KPMG
cutting through complexity

The Mobile Evolution

The challenges and opportunities of mobile

Volume 1

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KPMG INTERNATIONAL

Foreword

All hyperbole aside, mobile technology is radically transforming the world around us. By now, this reality should be clear to all: businesses across multiple sectors, consumers and governments alike. Indeed, most of us would be hard pressed to find an aspect of business and everyday life that has not already been touched in some way by mobile.

And while the mobile marketplace is moving at unprecedented speed – often with rather disruptive implications – the reality is that the wide-spread adoption of mobile holds significant opportunity for all types of organizations. For traditional enterprises, mobile offers a clear path to new revenue opportunities and business model transformation that – in many cases – should create unprecedented competitive advantage. For new market entrants, mobile could be the golden ticket that reduces the cost of entry, levels the competitive playing field, and allows innovative ideas to become billion dollar businesses.

Turning change into opportunity

Clearly, much has changed since KPMG published its Mobile Payments Outlook survey in July 2011. New products and services have been launched, cross-industry partnerships formed, and unexpected trends have emerged. Lessons have also been learned by keen observers who watched some mobile strategies soar while others plummeted at inception.

Likely the most important lesson for business leaders has been that success in the mobile marketplace takes much more than financial investment; it requires a strong (and realistic) understanding of the landscape and environment, a comprehensive and achievable vision for the future, the willingness and capability to learn from the mistakes and successes of others, the open-mindedness to work with competitors (so called 'co-opetition') and appropriate resourcing to turn change into opportunity.

This is unlikely to be easy: business leaders will need to balance pace against prudence to ensure that their mobile strategies support the long-term goals of the enterprise and that investments are aligned to the needs of the business. In many cases, the adoption of mobile will demand significant transformation as enterprises evolve their business models and enhance their operations in order to take full advantage of the benefits that mobile offer.

Where is mobile heading?

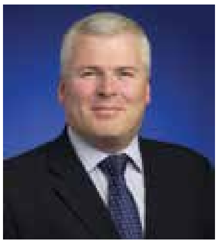
It is not surprising, therefore, that – with such dramatic and seemingly inexhaustible change underway – many business leaders find themselves somewhat bewildered by the complexity and scale of the mobile market evolution. Clearly, many challenges still lie ahead and many questions remain to be answered. What business models will prove resilient to future change? How will security and privacy concerns be overcome? Which payment technologies will win out in the long-term? What are the implications of newly emerging areas such as machine to machine (M2M) communication? In short, where is this all going?

To help answer these questions and clear away some of the complexity surrounding mobile, KPMG launched *The Mobile Evolution*, an ongoing article series examining many of the most pressing mobile issues facing executives today. Throughout the series, we have tapped into the experience and insight of industry experts and insiders to examine emerging trends, explain the latest concepts, and offer practical advice and recommendations to help business leaders turn mobile into sustainable business value.

This report represents some of the top articles from the first six months of the series. We hope that the articles and insights contained within help business leaders to develop a clearer understanding of the mobile marketplace and catalyzes the industry – technology companies, telecom providers, device manufacturers, banks, retailers and others – to work efficiently to solve the many challenges still facing the sector.

To read more articles in the series, we welcome you to visit kpmg.com/mobile. And, if you would like to discuss these ideas – or other mobile challenges facing your organization – we encourage you to contact your local KPMG member firm.

Sanjaya Krishna
Principal and Digital Risk Consulting Leader
KPMG in the US



Graeme Ross
Global Chair, Media & Telecommunications

Gary Matuszak
Global and US Chair, Technology, Media & Telecommunications

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Executive summary

There should be little doubt that mobile is a game changer. It is a rare business that is not in some way impacted by the opportunities and risks presented by mobile – whether they be new channels to market, creative ways of interacting with customers and engaging employees, or opportunities to drive cost efficiencies for businesses.

Indeed, it is hard not to be dazzled by the massive potential represented by mobile. But if all the hype can be believed, it seems clear that mobile is already taking over the world and dominating the lives of both consumers and the enterprise.

The statistics are certainly compelling: mobile subscriptions have increased by 45 percent over the past four years and – by the end of 2011 – almost 85 percent of the world's 7 billion people had access to a mobile device;[1] by the end of 2010, smartphone shipments had overshadowed PC shipments, making mobiles the *de facto* computing platform of choice;[2] and between 2008 and 2011, revenues for mobile apps and advertising grew by 153 percent (CAGR) to reach GBP12 billion.[3]

Yet, as the following articles point out, the market for mobile is still evolving, leading to new opportunities and challenges for executives.

Changing the way we pay

Mobile banking has already revolutionized the financial services industry. How will mobile payments transform not only the industry but also the way customers and companies interact? As **Kunal Pande – a Partner with KPMG in India** – points out (page 4), many emerging and developing world markets are ripe for mobile payments adoption with high mobile penetration and a huge unbanked population. In the West, notes **Mark Hale, Head of Payments at KPMG in the UK** (page 6), rising stocks of NFC enabled payment cards, new industry partnerships and the growing acceptance of devices is helping to drive the market.

Delivering a secure experience

Everyone in the mobile ecosystem is concerned about security and privacy, not least of all consumers and business users. But rather than let security and privacy concerns paralyze the development of a mobile strategy, notes **Stephen Bonner, a Partner with KPMG in the UK's Information Protection and Business Resilience practice** (page 8), executives must instead work to develop a sound strategy that reduces risk and safeguards data. One area of growing concerns is mobile app security, an issue explored by **Christopher Ammann and Ryan Burns with KPMG in the US** on page10.

Working within the mobile ecosystem

As **Malcolm Alder with KPMG in Australia** points out on page 12, no single company has the capabilities or experience to properly manage the full mobile value chain on their own. Partnerships are critical to market success. But with the current mobile ecosystem split between a number of leading platforms, organizations – whether mobile operators, retailers, banks or technology vendors – will almost certainly want to ensure they are participating in (and contributing to) all of the key platforms in their ecosystem, argues **Chris Woodland, Partner, KPMG in the UK** on page 14.

Using mobile to transform the enterprise

'Going mobile' is about much more than simply introducing devices into the workplace, notes **Yvon Audette with KPMG in Canada** (page 16); it's about innovating your business and operating models in order to take advantage of the full – and significant – benefits that mobile can offer the enterprise. Getting there, however, will require organizations – and particularly executive leadership teams – to create an environment that supports and encourages innovation and transformation, an idea that **Juvanus Tjandra with KPMG in Singapore** explores in his article on page 18.

A device-empowered shopping experience

While many retailers may look suspiciously on device wielding foot traffic moving through their stores, others see great opportunity and are taking the initiative to make the most of it, according to **Bolette Andersen with KPMG in the US** (page 20). And, keeping in mind that what is on the consumer shelves today often ends up in the office tomorrow (think of how the iPhone has now become a common enterprise device), **Sanjaya Krishna with KPMG in the US** offers his perspective on page 22 on why mobile leaders should be watching the consumer market for enterprise tips.

A check up with the mobile MD

According to **Ashraf Shehata with KPMG's Global Center of Excellence in Healthcare**, mobile is going to bring about an entirely new way of delivering health services. On page 24, he describes how mobile devices already allow specialists from halfway around the world to consult with patients, while remote monitoring devices are essentially bringing nursing and diagnostic staff right into the patients' home. And when patients do need to use location-based health services, mobile applications are helping them find the closest and most appropriate care at just the touch of a button. Get ready to see the mobile MD… your device.

