

# Are you ready for the new mobile commerce?

How to take your multichannel strategy into the era of  
disruptive mobile technology

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## Introduction

The traditional notion of executing a great multichannel retail strategy by aligning physical stores with a catalog, call center, and website has been completely disrupted. Rapid consumer adoption of advanced devices such as smartphones and tablets, high penetration rates for social media platforms with a significant mobile component (e.g., Facebook, Twitter, Foursquare), and the rising importance of digital goods, has led to skyrocketing customer expectations. Customers now expect to be able to interact with your brand in a seamless and consistent way on any hardware, anywhere.

To remain competitive, businesses must understand the strengths and limitations of emerging mobile touchpoints, the context in which each is used, and how other enterprises have begun to leverage them. As ecommerce moves away from a singular website experience to the modern landscape of fragmented mobile devices, platform-specific apps, and social networks, savvy executives will also need to focus on the flexible architecture and culture needed to execute the service-oriented technology that is rapidly becoming essential to keeping up with the pace of disruptive change.

This white paper outlines key trends in consumer expectations for mobile shopping, the technical prerequisites you will need in your ecommerce systems to deliver these applications, and how to effectively capitalize on your existing data and infrastructure to profit from these new touchpoints.

## Trends in Mobile Commerce

### Market Size

By almost any measure, growth in business and consumer spending on the mobile internet exceeded earlier estimates by a wide margin in each of the last three years. On the consumption side, global retail revenue from mobile devices (m-commerce) is now expected to reach \$119B by 2015, representing approximately 8 percent of the total ecommerce market<sup>1</sup>. In terms of business investment, expenditures on mobile marketing in the US alone are forecast to exceed \$1B in 2011 and \$1.5B the year after<sup>2</sup>, with the worldwide spend reaching a blistering \$21.2B by 2012<sup>3</sup>.

Pacing this growth in revenue is the consumer adoption rate for smartphones and other internet-capable mobile devices, which is a critical determinant of potential market size. On this front, the predicted increase is even more impressive. By 2015, over 36 percent of all US consumers are expected to be using the mobile internet<sup>2</sup>. Worldwide, mobile phones are forecast to overtake personal computers as the most common web access device within the next three years<sup>4</sup>, and in many developing nations, such as Egypt and India, this shift has already occurred, with up to 70 percent of the online population exclusively using phones to access the internet<sup>5</sup>.

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<sup>1</sup>Source: ABI Research, February 2010

<sup>2</sup>Source: Forrester Research, October 2010

<sup>3</sup>Source: ABI Research, May 2009

<sup>4</sup>Source: Gartner, January 2010

<sup>5</sup>Source: On Device Research, December 2010

## Eroding Barriers

In our 2009 white paper introducing the concept of 'Multichannel 2.0' commerce, we outlined six roadblocks that were hindering the widespread acceptance and deployment of commerce functionality on mobile devices. Since then, rapid improvements in hardware and software, coupled with far-reaching changes in consumer expectations and behavior, have all but eliminated four of these barriers:

### Security fears

Consumers have been generally receptive to marketing and education efforts by payment processors, financial institutions, and retailers. Exposure to (and familiarity with) the brands, processes, and security features associated with electronic transactions in general has led to a greater understanding by the public of the relative risks involved with mobile payments.

### Usability

In a few short years, mobile usability has improved dramatically in the eyes of consumers thanks to advances in device hardware, the substitution of WebKit-optimized HTML for WAP as the de facto mobile markup language, and the evolution of best practices for the design and development of software for small screens and touchscreens.

### Bandwidth cost

Thanks to new economies of scale and carrier investments in infrastructure, such as 3G networks, the retail cost of wireless bandwidth has been brought down to levels that were unthinkable only a few years ago. Data plans once measured in KB are now sold by the GB.

### Lack of consumer interest

Mobile connectivity and its "killer applications," such as mapping and social networking, reached critical mass and entered the cultural vernacular in less than two years. As a result, being accessible and presentable in these channels jumped overnight from being of limited value to being an essential part of any multichannel strategy.

