Can Bitcoin Conquer Argentina?

With its volatile currency and dysfunctional banks, the country is the perfect place to experiment with a new digital currency.

By NATHANIEL POPPER, APRIL 29, 2015

Dante Castiglione stalked through the doors of a glass-walled office tower on the edge of downtown Buenos Aires, just a few hundred feet from the old port district. In the crowded elevator, he shook his head and muttered under his breath about the stresses of the day and his profession. “I swear, this job can kill me,” he said, his eyes cast downward.

On the 20th floor, he hustled into an impersonal, windowless office and quickly removed the tools of his trade from his backpack and set them on the desk: locked blue cash box, cellphone and clunky Dell laptop with the same yellow smiley-face sticker that he puts on all his electronics. Then he unbuckled the fanny pack from around his waist, which contained the most important part of his business: bricks of $100 bills and 100-peso notes.

This room, rented for the day, was not one of Castiglione’s regular haunts. He mostly drifts among the old cafes in Buenos Aires, where the bow-tie-wearing waiters serve small glasses of seltzer water with each coffee. In his line of business as a money-changer, temporary meeting places are preferred; they make things harder for would-be thieves, whom he has so far avoided. On this Friday in late February, Castiglione had run around the city in his camouflage-patterned sandals, trying to distribute cash to some clients and pick it up from others. Once back in his temporary office, his outdated LG phone alternately chirped, buzzed and sang with incoming text messages and emails.

Ordinarily, Castiglione would have help. His 18-year-old daughter, Fiona, often deals with customers, but she was about to give birth to her first child. Her twin brother, Marco, who used to make cash runs, was now focusing on school. So Castiglione was alone, his stress evident in the sweat on his forehead and the agitation on his face. When his business partner, who lives in Rosario, Argentina’s third-largest city, called to ask why he hadn’t taken care of one particularly insistent client, Castiglione erupted in frustration.

Dante Castiglione, left, at the Rock Hostel, with its owner, Soledad Rodriguez Pons, who accepts Bitcoin. MARK PETERSON / REDUX, FOR THE NEW YORK TIMES

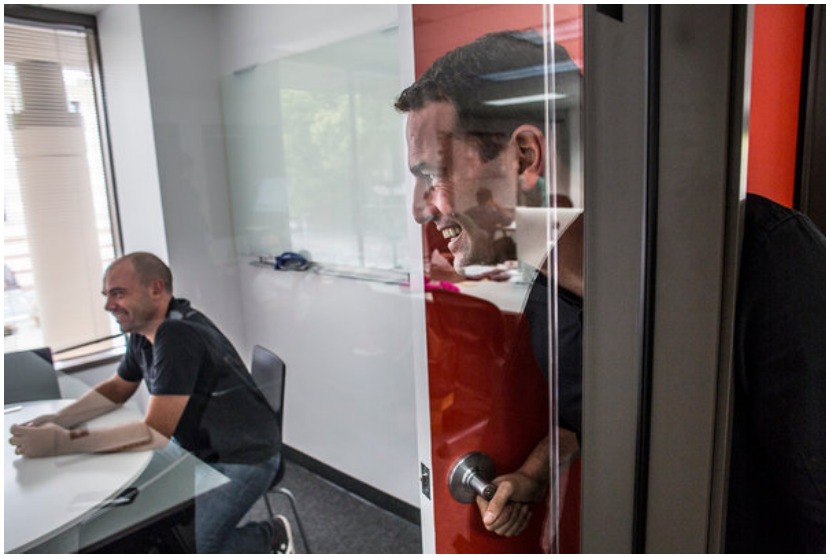
“If you want it done faster, you pick up the phone and call her yourself,” he growled in Spanish, before switching to another call.

After hanging up, he told me in English: “Everybody wants everything now, and I am just trying to do it. I’m not magical, as people think.”

