

# payments system research briefing

December 2012

FEDERAL RESERVE BANK *of* KANSAS CITY

## Where Social Networks, Payments and Banking Intersect

by Terri Bradford, Payments System Research Specialist

It may be old news that social networks are big, and getting bigger by the day. But the expansion of commerce across the social network landscape is a relatively new development—one that brings not only opportunities for innovation but also a range of potential risks.

As a consumer market, the world of social networks is vast. Facebook alone now has some one billion users. And it's not just that there are a lot of users. Those users are also spending a lot more time on social sites. In 2011, users spent nearly a quarter of their total online time on social networks, up from just 15.8 percent in 2009.<sup>1</sup>

Where there are large groups of people spending a significant amount of time, commerce tends to follow. Nearly all of the top internet retailers interact with consumers on at least one social networking site. When that interaction includes the sale of goods or services, familiar methods such as card payments, automated clearinghouse (ACH) transfers and even PayPal support those transactions. In addition, alternative payment methods have emerged. A significant number of financial institutions also engage their customers using social networks and some are beginning to offer payment services as well.

Unfortunately, where there is commerce and modes of payment to support it, risks tend to emerge. By their nature, social sites allow users to communicate not only directly with one an-

other but also, sometimes inadvertently, with an entire network of users. This may be a benefit for users desiring to socialize, but when payments are involved along with the data required to facilitate them, there are risks ranging from personal privacy violations to fraud, or even potentially money laundering.

This article begins with a glimpse of the extent to which social networks have been adopted. Next, it describes the diversity of commerce arising among social networks and the payment methods that support it. The article then describes ways in which financial institutions are using social networks to provide banking services and how consumer attitudes may drive opportunities to offer person-to-person (P2P) payments. Finally, the article concludes by setting out some of the potential risks of these various interactions.

### Social Networks and Their Use

In existence since the mid-to-late 1990s, the use of social networks has become mainstream. Facebook has one billion active monthly users, more than 600 million of whom use Facebook mobile products. Twitter has more than 140 million active users who are tweeting at a rate of nearly 350 million tweets a day. And LinkedIn, reportedly the largest professional networking site, has more than 185 million members in over 200 countries and territories.<sup>2</sup>

The demographics of these millions of active social

network users cover a wide range of ages. A 2011 study by the Pew Institute found that 83 percent of those who are 18 to 29 years of age, 70 percent of those 30 to 49, 51 percent of those 50 to 64, and 33 percent of those 65 and older are social network users.

With such widespread adoption, it's not surprising that the use of social sites has become the dominant way that Americans spend their online time or that the use of social networks on mobile devices is quite prevalent as well.<sup>3</sup> The sheer number of users has attracted commercial activity as well.

## Commerce and Payments on Social Networks

The nature of commerce on social sites varies. Most of it arises from the purchase of "virtual goods," particularly in social games.<sup>4</sup> However, commerce also arises from the purchase real goods from "storefronts" on social network sites, and as individuals use social media to make P2P payments and charitable contributions.

### *Virtual goods and micropayments*

A popular activity among users of social networking sites is playing games. While the games are free to play, individuals can customize their experiences within them through the purchase of virtual goods such as hair for an avatar, rain for a virtual crop, or food for an imaginary pet.<sup>5</sup> Players purchase these goods to enhance their gaming experience and/or to increase their chances of success in the game. A key feature of these virtual goods is that each purchase is of small value, often less than a dollar—a "micropayment." In aggregate, however, these micropayments are growing in significance. In 2012, U.S. revenue from virtual goods is projected to be \$2.4 billion, more than double the revenue from 2010 (Javelin Strategy and Research 2011).

