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BY MARK FLAMME, DOUGLAS DWYRE, AND KEVIN GRIEVE

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Rideshare services such as Uber and Lyft have transformed urban mobility and advanced the sharing economy. But it is another, less obvious aspect of their success that, over time, may have far more significance than launching a new mode of transportation.

Rideshare companies have perfected a challenging trick in the financial world: frictionless transactions. With these services, no cash or credit changes hands. Passengers simply tap their smartphone to summon a car and pay for it. That seamless experience, in turn, helps generate repeat business for the service provider. According to a study the Economist conducted last year, monthly taxi ridership in selected areas of New York City increased from 4.8 million in 2013 to 7.3 million in 2015 — with the rise in demand largely attributable to rideshare companies, and traditional taxi ridership in decline.

A few other companies have greatly simplified transactions as well. Starbucks offers an app that lets customers pay and accumulate rewards by pointing a barcode on a smartphone screen at the coffee shop's point-of-sale (POS) equipment. In 2015, just two years after the app launched, the program accounted for 24 percent of Starbucks's store transactions. Amazon's 1-Click ordering, Panera Bread's order/pay ahead and pickup, and the easy payments approach adopted by travel sites such as Airbnb and VRBO can also be placed in the category of instant purchase

Yet these are exceptions rather than the norm in POS payments. Even in the Internet age, most retail customers around the world pay for their purchases with credit cards — which leaves many sales opportunities on the table. It has been decades since the introduction of plastic payment. At the time, it was a breakthrough that provided the first stage of frictionless transactions. But with credit cards, even paying online can be a tedious process of filling out the account details and billing address each time a customer makes a purchase.

Now, e-commerce and various forms of digital tender are becoming ubiquitous, but companies continue to struggle to design and implement large-scale systems that avoid POS speed bumps. Although digital startups are edging into the back-office technology side of this arena, financial-services firms and retailers are mostly unsettled by the options and proceeding gingerly, hesitant to put resources into experimental approaches. And consumers haven't embraced the few choices they have, such as Apple Pay or Google Wallet, because they are not yet much more convenient than using a credit card.

Nevertheless, as e-commerce in general and mobile shopping in particular grow, frictionless payments seem inevitable. When frictionless payment systems arrive in full, they will permanently reset the way people buy

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products, both online and offline. This in turn will change retail and financial services. Merchants will offer new payment options, financial-services institutions will find new ways to serve consumers, and business models and profit streams will shift. Payments will fade into the background. POS systems will be cloud-based, increasing the velocity of innovation and allowing greater and more efficient integration of activities between financial-services firms and retailers. The cumbersome 16-digit credit card account number will give way to multiple types of more user-friendly and secure identifiers, and new "intelligent" personal financial management tools will emerge.

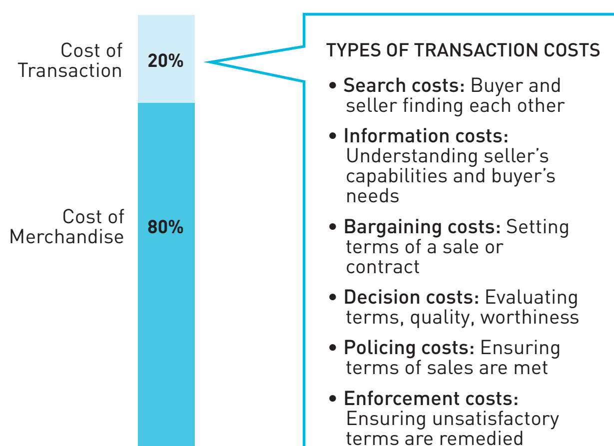
Indeed, frictionless payments will peak when during a single, quick transaction, intelligent apps will guide consumers to the payment option most appropriate to their financial status and preferences. Banks and other lenders will offer instant credit whose terms are driven by consumers' financial health and the items they are buying. Issuers of credit cards, which are a cash cow for banks, will find that they have to compete for placement in an active consumer's digital wallet. Broad, commoditized reward programs will recede. In this world, retailers will pursue ever more control over each transaction and the customer experience, balancing cost of payments, ease of use, customer needs, and overall brand loyalty.

