Capitalizing on mobile moments for Smarter Commerce

Determining how to build systems of engagement from vision through execution

IBM

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With consumer exuberance of mobile apps in full display, many enterprises are finding opportunities within their customer bases, business partners and workforce to deliver value by creating the perfect mobile app. Empowered consumers are demanding new engagement models on their terms with the companies they do business with. And, unfortunately, many companies are also inefficiently expending a lot of capital, time, resources – and worse – opportunities developing apps that don't add much value to their brands, businesses, or bottom lines. What, then, is making the difference between the winners and losers in capitalizing on the promises offered by the unique characteristics and benefits of mobile?

Two critical decisions must be determined to realize true investment-returning, business-changing value from an investment in mobile apps. The first is defining the right 'mobile moments'; the type of interactions that transcend a desktop experience to leverage the context of the users current reality in a way that engages and delivers value to the user, benefits the entire ecosystem, and also provides value to the enterprise. The second decision is developing a high quality, viable app strategy and deployment plan. This includes determining priorities in developing and delivering the app, determining its audience, the device(s) that will be supported, deployment and management, and how the app will be built. These dimensions will have a profound impact on the effectiveness, cost, and ultimately the return of the app initiative.

Neither of these determinations is simply a go/no-go type of decision, but instead requires rich, layered designs with many complex attributes that organizations must work hard to determine, vet, and assemble. Discovering your mobile moment and determining delivery priorities is a process that must be undertaken with care, energy, and leading design practices. Those willing to take the right approach will find themselves amazed by the innovation that occurs and at the value mobile apps can bring to their enterprises and bottom line, while feeling confident that opportunities were capitalized on profitably and smartly.

Smarter Commerce

Smarter Commerce is a strategic approach to building high performing businesses by serving customer needs in three ways:

1. **Customer Value**
   Rethinking operations in order to profitably deliver value to the customer.
2. **Customer Insight**
   Gaining a deeper understanding of customer needs and behaviors through data gathering and real-time analytics.
3. **Customer Engagement**
   Connecting with customers in a regular cadence, using a variety of means, and offering a valuable customer experience.

The mobile opportunity and challenge for today's organization

Today, any casual observer can see the profound impact mobile devices, such as smartphones and tablet devices, are having on how people communicate, learn, work, and play. By 2015, there will over a billion smartphones in the world.[1] According to The Neilson Company, Apple users have an average of 48 apps on their devices and Android users have 35.[2] From talking to friends and coworkers, to seeing leading edge apps touted on television ads, the world is humming with excitement about how apps will change our lives.

This app gold rush is being fully embraced by the business world that can see opportunities in getting closer to their customers and boosting their employee productivity. For customers, business leaders want to transform the customer relationship, become embedded in new ways in customers' lives, add new value, differentiate themselves competitively, build loyalty, reduce service costs, and ultimately find new revenue sources. For their workforces, they can imagine new ways field personnel can interact with customers and equipment, how knowledge workers can be simultaneously de-tethered from their desks and yet always connected, and how "where a worker sits" will be much less important than what she can do anywhere and everywhere. Succeeding companies will evolve to a new mobility based operating model through a suite of corporate apps as well as change the value proposition by upselling, cross selling and providing better services more efficiently to customers.

With this much momentum and energy towards today's application revolution, many are scrambling to do something or anything to jump into the fray. Some businesses are getting it and seeing the benefits of an innovative and well-crafted mobile app strategy. Others seem to be flailing; buying devices for their employees without a sound idea of what they do with them, or simply recreating a clunky desktop experience made smaller for a tiny screen. Others expend volumes of money and resources without a clear idea of what benefits they will realize. Some, though, develop a great idea for what the app does, but then fall down in deploying or scaling it. They develop with the wrong device strategy, fall short when it comes to distributing the app, fail to develop the code correctly, or don't manage the technology or upkeep effectively. Either way, money is wasted, resources misdirected, expectations and excitement deflated, and opportunities potentially missed.

