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Mobile Barcodes Open Doors to New Applications Opportunities

Perspective from Ed Finegold

Mobile Barcodes Open Doors to New Applications Opportunities. *But OSS/BSS Providers Must Better Define their Role in the Application Value Chain*

Barcodes are becoming even more prevalent in our everyday environment. Until recently, specialized scanners were required to read the barcodes on groceries, price tags, boarding passes, baggage tags, shipping labels, and event tickets. A number of applications, like NeoReader and Scanlife, have since emerged that are designed to turn any mobile phone with a camera into a barcode reader. The concept is simple – the phone can snap an image of a barcode, and the application can read the information embedded in it and follow its instructions. Further, more phones are entering the market sporting relatively large LCD screens that can present barcodes for scanning. These developments are opening the door to new applications for barcode technology and are bringing yet another set of useful functionality to mobile devices. Mobile operators are trying to figure out how to turn these technologies into revenue, and OSS/BSS developers need to define how they can actually help.



Leaving Paper Behind

Despite the myopia some pandering politicians display as they baselessly dispute humanity's contribution to global warming, "going green" is in. We might hope that large corporations would be environmentally conscious because it's the right thing to do. In reality though, their increasing desire to side with tree-huggers is based on the amount of expense it can save them. As one sage telecom expert recently pointed out over a round of beers, Wal-Mart didn't start installing skylights in their stores to reduce their carbon footprint. They did it because it saves them millions per year in energy costs.

As the price of everything that's manufactured in the hydrocarbon economy escalates, the cost of printing on and distributing paper items is increasing. As long as an increasing percentage of the mobile device population is capable of displaying the same information as something printed on paper, it makes sense that it's time to leave as much paper behind as possible. This is exactly what's beginning to happen with airline boarding passes. According to the Sydney Morning Herald, within the next year Qantas passengers will officially be able to present the barcodes from their boarding passes on mobile devices rather than on paper. While some people, such as savvy iPhone users, are already doing this, Qantas is among the first airlines to encourage this practice in an official capacity.



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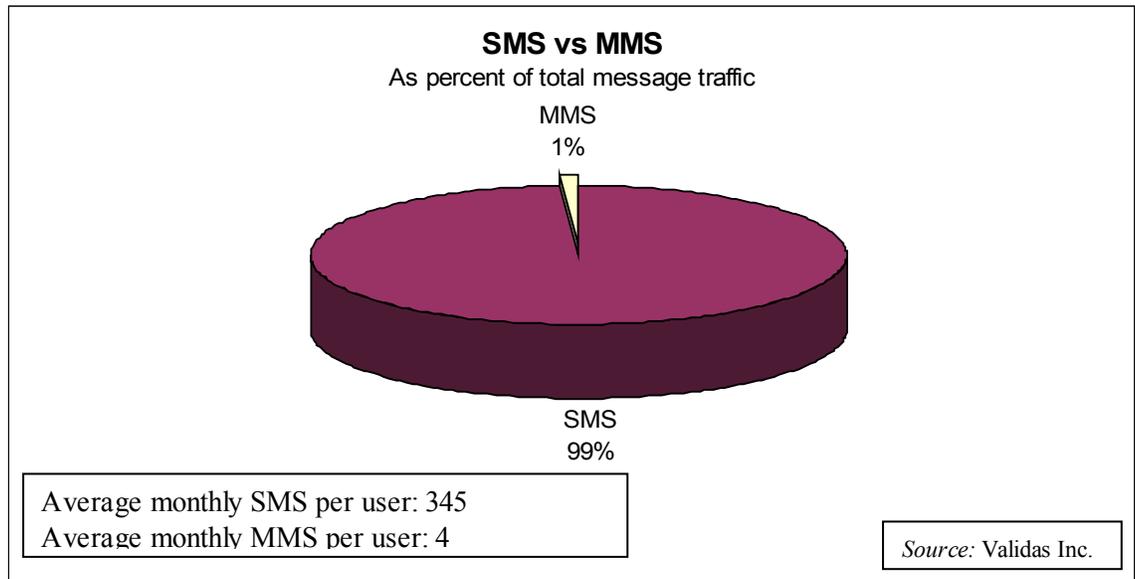
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This concept can, and probably should, be applied to any kind of ticket or coupon that would otherwise be printed on paper and scanned with a barcode reader. Concert and sporting event tickets are no longer torn; they're scanned, so why not go all the way? The same can be said for the coupons found in Sunday papers and unsolicited junk mailings, most of which end up in landfills and represent an inefficient, shotgun approach to promotional marketing. If we could all opt-in to the coupons we want and have them stored in our mobile phones, we'd never forget them and never miss a good deal on something we actually want.

