Payment Applications Make E-Commerce Mobile

Neal Leavitt

Because vendors see a profitable opportunity in applications that let users pay for goods and services via mobile devices, they are releasing easier-to-use mobile-payment applications.

Using mobile devices to pay for goods, services, bills, or money transfers offers numerous advantages, including convenience and ease of use for consumers, increased impulse and other sales for merchants, and more income for wireless-service providers, noted Ed Moyle, principal analyst for market research company Security Curve.

However, filling out the forms and typing in the credit-card numbers that have been necessary to make payments on smartphones, most of which have small physical or virtual keyboards, can be tedious and challenging.

This is one reason that adoption of mobile payments, particularly in developed countries, has not widened significantly, although the approach has been used for years in some areas of Asia and Europe, said Moyle.

Other limiting factors include security challenges and a lack of participation by merchants.

However, vendors are now releasing applications that work directly from mobile phones without additional equipment and that enable payments via several keystrokes.

According to some industry observers, the market is poised for rapid growth. Market research firm Gartner Inc. predicts the number of mobile-payment users worldwide will exceed 109 million by the end of 2010, up 54.5 percent from 2009. A recent report by Generator Research, a market-analysis firm, indicated the worldwide market for mobile payments will grow from $68.7 billion in 2009 to $633.4 billion by 2014.

MarketResearch.com estimates the value of mobile-payment transactions in the US alone could top $57 billion by 2015, up from $12 billion in 2009.

According to Gartner research director Sandy Shen, developing countries have adopted mobile-payment approaches more widely than developed nations. For example, said Forrester Research analyst Emmett Higdon, only about 6 percent of online adults—primarily young, high-income consumers—in the US have used any type of mobile payment.

"Mobile payments are a long way from mainstream adoption because current offerings lack a clear promise of superior benefits to consumers or a business model that addresses the needs of all the players in the payments ecosystem," Higdon said.

However, usage is growing, and several vendors—including BOKU, Obopay, PayPal, and Zong—are establishing themselves in the marketplace.

But they must still overcome numerous challenges before mobile-payment technology can become a popular approach.

WHY MOBILE PAYMENTS?

Mobile-payment services began in 1997, when Nokia enabled users to pay for soft drinks in Finnish vending machines via short-message-service transmissions from cellular phones. That year, Finland-based Merita Bank launched the first mobile-phone-based banking service, also using SMS.

However, early mobile-payment systems experienced only modest success because using wireless devices' keyboards and screens for complex transaction procedures was too much trouble and earlier devices weren't able to run sophisticated mobile-transaction applications.

Benefits

Mobile payments can be linked to users' credit or debit cards, phone

bills, or prepaid deposits.

They offer convenience for buyers by letting them make purchases from wireless devices, which lets them pay for goods or services wherever they are. Enabling easier purchases, including those made on the spur of the moment, yields more income for merchants.

Meanwhile, mobile-service providers get revenue from transactions carried on their networks.

Enabling technologies

The proliferation of smartphones with broadband connectivity, users' growing adoption of mobile data services, and the significant dissatisfaction that merchants today have with credit-card payments and associated fees are increasing mobile-payment adoption, noted Nick Holland, an analyst with the Yankee Group, a market research firm.

Today's highly functional smartphones—such as Apple's iPhone, RIM's BlackBerry, and Google's Android—let users efficiently run mobile-payment applications.

"Phones can now download and run payment apps directly, without carrier intervention," said Security Curve's Moyle.

For example, noted Zong vice president of product and marketing Hill Ferguson, "Android permits third-party payment services for developers to use in their apps. We recently launched an Android SDK for apps that let users make purchases without entering credit-card information, usernames, or passwords."

This type of approach, which multiple vendors have implemented, addresses users' concern about having to repeatedly enter identification, account, and payment details on devices with difficult-to-use keyboards.

Instead, users have purchases either added to their phone bills, deducted from a prepaid account, or sent for payment by a credit-card account to which they have automatically linked their phone-based purchases.

Other factors driving demand

The increased popularity of virtual goods and social networking is driving demand for mobile-payment technology, noted BOKU cofounder and senior vice president for product and marketing Ron Hirson.

For example, many users play online games from multiple locations, making the ability to utilize mobile phones to buy virtual currency and other items used in the social games attractive, he explained.

The increasing use of prepaid mobile-phone accounts lets some customers who don't have credit make purchases via mobile-payment technology, said Hirson.

The mobile-payments market may be poised for rapid growth.

