THE MONEY HACKERS

HOW A GROUP OF MISFITS TOOK ON WALL STREET AND CHANGED FINANCE FOREVER

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1 MAKING MONEY MOVE

HOW VENMO BECAME A VERB

When Iqram Magdon-Ismail and Andrew Kortina decided to disrupt the world of finance, it was because Iqram forgot his wallet.

This was 2009, and Iqram was spending a lot of time going back and forth to New York City from where he lived in Philadelphia. The trip was becoming somewhat routine for him: he would spend his weeks working at his day job and then spend his weekends in New York working with his friend Andrew on their new idea.

Iqram had met Andrew when they were freshmen at the University of Pennsylvania. They were randomly assigned together as roommates, and, unlike many of those random pairings, this one was a good match. The two of them shared the same interests and aspirations, and even some of the same computer science classes, so they got used to working side by side. By the time they were seniors, they were collaborating on a small business idea, a college classifieds site they called My Campus Post. They spent their afternoons doing grassroots marketing and their nights writing code. It was an exhausting, exhilarating first taste of the life they both wanted: creating an internet startup.

My Campus Post never took off, but it was a great learning opportunity. Most of all, it taught Iqram and Andrew that they wanted to keep working

together. After graduating, they moved to New York and started working as programmers, hopping from startup to startup and collecting experience along the way. Then a company back in Philadelphia offered Iqram a position as vice president of engineering. He took the job, but he didn't want to stop working with Andrew. They'd recently turned their attention to something big, something with real potential—something they were calling "Venmo."

Venmo was a music app.

IQRAM MAGDON-ISMAIL AND ANDREW KORTINA, "THE ROOMMATES"

They got the idea while they were at a jazz show. The music was so good, but they would never be able to hear it again. Wouldn't it be cool, they thought, if you could send a text message to the band and have a recording of the live show emailed to you?

The idea had promise, but figuring out how to implement it was taking a lot of time—and that meant, more weekends than not, one of them was on a train traveling to meet up with the other for a couple days of brainstorming and coding.

And one particular weekend, Iqram forgot his wallet.

Andrew told him not to worry about it. It wasn't the first time this sort of thing had happened to them, after all. They had been roommates for years, and over those years, they'd lent each other money for drinks, groceries, rent—and they'd always eventually gotten out a calculator, figured out who owed money to whom, and cleared their debt by writing each other checks.

How many times had they done this? Dozens? Hundreds?

But this time, the thought of their old system made Iqram laugh. A check? He wasn't even sure he knew where his checkbook was. He paid all of his bills online.

It was like a relic from a bygone era. If he could find that checkbook, he would scribble the amount onto that bank-issued piece of paper in barely legible handwriting and then have to mail the check to Andrew—which would mean buying a stamp and an envelope and finding a mailbox. Then, when Andrew received the check, he would have to find a bank branch, go there during its business hours, fill out one of those antiquated little deposit slips, and hand it to a bank teller along with some identification. Eventually—after a three- or five- or seven-day hold period—the money would be added to Andrew's account.

"Why are we still doing this?"

In 2009, people were doing everything from their mobile phones—except moving money. Somehow, this most fundamental, basic thing was a capability that hadn't been invented yet.

Why not?

Iqram and Andrew had come across a spot of what technologists and marketeers like to call "friction," the chafe that happens when someone tries to do something that should be easy but isn't. Imagine a visit to the DMV. That shudder that runs down your spine is because of friction.

Friction has been a driving force behind many of life's discoveries and inventions, and Venmo was no exception.

"Let's just try to solve this problem," they decided.

REMOVING FRICTION

"Let's just try to solve this problem."

Iqram and Andrew began work converting their mobile music app, Venmo, into a tool that people could use to exchange money.

Why is it so hard to move money across the internet?

