work through a mobile transition. Product development started about 18 months ago, with the company tapping outsourced resources for some of the work. More recently, the company has moved to build up its in-house team. In May, the company hired a senior vice president of technology to help with the mobile change. “We made a concerted effort to bring on someone with a mobile background,” Knopp says. “The No. 1 thing on the list was...the ability to build a scalable, mobile product.”

Spotlight Ticket Management has hired mobile development staff in addition to the technology executive. The company, which initially catered to customers asking for Web-based and laptop-oriented products, now has two native mobile apps and one mobile Web app in beta. The mobile shift “may be catching some people by surprise,” Knopp says, “because it’s happening faster than they anticipated. For us, it’s happening faster than we anticipated.”

As developers target growing mobile market, IT departments adjust

Organizations from recent startups to long-established enterprises all contend with the pace of mobile change. A recent Gartner forecast predicts that more than 2.3 billion mobile devices will ship worldwide in 2013. The market watcher expects tablet shipments to expand 67.9 percent over 2012 levels, while the mobile phone category will grow 4.3 percent. Notebook and desktop PCs, in contrast, are expected to decline 10.6 percent.

Naturally, software development increasingly targets those platforms. IT departments are adjusting in various ways. Some create specialized teams to tackle mobile development. Others aim to centralize mobile application management while letting people in different parts of the organization carry on with development. The latter group may launch governance boards or centers of excellence to coordinate mobile development ef-


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forts. Industry executives describe the two-fold objective of such organizations: Encourage creativity and avoid app anarchy.

“I view this as the yin and the yang of mobile apps,” says Roger Baker, chief strategy officer at Agillex, an IT solutions provider with an enterprise mobility specialization. “As a CIO, you really want to say to users, ‘Yes, you can develop mobile apps.’ But at the same time, you have a responsibility to control security, data access and data integrity—all the way up through the brand. You’re trying to do both innovation and control at the same time and, it’s a pretty interesting balancing act.”

Mobile apps hard to manage, but users love ‘em

Indeed, IT shops are grappling with the mobile juggernaut.

“Getting a handle on mobile initiatives that are underway is proving to be a challenge,” says Sriram Ramanathan, chief technology officer at Kony, a mobile and multi-channel application platform provider.

Ramanathan says multiple lines of business within enterprises have already invested in native, consumer-facing apps, which were built using external consultants. Those apps may reflect myriad standards, technologies and processes used in in their development. New devices, form factors and operating systems upgrades also contribute to the management task. In addition, Ramanathan notes strong demand for mobilizing internal apps, with both executives and employees leading the charge.

The spreading influence of mobile technology marks a departure from the traditional Web-based world. In that setting, CIOs grew accustomed to browser-based app delivery where they could centrally control Web apps with ease, according to Ramanathan.

To overcome the difficulties of mobile app development, some organizations are rolling specialized oversight groups. Ramanathan has seen a mobile/multi-channel center of excellence work well. He describes a center of this kind as a central, CIO-funded initiative that may carry out several tasks:

• Providing standards pertaining to process and mobile technology.
• Determining and socializing context-specific best practices for mobile development.
• Ensuring security best practices.
• Delivering a set of work product templates to support the mobile software development lifecycle.
• Providing project oversight and governance.

Mobile units take agile approach to application development

Examples of oversight groups include the Department of Veterans Affairs’ still-evolving mobile application governance board. The department describes the board in its VA Digital Strategy document as being “responsible for decisions concerning the development of mobile apps centrally managed by VA.”

As enterprises create centers or boards, they also look to deploy development methodologies for mobile apps. Agile methods and DevOps are among the approaches receiving attention. Spotlight Ticket Management, for instance, follows the agile methodology, which the company had been using before its mobile development transition. “We’re big believers in Scrum and just getting things down quickly and getting iterations out,” Knopp says. (Scrum is a framework for team collaboration on software projects.)

Dave Peters, VA assistant deputy CIO for enterprise software development, also noted that apps need to be designed in an iterative fashion. The key is to involve users. In the VA’s case, Peters says the department needs to practice...
both continuous integration—an approach that’s been around for about 20 years—and continuous deployment/DevOps “to decrease our time to market and enable more frequent and timely end user and customer feedback.”