What these articles – and others in our ongoing series – make plainly clear is that the pace of change and the opportunities created by mobile are unstoppable. For businesses, the simple reality is this: it is no longer an option to sit on the sidelines or take a cautious approach to mobile, businesses have to strive to get ahead of the curve to survive.

The bottom line is that those enterprises that are either not willing or not able to change their business models to meet this new mobile paradigm will almost certainly miss out. There should be no doubt that mobile is finally about to take off; the real question is whether today's businesses are prepared to survive the ride.

Mobile payments: the view from the East

By
Kunal Pande
Partner
KPMG in India

In a land where almost a billion people own mobile phones, cash is still king and large swathes of the population have no formal bank account, mobile payments are quickly becoming a critical part of India's economy.

In many ways, India's mobile payments sector shares many of the same challenges and opportunities as its peers in any other market – mature or emerging – around the world. Privacy and security are key, as is ease of use and accessibility. Indian banks and telecoms companies, like their foreign counterparts, struggle with technology integration and customer education, and fret about merchant adoption and the impact of regulation.

On the fast track

But take a deeper look and you will quickly find that India's payments market is bounding ahead and – in a number of areas – seems to be well on the road to overcoming many of the challenges that continue to plague their peers in other markets.

Mobile phone penetration is booming and – while levels have not quite reached that of some Asian or European countries – few people in either the cities or the furthest reaches of the countryside are without some level of access to a mobile phone. Banks, on the other hand, are few and far between; in fact, it is estimated that only about a quarter of all Indians have a bank account, while more than 60 percent own a mobile phone. Faced with these dynamics, it does not take long to realize that mobile payments will ultimately bring transformation to not only the payments industry, but society at large.

Cooperation not competition

One of the most promising signs of India's leadership in mobile payments comes from the high level of cooperation within the industry itself. On both the banking and the telecoms sides, we are seeing players come together and put aside their competitive differences in order to develop common standards and approaches to mobile payments. All stakeholders – banks, telecoms operators, technology providers, regulators and government organizations – have created the Mobile Payments Forum of India (MPFI), and are collaborating to address the market needs.

And while this may seem like a portent for a deep division between the telecom carriers and the banks, the reality is that both are working closely with the Reserve Bank of India (the banking regulator) and the Telecoms regulator to ensure that the industry is moving towards a level of standardization and interoperability that should allow the development of an open and interconnected mobile payment ecosystem across the country.

The pace picks up

As a result, India has witnessed the ascendency of two initiatives that, together, are accelerating growth of the mobile payments market. Interbank Mobile Payment Service (IMPS), a platform developed by National Payment Corporation of India is already adopted by more than 50 of India's banks to offer instant payment and remittance services using SMS, WAP, and a range of mobile apps.

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It seems India is poised to become a best practice for rolling out #mobile payments in the developing world.

Kunal Pande
Partner
KPMG in India

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Mobile payments: the view from the West

By
Mark Hale
Head of Payments
KPMG in the UK

In the mature markets of Europe and North America, mobile payments have exploded onto the stage as a critical imperative for banks, mobile operators and merchants. Mobile is seen as a valuable opportunity to protect existing revenues, add more 'value' to the customer, and create new revenue generating opportunities.

The allure of mobile payments

For the banks, mobile payments provide a unique opportunity to build customer loyalty, unlock cross-selling propositions and create a more efficient and effective interface for processing transactions. For the telecoms companies, mobile payments offers a viable path for moving further up the mobile value chain by providing payment and data services (as opposed to simply becoming the 'dumb pipe' that payments flow through). For merchants, mobile payment solutions increase average transaction revenues, increases customer throughput and provides a more information-rich experience for loyalty and targeting propositions than other instrument.

The power of data

Likely the biggest opportunity for each sector, however, lies in the data that is generated through mobile payments. Indeed, those that are able to most effectively 'mine' customer data will be able to offer their customers more attractive and more relevant services at the time that they wish to buy them: customer analytics will deliver more management information to merchants, purchasing patterns will better inform the loyalty card businesses, spending trends will help consumers better manage their finances.

This intrinsic value of payments data has not been lost on the new entrants now rushing to join in the market. Google wallet, for example, provides value to the online behemoth not by delivering a cut of the payments revenues, but rather by allowing the company to overlay their own data on top of the payments data in order to create deep and rich market insight. Apple® – should they enter the market as many anticipate – would similarly benefit from the reams of payment accounts, active customers and data that its current offering and mobile payments would provide.

However, it must be said that the mobile payments market in the developed world has been somewhat slow to move into the mainstream. Few standards exist on a national level, let alone on a regional or global level; technology is still a massive question mark as different forms of mobile payments vie for dominance; interoperability is still a distant possibility; and merchant adoption has been sedate at best.

Collaborative transformation

The mobile market potential is changing as a number of leading markets are now investing in industry-wide mobile payment solutions, often connected to an immediate payments clearing and settlement backbone. Also the stock of NFC (Near Field Communication) enabled payment cards and acceptance of devices is rapidly making the market ready for a collaborative transformation. The mobile payments market is finally inflecting, even if an additional push is needed to 'get it over the line'.

Yesterday's world, where mobile payment options in the Western markets tend to revolve around tie-ups between a single bank and a single mobile operator is being outmoded. Accepted wisdom has been that cross-industry collaboration is a critical stepping stone to the success of mobile payments, but this could take many forms. For example a proxy approach may be used to leverage assets (UK Mobile Payments), whereas an integrated approach may be used to align operating models (Near Field Communications). Solutions are being found and barriers are being torn down or avoided. Regulation and financial constraints have also played a role in slowing adoption of mobile payments. Many banks are distracted from innovation because they are focused on meeting the torrent of regulatory requirements that have been placed on them since the financial crisis. This has sometimes meant that there is little appetite for new channels that may result in further compliance complexity. And with capital ratios putting pressure on the investment capacity of most banks, few seem willing to outlay capital on building out a new system that, currently, is only being demanded by a small section of customers however significant the potential.

That is not to say that there have not been bright sparks of success in the market. A multitude of NFC pilots have been successfully concluded and most have demonstrated that the technology will be accepted and effective once the market commitment on the acquiring side and the issuing side are brought together into a clear market transformation. Without this, new pilots simply repeat the steps of their predecessors at best and at worst, risk sending a message to consumers that NFC is not fit for purpose.

The shape of things to come

That being said, the market is still driving forward, driven by a clutch of global and national banks and telecoms companies who see 'innovation' as a core brand value. Whilst most of the smaller regional institutions seem to be taking a 'wait and see' approach, before committing themselves to a particular mobile strategy, the national market investments we see around the world will demand commitment sooner rather than later.

Over the next two years, we believe that we will start to see many of the major barriers start to fall away as banks and telecoms start working together to create standards and protocols that drive interoperability. But those that are early into the market will find that they can not only build valuable experience for both their customers and IT leaders, they will also be able to help shape the direction that mobile payments will take in the future.