In 2009, moving money on the internet wasn't new. Amazon and eBay had been up and running for nearly fifteen years. Every major retailer had some version of an online shopping cart on its website, and, according to the US Census Bureau, e-commerce was generating more than $130 billion a year in sales.[1]

And e-commerce wasn't just for people with credit cards, either. Banks were issuing debit cards that worked just as well for online purchases.

Why was it straightforward to move money to Amazon and eBay but not to individual people?

PAYMENT GATEWAYS

ONLINE SHOPPING HAS become so commonplace that people don't think about how complicated it is. You hit the Buy Now button and it works.

Magic.

But there are a remarkable number of complicated steps that go into making that magic, and the steps are collectively known as a "payment gateway."

First, anyone who wants to receive credit card information on the internet has to follow guidelines spelled out by Visa, Mastercard, and the other members of the Payment Card Industry; their technology has to be what is called "PCI compliant."

PCI compliance requires the use of bank-level data security: established cryptographic protocols for encoding sensitive information; safeguards for protecting that information where it is stored; and maintenance and testing to make sure those systems are, and stay, secure.

Bank-level security isn't easy and it isn't cheap. The expense is a justifiable investment for big online retailers, but for small businesses—or for individuals who want to pass money between each other—it is completely out of reach.

And PCI compliance is only one part of the process. Once the credit card data is sent securely across the network, the receiving end has to translate those sixteen numbers into an actual payment. Is this string of data attached to a Visa, a Mastercard, a Discover, an American Express? Before the merchant can check to see if the credit card number is real, verify that it belongs to the person who submitted the order, and confirm there is money available in the account, the merchant must first figure out which credit card company to ask. The software that does this, a "payment switch," interprets the data and handles the connection with the issuing bank.

Then that credit card company—the issuing bank—goes through its own verification process. Debit card transactions get routed through the account holders' banks. Security checks run to protect against fraud.

The average credit card transaction goes through roughly a dozen individual steps before it can be approved—and these steps all happen in the two or three seconds between pushing the Buy Now button and seeing the confirmation screen.

Like magic.

All Iqram and Andrew wanted to do was create an app that could transfer money from a personal bank account to someone else's. Their banks had websites that showed them how much money they had—so they knew this data was already in a digital format. Why was it so hard to access?

And more to the point, why hadn't the banks created this functionality themselves?

One answer is the banks just didn't care. Banks had a long history of developing new technologies, but their idea of innovation was always aimed at making their own processes better and more efficient. Innovating the customer experience wasn't something that would have occurred to them, and even if it had, it wouldn't have been a high priority, least of all during the lean years that followed the market crash.

But for a software developer, creating a good user experience is paramount.

Even if banks had wanted to build a tool for transferring money, it wasn't as straightforward a problem as it might seem. In 2009, according to the FDIC, the United States had just shy of seven thousand banks.[2] Getting the banks to talk to one another was hard enough, but getting their databases to talk to one another—when each one had been built to its own custom specifications—was somewhere between infeasible and impossible. It would have taken a lot of work, and banks had no incentive to do it.

But Iqram and Andrew did—so they got to work.

Building the prototype, it turned out, wasn't especially hard. They were soon passing money back and forth to each other, leaving a long trail of SMS receipts of their transactions: "Iqram 20" quickly evolved into "Kortina paid you $20 for Thai lunch at Nooch."

It was working.

What wasn't working, though, was getting funding.

They took one meeting after another, but couldn't get anyone to take them seriously: they had no track record, no user base, and a prototype cobbled together on top of Google Voice—not enough to reassure a venture capitalist. One investor interrupted Iqram and Andrew's presentation to tell them he was only interested in "billion-dollar, home-run opportunities."

"This will be a trillion-dollar company," Iqram shot back.[3]

The investor wasn't convinced. Most investors hadn't heard of this thing called "fintech," a field that wasn't quite finance and wasn't quite technology. There was no reason to believe that, as a sector, it would be profitable. What was their plan to monetize? How was this little tool for trading small amounts of cash between friends ever going to make a substantial profit?