**Successful mobile app development makes key processes repeatable**

Arny Epstein, chief technology officer at Verivo Software, which provides enterprise mobility software, says companies that have built a good app development shop tend to be doing several things well. For one, they have determined the key skills they need and hired accordingly. They have also put thought into their desired development technologies and selected a mobile development and deployment platform to be productive with infrastructure, he notes.

“The best shops have also created an app lifecycle process where all the key phases—development, test deployment of an app, live deployment of an app, repeating the process with the next app or revision—are well established, repeatable and easier to improve in a consistent way,” Epstein adds.

Agilex’s Baker, meanwhile, cited the importance of having both the IT department and the business side work together on the mobile app certification process. IT, for example, may want that process to require user authentication to be properly implemented using the accepted organizational standard. The business side, for its part, may want to ensure that the organization’s logo appears appropriately on an app.

In addition, Baker believes an enterprise mobility group should specify a standard data access mechanism through which mobile apps can tap legacy systems. Instead of building multiple interfaces to legacy systems, Baker recommends building a mapping layer on top of the legacy systems. The idea, he explains, is to create a layer that “knows how to access data from legacy systems and make [data] available to the mobile device in a standard way.”

A central data access point is just another way of imposing some order on the mobile app trend. “We need to encourage people to do interesting and innovative things with app development but, at the same time, keep control of the data and the brand,” Baker says.
Heed These 10 Expert Tips for Mobile App Design

Too many iOS and Android apps are hard to use due to poor design – follow this advice to make sure your app isn’t one of them Galen Gruman, InfoWorld

A WHILE BACK, I complained about mobile apps that went bad due to poor user interface makeovers, such as the Associated Press’ AP Mobile, PRX’s Public Radio Player, and Gannett’s USA Today apps. Media companies – which really should know better – seem to be especially prone to bad mobile app design.

Good design is important for any application, despite what years of bad apps from vendors and IT shops have led us to believe. In the mobile context, good design is even more critical because the small screen and unsteady operating environment makes it even harder to use an app, which good design can overcome.

What can developers do about it? What should users look for? I spoke recently with Michael Griffith, creative director at Bottle Rocket Apps, a mobile app development shop whose apps include the nicely designed NPR News app. He had a set of 10 principles and recommendations that if followed should lead to better apps – especially better mobile apps.

1. Don’t simply port what you have to other platforms (iOS to Android, Web to iOS, Android to BlackBerry, and so on). The look and feel should honor the target platform, which users chose for a reason. Also, capabilities may differ based on what the platform offers, so developers need to decide when the platforms are too usefully different to deliver the “same” app across them and do related apps instead.

For corporate apps used in multiple contexts and devices, Griffith notes the degree of standardization should be greater than in consumer apps, so users can do what’s familiar across all devices they might be provided in the course of their work, assuring them they can do what they need regardless of device and reducing learning time. In this case, the app is the center of the user experience more than the device is. (By contrast, the device tends to be the center of the user experience in consumer usage.) You still must honor fundamental UI assumptions of the platform in the app’s basic interactions – such as access to menus.

2. Take advantage of mobile constraints to think creatively

An example is for an app to use facial recognition to auto-crop on the central focus of image rather than manually build all the views in the app’s asset library. Anticipating all the sizes and crops is a daunting task, and storing them in the app only makes it fat, which clogs devices’ limited storage space and consumes a lot of bandwidth during app updates.

3. Take advantage of mobile capabilities not available on a PC

For example, use the camera to snap images or “signatures,” or location services to narrow down suggestions such as in search or suppliers. Use those sensors, especially where
their additional data can reduce user and/or app background effort.

4  **Design accessibly**
It’s common to see young designers use small text and tight layouts that are hard for older users to read and accurately tap. Avoid the Retina effect: Just because there are now smaller pixels that make text technically readable at even smaller sizes, if you’re much past the age of 35, human eyes still can’t read such minuscule text. Use adaptive design instead, such as preferences over text size that adjust the layout accordingly. The new text-size API in iOS 7 should reduce the burden of that coding for iPhones and iPads.