MOBILE-PAYMENT APPLICATIONS

Users are currently employing their smartphones primarily to make small purchases, mainly for digital content such as music and videos, although almost any type of purchase is feasible.

Vendors recognize this. For example, mobile-platform vendor Bling Nation focuses on businesses that have a high number of small transactions, such as restaurants and convenience stores.

Phone-based purchases are also being used for charitable donations. For instance, users rushed to make text-based donations after a massive earthquake struck Haiti in January. Contributors included their cell phone number or user alias and the amount they wanted to give in a text message, and the carrier added the payment to their phone bill.

A number of mobile-payment vendors are making an impact in the marketplace.

BOKU

The company launched in 2009 and grew by acquiring mobile-payment vendors Mobillcash and Paymo.

BOKU works with local cell phone carriers worldwide. Merchants and publishers in 65 countries use its principal service, called Paymo.

The company focuses on purchases and transactions, primarily for social gaming and virtual goods, not money transfers.

When users are ready to purchase a product from a vendor, BOKU sends a text message asking them to authorize the transaction with a texted response. The system makes payments by having purchase amounts added to users' wireless phone bill.

Obopay

"The services we offer can be used for transferring money between people, paying for goods and services, making donations, topping off phone minutes, or paying bills," noted David Schwartz, Obopay's vice president for product and corporate marketing.

"We offer this service and technology to partners, which could include financial-services companies, mobile carriers, merchant, or nonprofits," he said.

Obopay lets users issue payments via a command or keyword sent to the company by SMS. Users can spend money from a credit or debit card, a bank account, or a prepaid deposit. After entering information about the desired payment, users go to their personal checkout page and enter the source from which they want to make the payment.

Schwartz said the company's technology uses multifactor authentication—such as the use of an authorized phone and a PIN—to secure the payment process.

PayPal

The company, which eBay now owns, started with a technology that let users beam money between Palm Pilots.

PayPal director of global communications Anuj Nayar said the company expects to process $700 million in mobile transactions by the end of this year, up from $141 million in 2009.

The company offers several services.

PayPal for Mobile uses a handset-based mobile application and a server-based device-matching algorithm by Bump Technologies that let two smartphones identify each other, connect, and transfer funds by simply touching.

Mobile Check Capture is an iPhone application that lets users add funds to their PayPal account from a check by taking a photo of it. The technology is based on 2004 legislation that lets US financial institutions clear checks by transmitting an image electronically.

Mobile Payments Library lets application developers add checkout functionality to their software to let smartphone users pay for goods and services.

PayPal stores users' credit- and debit-card information in its servers, saving developers from having to worry about this.

Zong

Established in 2000, the company has built a network via which it can directly bill charges to users' wireless-carrier accounts.

Zong works with about 3.5 million consumers worldwide and with 220 carriers in approximately 50 countries.

The company works with leading digital-goods merchants and is the mobile-payment provider for Facebook Credits, virtual currency that can be used with games and other applications.

When ready to make a payment on a merchant's website, users type in their mobile-phone number, then receive a text message containing a one-time PIN. They type that code into the website to verify their account, and Zong clears the charge through their carrier bill.

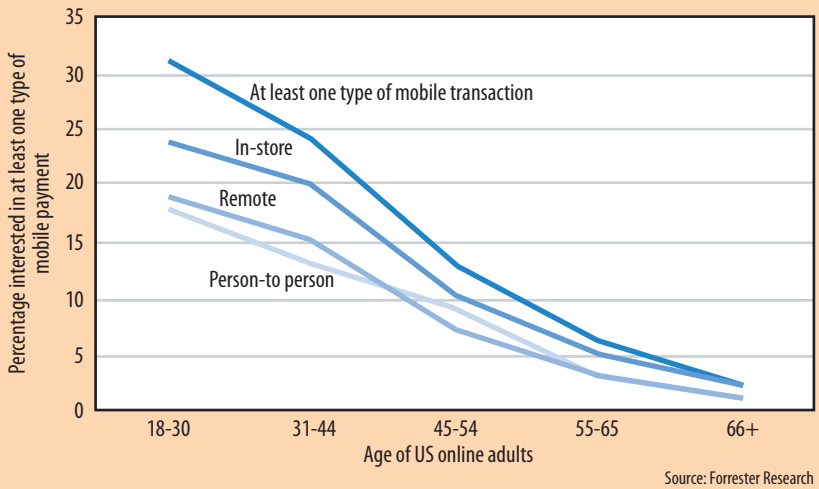

Figure 1. A recent survey indicates that respondents more than 30 years old are significantly less interested than those who are younger in using mobile devices to buy goods and services, pay bills, transfer money, and make charitable contributions.