It has been evident for some time that friction in money-based transactions carries a harsh penalty for everyone involved. In an old-fashioned physical store — whether a bookseller or a car dealership — transaction costs can amount to 20 percent of the item's price (*see Exhibit 1*). These include the cost of buyers and sellers finding each other and making sure that the terms of the deal are to everyone's satisfaction — and each transaction cost represents a potential delay and a moment at which the deal can be abandoned

E-commerce has removed many of these barriers. For example, buying a book online can eliminate about 95 percent of the search costs incurred by the consumer by going to a brick-and-mortar store; the online shopper still has to search, but the experience takes less time than getting to the bookstore — which might also involve transportation costs — and browsing for books on physical shelves. The convenience of shopping from home or, more recently, via a smartphone was such a radical break with the past that e-tailing has enjoyed double-digit growth since its inception two decades ago. But to con-

Exhibit 1: **Traditional Costs of Friction**

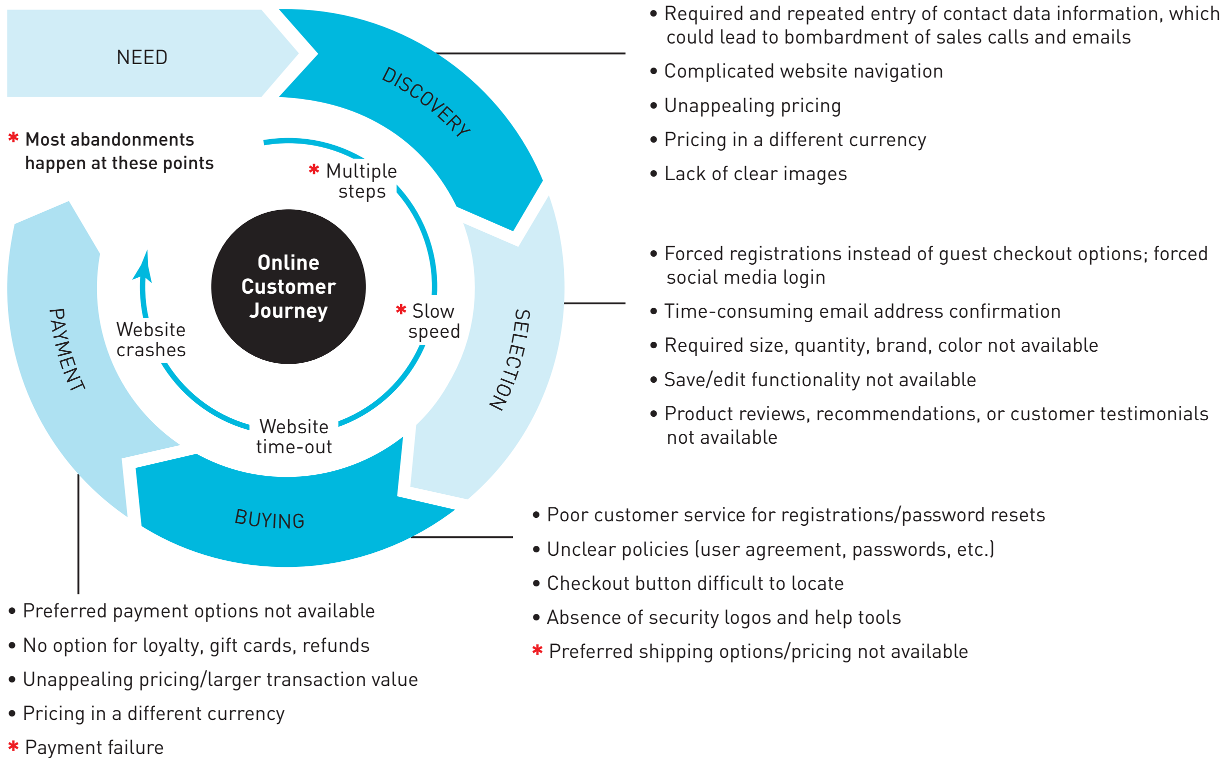
When a customer pays for a purchase with cash or credit, the transaction costs can amount to 20 percent of the price of the item and cause delays that might lead the buyer to abandon the deal.