The two remaining roadblocks were issues of implementation rather than consumption and, unfortunately, for most enterprises, they are even more salient than they were in 2009. Although the final part of this white paper suggests a methodology to alleviate these barriers by leveraging a service-oriented architecture, they will remain significant hurdles for the foreseeable future:

### Lack of standards across devices

Although the mobile web situation has improved somewhat with the growing standardization on WebKit-based browsers by smartphone and tablet manufacturers, it is unlikely that there will ever be a global

standard for hardware or operating systems. Yet fragmentation at the device level will pale in comparison to the imminent fragmentation in software channels as major hardware and software platforms all rush to erect walled gardens and proprietary marketplaces, each restricted to an arbitrary combination of devices, operating systems, carriers, geographic areas, retailers, and social networks.

#### Cost and resources

Based on the diversity of emerging channels for executing mobile initiatives, success in this space will require an even greater investment in strategy, people, design, and technology than predicted just 12 months ago. But the new prominence of the mobile internet means that few businesses can afford to ignore it, and this is borne out by research showing that 70 percent of enterprises plan to increase their mobile budgets in 2011, with over a quarter planning to double or triple their expenditures<sup>6</sup>.

<sup>6</sup>Source: Forrester Research, March 2011

## Mobile Channel Fragmentation

Mobile fragmentation is conventionally discussed in terms of either physical devices (BlackBerry, iPhone) or operating systems (WebOS, iOS, Android). While important, these distinctions mask additional dimensions that must be considered when defining an effective mobile strategy:

#### App versus mobile web

e.g., Apple App Store, Android Marketplace, BlackBerry App World.

Whether to invest in an app remains the most common decision faced by executives when determining a mobile strategy. While the determinants of success were unclear and unpredictable 12-18 months ago, the past year has seen a far better understanding of which factors should drive this decision. For more information, see The Mobile Shopping Landscape, later in this white paper.

#### Operating system/platform

e.g., iOS, Android, BlackBerry OS, Windows Phone.

This distinction is most important in the case of downloadable apps, where several factors come into play—the demographics associated with each platform, the cost of developing the unique versions, and issues around sharing revenue and customer data with the marketplace owner. But fragmentation across this dimension can also be largely irrelevant if, for example, a strategy focuses on distribution via the mobile web or social networks.

#### Hardware device

e.g., Apple iPhone 4, Apple iPad 2, Motorola Droid X, BlackBerry Torch.

As mobile technology has matured around a handful of operating systems that effectively mask differences in hardware, device fragmentation is decreasing in significance as compatibility issues migrate to the browser software instead. For companies interested in maintaining their customer experience down the long tail of legacy hardware, however, an understanding of hardware fragmentation remains important.

#### Mobile browser capabilities

e.g., iOS Safari, BlackBerry browser, Google Chrome.

While the adoption of WebKit-based browsers by all of the major smartphone and tablet manufacturers means that issues related to basic HTML have largely been addressed, differing support for standards such as HTML5 or Adobe Flash will have a significant impact on app versus web decisions, especially for publishers of media content or other digital goods. Without the interactivity and customization afforded by these supplementary technologies, enterprises seeking to provide a rich or immersive experience to their customers may have no choice but to opt for a downloadable application.

#### Wireless carrier

e.g., AT&T, Verizon, Vodafone.

With the success of standardized mobile operating systems, such as iOS and Android, together with their app marketplaces, most carriers have now retreated from an earlier strategy of imposing their own features, customizations, or marketplaces on subsidized smartphone hardware. This has significantly reduced the impact of carrier fragmentation to the point where it is largely irrelevant to the mobile strategy of most enterprises.

#### Other software channels

e.g., Facebook, Yelp, Foursquare.

Because they are already (or will be) present on vast numbers of smartphones and other devices, emerging software channels that lend themselves well to mobile usage, such as social networking, messaging, mapping, augmented reality, barcode scanning, and object recognition, represent untapped opportunities to connect with customers, as well as potential headaches in the form of more fragmentation. Although most are platform-agnostic, the most effective use of each one will likely require automation or integration work—and moving forward, new channels are liable to emerge on a very frequent basis.