Magical, no, yet something new all the same. His occupation is one of the world’s oldest, but it remains a conspicuous part of modern life in Argentina: Calle Florida, one of the main streets in downtown Buenos Aires, is crowded day and night with men and women singing out “cambio, cambio, cambio, casa de cambio,” to serve local residents who want to trade volatile pesos for more stable and transportable currencies like the dollar. For Castiglione, however, money-changing means converting pesos and dollars into Bitcoin, a virtual currency, and vice versa.

That afternoon, a plump 48-year-old musician was one of several customers to drop by the rented room. A German customer had paid the musician in Bitcoin for some freelance compositions, and the musician needed to turn them into dollars. Castiglione joked about the corruption of Argentine politics as he peeled off five $100 bills, which he was trading for a little more than 1.5 Bitcoins, and gave them to his client. The musician did not hand over anything in return; before showing up, he had transferred the Bitcoins — in essence, digital tokens that exist only as entries in a digital ledger — from his Bitcoin address to Castiglione’s. Had the German client instead sent euros to a bank in Argentina, the musician would have been required to fill out a form to receive payment and, as a result of the country’s currency controls, sacrificed roughly 30 percent of his earnings to change his euros into pesos. Bitcoin makes it easier to move money the other way too. The day before, the owner of a small manufacturing company bought $20,000 worth of

Bitcoin from Castiglione in order to get his money to the United States, where he needed to pay a vendor, a transaction far easier and less expensive than moving funds through Argentine banks.



Federico Murrone, left, and Wences Casares at Xapo, their company that handles Bitcoins, in Palo Alto, Calif.
MARK PETERSON / REDUX, FOR THE NEW YORK TIMES

The last client to visit the office that Friday was Alberto Vega, a stout 37-year-old in a neatly cut suit who heads the Argentine offices of the American Bitcoin company BitPay, whose technology enables merchants to accept Bitcoin payments. Like other BitPay employees — there is a staff of six in Buenos Aires — Vega receives his entire salary in Bitcoin and lives outside the traditional financial system. He orders what he can from websites that accept Bitcoin and goes to Castiglione when he needs cash. On this occasion, he needed 10,000 pesos to pay a roofer who was working on his house.

Commerce of this sort has proved useful enough to Argentines that Castiglione has made a living buying and selling Bitcoin for the last year and a half. “We are trying to give a service,” he said.

That mundane service — harnessing Bitcoin’s workaday utility — is what so excites some investors and entrepreneurs about Argentina. Banks everywhere hold money and move it around; they help make it possible for money to function as both a store of value and a medium of exchange. But thanks in large part to their country’s history of financial instability, a small yet growing number of Argentines are now using Bitcoin instead to fill those roles. They keep the currency in their Bitcoin “wallets,” digital accounts they access with a password, and use its network when they need to send or spend money, because even with Castiglione or one of his competitors serving as middlemen between the traditional economy and the Bitcoin marketplace, Bitcoin can be cheaper and more convenient than Argentina’s financial establishment. In effect, Argentines are conducting an ambitious experiment, one that threatens ultimately to spread to the United States and disrupt some of the most basic services its banks have to offer.

Bitcoin first appeared in early 2009, introduced by a shadowy figure known as Satoshi Nakamoto. The software underlying its creation established that Bitcoins would be released slowly and steadily until there are 21 million of them; at that point, more than 12 decades from now, no more Bitcoins will be generated. These rules produced two somewhat predictable results, especially coming in the immediate wake of the financial crisis and the government bailouts of the big banks. The limited and regular release of Bitcoins appealed to libertarians, who have been skeptical of currencies that governments can print in unlimited quantities. (When Rand Paul announced his candidacy for president last month, his campaign's website began accepting donations in Bitcoin.) The built-in sense of scarcity also led people to regard Bitcoin as a kind of digital gold, its value likely to increase over time — in other words, something to buy and sell as a speculative investment. The millions of traders, many of them in China, who have bet on the price of the virtual currency have kept the cumulative value of all outstanding Bitcoins well above $2 billion since late 2013. At the same time, that speculative activity has left much of the general public wondering why these virtual coins should be worth anything at all.