Driving MMS Usage...Finally

Barcode technologies represent two big opportunities for mobile operators in the

application space. First, if coupons, tickets, boarding passes and the like are distributed to mobile devices, it finally means there will be a major driver for MMS utilization. A recent sampling of 625 mobile phone bills by Validas, a provider of wireless bill analysis and rate plan right-sizing, suggests that MMS make up just 1 percent of all messaging traffic, while SMS continues to dominate at 99 percent (see Figure 1). In Validas' sample, which represented one month's usage, users sent 214,707 SMS messages versus just 2,360 MMS messages. Each user sent and received an average of 345 SMS in a month, but only 4 MMS. It is past time for mobile operators to monetize MMS infrastructure.



The other associated opportunity comes in the form of advertising – a game in which mobile operators have only begun to play, but are licking their chops to profit from. Coupons are part of the glue that holds the consumer economy together. Many of us have likely bought something we didn't really need just because we stumbled into a valuable coupon. Similarly, many of us have likely spent time sorting through filthy mass mailings while standing over a recycling bin, searching in vain for an offer that actually relates to our interests. Further, everyone can likely remember a time when they bought an item only to find out later they missed the 10 percent off coupon their friend discovered somewhere they never looked.

Mobile operators have an opportunity to make coupon-based promotions far more efficient and targeted to user interests. Advertisers are generally interested in reducing their effort while increasing customer response. The mobile channel gives them the ability to communicate directly with individuals. OSS/BSS applications have a significant role to play in this arena on two levels. The most commonly cited opportunity is in analytics applications that leverage the wealth of subscriber and usage data operators store across their IT environments. While conceptually there is promise in analytics, history suggests that massive data integration programs

take a long time to deliver, are extremely risky, and often fail. This threatens the ROI story for any analytics offering as operators tend to be wary of transformational approaches that try to boil the ocean.

So let's assume that in the near term, mobile operators take an opt-in approach that simply asks users what they do and don't like while offering them something valuable - like access to all of the best discounts on the stuff they want. OSS/BSS applications need to play a coordinating role in this scenario. They will be responsible for managing customer opt-ins and opt-outs and synchronizing the results with subscriber profiles. Those subscriber profiles will drive the policies that determine which offers are delivered to segmented user groups in the form of MMS-based barcode coupons and ads. OSS/BSS systems will coordinate ad-insertion and will provide the campaign management mechanisms advertisers need to introduce, adjust, and decommission their promotional campaigns.

In this scenario, MMS becomes a delivery mechanism that is greatly augmented by the intelligence OSS/BSS applications would provide. If operators are smart, they'll let advertisements pay the freight for the MMS traffic. If they get cute and charge users for the incoming MMS messages too, they're likely to find those users opting out more often and calling their contact centers angrily demanding the charges be removed from their bills.