The problem for organizations seeking to capitalize on the app opportunity seems to be two-fold. First, they must be able to envision the right app: create the new experience; define what it does; and how it creates value for the user, the user population, and the organization. Secondly, they must be able to build, roll-out, and manage the app in a way that delivers on the promise, ensures ongoing use and viability of the app, and maintains the right cost and return structure. These are challenges related to application development, technology, and organization. These two critical decisions define the mobility app conversation at most organizations today. Alternatively, we can think about these decisions based on who is making them, providing a simple acid test for enterprise success: (1) determining who owns and champions and governs mobility, and (2) choosing whether the business process owners going to a CIO and his team for app development with a fully thought-out mobile application lifecycle strategy, or are they reaching out to a boutique to achieve a quick win without thought to long-term or wide-spread consequences.

Discovering and inventing mobile moments

The first major decision for mobile app strategies is determining how the app creates value. The most successful apps are those that transcend systems of record and instead become systems of engagement. Systems of record result when an organization attempts to deliver a non-mobile application to the device by squeezing it onto the screen and perhaps simplifying the feature base. For example, they may 'screen scrape' their desktop-based enterprise resource planning (ERP) features into a phone-sized presentation. In doing so, they miss the immediacy of the mobile event, ignore the features that make mobility special (for example, location awareness, cameras, alternate inputs) and try to replicate a home- or office-bound activity with no real added benefit. They do this possibly because they are desperate to act on the mobile opportunity and have an unbalanced focus on cost control over benefits or they are simply lacking creativity.

A system of engagement is one that fully captures the unique attributes of the mobile experience. This includes enabling the user to transact and be informed in location-independent places. The application experiences are immediate and critical when information, collaboration, and timing are essential to what the user is trying to achieve. They use the alternate inputs of the device, such as the microphone, the camera, GPS, and accelerometer. Using the app is intuitive and fast, as users' swipe, pinch and motion thoughtlessly. A system of engagement is most relevant where context is key, meaning that the specifics of the users' time, place, and needs are central to the value of the application. Most importantly, they use the app to create mobile moments.

Figure 1

System of record approach versus system of engagement approach.

Mobile moments are interactions with mobile apps that have a '3X' affect: they provide value to the user; they provide value to the ecosystem (or population of users); and they create value for the enterprise. For example, the mobile moment for the user may be using the app to discover a critical piece of information that immediately suits the time and place where they are seeking it. For the ecosystem, the individual users' additions add new value and richness to the utility of the app. For the enterprise, the differentiating value or information they gather enables them to improve their offerings, make better business decisions about their users, or transform the economics of the business to either drive new revenue or reduce costs.

Mobile moments manifested: Seeing through walls with augmented reality

We're seeing mobile moments manifest themselves with many apps today. For example, the Seer app developed by IBM Interactive for the Wimbledon tennis event allows spectators to use their mobile phones to 'see' through walls using augmented reality features. Augmented reality allows users to view the real world using the camera on their smartphone with an additional layer of data superimposed on top that provides useful information. For example, as a user surveys a location by holding their phone up as a virtual periscope, information bubbles appear on top of the image of reality that provide directions and reviews of a food vendor, the length of the line for champagne, the direction and availability of taxis, and other useful information for spectators. The app uses GPS to determine the users' location and direction they are facing and data is then overlaid on these real-life images to provide an interactive map and real-time guide to the tournament, bringing the latest scores and transport information directly to users. The app also provides live video feeds of matches and live scoring updates. In future versions, the user will be able to provide their own commentary and review information of different site features, locate and coordinate with friends, and put their personal mark on the event.

The Seer Wimbledon app demonstrates a system of engagement that capitalizes on mobile moments and the context of the user's experience. With 3X value, the app provides interactions that benefit the user; they get to find the nearest cash machine quickly or instantly know how long the line is for strawberries and cream. For the ecosystem, the real-time updating of travel information, scores, and users' preferences continually add to the value of the app and its supporting data as a whole. For the enterprise – Wimbledon's organizers – the app provides value by improving and differentiating the ticket-holders' experience, and the data they collect informs the organization about what attractions are generating the most traffic or use, and how they might change the mix of events and amenities to further improve attendance, spectator value, and revenue opportunities.

