

Mobile payments first step in merging phones, keys, wallets into one device

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You're in the checkout line ready to pay for the items in your shopping cart.

Instead of fumbling with cash or pulling out a credit card, you whip out a smartphone. Inside the handset are chips that make nice with the store's register, and a digital wallet app holds virtual replicas of your plastic debit, credit and loyalty cards. You tap the screen to choose which one you want to use to pay for your purchases, then confirm the amount. An instant later, the transaction is complete.

If the digital future pans out the way that leading banks, credit card issuers, [wireless carriers](#) and tech companies hope, scenarios like this could become common.

Folks rarely leave home without their keys, wallets and cellphones. The thinking behind the next advancement in [mobile payments](#) - and it's likely to take years before this vision goes mainstream - is that all three can be merged into one.

"The promise of the mobile wallet is you'll be able to manage your entire financial life from a single device," says Andy Schmidt, research director for commercial banking and payments at TowerGroup.

Google took a major step toward making this a reality in May with the unveiling of the Google Wallet test pilot. Its financial, retail and technology partners include Citi, MasterCard, First Data, Sprint,

Bloomingdale's, Macy's, [RadioShack](#), Subway, Toys R Us, VeriFone and Walgreens.

Meanwhile, the rival ISIS mobile commerce network - formed in November among major wireless carriers AT&T, T-Mobile and Verizon Wireless - has struck agreements with American Express, MasterCard, Visa and Discover. Visa's own e-wallet is scheduled to be available by year's end.

Mobile payments can take many forms, and the field is wide open. Several well-known companies, as well as a number of start-ups you've never heard of, are jockeying to be the lead dog in this rush to make paying via cellphone practical.

Last spring, American Express launched the Serve digital payments platform that allows person-to-person payments over mobile phones, online or at merchants that typically accept regular AmEx cards. Serve pits AmEx against the likes of PayPal. Recently announced partners include Sprint and Verizon Wireless.

In May, Bank of America, Chase and Wells Fargo formed ClearXchange, a joint venture that lets bank customers make person-to-person payments using an e-mail address or mobile phone number.

"A lot of experimentation is happening," says Dan Schulman, president of enterprise growth at American Express. "There's no silver bullet, no definite winner out there at this moment."

Omar Green, Intuit's director of strategic mobile initiatives, says that during the next 18 months, "There's going to be a mad rush and a land grab. There's a lot of potential money on the table." Fee structures vary.

Intuit is helping merchants accept payments via phones and tablets

through its GoPayment reader that snaps onto certain Android, BlackBerry and Apple iOS devices. It turns compatible phones and tablets into credit card readers, making the devices potentially useful to business people who typically shun plastic, including contractors, plumbers and even the Girl Scouts.

San Francisco start-up Square, formed and led by Twitter co-founder Jack Dorsey, took a similar approach.

Users can plug Square's free pocket-size credit card reader into the audio jack on an Android or Apple device. Doing so allows customers to swipe credit or debit cards on those devices.

On the merchant side, Square lets shopkeepers accept payments via an iPad, bypassing the need for traditional point-of-sale cash registers. Customers can sign for a purchase right on the touch-screen of their iPad. Square charges merchants 2.75 percent per transaction.

Along the way, Square can capture meaningful data for businesses. "We can tell the (cafe owner) that they sold this number of cappuccinos, and this percentage of people bought biscotti, and this is what happens on a rainy day and this is your busiest hour on a Tuesday," Dorsey says.

There's some evidence that more and more folks will use phones to pay for everyday items.

Coffee lovers increasingly are getting their daily fix using the Starbucks payment app, available on Android devices, BlackBerrys and iPhones. Customers hold the phone in front of a scanner that reads an on-screen bar code.

"The customer can check his balance (on a prepaid Starbucks card), reload the card, get an update on where they are from a loyalty status,"

says Adam Brotman, vice president and general manager for digital ventures at Starbucks.

Ryan Detzel of Cambridge, Mass., is a fan of the app. He recently tweeted, "Someone needs to master mobile payments fast! The starbucks app works so well I wish I could pay for everything that way!"

PayPal recently demonstrated a wireless technology - known as Near Field Communication (NFC) - that lets people transfer money from their PayPal-funded accounts by tapping two Nexus S Android smartphones together. PayPal says the feature will hit the market this summer. The Near Field Communication technology is at the core of several mobile payment initiatives, including Google's.

"We're acutely aware that simply moving (from) a physical wallet to ... an electronic one is not enough," says Sam Shrauger, PayPal's vice president of global product strategy.