Because payments for virtual goods are micropayments, payment methods differ from those used for online purchases of real goods and services. Traditional payment methods such as card payments and ACH transfers generally require sellers to pay a fixed processing cost for each transaction. Having to cover this fixed cost for each purchase of low value would make the sale of virtual goods prohibitively expensive. To get around this problem, many social games allow players to pre-fund "virtual currency" accounts, like Facebook Credits and Linden Dollars, using traditional payment methods.<sup>6</sup> Players can then draw down their virtual currency accounts

as needed to purchase virtual goods. Under this arrangement, the fixed processing cost per payment transaction need only be incurred when a player adds funds to his or her account, rather than each time a virtual good is purchased.

Another payment method that economizes on the transaction costs of micropayments enables consumers to use their mobile phone accounts to pay for virtual goods. The cost of each purchase of virtual goods is charged to the consumer's mobile account and settled only once at the end of the month, when the consumer pays his or her phone bill. Billing to mobile phone accounts has long been used to pay for low-value digital goods such as ring tones and wallpaper. More recently, mobile payment providers like Boku, mopay and Zong have partnered with mobile carriers to facilitate payments for virtual goods used in games as well. In a typical transaction, the consumer selects the amount of a virtual currency to purchase and enters his or her mobile phone number. The mobile payment provider then sends the consumer a text message that contains a PIN, which must be used in the game to confirm the purchase. After the purchase is confirmed, the payment provider notifies the mobile carrier, which posts the charge to the consumer's phone bill. The mobile payment provider is subsequently paid by the carrier and will periodically settle with the game provider by transferring funds through the ACH to the game provider's bank account. A recent mopay study reveals that mobile gaming accounts for more than half of all mobile transactions, with growth in social gaming, in particular, drastically increasing.<sup>7</sup> Mopay data showed that average spending ranged from below \$2 for various mobile-related services to \$10 and above for social networking or entertainment offerings.

Consumers can also pay for virtual goods with rewards earned by participating in online promotions. Companies like Super Rewards and Tapjoy serve as intermediaries between advertisers trying to interest consumers in promotions and game providers seeking to monetize their games. Typically, when a consumer agrees to participate in a promotion, the intermediary asks the game provider to add the agreed-upon amount of virtual currency to the consumer's account. Periodically, the intermediary collects the funds due from the advertiser and passes them on to the game provider via the ACH, wire, PayPal or check to cover the virtual currency reward. These transfers are made only periodically, rather than each time a consumer participates in a promotion. As a

result, transaction costs are kept to a minimum, just as in the case of mobile carrier billing and pre-funding of virtual currency accounts. Tapjoy reports that its network has reached more than 500 million devices and is actively used by 110 million customers on a monthly basis.<sup>8</sup>

### *Purchase of real goods from social storefronts*

Ninety-seven percent of the top 250 internet retailers have a presence on at least one social networking site.<sup>9</sup> Social networks enable merchants to meet their customers where they are, and can provide information about potential customers, such as whether they are male or female, their age range, where they are located and even what language they speak. This type of insight can prove useful to retailers in improving products and services, refining marketing efforts, or simply making consumers' experience more enjoyable.

Using a social network like Facebook, a retailer can set up a page to promote products or services and encourage users to become "fans." Once a Facebook user opts to become a fan, the retailer's posts and special promotions appear on the user's Facebook page. In most cases Facebook users wanting to interact with a retailer will have to follow a link to the retailer's website, taking them off the Facebook platform.<sup>10</sup> However, some retailers operate storefronts that enable Facebook users to make purchases without leaving the Facebook platform.<sup>11</sup> In those instances, payment is almost always made through a payment intermediary like PayPal. As in traditional e-commerce, the payment intermediary either processes payments on the consumer's credit or debit card or uses the ACH to deduct funds from the consumer's bank account.