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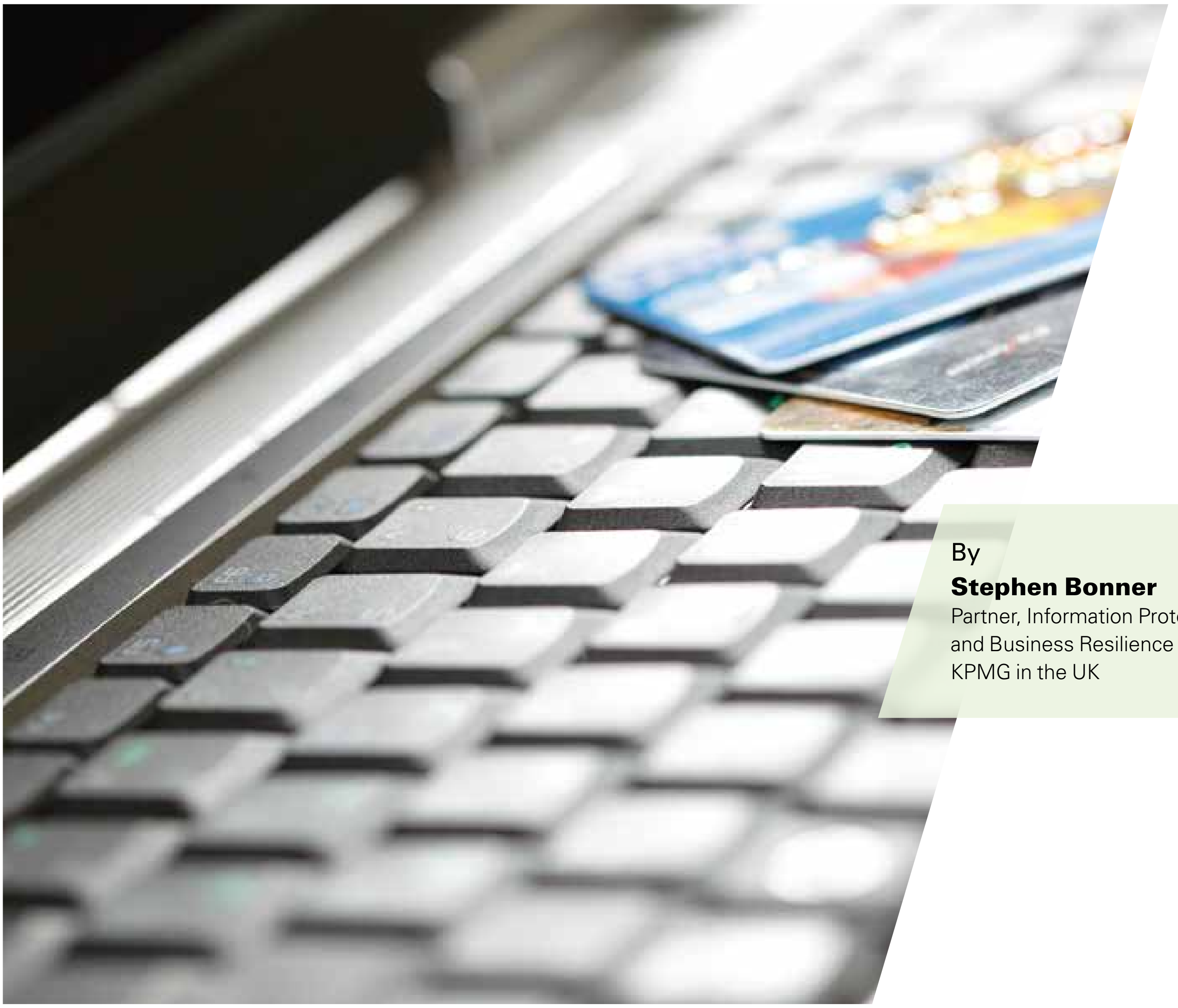
Many Near Field Communication (#NFC) pilots have been successful & demonstrated that the #technology will be accepted.

Mark Hale
Head of Payments
KPMG in the UK

"Over the next two years, we believe that we will start to see many of the major barriers start to fall away as banks and telecoms start working together to create standards and protocols that drive interoperability."

Taking control of mobile security and privacy



By
Stephen Bonner
Partner, Information Protection and Business Resilience
KPMG in the UK

It seems everyone is concerned about protecting their privacy and security on mobile devices. Indeed, according to a recent survey by KPMG International, *The Converged Lifestyle*, 90 percent of consumers are worried about the threat of unauthorized parties accessing their personally identifiable information through their mobile device.

Executives are also worried; and justifiably so. Given the recent litany of highly-publicized – and in some cases financially damaging – corporate security breaches, many executives have started to fret about the potential security risks that mobile may bring to their businesses.

And while this high level of paranoia and concern may simply be dismissed as the natural birth pangs of any new technology, the threat and risk must be taken seriously. Those that manage the risk well will find that this mobile revolution actually leads to greater security and privacy protection, while simultaneously delivering opportunities to engage with clients and customers in exciting new ways.

Being its own worst enemy

There is some truth to the idea that mobile, currently, is somewhat riskier than some other forms of technology or payment. In fact, some of the most compelling benefits of mobile also act as a double-edged sword. Their small size and compact design, while a key feature for consumers, also means that mobiles frequently end up lost in the back of cabs and other public places. Their small user interfaces and tiny keypads – central to their convenience – also tends to lead users to use shorter and often less secure passwords. And as more and more of our activities start to be enabled by mobile, so too will the amount of personal data that must be kept secure on our devices.

And the simple truth is that things are only likely to get more complicated as more and more devices come onto the market alongside an avalanche of new apps and functions. Each will open mobile up to weaknesses that can potentially be exploited by the nefarious.

Mobile myth-busting

But, taken in balance, it would seem that the potential security and privacy attributes of mobile may, in the long-term, far outweigh the risks. Already, many forms of mobile payments have become more secure than cash or checks. A lost wallet, for example, would require the estranged owner to cancel all credit and identity cards and essentially kiss any of the cash in the wallet goodbye. A lost mobile, on the other hand, can quickly and remotely be wiped clean and the data swiftly migrated to a new device – with money and identity intact.

New approaches to mobile security are now starting to emerge, many using the unique characteristics of mobile devices to reinforce and strengthen protocols. By using the geo-location feature of a cell phone when faced with a suspicious transaction, card companies can surmise – with a relatively high level of confidence – whether the cardholder was, in fact, present at the transaction. It's not too far a leap to prophesize the introduction of biometric authorization using the device's camera, or any number of new approaches that turn science-fiction into reality.

Taking a balanced approach

Rather than let security and privacy concerns paralyze the development of a mobile strategy, business executives must instead embrace mobile and – by carefully considering its inherent risks and opportunities – work to develop a sound strategy that reduces risk and safeguards data. And while security approaches will be different from company to company, there are a number of common considerations that may universally apply.