Source: Strategy& analysis

Exhibit 2: **Online Points of Friction**

E-commerce has removed many transaction costs, but still needs to minimize the payment obstacles that might cause consumers to abandon a purchase at any stage.



Source: PYMNTS.com and BlueSnap Study, comScore, Strategy& analysis

tinue to achieve accelerating growth, e-commerce will have to minimize the payment obstacles that can cause consumers to abandon purchases (*see Exhibit 2*).

For online retailers, it is always a challenge to get people to commit to buying when they can surf from one site to another. The primary problem, however, is cart abandonment by consumers who appear to choose items but give up on the sale before they check out. On average, nearly 70 percent of online carts are abandoned, according to an analysis by the e-commerce research group Baymard Institute. Multiple factors are to blame for cart abandonment. The Baymard study cites high taxes and shipping costs; requirements that the customer register an account, a complicated or lengthy checkout process, and website errors or crashes among the top customer frustrations. Other factors might include too many steps in a transaction; lack of product reviews and recommendations; limited shipping options; and the inability to apply multiple sources of funds (such as coupons, reward redemptions, gift cards, and multiple credit cards) in a single purchase.

The high price of cart abandonment has become a catalyst for advances in frictionless payment. The pace of new developments appears to be increasing, although impediments remain. But considering payments' importance to retailers' performance as well as the future of financial-services firms, these companies are motivated to address this challenge.

Given the shifting landscape, it is worth examining recent gains in seamless payments, where the friction points are most pronounced, and how financial-services firms and retailers can profit from transformation during the next decade. Three particular dimensions of frictionless payment activity are most important for companies: card management in the cloud, invisible payments, and personal financial fitness.

Card Management in the Cloud

In the first wave of frictionless transactions, consumer payment options became more convenient as cash and checks gave way to credit and debit cards. But significant obstacles remained. Using credit in a physical

store, consumers had to show their card, slide it or insert it into a POS device, input a PIN or signature, and wait while their credentials were approved. The situation did not improve much when e-commerce came along. Online shoppers still must enter significant information before a transaction is approved, especially if they are leery of trusting retailers with personal data for repeat purchases.

Applications that store credentials, such as Apple Pay, Visa Checkout, Google Wallet, and Masterpass, are the present-day attempt to eliminate friction. In physical stores, smartphones with digital wallets, devices that allow consumers to store credit accounts, need only be adjacent to POS equipment for transaction approval.

Retailers have been slow to upgrade their POS systems to accept the stored-credentials apps for several reasons. Consumers haven't yet shown widespread enthusiasm for them, the cost of adaptation is high, and stores are reluctant to share their payments with the apps' purveyors. However, these applications are encouraging the development of a digital wallet infrastructure that will likely pay off as systems and features are improved and consumers and retailers warm to using them. The apps offered by some startups are making substantial inroads in the POS cloud environment; Square, for example, which a number of small retailers have begun to use, has essentially turned tablets and smartphones into POS systems. But perhaps the most effective implementation of mobile retail payments so far is the Starbucks app. Much of its success can be credited to how much friction it removes from the transaction and the seamless integration of the company's loyalty and rewards program. The app greatly simplifies the multistep checkout process by requiring customers to designate a credit card for payment during the app's setup and by offering real-time rewards accumulation or redemption and automating account replenishment. (Although Starbucks is a pioneer in this payments approach, an increasing number of retailers and fast-food providers are now offering programs that automatically accept payment with a default credit card. These apps also create channels directly to customers for introducing new products and promotions.)