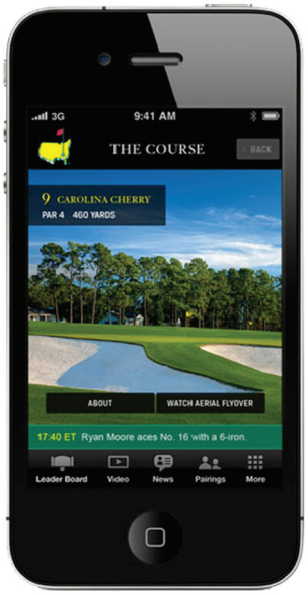
We can imagine an augmented reality being used in a host of other applications, especially for workers, not just consumers. For example, a power grid repair tech may be able to view his repair location through the camera and screen on his phone. As he looks over power lines, transformers, and switches, information bubbles appear that tell him performance data, repair status and history, key repair information, safety information and so on. At this moment, the individual benefits from the real-time information, the ecosystem from his additions to the system of engagement, and the enterprise from faster, safer repairs.

Another example of a mobile moment app is the new official iPhone® app for the Masters Golf Tournament developed by IBM Interactive. The Masters Tournament app enables live stream of different events throughout the tournament, such as special contests, tournament play, and player press conferences. The app enables users to prioritize the events they attend while allowing them to be in two places at once as a spectator. For the ecosystem and the enterprise, the app enables them to improve the value to their customers, reduce foot traffic and congestion at the event itself, and learn from

viewing patterns what the most popular events are. The app also provides a basis of learning for what future apps should be, for example, if the Masters Tournament would like to pursue augmented reality features similar to the Wimbledon Seer app.

Identifying mobile moments can be a process of invention and discovery – some are crafted from ingenuity while others come from existing needs looking for a solution. In the case of augmented reality, the mobile moment was created largely from the imaginative mind of the engineers and developers who could see a new way of interacting within the context of walking a busy tennis event. It leverages the device's GPS plus the camera as a means to define the context of a user's situation. With the Master Tournament video feature, users have long desired to view multiple events without the inconvenience of constantly walking the expansive course. The video was a mobile moment that fulfilled a long known consumer need.

Figure 2
Masters Tournament Application.



Leading Practice

Journey Mapping

One technique IBM Interactive and other organizations use to discover potential mobile moments is Journey Mapping. Journey Mapping is a formal analysis of a customer's (or employee's) total experience and interaction set with a company, looking at events far before an actual purchase and stretching well into the product or service experience and beyond. This comprehensive view of interactions enables the planning organization to catalog key moments and context within the users' experience. Besides capturing the events, good Journey Mapping codifies the importance, emotions, behaviors, sensations, and other qualities of each moment to best understand how they could potentially be leveraged in a mobile app situation.

Identifying the right mobile moments becomes the first critical decision in an organization's journey to capitalize on mobile apps. The process, like any major decision an organization makes, needs to be comprehensive, collaborative, and thoughtful. The best approach is to make this discovery process a formal initiative that calls on the skills and perspectives of many people who are vested in the experiences and outcomes of customers or employees. Formal techniques in identifying context, needs, and interaction should be used to frame this strategic discussion. Upon creating the perfect vision for your organization's mobile moments, the second challenge – and major decision point – becomes paramount: how to execute.

Deploying and managing mobile apps: Finding a four-way balance

Once the mobile moment has been defined, the next challenging aspect is determining its build, deployment and management decisions. These decisions all have varying cost, trade-off and complexity issues that need to be considered. For example, a decision to use non-native or web-based applications may reduce costs and make compatibility across devices simple, but it may seriously hinder the ability to make truly engaging, mobile moment caliber features.

Like determining the vision for the mobile moment and system of engagement, creating a comprehensive strategy and plan for execution should be a formal process of analysis, discovery, planning, and economic justification. As a baseline, there are four major areas that organizations should consider in their mobile execution strategies.