- **Ease of use:** Mobile security processes must be straightforward and convenient. The more complicated the process, the more opportunity is left open for phishers and hackers to take advantage. Executives must be sure that their security measures never start to overshadow the convenience of the mobile channel.
- **Customer awareness:** Education will be a key component of overcoming consumer's security concerns. At the business-to-consumer level, this will require companies to clearly explain the measures they have taken to protect their customers. At the industry level, businesses must bind together to articulate the real risk profile of mobile to a skeptical general public.
- **Technology planning:** Executives will need to ensure that their developers and IT leaders are thinking about the deeper tactical implications of mobile and how these impact the risk profile for the company. For example, how much information will be stored on the device versus in the cloud? Will upgrades to applications be automated to ensure security gaps are quickly slammed shut?
- **Ongoing verification:** Given the speed of change in the mobile ecosystem, executives will need to focus on creating appropriate controls and governance processes to ensure that any changes to the platform or software are thoroughly tested and certified to meet the high expectations of customers.

The bottom line is that executives have every right to be wary of the security and privacy risks involved in mobile, but not to the detriment of their mobile strategies. Indeed, those that are able to manage and mitigate the risks while pushing forward with mobile innovation will almost certainly find themselves poised to dominate in this new market.

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Those that manage the risk of #mobile will find that this technology leads to greater security & privacy protection.

Stephen Bonner
Partner, Information Protection and Business Resilience
KPMG in the UK

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Securing your mobile apps: six priority areas

By
Christopher Ammann
and
Ryan Burns
KPMG in the US

The pace at which mobile apps have permeated into our everyday lives is astonishing. It has, after all, been less than five years since Apple opened the first app distribution service and, already, apps have become a critical and ubiquitous aspect of most people's everyday lives.

In 2009, just one year after the first mobile apps were put onto smartphones, users downloaded more than 9 billion[4] of them; two years later that number had more than tripled to 29 billion. Pundits suggest that 2015 will see the number soar to 183 billion.[5]

This is not all Angry Birds and restaurant reviews; many enterprises have also found apps to be a valuable tool for enhancing productivity, driving mobile adoption and increasing efficiency. The trend is set to continue; according to the researchers at Gartner, almost nine in ten enterprises will likely support corporate applications on personal mobile devices by the end of next year.[6]

A new and flexible model for development

In part, this is because app development offers organizations a new and different model for delivering IT support and services. Rather than spending two or more years developing a near-perfect piece of software, apps are developed in a more iterative fashion where improvements and new functionality are bolted on as they are demanded or developed.

This is both a good and a bad thing. On the one hand, this development style allows for greater flexibility, faster development time and a greater ability to make changes or fix bugs as needed. It also means that opportunities for competitive advantage can be capitalized upon as soon as they are identified.

At the same time, however, the approach creates new challenges, particularly for risk managers, security leaders, executives and even the developers themselves. For one, an application that is rushed to market too early may meet with negative reviews and fail to ever gain sufficient traction. Too many upgrades and fixes also carry the potential for overwhelming devices or soaking up valuable bandwidth.

The imperative of rigorous testing

The greatest challenge, however, relates to security and resilience. Indeed, with applications now holding increasing amounts of our personal and mission-critical enterprise data, the ability to adequately test mobile apps has become a vital capability for software developers and enterprise risk teams alike.

But interestingly, many mobile apps seem to enjoy a veritable 'free pass' when it comes to testing, particularly when compared against the rigorous risk testing and resilience planning that once defined enterprise software development.

Key areas of focus for testing

In our experience, mobile apps – whether in the consumer or the enterprise market – should undergo rigorous testing against six key criteria:

- **Interoperability:** With the potential for numerous applications and services running simultaneously on a mobile device, testing must address how the mobile application responds when other services are active.
- **Recoverability:** Mobile app testing should consider a range of potentially unexpected events that may occur such as power limitations, faulty devices or platform failures – particularly since modern mobile operating systems tend to do a poor job of managing concurrent services and applications.
- **Efficiency:** While today's mobile devices boast a myriad of power hungry components including GPS, multiple network radios, and video cameras, some providers may not offer sufficient battery capacity in their devices to consistently power these components, making the efficiency of power consumption a critical testing point.
- **Security:** All too often, mobile apps rely on unsecure connections, store data unencrypted, or allow direct access to data through an unsecure interface. Testing should address these potential security issues through the use of application and network security testing tools.
- **Fault tolerance:** Since mobile devices are (as the name suggests) mobile they are exposed to a litany of new problems such as suspended connections, varying network strengths, or the temporary loss of a GPS signal.
- **Usability:** Given that user experience of the application differs by device, and that enterprise users are increasingly being encouraged to bring their own devices to the office, mobile app testing must account for the wide variety of devices that may be used.

Putting testing at the forefront

The bottom line here is that testing cannot be an afterthought for application developers and enterprise risk managers. Indeed, organizations must take a risk-based approach to help ensure the success of their mobile apps in the marketplace.

To achieve this, new testing techniques and tools will be needed to help companies quickly develop and redesign secure, stable, functional mobile apps. Such techniques and tools must – above all – help risk managers and developers to manage and mitigate the business and operational risks specific to mobile apps.

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The ability to test #mobile apps is a vital capability for software developers & enterprise risk teams.

Christopher Ammann
and
Ryan Burns
KPMG in the US

Testing cannot be an afterthought for application developers and enterprise risk managers. Indeed, organizations must take a risk-based approach to help ensure the success of their mobile apps in the marketplace.

Driving mobile success through cross-industry collaboration

By
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Partner
KPMG in Australia

If the rise of mobile has taught us anything, it is that cooperation across multiple industries will be critical to success in this space. Indeed, in KPMG International's *2011 Mobile Payments Outlook*, we forecasted that organizations were poised to collaborate more to create compelling market propositions that could not be achieved through 'go it alone' efforts.

The value of partnership

Nowhere is the need for cross-industry collaboration more keenly felt than in mobile payments. As both banks and telcos begin to realize that neither can fully dominate the market alone, new models of cooperation are emerging. Last year AT&T, Verizon Wireless, T-Mobile and Discover Financial Services joined up to form ISIS in the US. At the same time, Google was busy striking up partnerships with Sprint, Citi, MasterCard and First Data to develop new services and establish dominance in the nascent market. We have since seen Starbucks become Google Wallet friendly and, more recently, the Spanish telco Telefónica announce their plans to sell their aggregated customer data to retailers to enable better targeting. Telefónica's Digital hub also joined forces with Mozilla earlier this year, and there is wide-scale industry support from the big telco operators and device manufacturers, for Mozilla's plans to launch smartphones in 2013 that use a new fully open mobile ecosystem based on HTML5. In Australia, Telstra has recently announced a strategic partnership with Australia Post to enable customers to have access to a Digital Mailbox that will provide a variety of functions including the ability to pay bills from anywhere, anytime on mobile and all other devices. While in the UK, we have seen direct competitors forming JVs in the telecoms sector to provide a cross-carrier mobile payments platform, such as the JV from Vodafone, O2 and Everything Everywhere.

And, increasingly, the idea of cooperation in the mobile space has started to seep into other industries not traditionally known for forming opportunistic partnerships. In healthcare, for example, telecom and technology companies are starting to work in collaboration with healthcare systems to develop and launch innovative eHealth services that not only extend the reach of health services to hard-to-reach geographies, but also help health systems make better use of their resources.

The automotive industry is another sector where mobile partnerships may add incremental value and create new differentiators for manufacturers. Remote tracking, car sharing programs and 'connected' cars will require automotive OEMs to leverage the mobile-savvy experience of both telecom and technology providers in order to create reliable, efficient and effective solutions.