5  **Show mockups and prototypes to clients or users on the device the app will run on**
A PDF or Photoshop mockup on a large computer screen simply doesn’t reflect the look and feel of a smartphone or tablet, nor are the interactions (such as touch, swipe, and type) the same. What looks and works right on a big screen with mouse and keyboard may feel horrible on a mobile device’s small touchscreen. Likewise, what works well on a mobile device may function poorly on a computer screen, causing users and client to reject good options. Show your comps and prototypes in the actual context.

6  **Beware metaphors**
There are fewer universal graphical metaphors you can count on people understanding – the old analog images (TV screens, radio controls, tape players, cameras, filmstrips, LPs, rotary dial, pilot lights, and even CDs) are not operationally familiar to younger generations, even if they may have seen them in an older movie. Although iconography theoretically allows for more universal design, many of the analog bases for the icons are becoming less and less familiar, confusing users. The use of text may be better, even if localization is required – Apple’s apparent conclusion, judging by iOS 7.

7  **Beware oversimplification, where everything (color, weight, texture, and so on) looks the same**
Too simple is as confusing as too complex, as both lead to difficulty in centering user focus for the task or content at hand.

8  **Design apps, not applications**
The more complex an app, the harder it is to use and navigate, especially in the smartphone context of on-the-go, uncertain environment (where users could be standing, sitting, or jostling, as well as working in dim light or bright light). If you have a lot of functionality to provide, consider breaking it into a set of related apps, each focused on a core functionality. This “don’t overload the app” notion can be tough to explain to clients, especially given the pressure to “do more” in each revision, but it’s essential that apps don’t become unwieldy or confusingly complex. (Griffith suggests you cite the line “Freedom of choice is what you get, freedom from choice is what you want” from the band Devo’s iconic “Freedom of Choice” song.)

9  **Design for layers of experience**
First-time users should feel something special and immediately valuable when they launch your app. Subsequent users should discover more utility that is easy to access. People using the app regularly over time should get deeper functionality to make even more sticky and useful. Flipboard is a good example of that approach, Griffith notes.

10  **Make data travel to the user in context**
Techniques include motion and transitions to enrich the user experience, and push the value to the user rather than force the user to look at it. Leave a way to go deeper for those who want to, rather than overwhelm people with information by default.
Windows developers are struggling to meet demand for mobile apps with current tools and skills, while also supporting and enhancing existing desktop apps. By Thor Olavsrud, CIO

WINDOWS DEVELOPERS are feeling the demand for mobile apps, but they say their current tools and skills are preventing them from delivering those apps.

Adding to the pressure, the demand for mobile apps is layered upon the expectation that developers will continue to support and enhance existing applications. Those sentiments are echoed in a survey of 1,337 developers with responsibility for Windows desktop applications conducted recently by market research specialist Dimensional Research. The research was sponsored by Embarcadero Technologies, a vendor of database tools and development software.

Windows developers lack confidence in ability to meet mobile demand
Dimensional Research found that while Windows developers are experiencing great demand for mobile applications—85 percent of respondents said they’d received requests for mobile apps—they lack confidence in their ability to meet that demand. Survey respondents said they feel existing mobile development tools are costly and complex, alternate solutions (like JavaScript and HTML5) fail to meet user experience requirements and the need to continue supporting existing apps limits their ability to develop the new skills required.

“Windows developers clearly see the need to bring their deep experience with applications development to mobile applications,” says Diane Hagglund, senior researcher at Dimensional Research. “Today’s development options either limit the end user or result in costly and complex native development across multiple platforms. These Windows developers clearly need better options.”

Users have high expectations for mobile apps
Developers told Dimensional Research that most end users expect business apps to be available in some form on their smartphones and tablets. Sixty-five percent want at least partial functionality from an existing desktop app, while 43 percent want the entire functionality of a desktop app on their mobile app. In addition, 58 percent of Windows developers say they have fielded requests for entirely new mobile applications.

And user expectations of these apps are high: Windows developers who have received requests for these mobile apps say 54 percent of end users expect the simple mobile app experience they have come to expect from consumer mobile applications, even for very complex applications. In addition, 51 percent of Windows developers say end users believe...
that all desktop functionality can be made to work as a mobile app, even on devices with limited capabilities. Also, 45 percent of Windows developers who have received requests for mobile applications say end users want the mobile apps to support every mobile platform on the market.