The Bitcoin broker Brenda Fernandez scans the QR code of her client's virtual wallet to make a trade.
MARK PETERSON / REDUX, FOR THE NEW YORK TIMES

But the wild fluctuations in price — the value of a Bitcoin has bounced between $70 and $1,200 over the last two years — have obscured a significant aspect of the currency's broader potential. Bitcoin digital tokens are part of a new kind of online financial network, which runs on the computers of those who use the virtual currency. People who join and support the network — hosting its open-source software, serving as record-keepers of sorts — receive new Bitcoins as they are released in a kind of recurring lottery, thus encouraging user participation. The details of how the network operates can be mind-numbingly complicated, involving lots of advanced math and cryptography, but at the most basic level, the network makes it possible for the first time to send valuable digital money around the world almost instantly, without moving through an intermediary like a bank or credit-card company or a service like PayPal. In a sense, the Bitcoin network was designed to be a financial version of email, which enables messages to be delivered without passing through a national postal service, or like the broader Internet itself, which allows people to publish news and essays without going through a media company. Instead of just delivering words, though, the Bitcoin network makes it possible to deliver money from New York to Shanghai in a matter of minutes without paying any financial institution.

The number of Bitcoin users in Argentina is relatively small; it barely registers on most charts of global Bitcoin usage. But Argentina has been quietly gaining renown in technology circles as the first, and almost only, place where Bitcoins are being regularly used by ordinary people for real commercial transactions. A number of large American companies have started accepting Bitcoin payments, but so far there has been little economic incentive for their customers to pay with Bitcoins.

In contrast, the best-known Bitcoin start-up in Argentina, BitPagos, is helping more than 200 hotels, both cheap and boutique, take credit-card payments from foreign tourists. The money brought to Argentina using Bitcoin circumvents the onerous government restrictions on receiving money from abroad. Castiglione has some hotel clients, but he says that many of his 800 or so registered customers are freelancers who use Bitcoin to get paid by overseas clients, or companies that want to move money in and out of Argentina. A popular new online retailer, Avalancha, began accepting Bitcoin last summer and has seen the volume of Bitcoin transactions grow steadily since then. Avalancha offers customers a 10 percent discount when they use the virtual currency, because accepting credit cards generally ends up costing Avalancha more than 10 percent as a result of the vagaries of the Argentine financial system. The Bitcoin community in Buenos Aires has been vibrant enough to produce what's known as the Bitcoin Embassy in the center of the city, a four-story building that serves as the home to eight start-ups whose businesses depends on the Bitcoin network.

Bitcoin proponents like to say that the currency first became popular in the places that needed it least, like Europe and the United States, given how smoothly the currencies and financial services work there. It makes sense that a place like Argentina would be fertile ground for a virtual currency. Inflation is constant: At the end of 2014, for example, the peso was worth 25 percent less than it was at the beginning of the year. And that adversity pales in comparison with past bouts of hyperinflation, defaults on national debts and currency revaluations. Less than half of the population use Argentine banks and credit cards. Even wealthy Argentines fear keeping their money in the country's banks.

Wences Casares grew up on a remote sheep ranch in Patagonia and now lives on an estate looking out over Silicon Valley. He is, as much as anyone, responsible for making Bitcoin known in both Argentina and the United States. In 2001, he sold his first major start-up, a sort of ETrade for South Americans, to the Spanish bank Santander for $750 million. He sold his next big company, an online bank, to Banco Brasil. By the time he first heard about Bitcoin, in late 2011, he was in his first year of his latest start-up, Lemon, a mobile wallet for smartphones, not unlike Apple Pay, which came out three years later. His fascination with Bitcoin had less to do with professional experience, however, than a childhood spent in a country whose financial system seems to be terminally broken.

There was rarely a time during Casares's youth when Argentina was not enduring some sort of financial crisis. In 1983, after years of inflation, the government created the new peso: each new one was worth 10,000 old pesos. In 1985, the new peso, its value eroded by inflation, was in turn supplanted by the austral, worth 1,000 new pesos. Eventually the government went back to the peso, this time pegged to the dollar, an effort that also failed.