Eyes wide open

While the value of cross-industry collaboration in mobile is becoming increasingly clear, many are finding that establishing and maintaining these partnerships is rather more difficult and complex than anticipated. In part, this is a cultural challenge: most big players in the mobile field are accustomed to being the 'gorilla' in any partnership that they participate in and – as a result – bridle at the idea of sharing leadership with new partners. But the reality is that cross-industry cooperation will likely bring together a number of Silverbacks who will need to learn how to cohabitate in order to achieve mutual benefits.

Even in cases where dominance is not an issue, partnerships can quickly become strained and eventually disintegrate as market dynamics start to change and individual participants evolve. Indeed, today's partner may well be tomorrow's competitor and – with this in mind – many players are choosing to enter into bilateral partnerships on narrow terms rather than creating more complex (yet more comprehensive) grand alliances. MVNOs (Mobile Virtual Network Operators) have long been an example of this, where the operator provides a clearly defined and usually relatively narrow capability set to the brand partner, such as Virgin.

Mobile, however, does kick up a number of unique challenges that should be addressed early on in the development of any partnership. The ownership of the customer, for example, is a sticking point that can easily become contentious. When it comes to payments, both the telcos and the banks are keen to ensure that they maintain the customer relationship, for example, and this has already caused some friction between the two sectors. Similar challenges stem from the ownership, use and access of data within the partnership, particularly in the retail sector where everyone from the telco through to the retailer's loyalty program administrator will need to harvest value from the data in some way.

Creating a long and happy relationship

Ultimately, much of the success of partnerships comes down to two basic – yet very important – steps. First, ensure there is alignment within the partnership on what each party's objectives, roles and responsibilities are. The success of the partnership will depend on ensuring there is enough commonality between parties to make the relationships work, yet not so much overlap as to create friction in the future.

The second step is to develop strong governance and issues resolution frameworks to ensure that if and when disagreements do arise between members of the partnership, they can be solved quickly and equitably while allowing the work of the partnership to continue unfettered. An example of this is dealing with liability attribution in the case of a significant systemic fraud.

The reality is that the development of cross-industry collaborations will be inevitable for any organization seeking to grow into new sectors or offer new services through the mobile channel. No single company has the capabilities or experience to properly manage the full value chain from device through to payment clearance (nor would many want to).

The question for executives, therefore, should not be whether partnerships will need to be formed, but rather how the right partners will be selected and how the relationship will be structured to ensure that everyone – including the customer – gains value from the arrangement.

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No single (#payments) company has the capability to manage the full value chain from device to payment clearance.

Malcolm Alder
Partner
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Growing the mobile ecosystem

By
Chris Woodland
Partner
KPMG in the UK

In speaking with clients around the world, I'm often asked about the mobile ecosystem. Who is dominating the ecosystem? How is it changing? What does the future hold?

The battle to dominate the ecosystem

The first thing to recognize is that the mobile ecosystem is neither homogenous nor platform agnostic. Rather it is heavily influenced by a small number of dominating platforms that, if truth be told, wield the power to transform the entire industry and its key value chain components.

Platform markets generally standardize to two or three. In mobile, Apple and Android™ currently dominate at around 80 percent market share. Yes; Android is the clear winner in terms of unit sales, but Apple is still the number one when it comes to value – either from revenue generated by applications, e-commerce commissions, and web traffic.

These platforms recognized early that success depends on an incentivised developer community, which in turn builds scale and financial investment in the form of more application development. In other words, app stores have become a key ecosystem control point. A platform's place in the ecosystem therefore is largely based on the prevailing business and revenue sharing models between participants.

Competition drives innovation and choice

We have however also seen multiple competing business models evolving in tandem within the same geography and sector. In Europe alone there are dozens of mobile banking platforms, many of which offer what are essentially identical services.

Consumers want choice and a great user experience: nobody likes to be told that they can only use a certain phone or a certain payment card nor that they are tied to a group of service providers simply because of their platform.

Competing platforms are also advantageous for the sector. Competition drives innovation, ensuring the customer experience as well as value is – most of the time – a priority. It also helps ensure monopoly situations do not arise, focusing ecosystem participants on providing the best services at the lowest cost.

Keeping the field wide open

The interesting part of all this is that few – if any – organizations cater to just one platform. App developers often create different versions for different platforms. The same can be said for retailers and banks which, if tied to just one platform, would be putting themselves at a significant disadvantage and limiting their accessibility.

But participating on multiple platforms brings different problems. Increased cost, multiple service offerings, rising complexity and even competing go-to-market strategies create a management and resource nightmare.

Taking a bigger part of the value chain

While the beauty of a well-calibrated ecosystem is that there may not be one dominating centre of gravity, many organizations are currently focused on enhancing their position within the ecosystem to increase their gravitational pull and command a greater share of future spoils.

For example over the past 18 months almost every major mobile operator has announced some form of hub dedicated to developing, incubating and commercializing new ideas and services for their mobile offerings.

This is partly a defensive move to ensure that they as operators are not relegated to offering a low value utility. It also reflects emerging revenue opportunities such as OTT video and messaging services, data analytics arising from increasingly vast machine-to-machine connections, payments, smart metering and location-based services that would align well with operators' business models while allowing a shot at earning a greater share of the customer's wallet.

No single solution

The mobile ecosystem is dynamic, and platforms will continue to drive distinct aspects of the ecosystem. The iOS will, for the time being, address more 'premium' segments, and Android will focus more on the mass market and value segments in the developed and developing world. Any organizations playing in the mobile space – whether mobile operators, retailers, banks or technology vendors – will almost certainly want to participate in, and contribute to, a number of key platforms within the ecosystem (for now at least).

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Successful #mobile platforms have a robust #application developer community to drive market demand.

Chris Woodland
Partner
KPMG in the UK

The mobile ecosystem is neither homogenous nor platform agnostic. Rather, it is heavily influenced by a small number of dominating platforms that, if truth be told, wield the power to transform the entire industry and its key value chain components.

Driving growth through mobile

By
Yvon Audette
Partner
KPMG in Canada

Nobody ever grew their business by maintaining the status-quo. So it is with mobile: those organizations willing to innovate their business and operating models are achieving results in the new mobile era, while those standing on the sidelines are quickly falling behind.

The power of innovation

You only need look at the experiences of some of the biggest brands to see a stark lesson in the need for radical innovation to unlock mobile growth. Apple has clearly leveraged mobile to completely reinvent their business model. Devices such as the iPhone® and iPad® have been the driving force behind much of the growth in mobile adoption over the past five years, while iTunes® and the aligned App Store® have created new revenue models for both Apple and its retail and media partners.

Tablet technology is being used in retail, similar to the Apple Store® concept, to increase speed of service, productivity and efficiency. And Amazon continues to dominate mobile: their mobile app allows consumers to compare prices when inside stores by scanning barcodes, taking photos, or searching to compare prices and check availability. Indeed, some of the more tech-savvy retailers have seen an opportunity to offer exclusive deals to smartphone customers.

And some smaller and newer companies are also seeing huge mobile opportunities: the award-winning Payfirma was the first in Canada to commercialize a mobile point of sale with a credit card reader, and now offers a payment platform for businesses to accept payments online, in-store and while mobile. Their premise is to make payments fast, cost effective and seamless for both the consumer and businesses.