“Apple just insanely raised the bar in 2007,” says Steve Haney, senior director of product marketing at Embarcadero. “Users now have very high expectations for user experience. Stuff just has to work now, and it has to be elegant and it has to be fun. At the same time, we can’t just leave the past behind. We have to support what we’ve built.”

**Developers must support desktop apps when going mobile**

In fact, 99 percent of Windows developers say that mobile apps are a supplement to existing desktop apps, not a replacement for them. Only one percent of developers told Dimensional Research that they will stop development of existing Windows desktop applications in favor of mobile apps. Another four percent say they will provide support for existing desktop apps, but no new features. But 95 percent of Windows developers say they will continue development and support of Windows applications even as requests for new mobile apps grow sharply.

Despite its challenges in the enterprise world, developers say user demand for Android apps is highest, at 83 percent, with demand for Apple iOS trailing closely at 67 percent. Demand for Windows Phone and Windows RT apps place third and fourth at 33 percent and 17 percent, respectively.

“If these guys get asked for a mobile app, though, it’s usually required for all the platforms,” Haney says. “And that has them concerned. The more experience they have with mobile, the more concerned they are.”

Ninety-two percent of Windows developers say they have concerns about developing mobile apps: 57 percent cite the need for new development skills, 56 percent point to the complexity of testing apps on multiple platforms and 54 percent cite the high cost of multiplatform development.

Forty-five percent say the tools for developing mobile environments are inadequate compared with tools for desktop development, and 42 percent say it’s difficult to find developers proficient in multiple platforms.

All these concerns are higher, often significantly, among developers who have mobile development experience. For instance, 62 percent of Windows developers with responsibility for mobile say that the high cost for developing apps for multiple mobile platforms is a serious concern.

**HTML5 or JavaScript not the answer**

Scripted or interpreted language solutions like HTML5, JavaScript, Python and others are often seen as a way to develop once and deploy on multiple platforms. But 85 percent of Windows developers say natively compiled mobile apps deliver a better experience for users. Even though more than half of them consider themselves knowledgeable or expert in HTML5 and JavaScript, 74 percent of those “knowledgeable” or “expert” developers say they find the environment challenging.

Developers cite difficulty in accessing device features (44 percent), inadequate programming language features (38 percent), browser incompatibility, poor documentation, debugging, source code maintenance, lack of libraries, scalability, form factor and more.

“They don’t want to go with HTML5,” Haney says. “They know how complex and limited it is. Windows developers are still one of the largest developer groups out there,” he adds. “There’s something like 1.3 billion Windows devices out there. But these guys don’t necessarily have a path to mobile.”
How 4 Companies Use Mobile Apps to Court Customers

IT is on the hot seat to step up its mobile game as businesses strive to get closer to their customers. By Beth Stackpole, Computerworld

You don’t have to look far to witness the total domination of the mobile device. Whether on the commuter rail or at the soccer field, cruising the mall or navigating a bustling city street, consumers are wedded to their smartphones and tablets to conduct the business of both their personal and professional lives.

As a result, the mobile channel is opening up new ways for companies to nurture customer relationships in ways not possible in the past. Via the deployment of strategic apps, mobile presents businesses with a unique opportunity to engage customers with a product or service anytime, anywhere, in a manner that is specifically tuned to their individual needs.

The mobile experience also delivers a rich set of analytics that provides hard-to-come-by insights into everything from a customer’s buying behavior to his or her actual physical location, allowing companies to custom tailor the conversation while also setting the stage for interaction that is all about intention, according to Chris Silva, an independent mobile analyst.

“If you’ve got customers, you’ve got mobile customers, and it’s one of the few places where you can almost replicate the conversion potential that you have when someone walks into a store,” he explains. “Anyone using a mobile app or accessing a mobile website is doing it as part of a task, so it’s a model built around consumption.”

Yet hand in hand with this powerful business opportunity come some unique development challenges for enterprise technologists. IT is being tasked with building out an app portfolio that supports a wide range of mobile platforms, including smartphones and tablets, amidst a continuously changing landscape of operating environments, from Apple iOS to Android and Windows 8.