## The Mobile Shopping Landscape

### Desktop Website

Although often overlooked in the rush to exploit newer channels, the desktop website and its accompanying ecommerce infrastructure can often play crucial roles in a successful mobile strategy. Where the desktop site is relatively lightweight in terms of functionality, free of Adobe Flash or other supplementary technologies, and designed to

work well on smaller screens and with a touch interface, there is often no need to create a mobile-optimized variant, freeing resources to execute in other channels. This is especially the case wherein the target demographic is likely to already own an advanced mobile device, such as a smartphone or tablet.

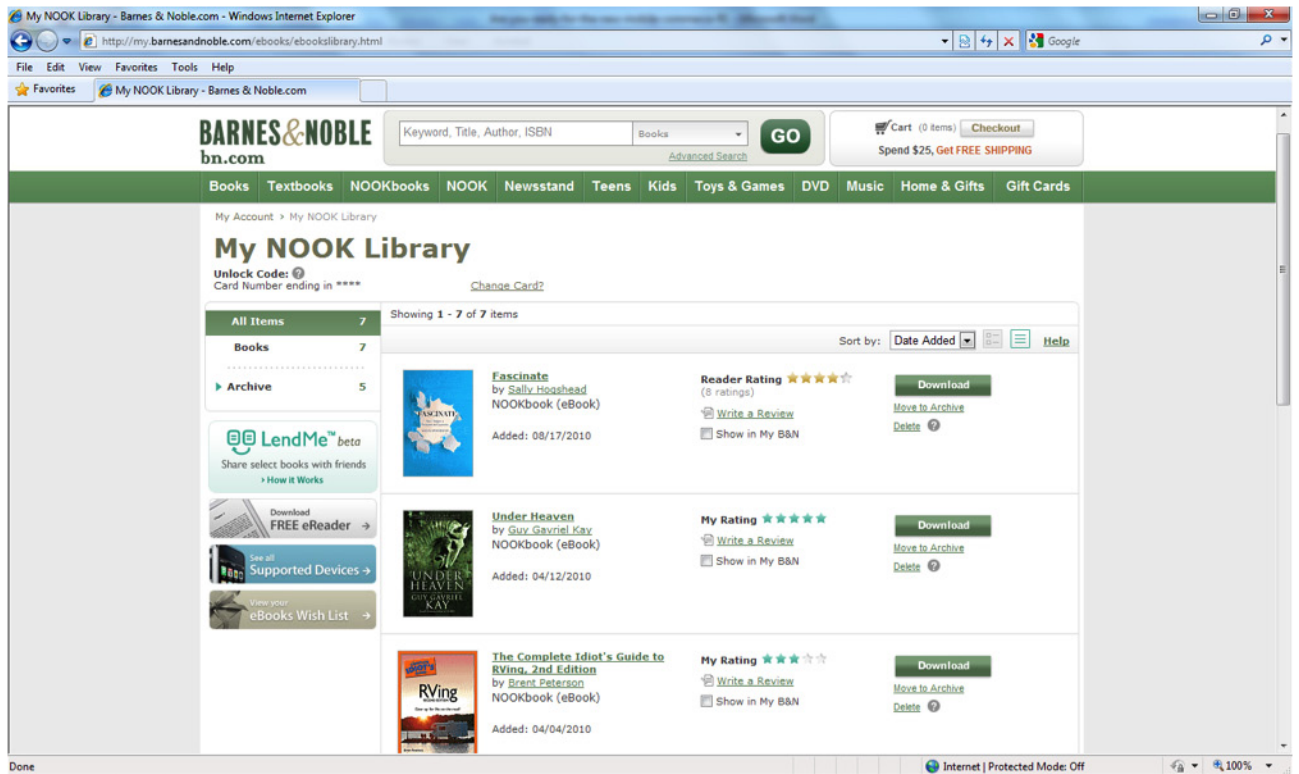




The Apple website offers an identical experience for users of any contemporary browser, including those that ship with every major smartphone or tablet.

Another overlooked opportunity is the inclusion of functionality on the desktop site that integrates or streamlines the customer experience between a computer and one or more mobile devices. This is especially true for cloud-based services, digital goods, or any product purchased on a subscription or recurring basis, as the larger screen and keyboard lend themselves well to organization and management tasks.

Barnes & Noble's desktop site allows an ebook library to easily be administered for consumption on the nook tablet or e-reading apps on other devices.