Twitter is another social network that retailers use to interact with consumers. Retailers can encourage consumers to "follow" them on Twitter by sending tweets with special offers. As in the case of Facebook, consumers responding to these offers generally must leave the social networking platform and navigate to the retailer's website or physical location to make the purchase. However, new payment services like Chirpify are attempting to streamline the payment process by linking consumers' Twitter accounts with their PayPal accounts.<sup>12</sup> Chirpify enables a Twitter user to buy goods and services without

leaving the Twitter platform, simply by replying to tweets. PayPal, acting as the intermediary, processes the payment on the consumer's credit or debit card or through the ACH. Among the users of Chirpify are a growing number of musicians who sell music and merchandise via Twitter.

### *P2P payments and charitable contributions*

P2P payments have been introduced on social networks by providers such as Pay Me and Twitpay but haven't yet achieved widespread adoption. Pay Me was launched on Facebook in 2007 and Twitpay was launched on Twitter in 2008. Both P2P services required their respective users to link their social network account with a PayPal account to settle payments.<sup>13</sup> With either P2P service, a user could initiate a payment to another user of the same social network by replying to or sending a message. Pay Me or Twitpay noted the payment on the accounts of the sender and recipient and kept a record of the payment until it settled through PayPal. Failing to achieve significant adoption within their respective social network, Pay Me shuttered its service by 2010, and Twitpay shifted its focus to its RT2Give service, which enables registered non-profit organizations to solicit contributions via Twitter.<sup>14</sup>

Twitter users interested in making charitable contributions can also register with RT2Give by providing personal and payment information and linking their Twitter accounts. Once the registration process is complete, Twitter users can respond to tweets from registered causes without leaving the Twitter platform. Payments are completed by traditional methods such as the use of credit or debit cards or through the ACH. Examples of charities that use RT2Give include the Literacy Freedom Project, the American Lung Association, and the Children's Miracle Network.

Social networks also facilitate charitable contributions through the purchase of virtual goods in social games. For example, in response to the Haiti earthquake in January 2010, social game developer Zynga created limited edition virtual goods for games played on Facebook and donated the proceeds to Haitian relief efforts. Purchases of virtual goods like Haitian white corn in FarmVille and Haitian fish in FishVille generated over \$1.5 million in charitable contributions for Haitian earthquake survivors.<sup>15</sup>

## Banking Services on Social Networks

Merchants are not alone in their use of social networks to engage customers. A study by The Financial Brand found that nearly 75 percent of financial institutions use Facebook, 54 percent use Twitter, and 48 percent use LinkedIn.<sup>16</sup> They use these sites to share information about their community service and philanthropic activities, market products and services, provide customer service, foster engagement and, to a more modest extent, provide access to banking services.

Vantage Credit Union was an early adopter of social networking. It used Twitter to launch its TweetMyMoney service in 2009. TweetMyMoney allows Vantage customers who are also Twitter users to view account balances, transfer funds between their Vantage accounts, and view their last five transactions. While Vantage remains a relative trail blazer in offering banking services through a social network, Citigroup recently solicited interest in banking on Facebook, and a number of international financial institutions have recently begun offering banking services as well.<sup>17</sup>

Earlier this year, India's ICICI Bank launched a Facebook banking application that enables its customers to perform account inquiries, check account balances, and get account statements. South Africa's FNB Bank has also given its customers the ability to bank on Facebook by linking their mobile banking profile to their Facebook profile. The FNB Bank service is currently limited to purchasing prepaid airtime, text messages and smartphone data bundles, and viewing balances and lottery results. FNB customers can also buy vouchers that can be sent as gifts to friends on Facebook and later redeemed for prepaid airtime or converted to cash. In addition, FNB plans to allow payments in the future. Meanwhile, Commonwealth Bank of Australia is building an application that will allow its customers to make payments to third parties and friends through Facebook. Finally, New Zealand's ASB Bank, which is owned by Commonwealth Bank of Australia, has a mobile application that allows its customers to make P2P payments directly to Facebook friends.