Adding to this backdrop of complexity are the vastly accelerated delivery schedules for mobile apps — weeks as opposed to the months or years of traditional IT projects — and the fact that many IT staffs, already strapped for core talent, are lacking the requisite mobile development skills, forcing them to hire up or turn to outside partners.

“Most mobile strategist roles and groups are in their infancy today,” notes Silva, who says internal IT departments need to prove their competency to be taken seriously as mobile players.

Despite the scope of the task, the opportunities to leverage mobile as a stepping stone to customer intimacy are too potent to ignore. Read on to discover how four IT organizations in different industries are rising to the challenge and making mobile a centerpiece of how their companies forge tighter customer relationships.
The mobile opportunity
Navigating a trade show is difficult work as an attendee, but the complexity multiplies exponentially as an exhibitor trying to juggle all of the logistics. Freeman Co.’s exhibitor customers often complained about the long walks to the service desk to report problems, the lengthy post-show checkout process and the lack of timely access to freight information.

To address those concerns, the company launched its Concierge Elite Program in 2009, putting Freeman customer service reps on the ground with mobile access to a Web-based application that let them troubleshoot problems.

What they launched
Maranville’s team partnered with business colleagues in customer service and marketing to develop Concierge Elite, which was made available to customers about a year and a half ago. The mobile app – initially available for iPhones and iPads and more recently for Android and Windows 8 devices – streamlines the exhibitor experience. It lets customers get basic information about the event while also delivering a variety of services, including the ability to place orders for booth equipment, submit trouble tickets and orchestrate post-show checkout without a need to stand in line. Another feature of Concierge Elite is a freight alert capability, which notifies exhibitors via text or email when their freight has actually arrived in the booth so there is no waiting around and no mix-ups, Maranville says.

The technical details
Using Web services, the individual solutions (trouble tickets, checkout and so on) are stitched together via a messaging software layer running at the show site that hands off information between the local distributed apps and Freeman’s back-end, Java-based e-commerce and operations systems – an approach that facilitated development time, Maranville says.

The greatest pain point
The primary challenge to pulling off Concierge Elite was navigating the ever-changing mobile device landscape, Maranville says. Freeman accomplished this by using a development tool called PhoneGap to provide a layer of abstraction around the app so it could easily be ported to different form factors and screen sizes and deployed in the different app stores.

“The right now, our biggest challenge is staying caught up with all the devices and operating systems so we can provide the best experience without being tied to a specific device or screen size,” Maranville says.

The payoff
Concierge Elite cost less than $500,000 to develop, and Maranville says the payback has been “huge” in terms of improved customer service.

The mobile market explodes
The growth of tablets and mobile phones has surged over the last few years, and the momentum, for now at least, appears nearly unstoppable. Gartner projects tablet shipments to grow 67.9% in 2013 – to reach 202 million units shipped – while the mobile phone market will expand 4.3% to hit volumes of more than 1.8 billion units.

International Data Corp. also sees 2013 as a watershed year for smartphone adoption. This will be the first time that more smartphones are shipped than feature phones, accounting for more than half (52.2%) of all mobile phones deployed worldwide, according to IDC’s most recent forecast.

It soon became clear, however, that exhibitors wanted to track and problem-solve on their own. “Our customers are at a show site in a convention hall surrounded by stuff, and having a [non-demo] PC is not really an option, and if they do, connectivity is questionable,” says Richard Maranville, Freeman’s EVP and CIO. “That led us to mobile pretty quickly.”
Snapshot
Toyota Financial Services
IT proves its mobile mettle
Location: Torrance, Calif.
Line of business: Financial
IT staff: 150 employees

The mobile opportunity
With a mandate from the CEO to improve the customer and dealer experience, it was a no-brainer that Toyota Financial Services (TFS) would deliver a mobile app to let customers access key services on the go. What was questionable was whether the internal IT team would spearhead the project or whether it would be handed off to an outside player considered to have deeper experience in mobile development practices. (Spoiler alert: IT got the job.)

What they launched
The project encompassed a series of mobile apps for the Toyota, Lexus and Scion brands, allowing for bill payment, simple account access and a dealer locator, among other services. Mobile websites were launched first for Toyota and Lexus in January 2011. These were followed by iOS versions for each of the three brands (myTFS, myLFS, and Scion Solutions) for the Apple App Store in October 2011 and then for Android in October 2012.