Turning mobile into money

Similar experiences can be found in almost every sector and region. In particular, those operating in the telecommunications, media and technology sector quickly found that their entire survival has rested on their ability to successfully transform in the mobile space. Many are still trying to figure it out: some of the world's leading device manufacturers have been laid low (think RIM or Motorola), content providers continue to struggle to create sustainable revenue streams (as illustrated by Facebook's current travails) and many of the biggest technology companies have been slow to the game (especially in the enterprise technology space).

And while there continues to be a smoldering debate on the future of mobile apps, it seems fairly clear that the platform is one of the most successful ways to convert mobile into revenues. The app ecosystem continues to grow at a remarkable pace, those that are transactional in nature are seeing rapid and wide adoption, creating new revenue opportunities for a wide range of organizations including governments, not-for-profits and corporates.

More than one way to improve the bottom line

But winning in the mobile space is not just about creating new revenue streams. In fact, some of the greatest mobile growth strategies result from enabling mobile within the enterprise to drive down costs, enhance efficiency and increase productivity.

A good example of this can be seen in public transportation systems around the world, not traditionally known for their efficient ticketing systems or customer service. Take the UK's Oyster card system, for example, with its convenient online top-up facility, and pay-as-you-go model. This has resulted in a smarter, faster and more economical ticketing system in one of the world's busiest capital cities.

This will not be a simple transformation for most businesses. Indeed, achieving sustainable growth from mobile within the enterprise environment will require organizations to rethink everything about their business from their market strategy right down to procurement. No value will come from arming every employee with a mobile device unless the business also transforms its underlying processes and operating models to truly embed mobile into the very fabric of the enterprise.

Giving a tablet to a hospital doctor, for example, does little to improve patient outcomes unless health data and patient records are made accessible by mobile. Similarly, there is no use enabling an office worker with mobile technology unless they can access and operate core enterprise systems. And there is little benefit in offering customer ordering via mobile unless that system is integrated into the manufacturing and supply chain operations.

Yes, embedding mobile into the enterprise can be disruptive. But the journey can also be highly rewarding. Those who take a systematic and strategic approach to thoroughly reassessing their current operating models and processes will find new opportunities to enhance efficiency, drive productivity and encourage innovation, all of which ultimately lead to growth.

The story will be remarkably different for those that are unwilling – or unable – to reinvent themselves into a truly mobile-enabled enterprise.

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Yvon Audette
Partner
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"Achieving sustainable growth from mobile within the enterprise environment will require organizations to rethink everything about their business from their market strategy right down to procurement."

Catalyzing the mobile enterprise

By
Juvanus Tjandra
Partner
KPMG in Singapore

Ask any executive in almost any industry if they have a mobile strategy, and the answer will almost certainly be a resounding yes. Most will point to shiny new mobile sites or WAP applications that – essentially – translate enterprise websites into mobile accessible pages. Others will quote stats on employee mobility based on enterprise device penetration and usage.

Transformation from innovation

But, in my experience, few organizations have yet to embed mobile into their overall business strategy and operating models. Simply put, mobile has most often been seen as an enterprise IT 'add on' rather than a catalyst to enterprise transformation.

However, we are starting to see some examples of enterprises and industry sectors where mobile adoption has led to innovations that have dramatically altered the business process and operating models.

Likely the most obvious example comes from the supply chain and logistics sector where mobile has unlocked new and improved processes to monitor the movement of goods or analyze more efficient delivery routes. This has led to improved margins, reduced down time, more accurate tracking and leaner supply chains.

Governments are also getting in on the game. In Singapore, reportedly, town councils have even created mobile applications that allow residents to submit photos of 'community issues' – such as lamp-post replacements or contaminated public spaces – that can then be prioritized and remedied by the appropriate government department.

Creating a supportive environment

Clearly, this type of innovative enterprise thinking cannot be catalyzed by simply arming employees with smart phones and expecting innovative change to miraculously appear. Indeed, capturing real enterprise value and innovation requires organizations – and particularly executive leadership teams – to create an environment that supports and encourages innovation and transformation. In other words, employees must be encouraged to take calculated risks if the outcome leads to new ideas or new operating models.

Moreover, organizations must also start to rethink their existing processes and ways of working to explore how mobile may enhance efficiency, drive productivity or increase business flexibility. More often than not, enterprise innovation in mobile is thwarted not by a lack of creativity, but rather by inflexible and outdated processes that only go to reinforce the enterprise status-quo.

Understanding the limitations of local infrastructure and mobile capabilities within operating markets is also key. In Asia, for example, mobile capabilities vary from one country to the next. Some, like Korea, Japan and Singapore, are believed to be more mature mobile ecosystems and are therefore leading the way in embedding mobile into the enterprise. Many others are still at the 'interacting stage' where mobile is being used to access websites, browse information or check prices. But there are also parts of Asia that are essentially only just connecting to mobile; not surprisingly, Myanmar and North Korea suffer the absolute lowest mobile penetration rates of any country around the world.[7] It is not always possible, therefore, to develop one clear and consistent global mobile strategy for the enterprise.

Taking the right steps to mobile success

There are, however, a number of steps that organizations can be taking today that can lead to competitive advantage in the future. For one, executives must start to develop a digital strategy that not only reflects their business objectives, but also their customers' needs and expectations. Then the trick is to find a way to operationalize the strategy within the realities of the local markets and available technologies.

This, in turn, can lead organizations to identify and manage risks related to mobile. Some are fairly routine – how to secure data and customer information within the IT environment, for example – while others raise some unique challenges. How will we develop new applications or services? What third party providers should we partner with to execute our strategy? Which technologies will be required to achieve our digital strategy? What is the impact of mobile on our existing IT architecture?

No such thing as a 'future proof' model

The only constant is change and never has this been more true than in today's technology market. Indeed, change in mobile technology is expected to continue to pick up pace unabated for the foreseeable future, meaning that enterprises and their executives will need to be vigilant about monitoring technology and customer trends in the marketplace and adapting their digital and mobile strategies accordingly.

The reality is that mobile is a fast-changing game and one that provides ample opportunity for organizations to differentiate themselves and improve operations; those that do not take advantage may soon be left behind by more nimble and innovative competitors. Those that embrace the change that mobile can bring, however, will almost certainly reap the rewards of improved productivity, increased efficiency and greater customer loyalty.

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Partner
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"More often than not, enterprise innovation in mobile is thwarted not by a lack of creativity, but rather by inflexible and outdated processes that only go to reinforce the enterprise status-quo."

Retailers mobilize

By
Bolette Andersen
Principal
KPMG in the US

Mobile devices are now clearly a core component of the retail shopping experience. Recent estimates and surveys show that more than 80 percent of device owners used their smartphone or tablets to help them shop during the most recent holiday season, including more than 86 million US consumers (28 percent of the total population).

Indeed, anyone who steps into a retail outlet these days will find legions of shoppers peering – not at the merchandise on the store shelves – but rather into their devices to find price comparisons, download coupons, check inventories and get product information.

And while consumers' growing reliance on mobile devices may not come as a big surprise for many retailers, some of the more innovative ones are working hard to take advantage of the mobile channel to drive sales, increase loyalty and capture greater market share.