The Barcode Scanning Mobile Phone

On the flip side of the mobile barcode is the emergence of applications that turn any camera-phone into a barcode reader. Rather than waiting for the device manufacturers to embed specialized barcode readers into handsets, creative companies like NeoMedia Technologies are introducing applications that use what's available - embedded digital cameras. Most phones have cameras built in, which means they have the ability to capture barcode images. NeoMedia's NeoReader is one of the few that can read a range of 2D and 1D barcode types. 2D barcodes come in a number of flavors including non-proprietary versions like Data Matrix, QR, and Aztec, and proprietary formats like EZcode, the format used by Scanbuy and its Scanlife application. The most common 1D barcode is the UPC code, which should be most familiar to consumers.

The industry needs to come to some consensus on which type of barcodes and which set of reader capabilities will prevail. This is necessary because without greater commonality it will be difficult to achieve a critical mass. If different devices read completely different barcodes, as is often the case in today's nascent stage, it makes it tougher for advertisers and retailers to pick a direction in which to invest. That doesn't mean only one type of barcode will dominate. Barcodes range in size, complexity, and the amount of information they can contain. It stands to reason different formats will be most suitable to different purposes. But if a common subset can be defined, and reader applications refined to support them, critical mass can be achieved.

The reason retailers are especially excited about mobile barcodes is that they can combine the traditional shopping experience with that of the Internet. For example, Papa John's pizza has introduced a mobile ordering website. In September it announced a partnership with NeoMedia in which it will send mailers in select

markets that include barcodes. Customers can use their NeoReader equipped devices to read the barcode, which will direct them to the mobile pizza site and give them an offer for free pizza. Similarly, Ralph Lauren Rugby has begun to introduce interactive displays in their flagship stores. Shoppers that load an application called QR reader on their mobile devices can scan QR codes – an advanced 2D barcode with significant information capacity – that will direct them to Rugby’s mobile website where they can make purchases directly. These are relatively inelegant applications of the technology. The Papa John’s example relies on a paper-based mailing and assumes users have NeoReader loaded on their devices. The Ralph Lauren example assumes people want to shop online while they’re out walking around. Regardless, these examples are evidence that major chains are beginning to experiment with the technology.

Mobile devices as barcode readers become most compelling when they enhance the retail shopping experience. In early September, Big in Japan won one of Google’s 10 Android Developer Challenge awards for its GoCart application. GoCart is being designed for Google’s Android platform and for the iPhone. It allows a shopper to scan the barcode on a product and instantly pull up product reviews and comparative pricing from other outlets. This is where the local shopping mall and the Internet become bedfellows.

This kind of approach not only marries traditional shopping with the Internet model, but has the potential to increase sales and customer loyalty, as well. For example, imagine you’re out shopping for a pair of shoes that’s on sale. You get to the store and it turns out they don’t have your size. You scan the barcode on a display and your mobile phone displays a menu asking if you need a specific size or a different color. When you respond, the device gives you two options. You can pay the sale price now and come back to the store in a week when the next shipment is in, or have the item drop shipped to your home immediately.

OSS/BSS applications can play a role in these kinds of scenarios because they are fulfillment chains. Consider that something in the network needs to know what information to present to the user when a certain barcode is scanned. The barcode acts essentially as a provisioning trigger. OSS mechanisms in the background need to ensure that the correct information is delivered to the device immediately. When the user takes action, such as requesting a certain size and color shoe that he or she will pick up in a week, the fulfillment application needs to ensure that information is transmitted into the supply chain. The retailer’s supply chain process would then add the customer’s requested item to the next shipment and mark it as “hold for [customer name].”

As the telecom industry struggles to devise valuable applications that enhance or supersede what the Internet can offer, it’s important for OSS/BSS providers to communicate the roles they can actually play. Too many are making vague claims about their ability to drive new, application-based revenue streams without adding any creative ideas to what those applications might look like. Those ill-defined statements sound like “me-too” pandering, and they don’t give buyers – in this case mobile operators – confidence that the OSS/BSS space can play a critical role. Over-promising and under-delivering is a persistent problem that makes the OSS/BSS space a disorderly market with a questionable value proposition. Like our

favorite presidential candidates, it's time for us to stop talking in generalities and offer real details about what OSS/BSS can deliver.

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