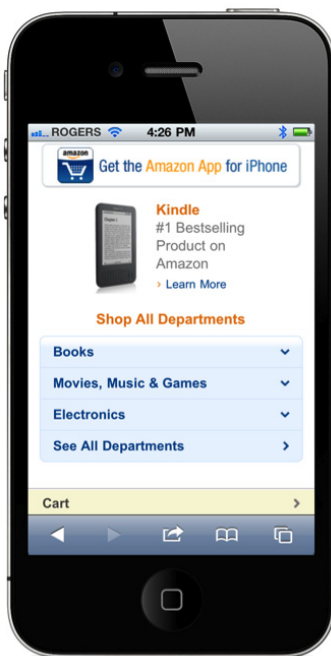
## Mobile-optimized Website

In 2010, 12 percent of the Internet Retailer Top 500 ecommerce sites had mobile-friendly variants with checkout capabilities, up significantly from 4 percent the previous year<sup>7</sup>. Of these, a full 11 percent were designed to render best on the iOS Safari browser, highlighting the continued importance of the iPhone and iPad demographic to US merchants.

Although a large number of mobile ecommerce sites continue to eschew mobile purchasing capabilities in favor of providing some combination of click-to-call, store locators, inventory lookup, product descriptions, and customer reviews, the substantial increase in merchants transitioning to full

m-commerce capabilities reflects both an increasing consumer acceptance of mobile payments as well as the decreasing cost to businesses of implementing a mobile checkout.

Amazon.com is frequently used as an example of a full-featured ecommerce site optimized for mobile usage across a wide range of hardware. It is important to note that when accessed on an iPad or other tablet, the desktop version is presented. While this new type of device is portable, Amazon recognizes that it is not designed to be used in the same way as a truly mobile device.



<sup>7</sup>Source: Acquity Group, March 2010

As mobile browser functionality and bandwidth continue to improve, we expect to see the ecommerce feature gap between desktop and mobile sites shrink rapidly. Savvy enterprises will then focus on tailoring the tools and interactions offered in their mobile experience to meet specific demands of the context in which users are accessing the website, such as in a retail store, on the street, or while watching an event with friends.

### Platform-specific App

Until recently, the decision to invest in an iOS, Android, or BlackBerry application was clouded by unclear and unpredictable determinants of success. Although these channels do offer high levels of functionality, interactivity, and user experience, the high

engagement threshold below which users are unlikely to download or keep the app on their devices has led to disappointment in the ROI of mobile applications for many retailers and other enterprises, especially those that equated their entire mobile strategy with an app for a single platform. With so many uncertainties at play, many companies simply decided to stay on the sidelines, with fewer than 7 percent of the Internet Retailer Top 500 fielding any kind of mobile application in 2010<sup>7</sup>.

Now that the market has witnessed numerous apps become runaway sensations (primarily in the iOS App Store, but also to a lesser extent in other marketplaces), key factors that should drive the decision to pursue a mobile application over other channels have become clearer:

	Mobile Applications	Mobile Website
Enterprise Type	Specialized and offering a unique or highly differentiated product/service	General merchandise and commodities (both products and services)
Customer Type	Highly loyal, identifies with brand, or frequent customer	Occasional, new, or indifferent to brand
Barrier to Initial Access	High – user must seek out, download and then keep application	Varies – as with a desktop site, initial access depends on recognition, marketing and SEO
Barrier to Repeat Access	Low – if kept, application is always present on the device	Varies – as with initial access, unless bookmarked by the customer
ContentType	Highly interactive services, media, and other rich content	Services with a lower interactivity requirement, offline merchandise
ContentPresentation	Curated and customized	Search – the faster, the better
ContentBandwidth	Higher	Lower
Frequency of Usage	Daily to weekly	Weekly to one-off
Intensity of Usage	Intense (banking, gaming, news)	Casual (browsing) or flash (find a location)
ExperienceExpectation	Rich and interactive	Clean and fast
Cost Structure	Higher development costs, plus incremental costs per platform	Varies – but with a lower cost of entry
OtherConsiderations	Integration issues with core commerce systems, potential marketplace rights issues, selection of app platforms	Browser compatibility issues, lack of advanced interactivity

At this point in time, deployment of an effective mobile website still carries the lowest risk and greatest exposure for most companies and also offers an opportunity to improve and evolve the commerce infrastructure necessary to effectively leverage other mobile touchpoints. Enterprises with an exceptional brand, a highly loyal customer base, or with a specialized, highly differentiated product or service to offer should then consider the development of one or more mobile applications as a next step.