Turning showrooms into sales

The strongest example of this has come from retailers' response to 'showrooming' (where shoppers examine items in a bricks and mortar store, price compare on their mobile device, and then leave to purchase the item; often at a lower price and often somewhere else).

But a small (but growing) number of retailers have recognized the potential competitive advantage that can be achieved by leveraging this trend towards showrooming to make their customers more 'sticky'. The reality is that mobile showroomers tend to be more serious about their purchase than those browsing the shelves: they have entered the store, they have researched their chosen products and are now simply examining the items before concluding their purchase.

The challenge for retailers, therefore, is how to ensure that the purchase happens within their store rather than online or – worse – with a competitor. In response, Barnes & Noble, a US-based book retailer, has developed a dynamic program aimed at converting showroomers into customers. The system identifies consumers that are using their proprietary e-reader (the Nook) to browse titles and then may offer a 'special price' if that book is downloaded while the consumer is still in the store. And, to ensure that sales staff and customer aassociates support the program, Barnes & Noble gives the sales credit to the store in which the download occurred.

Putting mobile on the shop-floor

We have recently also seen some newer mobile solutions gaining ground in the retail environment. For example, a growing number of retailers are experimenting with location-based mobile applications like Foursquare and Shopkick (which offer users special rewards for 'checking in' at participating stores) to lure passing shoppers into their locations.

Other retailers are moving their point-of-sale devices off of the counter and onto the floor. At some clothing retailers, associates are given mobile devices with dongles that can accept most forms of payment, allowing the associates to concentrate more of their time on customers. Apple goes one step further by allowing customers to take a photo of the item and – after selecting from a few security and payment options – walk right out the door without even using a check-out counter.

The future of mobile for retailers

While all of this may seem innovative enough, the real power of mobile for retailers does not rest in a single application but rather in how all of those applications work together with enterprise systems to create a differentiated, efficient and effective sales process. Take, for example, a retailer that can attract a passing customer into the store using location-based mobile services, pull up the customer's transaction history from the database and send that information to a nearby sales associate, who can then use that data to make recommendations and, finally, help the customer scan the barcodes with their device and use mobile payment options to complete the transaction.

However, achieving this nirvana will require retailers to think differently about how mobile can be integrated into their operating models, their omni-channel sales environment and their technology infrastructure. It will demand significant change in the way they perceive, interact and sell to their customers. And it will take innovation on the sales floor, in the back office and in the boardroom.

The bottom line for retailers is that mobile is here to stay: those that adapt will survive and thrive, those that don't may well be left behind.

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Bolette Andersen
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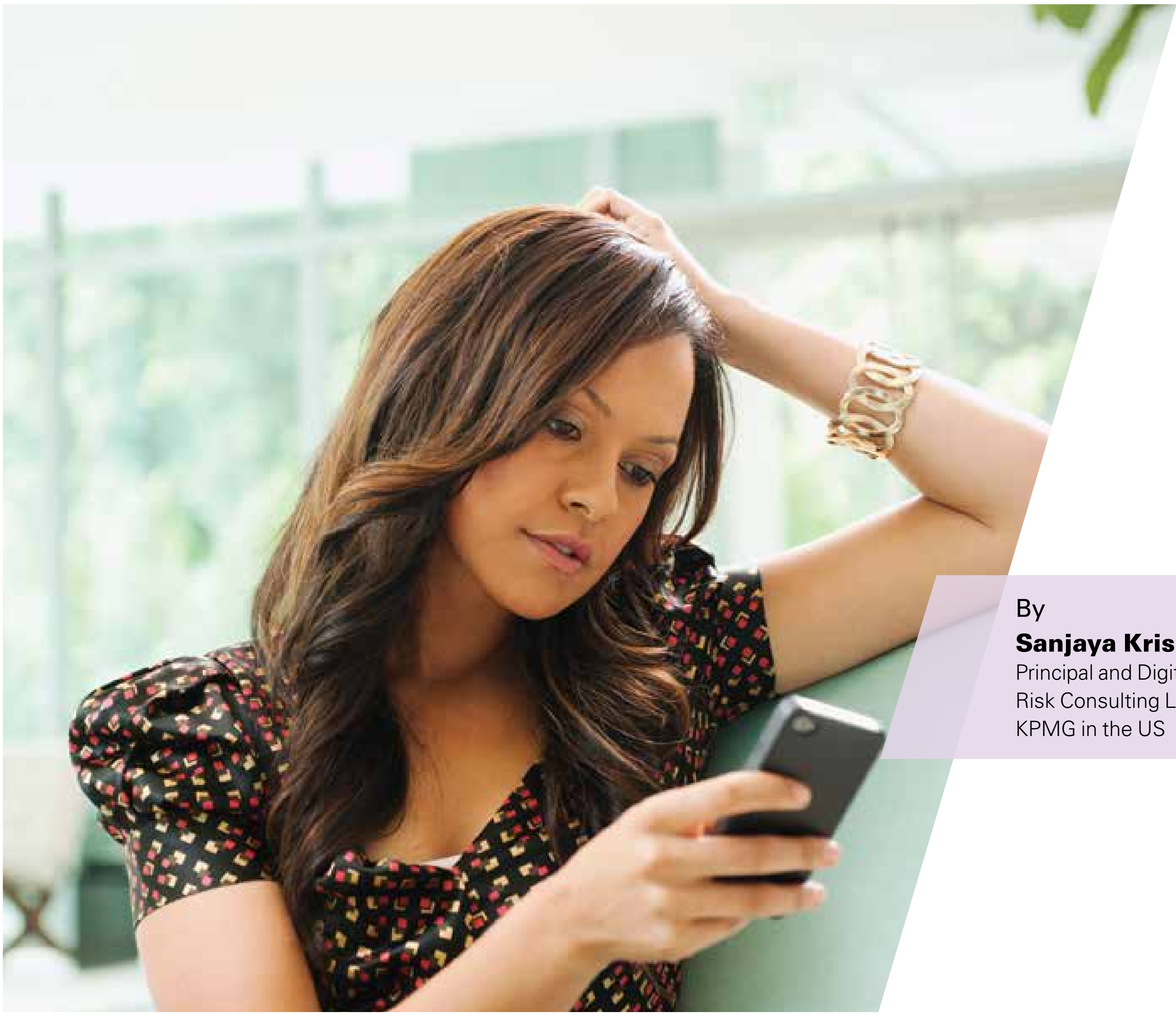
Mobile enterprise lessons from the consumer aisles



By
Sanjaya Krishna
Principal and Digital
Risk Consulting Leader
KPMG in the US

We believe that business executives – from all sectors – should spend a bit more time playing with the gadgets at their local mall and watching how their kids use their devices to catch a glimpse into how mobile is going to change the common enterprise.

From the family room to the boardroom

The reality is that many of the mobile gadgets and technologies now in use within the modern enterprise were first introduced into the market as consumer goods and services. Smartphones were initially aimed at the consumer market but are now ubiquitous business tools; tablets saw uptake in the hands of consumers long before they came into the boardroom; even early cloud technologies were first tested in consumer markets before becoming the 'killer' enterprise app that it is today.

So it only makes sense that savvy business executives should be identifying and assessing mobile trends and technologies that emerge from the consumer aisles to see how they might adjust their enterprise strategies going forward.