The technical details
The apps, developed with re-use in mind, were conceived as an extension of TFS’ retooled consumer website. As opposed to taking a native development approach for each mobile platform, TFS choose to build out the app portfolio on a foundation of federated security and Web services, including the REST open source Web services technology.

The idea, says Marlo Donate, chief digital officer, is that once developed, the apps could quickly be ported to multiple mobile platforms in a relatively short time frame. Case in point: While the Toyota Financial Services and Lexus Financial Services mobile websites took eight months to develop, subsequent Mobile Click to Pay versions for the Android platform took only three and a half months.

“We opened up eight [mobile] channels in two and half years, and they all have the same integration on the back end, but look different based on the brand of vehicle,” Donate explains.

The greatest pain point
During the initial scoping of the Mobile Click to Pay project in mid-2009, the business side wasn’t fully confident that IT could deliver on the vision to leverage mobile as a way to offer a higher level of service and open up new payment channels, Donate admits. The “aha moment” came when both sides were together in a room, with marketing brainstorming an innovative concept -- enabling customers to get set up on mobile payments simply by having them swipe a barcode printed on their billing statement -- and IT saying it could quickly prototype that setup. “This was the turning point in the relationship between IT and business,” Donate explains. “It established trust and the sense that we could work together better.”

The payoff
While declining to discuss project costs, Donate says the customer response has been huge -- without any marketing, there have been 297,224 total downloads for the iPhone apps and 45,165 for the Android apps, which have only been out for five months, Donate says.
MOBILE APPLICATION MANAGEMENT

An interactive eGuide

Case study

Snapshot

WSSC

Mobilizing customer self-service

Location: Laurel, Md.
Line of business: A water and wastewater utility serving suburban Washington, D.C.
IT staff: 94 employees

The mobile opportunity

With 1.8 million residents spread across 1,000 square miles of metropolitan and suburban Washington, D.C., and a customer service center that fields over 50,000 calls a month, the Washington Suburban Sanitary Commission (WSSC) was hungry for a way to let customers help themselves without sacrificing its levels of service. The rise of the mobile device provided just the right opportunity. “We wanted to have some sort of self-service option for customers in a post-PC era when everyone walks around with a smartphone or tablet,” says Mujib Lodhi, WSSC’s CIO. “We wanted customer intimacy, so why not connect directly to them?”

What they launched

WSSC Mobile made its debut in 2011, allowing customers to pay bills, report problems and monitor their water usage without having to wait for phone assistance. Using integrated GPS capabilities, WSSC Mobile also lets users track the status of their issue and view a map of any current problems in their area.

The app is also a way to enlist the public in identifying problems, helping the utility’s small team of experts police the 1,000 square mile area. “It creates a partnership with customers so if they’re out for a morning jog and see a leaky hydrant, they can pull out their smartphone, snap a picture and submit it and, based on the geographic coordinates, WSSC can immediately dispatch a crew to take care of it,” Lodhi explains.

The technical details

To keep costs in check, WSSC leveraged existing tools to create the mobile app, including ESRI’s Arc-GIS suite for spatial applications, IBM’s WebSphere suite for all J2EE applications and Oracle for the RDBMS.

The team also took a hybrid development approach to minimize platform-specific programming, while still delivering a device-specific user experience, Lodhi says. Specifically, they employed an open-source library-wrapper framework, which included JQueryMobile for screen navigation and design; JavaServer Faces MVC framework for business logic process; Dojo for asynchronous calls; and Objective-C to create application wrappers for iPhone, Android and BlackBerry devices.

The greatest pain point

Integrating the app with the GIS system and getting the user experience right was IT’s biggest technical challenge, Lodhi says. Initially, when IT presented a prototype of the app to the business, they weren’t impressed and sent the team back to the drawing board to optimize the look and feel for a truly mobile experience. “We wanted to give customers an excellent experience so they’d use it,” he says. “We paid attention to the feedback, took it seriously and went back and fixed it.”