"I think I understand economics better than most people because I grew up in Argentina," Casares, now 41, told me. "I've seen every single monetary experiment you can imagine. This is the street-smart economics. Not the complex Ph.D. economics."

One particular episode is seared in Casares's memory. In 1984, during the first significant episode of Argentine hyperinflation following the military junta's loss of power, Casares's mother came to get him and his two sisters from school one day. His mother carried two grocery bags filled with cash — the salary she had just been paid. She rushed with Casares and his sisters to the grocery store and made them run through the aisles, grabbing as much food as they could before the prices changed. (An employee walked through the store all day doing nothing but re-pricing the goods on the shelves to keep up with the rapidly changing value of the peso.) After paying at the register, Casares and his sisters ran back for more food to spend the leftover money on. In this hyperinflationary environment, holding on to pesos was the same thing as losing money.

Casares is descended from one of Argentina's old landholding families — a town called Carlos Casares, near Buenos Aires, is named after one of his ancestors — but his branch of the family went through hard times and ended up ranching sheep. When his father sold wool and the buyer's check took a month to clear, that income could be halved by inflation, forcing yet more household cutbacks. Whatever savings accumulated were quickly exchanged for dollars, which held their value better than pesos.

In 2003, Casares and five friends bought a school bus and drove it on a three-week road trip from Buenos Aires, the capital, to Tierra del Fuego, at the southern end of South America. After the vehicle was stolen upon their return, the friends vowed to buy a second bus for another trip. In December 2011, one of them, Jorge Restelli, finally found a bus for 60,000 pesos, or $14,000, in the classified ads. The friends who lived in Argentina quickly paid their shares to purchase and fix it up, but Casares stalled, knowing how much it cost in time and fees to move money from the United States to Argentina. Then Restelli told him that Bitcoin might be just the answer.

At the time, the virtual currency had a small cult following in the United States and was essentially unheard-of in Argentina, but Restelli had read about it on an American tech blog. The same day Casares heard about Bitcoin, he found someone online who agreed to meet him at a cafe in Palo Alto and sell him 2,700 or so Bitcoins for about $8,000 in cash. Casares sent Restelli the Bitcoins that evening.

Casares was fascinated by the transaction. Here was money that anyone could buy online and that promised to hold its value better than the peso. (That promise would later be tested by extreme price swings.) It also seemed to offer access to the financial system for those who couldn't open bank accounts or secure credit cards. Even Casares, who created his first start-up in the country, had never held an Argentine bank account.

He sent articles about Bitcoin to his bus-trip friends and explained how easy it was to move thousands of dollars in and out of Argentina. One friend went on to found the central Bitcoin advocacy group in Argentina and opened the Bitcoin Embassy in Buenos Aires. Casares began stockpiling Bitcoins, and when he visited Argentina during 2012, he posted offers to sell them on an Internet message board that was becoming a small, impromptu national marketplace for the virtual currency. He organized the first Bitcoin Meetup in Argentina in December 2012, though only a handful of people besides Restelli showed up at the whiskey bar where it was held.

By then, Casares was proclaiming Bitcoin's promise to any Silicon Valley friend who would listen. He had come to believe that the advantages of its network would push the value of each Bitcoin to astronomical values, just as slivers of the airwave spectrum increased in worth as more communication companies sought to use it. In the meantime, each Bitcoin could serve as an easy, secure place to store money, comparable to gold.

Many of Casares's friends in the United States were initially skeptical: What could Bitcoin do that their credit cards couldn't? But Casares explained how places like Argentina were different. His first big convert among his friends, and the one whose opinion in this area mattered the most, was David Marcus, who had recently become the president of PayPal. Marcus's light-bulb moment came in the fall of

2012, when the Argentine government ordered PayPal to bar direct payments between Argentines, part of the government's effort to slow the exchange of pesos into other currencies. As the policy went into effect, and Marcus watched the price of Bitcoin rise against the peso, he figured that Argentines were using Bitcoin to circumvent the government's restrictions. Marcus began buying Bitcoins himself and also pushed PayPal to start investigating the currency's use.