Meeting consumer demands

One trend that is undeniable is the continued uptake of mobile shopping over the past year or so (PayPal reported a 193 percent jump in mobile payment volume on Black Friday versus 2011). The numbers indicate that consumers are increasingly comfortable conducting transactions on their mobile devices. And – having tried, tested and trusted mobile payments at the more innovative stores – these consumers will come to expect this convenience from all of their vendors and service providers.

But it is not just about mobile payments. Mobile devices are increasingly being used during the whole shopping cycle – to compare prices, view product information, get store locations, and download coupons. Nielsen recently found that 78 percent of mobile shoppers used their smartphone to find a store, 68 percent checked prices online and 39 percent used mobile coupons. And what is interesting is that mobile shoppers tend to stay connected even after their purchases, and are starting to comment on social media channels about their experience, the product and the brand.

The lesson here? Those organizations without a mobile commerce/payment strategy had better move quickly to develop one or risk being left behind by their more advanced customers.

An augmented business reality?

We are constantly seeing the introduction of newly commercialized technologies that will surely have far-reaching implications for the enterprise as well. Take augmented reality (AR) technology for example. Yes, AR glasses and automobile heads-up displays may seem like fun and quirky new technologies today, but it is soon to become big business. Toy makers have introduced AR technology to their toys and retail stores in an effort to sell more products. Nokia also launched its City Lens App, based on a 3D map of the world to make finding shops and restaurants simple using a phone's camera viewfinder.

But it's not all just fun. According to Gartner, AR is a logical extension of location-based and context-aware mobile interactions. The market is believed to be on the verge of exploding. A recent study by Mindcommerce suggests that AR revenues will exceed USD3 billion by 2015 and Juniper Research suggests that AR applications will enjoy more than 2.5 billion downloads each year until 2017.

While that's great news for tech firms and game developers, it also has implications for other sectors and industries.

In addition to the retail sector, innovative organizations in the mining, logistics and automotive sectors are already experimenting with how AR technologies can drive greater efficiency, lead to better product development, or improve services within the enterprise. The value of AR to an organization's technicians and sales forces is obvious; their use in the boardroom only somewhat less so. But already we are starting to see new approaches and business models take shape that tap into the wider spectrum of AR capabilities, particularly from media and telecom providers, clothing manufacturers and public service organizations.

Assessing the enterprise value of innovation

That is not to say that executives should be bending their business models or reinventing their market strategies to incorporate every new technology or fad that gains popularity with the twenty-somethings. Rather, the winners of the mobile age will be those enterprises that are able to identify valuable innovations, integrate them into their existing business strategy and then leverage their new capabilities to become more efficient, effective and customer-focused.

The telecom, media and technology (TMT) sector will play a key role in this shift by helping businesses adopt, adapt and become adept at integrating these new mobile technologies. But first, TMT organizations will need to fully develop and communicate their own value proposition within the ever-shifting mobile market space.

Clearly, every sector has a lot to learn from browsing the consumer aisles.

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Savvy business executives should be identifying and assessing mobile trends and technologies that emerged over the past two months to see how they might adjust their enterprise strategies going forward.

Sanjaya Krishna
Principal and Digital Risk Consulting Leader
KPMG in the US

> "The winners of the mobile age will be those enterprises that are able to identify valuable innovations, integrate them into their existing business strategy and then leverage their new capabilities to become more efficient, effective and customer-focused."

Mobile MD: How mobile devices will revolutionize healthcare

By
Ashraf Shehata
Global Center of Excellence Healthcare
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In 50 years' time, I believe that we will consider the rise of mobile technology to be one of the greatest medical advances the world has ever seen.

Armed with the newest devices and technologies, patients will enjoy better health outcomes, doctors and medical professionals will be more effective and efficient, costs for payers and governments will be slashed and populations will – for the most part – be more health conscious.

Indeed, by coupling the power of mobile devices with rapidly-maturing technologies such as cloud, health systems around the world are starting to awaken to an entirely new way of delivering health services.

Hospitals without walls

Of course, this revolution in healthcare will come, not simply by virtue of the mobile devices themselves, but rather by unlocking new approaches to delivering health services. Gone will be the constraint of physical location and – with it – the hard costs of maintaining costly facilities such as hospitals. Instead, care will be moved out into the home, office or primary care environment; whichever location best suits the patient and their circumstances.

Yet as the hospital fades away as the epicenter of health service delivery, patients will find that – somewhat counter intuitively perhaps – access to medical professionals and services will actually increase. Mobile devices will allow specialists from halfway around the world to consult with patients, review test results and design treatment plans. Remote monitoring devices will essentially bring nursing and diagnostic staff right into the patients' home. And when patients do need to use location-based health services, mobile applications will help them find the closest and most appropriate care at just the touch of a button.

Moving to mHealth

While the benefits of mobile within healthcare are clear, the path to mHealth is far more complicated. In part, the challenge is institutional: most health service delivery is designed with providers in mind rather than patients. And, as such, care tends to be fractured and incongruous which, in turn, leads to higher costs and sub-optimal patient outcomes.

Mobile holds the promise to change all of that. Using mobile devices and enabling technologies, providers will be able to access a shared and holistic view of the patient, thereby speeding up the care process and eliminating the potential for errors or interactions. Mobile devices will enable medical professionals and caregivers to collaborate and work together to design better treatment options tailored to the needs of each patient. And, ultimately, mobile will usher in an era of integrated care where providers work as a single team to deliver better health outcomes for their patients.

The future is here

Evidence of this evolution is all around. Attendees at the Consumer Electronics Show 2013 will have seen an explosion of health-related organizations demonstrating new mobile solutions. Delegates from United Healthcare, one of the largest health benefits providers in the US, talked up their partnerships with some of the world's top mobile gaming developers, while the CEO of Verizon stole the show with a keynote presentation on the telecom giant's move towards creating a healthcare cloud.

A range of new smartphone-enabled devices are also now starting to emerge. AliveCor, a San Francisco-based company, has developed an iPhone case that acts as an ECG; MobiSante (also based in the US) offers an FDA-approved, smartphone-based ultrasound device; Sanofi, a French pharmaceutical company, sells an iPhone-enabled blood glucose monitoring device.

At the same time, we have seen the market start to heat up with major health providers and payers snapping up mobile technology solutions that hold the promise to increase efficiency, enhance patient outcomes or create a better customer experience. Just over a year ago, Aetna, another large US payer, purchased Healthagen, a mobile health startup and the developer of the popular health app iTriage (a mobile app that allows patients to not only understand their symptoms but also identify a nearby provider based on wait times, patient feedback and effectiveness ratings). Aetna has been aggressively expanding its reach and coverage ever since.

Some way still to go

More progress will need to be made before mHealth can truly become a new model for health delivery. Applications and mobile services will need to mature beyond simply replicating web services or dishing up static information. Device price points and functionality will need to improve (particularly for more specialized mobile devices such as ultrasounds). Cloud providers – both public and private – will need to hone their service offerings towards the unique needs of the health sector. And, throughout, health providers will need to maximize innovation and rethink business models to ensure they are making the most of these new approaches.

What is clear is that mobile technologies and devices are catalyzing a transformation in the way that modern healthcare is delivered to such an extent that – 50 years from now – doctor's offices and hospitals may be nothing more than a quaint memory of a bygone era.

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Sources

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