One of the main hurdles faced by electronic P2P payment services is the inability to achieve universal adoption among consumers, whether as payers or as payees (Bradford and Keeton). Given consumers' demonstrated willingness

to engage on social networks, it may be that social networks could provide a channel through which P2P payments can overcome this hurdle. There are now 5 billion mobile devices in the world and 1 billion Facebook active users—600 million whom already access Facebook from their mobile device.<sup>18</sup> Though banking on social networks is still in the developmental stage, the financial institutions that are pioneering payment services are able to leverage some aspect of their mobile banking platform to allow customers to send payments to Facebook friends.

## Implications for Payments Risk

Growth of commerce and payments on social networks has implications for risks related to money laundering, fraudulent activities, and privacy violations. With respect to money laundering, in the physical world, providers of financial services are mandated under the Bank Secrecy Act and the USA Patriot Act to "Know Your Customer" (KYC). KYC requires financial institutions to collect and analyze basic identity information as well as monitor financial transactions against expected behavior. In a virtual world, money laundering is an emerging vulnerability that could potentially occur as social gamers interact internationally, buying and selling virtual property, goods, and services. An individual can establish a virtual currency account using falsified information. The individual can fund the account using a prepaid product, for example one purchased with proceeds from criminal activities. The individual can then begin to transact with a partner or a network of partners who then convert the virtual currency to real currency and withdraw the funds (AUSTRAC 2012).

In contrast with the physical world, the KYC responsibilities of operators of virtual worlds are less certain. In July 2011, under a requirement of the Credit Card Accountability, Responsibility and Disclosure Act of 2009, the Financial Crimes Enforcement Network (FinCEN) issued its final rule amending the Bank Secrecy Act implementing regulations regarding Money Services Businesses (MSBs). Though money laundering in the context of social networks is not explicitly addressed, the rule clarifies which entities qualify as MSBs and are therefore subject to the anti-money laundering



regulations of the Bank Secrecy Act.<sup>19</sup> Given this clarification, it could be interpreted that providers of virtual currencies are indeed MSBs and should be treated accordingly.

Other fraudulent activity is also a risk on social networks. For example, users who participate in online surveys or sign up for new services to earn rewards may be misled by confusing or spurious offers. Some users have experienced billing of unwanted services to their mobile phone or card accounts.<sup>20</sup> Fraud also can result from criminals' using stolen payment card information to buy digital goods which they sell and then convert the virtual proceeds into real dollars. Consumers have recourse when transactions are made with payment cards, but it is less clear what recourse is available when mobile account billing is the method of payment. Merchants selling goods in social networking environments may also be more vulnerable to fraud. Their vulnerability arises because methods of fraud detection may not be rigorous and because delivery of goods is instantaneous. CyberSource Corporation has estimated that merchants that sell digital goods lost 1.9 percent of revenue to fraud in 2009, compared with a 1.1-percent fraud rate for companies that sell physical goods online (Worthen).

In addition to fraud risks, users of social networks can expose themselves to identity theft through social engineering, hacking or inadvertent exposure of data. Research has shown that even individuals with privacy concerns who join social networks nevertheless reveal vast amounts of personal information—about themselves, their families, and even their employers. Some users believe they can control access to their personal information, while others have a general misconception about the actual size and composition of the online community and therefore the visibility of their profiles (Acquisti and Gross). In recent testimony before the House Judiciary Subcommittee on Crime, Terrorism, and Homeland Security, the assistant director of the FBI stated that social networking sites, especially, are breeding grounds for cyber-criminals who

trick unsuspecting victims into revealing bank account information and other personal details. To combat such activities, the FBI has forged partnerships with federal, state, local and international law-enforcement agencies, and with the private sector and academia.

Social network users' data also can be inadvertently exposed. For example, Facebook recently announced it has begun allowing marketers to target ads at its users.<sup>21</sup> Facebook is enabling the advertisements based on the email addresses and phone numbers that users list on their profiles, or based on their surfing habits on other sites. Facebook maintains that it is not selling user data to advertisers. However, its actions have raised concerns and calls for special scrutiny because in many cases Facebook has more information about its customers' identities than other internet companies.