1. Audience

The first priority is determining who your audience is for the app, with the largest distinction for enterprises being consumer or workforce.

Designing for consumers has serious implications for application compatibility across device types, need to be ironclad in their dependability, be easy to distribute, and particularly easy to use as consumers tend not to tolerate any training or instruction to use an app. The economic analysis of consumer apps should consider upside considerations, asking questions such as "Will this app generate more sales or revenue? Will it differentiate our brand or competitiveness? Will it increase loyalty?" Consumer apps may be revenue sources of their own if they are for sale and have opportunities for alternate pricing models (for example, subscriptions, add-ons, upgrades) for certain services. Other opportunities are found in cost avoidance, such as automating or avoiding customer service cases via the app.

Apps for the workforce have different considerations. With a captive audience, the organization can mandate a certain type of device, eliminating the need for cross-device compatibility. Internal audiences may be more tolerant of training or more frequent patches and upgrades.

Figure 3
Finding the balance in mobile app execution priorities.

Distribution of the app may have different implications if thousands of new devices have to be constantly updated in the field. The economic and business analysis of workforce apps likely focus on productivity, efficiency, cost avoidance/reduction, and work elimination/automation over upside factors. There may also be opportunities for improving attributes like safety, workforce field deployment, regulation compliance improvement, or asset maintenance.

2. Device type

With a half dozen different device types (for example, Apple iOS, Android, Microsoft, RIM) with their own native languages, choosing which devices to support and which not to becomes a serious dimension to the app plan. Understanding your audience helps prioritize the importance of each device type.

A new discipline is emerging within the industry called Mobile Device Management (MDM) that is tackling the complexity of managing multiple apps across multiple device types, and often across dozens of geographies, each with their own data, broadband, and language differences. Device type decisions affect issues such as support and patches, data plans and roaming considerations, remote support, and reimaging / decommissioning.

3. Distribution

Distributing the app, including its updates, add-ins, data, and content, must be considered in the planning stages of app development. Will you use an app store? Will users be able to search online for it or access through a web portal? For consumer apps, technical considerations are about installation, updates, and maintenance. For product developers and marketers, distribution might also include pricing attributes, marketing and creating awareness for app adoption, and measurement of distribution and use. Employee apps may have greater concern for independent distribution/installation channels, data security concerns, user authentication, and update frequency.

Leading Practice

Rapid prototyping for mobility

Rapid prototyping of apps enables technology and business teams to quickly test app outcomes, aid the design process in real-time, find successful and failed features ahead of development, and even create excitement and advocacy for the app initiative within the organization.

Three common techniques for rapid prototyping include emulation, simulation, and visualization.

An emulator generally is a piece of hardware used for tests. It is self-contained, and integrated into development environments and is able to debug apps in real-time.

A simulator is a piece of software that duplicates as precisely as possible so you can “run” your code to see if it is correct. The Simulator is relatively slow in execution.

Visualization is a “graphical” specification. It is a high fidelity wireframe with dynamic links to reflect real world navigation.

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4. Development and management

The app vision (the feature/function design) together with the audience, device type, and distribution culminates into a total strategy and plan for how to develop (code, build, test) and manage (distribute, host, update, secure) the mobile app. These decisions ultimately determine the costs of building and maintaining the app. These involve decisions about using native vs. hybrid to code the software, how to organize and staff the development team, how to host the software, considering using "mobility as a service" type of solutions, deploying the ongoing maintenance staff, and so forth.