Iqram and Andrew didn't have clear answers. But that didn't change their commitment to the app. They continued to find ways to make the user experience more seamless, improving it one iteration after another, sending countless text messages back and forth across the system.

Then they noticed something.

Their collection of text receipts was starting to paint a vivid, if accidental, picture of their lives. The list of transactions showed where they liked to eat and drink, what bands they liked to see, who they were spending their time with. Every time someone passed money to someone else, it was because there was something interesting going on—and, collected together, all of this information about a person's transactions started to tell a unique story.

What they had created, by pure accident, was a social news feed.

Venmo wasn't just a way of moving money. It could also be a social network, broadcasting real-time data information about its users.

This could be huge.

If only they could get some money.

BILL READY KNEW a thing or two about money.

He was an unlikely dot-com entrepreneur: he had never even used a computer until he arrived at college. But he was a quick study. He dove into software engineering, and before he turned thirty, he was president of an online bill payment company called iPay. When iPay sold for $300 million, Bill moved on to take over one of the most important internet companies you've probably never heard of: Braintree.

For Braintree, being next to invisible to its users is a feature, not a bug.

Founded in 2007, Braintree became the digital expert at taking all of the various steps that make up an e-commerce transaction—the ten to fifteen different handshakes and data submissions and switches and verifications—and bundling them up so they can be integrated easily into a website.

Bill's goal for Braintree was simple: "How can we democratize access to the tools that have been the exclusive domain of only the biggest e-commerce players and give them to everybody? How do we take the fire from the top of the mountain and give it to the masses to make sure that it benefits the many rather than benefiting the few?"

Braintree's software allowed merchants who wanted to accept payments online to offer their customers an easy, frictionless shopping experience, just as good as Amazon or eBay. Braintree could handle all of the technical and regulatory complexity so that merchants could focus on the products they wanted to sell.

Braintree created, in essence, a plug-and-play shopping cart that the whole internet could use.

For anyone running a small business online, this was revolutionary.

But when Bill took over Braintree in 2011, the company pivoted in a direction that no one else saw coming and created the innovation that would power so much of the fintech and e-commerce we have today.

BILL READY, "THE FIXER"

Bill thought Braintree should start building a platform for mobile shopping.

In the first years of the iPhone, people weren't using them much for shopping. The experience was just too terrible. By 2011, the iPhone had been out for four years and the App Store had been open for three, and three of its bestselling apps were Angry Birds, Skee-Ball, and The Moron Test.[4] The bleeding-edge smartphone of the day was the iPhone 4, which ran on a still-being-developed 3G network that was slow and unreliable. Smartphones weren't being used for serious things, including serious shopping.

If people did want to shop on their iPhones, they had to visit websites that hadn't yet been optimized for mobile—so they would have to pinch and zoom just to see what they were buying. Then they would have to type in their credit card information with their thumbs—all of it: name, billing address, the sixteen digits of the credit card, the CVV number.

By 2011, Amazon had implemented 1-Click purchasing on its site, but generally, websites weren't saving credit card credentials; they were asking users to type in their card information every time they made a purchase. Collecting and storing credit card data always carries some risk, and storing this data with PCI compliance requires ongoing expense and care. There just weren't enough reasons for most vendors to go to all that trouble. As long as people were shopping through their desktop and laptop computers, they had access to full-size keyboards, and typing in their payment details each time didn't seem like much of a bother.

On a mobile device, it was a pain in the ass.

In those rare cases when consumers did go to the trouble of all that thumb typing, they would have to hope that, when they hit the SUBMIT button, the 3G network didn't drop their connection—because if it did, they would have to start the whole transaction over, without knowing whether or not the first one had gone through.

With all those deterrents to mobile shopping, the e-commerce industry didn't believe smartphones were worth the investment of their attention or, more importantly, their money.

Bill Ready thought otherwise.