The payoff

All in all, Lodhi estimates the project cost a couple of hundred thousand dollars. It delivered value by reducing call volume, call handling times and paper expenses since more customers are seeking out information online. The team has steadily added new features to WSSC Mobile with a fresh release about every three months. To date, about 10,000 customers have downloaded the mobile app, and WSSC’s goal is to get to 150,000 user downloads in the next three to five years.
Case study

Snapshots

First Trade Union Bank
Tapping mobile to attract Gen Y

Location: Boston
Line of business: Community bank with assets of $650 million
IT staff: 6 internal employees

The mobile opportunity
When you’re a small bank trying to differentiate yourself in the market by targeting the Gen Y crowd, adding another branch or another high-yield savings product just isn’t going to cut it. Not only was First Trade Union Bank’s target audience comfortable with the idea of mobile banking, they expected nothing less than being able to take care of all of their banking needs via mobile without ever having to step foot inside a physical branch.

With that in mind, the bank made a decision three years ago to move away from a branch strategy and pursue mobile with vengeance. The goal: To offer its customers a mobile experience that was on par with what the big banks and online-only upstarts like Ally and Simple could deliver.

“If you can engage a Gen Y customer through their phone, you have the ability to create habits and make the relationship more sticky,” says Pete Chapman, the bank’s senior vice president of emerging technologies. “We need to get to the point where our customers are logging into their mobile bank app multiple times every day.”

What they launched
In February 2012, the bank rolled out its first mobile app, for both iPhone and Android, which allows customers to make deposits by taking a picture of a check. Soon after, in June, First Trade followed up with a full mobile banking app, also available on the iPad, which lets customers tend to about 80% of their banking needs via their phones, including opening accounts, initiating transfers, requesting checking balances and managing their funds.

First Trade then made a decision to be among a handful of banks offering a mobile payment app. Released this summer, FT Pay, powered by the LevelUp mobile payment network, lets First Trade customers link to a debit card of their choice and make mobile payments at participating stores while earning rewards.

The technical details
Like most banks its size, First Trade doesn’t have a deep enough IT bench to develop online or mobile infrastructure from scratch so it had to rely on licensing pre-built services from a variety of technology partners. “We could have hired five developers with a budget of over $700,000 for salaries and built everything from scratch, but we ruled that out pretty quickly,” Chapman says. “Our approach was to find a partner that understands mobile apps really well and can create an engaging experience to allow us to focus on what we do well – banking. That way, we can get to market quicker and with less expense.”

The greatest pain point
Partnerships are great, but only if the partner is right, Chapman says. Most banks licensing technology find themselves with a me-too product offered by dozens of competitors. First Trade took a different approach with its FT Pay app. Since LevelUp was local, Chapman was able to spend hours on site, providing input into the development strategy and helping fine-tune the app to support specific rewards opportunities for First Trade customers. “Partner management is absolutely something you have to consider,” he says. Getting to know senior leadership and the partner’s technical roadmap is critical for any initiative to be a success, Chapman advises.

The payoff
Chapman estimates First Trade has spent a couple of hundred thousand dollars on its mobile app portfolio so far – compared with having to invest at least $1 million to open up a new branch. While it’s too soon to gauge entrenchedness of the mobile payment app because it’s been available only a few months, the bank has seen triple-digit growth in its mobile banking usage and better retention rates for checking account openings. Says Chapman: “All that has to do with the mobile technology we’re putting out there.” •
5 Key Phases in Creating a Successful Mobile App

There are 5 key phases of mobile app creation that can ensure your mobile development initiatives are met successfully. Each phase is critical to the app’s overall success and feeds into the next step of the process of product development for the app.

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Keeping the Mobile Enterprise Moving

Enterprises can’t afford to be left behind as mobility surges to the forefront of IT and business strategies. Nor can they afford to churn out poorly performing mobile apps that alienate users and sap valuable IT assets. This white paper examines current trends in enterprise mobile app use. It explores why businesses are jumping into the mobile arms race and the risks of implementing poorly disciplined software development practices.

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5 Secrets to Scaling Enterprise Apps

View this interactive brief to learn how leading companies are addressing the key stages of mobile app development from design to user adoption. The video also provides tips on how apps can scale quickly and reliably, and offers an overview of five key traits of every successful mobile app: flexibility; visibility; efficiency; accountability; and scalability.

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