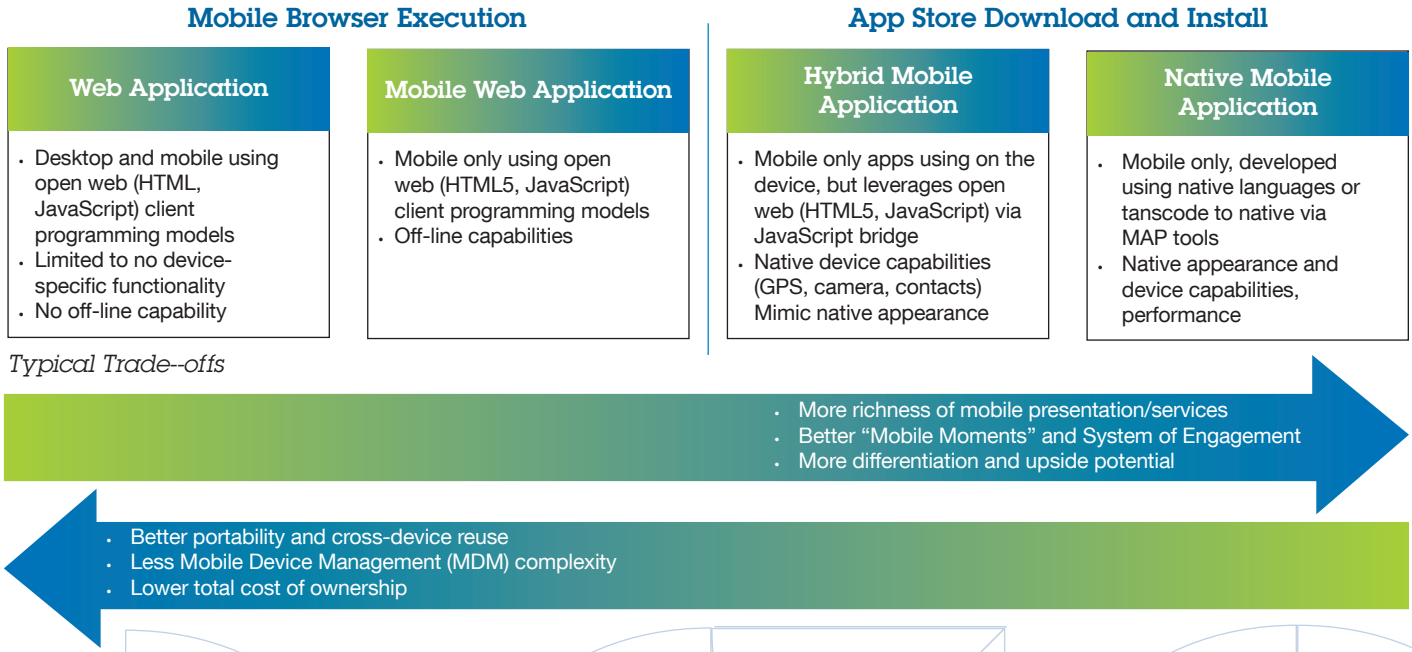
The diagram below shows deployment options and their various trade-offs. Generally, native development best supports higher end applications that can best support mobile moments and a system of engagement.

Those looking to trail blaze with imaginative functionality, capitalize on the unique input mechanisms of specific devices, and create unique experiences are most likely be on this side of the spectrum. Those seeking less MDM complexity and lower development/management costs are often considering web-based solutions.

As these technical activities are pursued, parallel efforts in marketing, sales, product support, tech support, help desk, training, and finance may all have to plan individual efforts to manage the business aspects of the application such as building awareness, collecting revenue, training employees, or organizational change management. While not explored extensively in the scope of this paper, these factors are profoundly important to realizing the benefits and return on investment in mobile apps and call for a collaborative approach across the enterprise to ensure success.

Figure 4

Spectrum of Development Approaches for Mobile.



Conclusion

As a relatively new, open, and emerging business phenomenon, mobile apps generate a high level of excitement and anxiety for enterprises today. In many ways, mobile apps represent the same level of intense speculation and innovation as the emergence of the web did back in the late nineties. With this in mind, mobile app developers have to simultaneously juggle finding game-changing innovations while also confronting the realities of cost and potential failure. It is because of the velocity of this environment that careful analysis, customer research, sound decision-making, thoughtful strategy, financial analysis, and comprehensive execution planning become more important than ever in delivering a successful mobile app program. Organizations today should give serious attention to these activities if they wish to capitalize on mobile moments and drive meaningful results from their customers' and employees' mobile engagement.

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Notes and Sources

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