"I started looking at our traffic logs, and I'd see a half percent, one percent, one and a half percent of our traffic was coming from mobile." He started thinking about Moore's Law, the famous principle that computing power

doubles every two years, and he realized: in just a few more years, phones were going to become the main way people did their shopping.

He knew he could have Braintree build out the tools to make this possible—but to justify the company's expense, he also needed customers who would be willing to buy those tools.

And convincing them wasn't easy.

"I would say, 'Someday, people are going to buy TVs and clothing—everything you buy on e-commerce, you will buy on your phone.' And I'd get laughed out of the room."

TRUE BELIEVING

"I would say, 'Someday, people are going to buy TVs and clothing—everything you buy on e-commerce, you will buy on your phone.' And I'd get laughed out of the room."

Bill Ready also didn't have any data to prove his point. He was seeing into a future that hadn't happened yet. "When we did our first native mobile payment APIs, we literally had tick marks on the wall for each transaction. We would literally count them, because there was nobody trying to do that."

It was a vicious cycle: as long as the consumer's experience was bad, people wouldn't shop on their phones. But until people started shopping on their phones, merchants didn't see any need to improve the mobile experience.

Bill knew he was going to have to find a way to break the cycle. He was going to have to improve the customer experience on his own.

Braintree was one of the main go-to companies for any small business that wanted e-commerce, on a mobile phone or not, and the company already had relationships with most of the early mobile winners—Uber, Airbnb, Dropbox, and Angry Birds. All of them told Bill the same thing: their biggest falloff in the customer acquisition funnel—the place where they were most likely to lose prospective customers—was the point where the person had to type in credit

card information. As long as they could get customers to enter their card info that first time, then the apps could save the information, so users would never need to enter it again and would be able to make future purchases with the push of a button.

But customers *really* didn't want to enter all that information, even that first time.

Bill knew something that these customers didn't: the credit card information that they thought was being saved by Uber or Airbnb (founded in 2009 and 2008, respectively) or Dropbox or Angry Birds was actually being saved by Braintree. "We had the payment credentials. So, imagine a user that would sign up for Uber, sign up for Airbnb, sign up for Dropbox, go play Angry Birds. They would be asked to reenter their payment information for each app. And that would be this huge pain point in every single one of those apps. But we already had the payment information for that user. We knew who that user was. We had the technical ability to make it such that, when you went from one of those apps to the next app, we could just pop your payment information there if we wanted to—at a technical level."

But Bill knew he couldn't do that. "The user would have completely freaked out."

Braintree had been so successful at making itself transparent to customers, at hiding its brand and its whole existence from the shopper, no one knew that half the e-commerce sites on the internet were running on the platform and capable of sharing payment information across different brands.

"Braintree had millions and millions and millions of credit cards on file and known users and known devices. But what we needed was a consumer network. We needed a way for the consumer to understand when they came to that next app, how in the heck did their payment information become available."

He needed to make his invisible brand visible so consumers wouldn't get freaked out.

He needed a social network.

When Bill found Venmo, it had just three thousand users, all of them in New York—and had roughly that same number of dollars in the bank. The company had just notified its employees that they were planning to shut the doors. "They had run out of money, and they didn't have a monetization model."

But Bill thought they might be exactly what Braintree needed.

Venmo is a "peer-to-peer" service that connects people directly to other people. "There's an inherent virality in P2P services. If somebody sends you money, you sign up. You have a strong incentive." As more people use it, more people sign up—and you build a mass of users who have opted into the service.

Bill imagined merging Venmo's users with Braintree. "That could be a way to go build the consumer network and have people understand how their payment details were available in the next place." If people knew that they had signed up for Venmo, and their Venmo information was suddenly available to them across the entire network of Braintree apps and sites, they would understand that their credentials had jumped from site to site because of their membership on Venmo.

In 2012, he decided that he was going to buy Venmo.

"I had to wire them money to make payroll so there [would still be] employees there when we finished closing the deal."