Of course, Starbucks is unusual among retailers in being able to offer a merchant-branded payment program. For many customers, visiting Starbucks is a daily or even twice-daily event. By contrast, a store that sells higher-priced items — such as a toy outlet — that customers visit less frequently might struggle to generate a return on investment from a similar app.

Nonetheless, Starbucks's approach writ large is a model for the outlines of a frictionless payments environment: account and transactions data and credit cards and authentication credentials stored in the cloud, where consumers can digitally access them. For shoppers, an interaction at any retailer would be as simple as asking for an item. Amazon is experimenting with a version of this approach in its Go store, which it's testing with one outlet in Seattle. Available first to Amazon employees only, the store features a combination of sensors, digital imaging, and databases that keep track of what is taken off the shelves and continuously posts this information to the customer's Go app, which charges shoppers via payment credentials stored in their Amazon accounts — no one ever has to wait in a checkout line.

In the online world, large-scale frictionless payment programs are closer to reality. For example, many sites use PayPal for instant payment (consumers are still required to sign in to PayPal before approval), whereas Amazon, which has a daily relationship with many of its customers that rivals Starbucks's physical space, offers a 1-Click checkout program that is an online analog to the coffee retailer's app. Apple's latest innovation lets consumers pay for items chosen on their laptop by pressing the home button on an iPhone, which authorizes sales via biometric authentication.

Considering that the concept of frictionless payments still has a daunting maturity curve ahead of it, financial-services firms should view this time as an opportunity to make inroads and form profitable relationships with both retailers and consumers. Financial institutions should strive to ensure that consumers make their credit card the default credential in digital wallets. Some behavioral researchers have found that when consumers designate a card for payment programs, they spend more money both online and offline with that

card. Earning "top of digital wallet" placement will require a combination of targeted marketing to active e-commerce shoppers and campaigns that focus on e-wallet programs.

Most financial-services firms have not yet fully explored this strategy. Historically, financial companies have established partnerships with top retailers in order to issue co-branded and private-label cards that give them a better-than-average chance of being chosen by consumers who have an affinity with the retailer. However, these programs have failed to achieve even 10 percent consumer penetration due chiefly to the convenience of general-purpose credit cards, some of which offer rewards for frequent use.

But even top e-wallet placement is not enough for financial-services firms to take advantage of consumers' switch to frictionless payments — and it won't offset the brand destruction that they will face as credit card logos become invisible, buried in e-payment programs. To expand their role, financial-services firms should consider helping consumers with the cumbersome task of loading and managing their stored credentials across multiple retailers. The bank would handle all activities in these accounts, such as updating accounts as cards expire or logging changes to a customer's physical or email address. Through tech players such as Apple Pay, American Express and Chase have been at the forefront of large credit card issuers pursuing this strategy of updating account credentials.

As frictionless payments take hold, shoppers will be able to make purchases without thinking about which card to use. By taking on total card management, issuers can avoid "card switching" losses incurred when, for example, consumers are forced to re-input account data.

Invisible Payments

Ultimately, the goal of a frictionless payment system is to make the money part of the transaction seamless and virtually imperceptible to the consumer. Eventually, this may be manifested in many ways beyond just the basic credit card transaction. It could include ubiquitous "buy" buttons on TV and in Google search results that offer instant purchasing via digital wallets on mobile devices. Another possibility is programs that let travelers check in to a hotel on their mobile phone, bypass the front desk, go directly to their room, and use Bluetooth connectivity instead of a keycard to unlock the door. In fact, smartphone-based programs, which are radically simplifying hotel check-in and checkout, are already installed in hundreds of Starwood and Hilton hotels worldwide, and the rest of the industry is exploring ways to follow suit.

In this environment, marketplace lenders (MPLs), which connect consumers with credit lines and funding for purchases on the spot, will play a bigger role. This type of instant lending is primarily a tech innovation, filling a space first opened by larger retailers offering private-label credit cards at the checkout counter, and is made possible by digitization. At a reasonable cost, startups like Braintree (which is owned by PayPal) and Stripe essentially give retailers and service providers, no matter what size, the convenient payment capabilities that Amazon spent tens of millions of dollars to develop for its 1-Click feature.