New approaches

Some vendors are taking new mobile-payment approaches. For example, companies such as Bling Nation are using near-field communications to enable mobile purchases. NFC uses an RFID chip in a mobile phone that contains a buyer's credit- or debit-card information. When tapped against a payment terminal, the phone's chip exchanges information with the terminal's RFID-equipped receiver.

Intuit and mophie have designed the Complete Credit Card Solution accessory, which includes a credit-card reader that attaches to an iPhone, as well as a mobile-payment application.

OBSTACLES

Mobile-payment services must work on many types of phones and via the networks and billing services of many cellular-service providers, which adds complexity to the transaction process, said Tom Starnes, principal of market research firm Objective Analysis.

Many services address this issue by making their transactions browser based, noted William Stofega, program director for mobile device and technology trends at market research firm IDC.

Mobile-payment application vendors must convince merchants to work with their technologies. Until they can do so, potential customers might not use the services because they wouldn't have many merchants to work with.

And there isn't high interest among all age groups in making mobile payments, as Figure 1 shows.

Security

Some technologies used for mobile payments have inherently weak security. For example, SMS is vulnerable to snooping, spoofing, message interception, and social-engineering-based bypasses of security measures.

If consumers whose mobile payments are charged to their phone bill lose their handset and someone uses it to make purchases, carriers may force them to pay for the unauthorized charges.

"Laws and regulations governing phone-bill charges may not cover noncommunications-related charges," explained Suzanne Martindale, associate policy analyst with Consumers Union, a consumer-advocacy organization. "You're protected if you find a bogus long-distance calling charge but may not be if you find a bogus charge for a ring-tone download."

The greatest challenge will be educating users that their mobile device is more than just a phone and can be attacked by fraudsters while not scaring them into never performing mobile transactions, the Yankee Group's Holland said.

Trust and familiarity

Mobile-payment technology is relatively new and thus unfamiliar to many users accustomed to buying goods and services with cash, checks, or credit cards, Holland noted.

"Credit-card payment systems are widely deployed," said Rob Enderle, principal analyst with the Enderle Group, a market research firm. "The same has not been done for phones, and neither the phones nor the systems that use them are consistent or widely deployed. And people really don't trust their [wireless] carrier that much because of past unplanned charges and fees. Putting more of their money in the hands of that carrier may not be palatable to them"

Also, said Enderle, "This is yet one more way to run up debt, and that could be problematic."

Other challenges

Another challenge for mobile-payment providers is convincing major wireless carriers to lower the fees—sometimes 30 to 60 percent—that they charge vendors for each transaction, noted IDC's Stofega.

By making the process more profitable for vendors and merchants, lower fees would enable more of them to participate in the mobile-payment marketplace and increase the revenue for all players, said BOKU's Hirson.

For mobile-payment vendors, creating the right ecosystem of financial, wireless carrier, and merchant partners that can create widely useful, convenient, and lucrative services is another challenge, according to Obopay's Schwartz.

Some investors have poured a significant amount of money into mobile-payment services. For example, Nokia invested $35 million in Obopay. Some top venture capitalists—including Andreessen Horowitz, Benchmark Capital, DAG Ventures, Index Ventures, and Khosla Ventures—have invested a total of about $40 million in BOKU.

"Interest and investment by major market innovators like Apple and Google are already creating excitement and buzz in the industry," said Todd Ablowitz, president of Double Diamond Group, a global electronic-payments consultancy. "Starbucks recently expanded its mobile payments trial to 300 more stores. This could drive greater innovation and prompt some traditional payments-industry players to step off the sidelines."

In South Korea, 10 percent of e-commerce transactions are already handled via mobile payments.

However, predicted Security Curve's Moyle, there won't be enough consumer or merchant support for widespread adoption in the US for another three to five years.

According to the Consumer Union's Martindale, mobile-payment systems still come with risks that could undercut their convenience and hamper industry growth. Therefore, he explained, any company offering such applications should provide full consumer protections that mirror those in US debit- and credit-card laws, as well as provide assurances that users won't be held liable for purchases fraudulently made by others.

Bling Nation co-CEO Wences Casares said it took years for consumers to adopt credit and debit cards, and now we can't imagine not using them for purchases. He added, "Mobile payments might just be adopted more quickly and in less time."

Neal Leavitt *is president of Leavitt Communications (www.leavcom.com), a Fallbrook, California-based international marketing communications company with affiliate offices in Brazil, China, France, India, and the UK. He writes frequently on technology topics and can be reached at neal@leavcom.com.*

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