Bill also knew the key to monetizing the platform. It costs money to send money—to interact with banks and PCI-compliant payment gateways. "Customers don't want to pay for those services. But if you bring a consumer to a merchant, the merchants are happy to pay for those services. That's how payments have been working for a long time. We can monetize from the merchant side of this."

With the addition of Venmo to Braintree's arsenal, the company was able to offer a "push-button" buying experience that would work not just in a single app but across any app that used Braintree's payment gateway—literally millions of merchants.

Mobile shopping was about to get a lot easier.

The following year, Braintree processed $12 billion in e-commerce transactions and a third of them were on smartphones. As Bill had predicted, Braintree was able to monetize Venmo while also rapidly growing its user base.

That's when he got a call from John Donahoe, the CEO of eBay and its subsidiary, PayPal.

In the world of online payment, PayPal was and always had been the giant gorilla. Founded in 1998 and one of the great IPOs of the dot-com boom, the company grew every year after, and by the time Donahoe reached out to Bill, PayPal had 137 million active user accounts and was processing almost 8 million payments every day.

But, like just about everyone else, the company had failed to see the coming importance of smartphones. "We know we need to rebuild PayPal for native mobile," Donahoe told Bill. "We want you to bring your technology here."

PayPal bought Braintree, and Venmo along with it, for $800 million in cash.

As of 2019, mobile payments make up more than 40 percent of PayPal's business: people used it to transfer money over their phones to the tune of $19 billion in the last quarter alone.

With the push of a button.

Shopping and sending money with our phones has become commonplace. This change didn't happen because of banks, though banks had all the technology they needed to do it. It happened because a few people outside of the banking industry saw what the banks weren't seeing, and they seized the opportunity.

But banks see it now.

In 2016, a consortium of some of the biggest banks in the United States—JPMorgan Chase, Bank of America, Wells Fargo, PNC, and others—formed a joint venture called Early Warning Services. The following year, the company released Zelle, a mobile app that lets users send money to other Zelle users—directly competing with Venmo.

Because Zelle has direct access to all of its banks' members, its network has grown quickly, reaching 27.4 million US users and processing $75 billion in payments in 2018.[5]

And because Zelle is operated directly by the banks, it is able to move the money instantly, without Venmo's one-to-three-day delay.

The only thing Venmo has that Zelle doesn't have is a social feed—and to some Zelle users, this is an improvement: many people are resistant to the idea of broadcasting their financial transactions out into the world.

But this, too, might be something that is shifting beneath the banks' notice, because plenty of people—especially younger people—*do* prefer the social feed. "Thirty percent of all Venmo payments use emojis," Bill Ready said of his service, "and that number is growing."

It's hard to know what to make of this. Maybe the idea of an emoji-based social feed that broadcasts our spending is a fleeting moment in history. But it absolutely reflects a fundamental shift in the way our society is interacting with, and talking about, money. Thanks in part to Venmo, there are people who will never walk into a bank branch, because they can beam each other

money from their phones. And after centuries of taboo around the idea of talking about finances, people are willingly transmitting this information out to the world. A generation ago, this would have been unthinkable. Even in 2010, it was practically unthinkable.

Cultural change is happening right in front of us, incredibly quickly.

And it's not yet clear if the banks will be able to keep up.

Thanks for reading the first chapter of ***THE MONEY HACKERS***. In later chapters, Daniel P. Simon explores the stories of more Money Hackers including:

– Adam Dell, the millionaire playboy whose numerous fintech successes still haven't gotten him out of the shadow of his brother, Michael Dell.

– Ismail Ahmed, who barely escaped his village in war-torn Somaliland but went on to become the United Nations' head of remittances, and then created a platform called WorldRemit to improve the lives of immigrants and their families worldwide.

– Cameron and Tyler Winklevoss, the "Winklevii" twins made famous for their involvement in the creation of Facebook, who are now deeply involved and invested in the cryptocurrency Bitcoin.