By creating a transparent nexus of consumer, merchant, and creditor each time a transaction occurs, POS hardware and software startups create additional links into the value chain for MPLs to integrate. Essentially, the POS companies are decoupling payments from the traditional credit ecosystem. Next, the new array of marketplace lenders ideally will lower the cost of credit and increase access to capital by forcing an array of creditors to compete for the consumer's attention.

Suppose a woman is buying a large piece of furniture. At the point of transaction, online marketplace lenders would plumb their networks to vie for her business and, within seconds, offer the loan with the most favorable terms. This is a nightmare scenario for financial-services firms unless they determine how to participate in this new market. For many issuing banks, credit cards make up more than 50 percent of net income, and they could suffer significant declines if they are edged out of POS activities. Consequently, it is critical for financial-services firms to form partnerships and joint ventures with marketplace lenders, offering capital for purchases at lower-than-normal rates in order to gain a

slice of these frictionless transactions. They bring to these relationships distinct capabilities: Marketplace lenders tend to be adept at implementing the latest technology and offering modern user interfaces, whereas incumbents can boast superior balance sheets and strong underwriting skills.

Some incumbent firms are hesitant to join forces with marketplace lenders because the banks believe doing so would cannibalize the interest rates they routinely charge for credit card purchases and loans. A consumer considering a three-year bank loan would typically be able to secure an MPL loan for the same duration at a rate of around around half that of the conventional loan. But banks that shun MPLs are taking a shortsighted approach to inevitable changes in the marketplace. If they don't participate in POS lending, incumbents risk losing their credit relationship with consumers, especially as consumers become accustomed to obtaining POS loans and begin to view their credit cards as secondary loan options. Already, recent surveys have found that millennials prefer financial services provided to them by tech companies to those provided by banks.

Personal Financial Fitness

For consumers, frictionless payments will come with some peril. As their spending activity becomes more seamless and automated, it will lose some of its transparency. Rather than consciously choosing a credit card and signing a receipt for each purchase or completing an online form, people will be able to make a purchase without stopping to think about how much it will cut into their finances. A transaction could be a short-term indulgence with costly consequences. For many consumers, new payment systems could mean frequent overdrafts, credit card balances that exceed their limits, purchases that are not in line with their budgets, and end-of-the-month realizations that spending has gone overboard.

To address this problem, we expect a cottage industry to develop around personal financial management (PFM) tools. These applications will sit atop a consumer's digitized financial records, using heuristics and data analysis to determine daily spending and saving based on a person's declared short- and long-term financial goals. Credit Karma, Good Budget, Level Money, and Mint are among the companies making forays into this space.

These companies offer budgeting assistance, reports on credit scores, investment tracking, and advice in real time, and they are providing hints about what PFM programs will ultimately offer. Like the many popular fitness apps that manage aspirations and achievements, PFMs will alert consumers when they are in danger of overspending in certain categories and offer advice for avoiding certain purchases so that consumers can maintain their savings trajectory toward the desired down payment on a home or car, for example. Programs like these could be another opportunity for tech-savvy financial-services firms, which are able to develop and customize apps suited to their customer base, to unearth a new revenue stream in the frictionless environment.

Eventually nearly all consumers, retailers, and financial-services firms will experience the vast shifts in culture, personal finance, and social mores that emerge from frictionless payments. Consumers stand to gain a lot in terms of convenience and productivity, and maybe even in money management and decision making. Shoppers have demonstrated some trepidation, due most likely to the deficiencies in the system to date, but once truly frictionless payments are the norm, consumers should be much more eager to adapt. Financial-services companies can benefit by following the consumer's lead and proactively preparing to play a primary role in the new frictionless payments ecosystem. So far, the somewhat conservative response from all participants indicates that they don't yet realize how much they have to gain from the changes happening around them. +

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