### Location Awareness

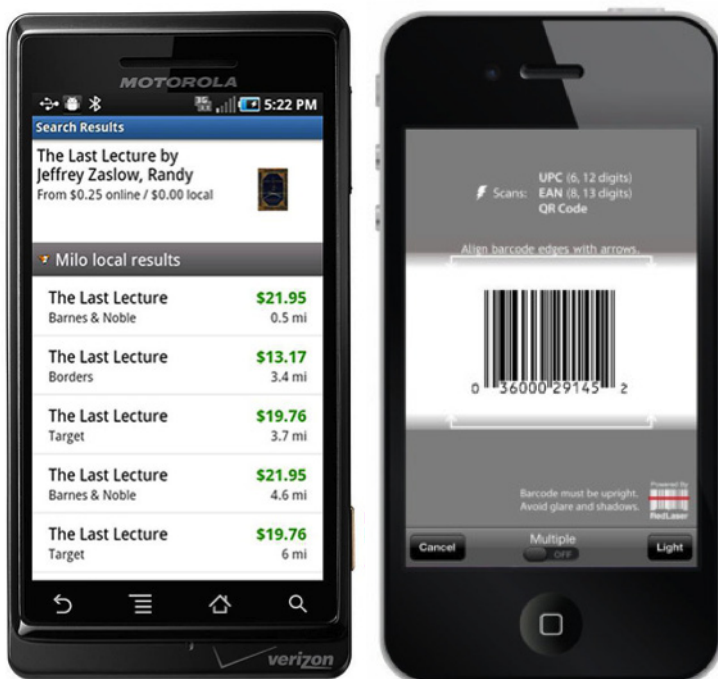
Whether driven through a custom app, a third-party social network, or other location-based service, geotargeting promises to be the breakout application for multichannel retailers and other offline marketers in 2011. Initially popularized by applications with a limited audience, such as Foursquare and Gowalla, major players such as Facebook and Groupon will soon simplify the process of “checking in”, address lingering privacy concerns, and increase the location awareness of their other services.

The current focus on location by social networks provides the opportunity for enterprise marketers to experiment with personalized in-store deals, coupons, pricing, and other promotions without committing significant resources to the implementation of custom technology. Although this touchpoint is unlikely to generate significant revenue in the near term, companies that take advantage of this window to prepare their organization and infrastructure for this level of marketing response will increase their chances of success when even more precise and ubiquitous geotargeting applications arrive in the coming years, and consumers warm up to the potential offers presented through this channel.



## Physical Recognition and AR

Now in the early stages of adoption, the recognition of physical marks and objects, such as UPC codes, book covers, complete products, or even locations by smartphone cameras connected to the cloud, promises to revolutionize offline shopping and commerce. Sometimes termed augmented reality (AR) for its ability to provide a layer of digital information about the user's immediate environment, the most obvious commercial benefit for consumers is nearly effortless and instantaneous access to detailed product information, competitive pricing, reviews, and opinions about physical products.



While this technology and its associated business models are still maturing, it is only a matter of time before successful multichannel retailers will have to aggressively market in this space as well. The use of smartphones as “personal barcode scanners” by deal-seeking comparison shoppers is already on the rise, and while this would initially seem to be yet another assault on in-store revenue, it also represents an unprecedented opportunity for savvy retailers to respond, in the same touchpoint, with a personalized offer to help close the sale immediately.

## On the Horizon

The following technologies may eventually play a significant role in the evolution of multichannel and mobile commerce, but are unlikely to have an impact in the short term due to their incubation time:

### HTML5

The next-generation language standard for both desktop and mobile websites promises to bring much of the functionality currently restricted to native apps right into the browser, including location awareness, offline data storage, and video playback. However, based on the tight feature control exerted by Apple, Google, and other operating system vendors, and the potential revenue impact of a mass exodus from each app marketplace, the full benefit of HTML5 on mobile devices is unlikely to be unleashed or felt for quite some time.