## Conclusion

Commerce—and payments—will tend to arise wherever people congregate in significant numbers. Although commerce on social networks is still in its early stages, it offers interesting possibilities for payments. New payments are emerging alongside more familiar options such as card payments, ACH transfers and PayPal. Now, Twitter can be used to complete a transaction using just 140 characters or less. Virtual currencies like Facebook Credits and Linden Dollars can be used to purchase virtual goods. In turn, those purchases of virtual goods can be used to make charitable donations. And, with just the name of a Facebook friend, funds can be transferred from one person to another.

However, just as social networks create opportunities for commerce, they may also unintentionally introduce risks such as breaches of privacy, fraud and even money laundering. If new regulations become necessary, that may have a dampening effect on the potential for social networks to offer new retail payment opportunities. If the social channel is to reach its full potential, providers, users and policymakers will need to remain vigilant and guard against the attendant risks.

## Endnotes

<sup>1</sup>State of the Media: The Social Media Report, Nielsen Q3 2011, and “What Americans Do Online: Social Media and Games Dominate Activity,” Nielsen Wire, Nielsen, Aug. 2, 2010.

<sup>2</sup>The statistics in this paragraph were accessed on Dec. 4, 2012, at the following sites:

*Facebook Statistics:*

<http://newsroom.fb.com/content/default.aspx?NewsAreaId=22>

*Twitter Statistics:*

<https://business.twitter.com/basics/what-is-twitter/>

*LinkedIn Facts:*

<http://press.linkedin.com/About>

<sup>3</sup>State of the Media: The Social Media Report 2012, Nielsen.

<sup>4</sup>Social games are a subset of online games, which are played on multiple platforms (PCs, consoles, and social networks with Facebook being the largest platform).

<sup>5</sup>In gaming, an avatar is a visual representation of the player of the game.

<sup>6</sup>Facebook Credits are used to purchase goods in a wide variety of games that are played on the social networking site. Once purchased, they cannot be converted back to cash. Credits are scheduled to be phased out by year end; user account balances then will be measured in U.S. dollars, or whatever currency is native to a country. <http://developers.facebook.com/blog/post/2012/06/19/introducing-subscriptions-and-local-currency-pricing/>, accessed Oct. 5, 2012.

Linden Dollars are the virtual currency used in the virtual world Second Life. Linden Dollars can be traded for real world currencies (USD, EUR, GBP, JPY) on the Lindex, the official Second Life trading site, and on other third-party exchanges.

<sup>7</sup>Mopay Study Reveals Consumers’ Spending Behavior Via Direct Carrier Billing, [http://www.mopay.com/upload/20120904\\_PM\\_mopay\\_Numbers\\_US.pdf](http://www.mopay.com/upload/20120904_PM_mopay_Numbers_US.pdf), accessed Dec. 4, 2012.

<sup>8</sup>Tapjoy Surpasses Half A Billion Mobile Devices, <http://info.tapjoy.com/about-tapjoy/company-news/press-releases/tapjoy-surpasses-half-a-billion-mobile-devices/>, accessed Dec. 4, 2012.

<sup>9</sup>TOP 250 Internet Retailers On Social Media, <https://www.campalyst.com/top-250-internet-retailers-on-social-media-infographic>, accessed Oct. 3, 2012.

<sup>10</sup>“Gamestop to J.C. Penney Shut Facebook Stores,” Bloomberg, Feb. 22, 2012.

<sup>11</sup>“Small Retailers Open Up Storefronts on Facebook Pages,” New York Times, July 25, 2012.

<sup>12</sup>Chirpify has also integrated with Instagram, a photo sharing social network. See References.

<sup>13</sup>Twitpay originally used Amazon Payments to settle its transactions, but was later relaunched with a link to PayPal.