Indeed, for many mobile payment backers the Holy Grail is to link digital wallets to other apps on a phone. That's why Google is combining its Wallet with Google Offers, which generates discount deals. And it's why Visa, for example, can deliver security-minded transaction text alerts every time a customer's account is used overseas or a payment amount exceeds \$100.

If you use your Visa account to make a purchase at a store that happens to be near a Gap outlet, you may receive a Gap mobile coupon right then.

Jeff Larson, vice president of global marketing at Subway, sees the "opportunity to integrate not just payments but social media, search, location, GPS (and) mobile offers."

Even so, persuading the masses to embrace mobile payments isn't easy.

According to the Gartner research firm, worldwide mobile payment users will surpass 141.1 million in 2011, up from 102.1 million in 2010. Mobile-payment volume is forecast to total \$86.1 billion, up from \$48.9 billion last year. But Gartner says the market is growing more slowly than mobile-pay proponents expected. Also, the researcher says, in developed markets, mass-market adoption for such payments is at least four years away.

Intuit's Green says, "What I'm hearing isn't so much, 'Please give me a way to tap and go.' What I'm hearing is, 'Please help me better manage my money when I'm actually out there spending it.'"

He envisions a smart wallet that eventually might steer customers to use one digital account to pay for a given item because reward points or a discount is available, while advising against using another because the account is nearing its credit limit.

Among the obstacles that need to be worked out:

- If it ain't broke, why fix it? Consumers have been pulling cash or plastic cards out of physical wallets for generations. Green says, "There isn't anything harder or more expensive than changing people's behavior."

What's more, shoppers have never had to worry about dying phone batteries preventing them from being able to make a payment.

- Security and privacy. Consumers worry about losing their phones, but the fact is people may be in better shape losing their smartphone than if their actual wallet is lost or stolen. Phones (and apps) can be password-protected. Security elements are built into the NFC chips. It's easy to

remotely shut down a digital wallet if necessary. And people may notice a missing phone before they notice a missing wallet.

Still, Consumers Union senior attorney Michelle Jun cautions, "If wireless carriers expect consumers to feel comfortable using mobile-payment services, they need to provide at least the same level of protections that come with credit cards." Jun says mobile charges linked to credit or debit cards are guaranteed the same federal protections but that mobile charges linked to other forms of payment lack such legal protections.

Customers also must have a clear understanding of their privacy rights.

"Right now we're not actually taking any data and storing it or doing anything with it beyond allowing a transaction," says Google mobile-payments executive Osama Bedier. "We have a policy around how to do that, and privacy is very important to us. The consumer has to be very aware of what data they may be making available, and they've got to give their consent in every case."

Google says the transaction data remain between you and your bank, just as it does when you use a traditional credit card.

- Infrastructure. Merchants must be persuaded to upgrade checkout terminals. Relatively few can handle Near Field Communication-type contactless payments right now.

"Merchant acceptance is somewhat spotty at best," says Peter Ho, product manager for Wells Fargo card services and consumer lending. It's going to take time and money."

Alberto Jimenez, who leads IBM's mobile-banking and payments initiatives globally, says there are several challenges: "The fact that

phones are not ready, the point that merchants are not ready and that the ecosystem is not coordinated."

Very few handsets are equipped with Near Field Communication chips. In the USA, Google is launching its Wallet soon with just a single device that has the chips: the Nexus S from Sprint. The iconic iPhone doesn't have the capability. But more NFC-capable phones are in the pipeline.

There are workarounds in the meantime. You can put antennas that make such transactions possible on memory cards that fit into slots on several phones. You also might put stickers with the technology embedded on them on a phone.

Silicon Valley start-up Naratte uses ultrasound frequencies to provide what it claims are NFC-type benefits. The technology, called Zoosh, uses the speaker and microphone built into mobile phones.

- Competition. It's not known if shoppers will carry multiple payment or wallet apps or just multiple cards within a digital wallet. As the market sorts itself out, everyone is going to want their piece, from the financial institutions to phone companies.

But MasterCard mobile head Mung-Ki Woo believes the growth of mobile means the pie will only get bigger: "This isn't a zero sum game," he says.

Google's Bedier is equally sanguine. "Part of why we feel there's an opportunity in this space for [Google](#) to make a difference is there are too many solutions that are all fragmented and don't work well together. The whole essence of payment has been some level of standardization. Let's create the right opportunity using our weight to create the right set of standards."

And how quickly does Bedier think this all gets adopted?

"It's early. Obviously, I'm optimistic. We're in this game for a reason. The timing is right, the opportunity is right and the approach is right."

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