## Near NFC Communication (NFC)

NFC chips, currently integrated with payment cards in products such as Visa PayWave and MasterCard PayPass, enable contactless transactions by transmitting debit information over a very short range. By embedding this technology into mobile devices, a “one stop shop” for combining all of the touchpoints described above with a secure, automated offline payment method may be achieved. Although this roadmap has been discussed by major manufacturers at some length (most recently at Mobile World Congress 2011), the logistics of upgrading an entire generation of hardware means that NFC is unlikely to affect mobile strategies for several years.

## Preparing for the New Mobile Commerce

Success in these emerging channels will require a strong and stable commerce infrastructure capable of handling customer, product, and transaction data at the individual record level, and disseminating it to a wide array of external services. Consumers accustomed to the product detail, logistics visibility, individual attention, and personalized marketing of a desktop web experience will soon expect the same level of service and interaction—whether they are reaching out to your brand on the mobile web, through an app, via a Facebook check-in, or while holding their smartphone in a store. While the vast majority of retailers and other businesses do not yet have this sort of integrated system in place, many of its prerequisites can already be found within the IT infrastructure of most enterprises. Your

ecommerce platform is likely to contain much of the data and raw functionality necessary to drive the new multichannel experience, including:

- Product information including images, video, detailed descriptions, and metadata
- Product relationship data such as accessories, cross-sells, up-sells, and dependencies
- User-generated content such as reviews, images, questions, and answers
- Personalized recommendations and automated marketing rules
- Analytical data including product views, best sellers, and conversion activity
- Customer profiles including preferences, addresses, billing information, and order histories
- Shopping carts, wish lists, and gift registries
- Transaction history and fulfillment data

These prized assets need to be leveraged for the benefit of both your customers and the enterprise in order to achieve the following goals:

- Customers should have a holistic and consistent brand experience, regardless of the channel in which they are interacting with you or the activity they are currently performing.
- The enterprise should have a single view of all customer interactions, either in aggregate or by specific channel.
- Channels such as social networks or apps should have simple, stable, and automated integrations that allow them to access only the data assets and functionality necessary to provide the

The key to this holistic view of multichannel commerce is the provision of ecommerce assets, data from legacy sources such as inventory, warehouse, ERP or POS systems, and core transaction functionality in the form of services in a SOA (service oriented architecture) environment. This allows any existing or future channel to consume and leverage them in a scalable way.

Exposing core commerce and marketing services via a set of simple, stable, and documented APIs (application programming interfaces) is the only approach that provides the flexibility and scalability needed to allow your business and its third-party partners to quickly and cost-effectively write the shopping applications or adapters that are necessary to operate in the new mobile channels. This service-oriented architecture separates the heavy lifting necessary for core catalog and order operations from the multitude of unique consumption-oriented functions that are required by each individual mobile touchpoint.

## Conclusion

The explosive growth of the mobile internet and its associated devices has finally helped to realize the idea of consumer convergence, making it imperative for multichannel retailers and other enterprises that sell online to present a unified and consistent view of themselves to customers across a multitude of devices, locations, and activities. In this new world of agile or elastic commerce, the concept of a traditional website or in-store

purchasing funnel becomes obsolete as mobile devices bridge the gap between online and offline. All enterprises will have to transform themselves into next-generation multichannel retailers, allowing consumers to interact with their brand, search their catalog, make a purchase, or track an order—whether they are browsing a desktop website, scanning barcodes with their smartphone in a store, or checking in at a coffee shop.

The most direct and effective way to provide this unified multichannel view will be to leverage existing ecommerce functionality, exposing it through an open architecture, stable integration framework, and documented APIs that allow the enterprise or its third-party partners to rapidly develop features and integrations in a scalable and cost-effective manner. Because the ecommerce platform, engine, or framework is likely to be the only system currently within your IT infrastructure to integrate many of the prerequisite data sources, this approach represents the most promising long-term strategy for dealing with the accelerating growth of disruptive mobile technology.

## About Elastic Path

Elastic Path is the leader in digital commerce technology and expertise for enterprises selling digital goods and content. Major global brands such as Google, Time Inc., and Virgin Media rely on Elastic Path to monetize digital relationships with their customers in ways that are frictionless, social, and everywhere.

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