<sup>14</sup>RT2Give means “retweet to give.” In January 2012 Twitpay also began allowing registered clients to post messages and solicitations on their Facebook walls. <http://blog.twitpay.com/?p=404>, accessed on Oct. 5, 2012

<sup>15</sup>“In five days, Zynga raises \$1.5M for Haiti via Facebook games,” January 19, 2010, <http://venturebeat.com/2010/01/19/in-five-days-zynga-raises-1-5m-for-haiti-via-facebook-games/>

<sup>16</sup>State of Bank & Credit Union Marketing in 2012, Jan. 17, 2012, <http://thefinancialbrand.com/21384/2012-bank-credit-union-marketing-study-results/> Participants included over 300 FIs; 101 banks, 143 credit unions, 33 community banks and 26 other types of financial organizations.

<sup>17</sup>“Facebook Banking Shows Signs of Life,” American Banker, Aug. 2, 2012.

<sup>18</sup>Fowler, Geoffrey A., “Facebook: One Billion and Counting,” Wall Street Journal, Oct. 4, 2012.

<sup>19</sup><http://www.gpo.gov/fdsys/pkg/FR-2011-07-21/pdf/2011-18309.pdf>, accessed Oct. 5, 2012.

<sup>20</sup>“Zynga’s Request to Dismiss Lawsuit Denied By Judge,” Industry Gamers, Nov. 16, 2010.

<sup>21</sup>“Facebook Sells More Access to Members,” Wall Street Journal, Oct. 1, 2012.

## References

Acquisti, Alessandro, Ralph Gross, “Imagined Communities: Awareness, Information Sharing, and Privacy on the Facebook,” Privacy Enhancing Technologies Workshop 2006.

Australian Transaction Reports and Analysis Centre, AUSTRAC typologies and case studies report 2012, pp 16-19.

Bradford, Terri, William P. Keeton, “New P2P Payment Methods: Have Checks Met Their Match?” *Economic Review*, September 2012.

Javelin Strategy and Research, *Virtual Currency and Social Network Payments—The New Gold Rush*, June 2011.

Lunden, Ingrid, “InstaSale: Chirpify Takes Its In-Stream Commerce Service To Instagram As Its Twitter Servicer Continues to Fly,” October 23, 2012.

Madden, Mary, Kathryn Zickuhr, 65% of Online Adults Use Social Networking Sites, August 26, 2011.

The Nielsen Wire, “What Americans Do Online: Social Media and Games Dominate Activity,” August 2, 2010.

Worthen, Ben, “Fraudsters Like Virtual Goods,” *Wall Street Journal*, July 21, 2010.

# payments system research

Web site: <http://www.kansascityfed.org/research/bankingandpayments/>

The Payments System Research Department of the Federal Reserve Bank of Kansas City is responsible for monitoring and analyzing payments system developments. Staff includes:

**Terri Bradford**

Payments System Research Specialist  
[Terri.R.Bradford@kc.frb.org](mailto:Terri.R.Bradford@kc.frb.org)  
816-881-2001

**Fumiko Hayashi**

Senior Economist  
[Fumiko.Hayashi@kc.frb.org](mailto:Fumiko.Hayashi@kc.frb.org)  
816-881-6851

**Rick Sullivan**

Senior Economist  
[Rick.J.Sullivan@kc.frb.org](mailto:Rick.J.Sullivan@kc.frb.org)  
816-881-2372

**Emily Cuddy**

Research Associate  
[emily.cuddy@kc.frb.org](mailto:emily.cuddy@kc.frb.org)  
816-881-4788

**William Todd Mackey**

Vice President  
[William.T.Mackey@kc.frb.org](mailto:William.T.Mackey@kc.frb.org)  
816-881-2459

*The views expressed in this newsletter are those of the author and do not necessarily reflect those of the Federal Reserve Bank of Kansas City or the Federal Reserve System.*