In March 2013 Casares attended an exclusive technology conference near Tucson hosted by the investment bank Allen & Company. At dinner the first night, Casares won the attention of a table full of investors by describing his childhood experiences in Argentina and how Bitcoin equipped people to avoid similar situations. He demonstrated the capabilities of the Bitcoin network by sending $250,000 worth of the virtual currency to the phone of a table mate, who was then directed to pass the money along to the man next to him with no more than a few taps of his iPhone keypad. During the next two days of the conference, a steady stream of attendees who had seen or heard about the Sunday-evening conversation approached Casares, including Reid Hoffman, the co-founder of LinkedIn. On a hike Wednesday afternoon, Casares spent the entire time explaining the concept to Charlie Songhurst, Microsoft's head of corporate strategy.

At the time, Casares was still running his mobile-wallet start-up and had no business stake connected to Bitcoin beyond his own holdings of the virtual currency, which had become substantial. He urged his friends to make their own purchases. On Monday, the first full day of the conference, the price of a Bitcoin jumped more than $2, to $36, and on Tuesday it rose more than $4, its sharpest rise in months, to more than $40. After everyone flew home from the conference, Songhurst wrote a paper and distributed it privately to some of the most powerful investors in Silicon Valley. "We foresee a real possibility that all currencies go digital, and competition eliminates all currencies from noneffective governments," it said, channeling Casares's arguments. "The power of friction-free transactions over the Internet will unleash the typical forces of consolidation and globalization, and we will end up with six digital currencies: US Dollar, euro, Yen, Pound, Renminbi and Bitcoin."

The buzz generated by the conference was not the only factor that pushed up the price of Bitcoin in March 2013. A financial crisis in Cyprus came to a head in the middle of the month; the closure of some bank accounts there led to conjecture that Russians were seeking refuge from the Cypriot banking system in Bitcoin. But Casares noticed that every time he helped another one of his wealthy friends start buying Bitcoins, prices rose, suggesting to him that they were responsible for much of the increase. Over the course of March, the price of a single Bitcoin nearly tripled, to around $100, and that surge generated the first widespread media coverage in the United States and Argentina (some of it, not coincidentally, from journalists cultivated by Casares). The crowd at the next Bitcoin Meetup in Argentina, hosted in April by one of Casares's friends, was about five times larger than the first one organized by Casares just a few months earlier.

Dante Castiglione first heard about Bitcoin that same March. A Canadian who hired him to do some software consulting asked if he could pay him in Bitcoin. Castiglione, who grew up in a small apartment in downtown Buenos Aires, ran his own consulting firm, the latest in a long line of jobs after he dropped out of college. He is a successful version of what Argentines refer to as a buscavida, a person who gets by finding opportunities on the fringes of society, a more expansive career option in Argentina than in most countries.

When it came to working for overseas clients, the biggest issue for Castiglione, like many Argentines, was the government-set exchange rate between dollars and pesos. In an attempt to tamp down inflation, the government has long forced banks to sell dollars at artificially low rates. In March 2013, the government said a dollar was worth around 5 pesos. But anyone could go to one of the money changers on Calle Florida and trade a dollar bill for about 8 pesos, the black-market rate, also known as the dólar blue. (Economists and people outside Argentina often regard the dólar blue as the real exchange rate, a closer reflection of the peso's actual worth.) The official exchange rate was costly for businessmen like Castiglione. When dollars from foreign customers came in through traditional means, banks automatically converted them at the mandated rate, and Castiglione ended up with three fewer pesos for each dollar than he would have gotten by exchanging them on the street. Castiglione had to sacrifice nearly 40 percent of a foreign payment to turn it into pesos.

When the Canadian customer paid Castiglione in Bitcoins, Castiglione found someone online willing to meet him in Buenos Aires and pay him in pesos at something close to the dólar blue rate. The demand for his Bitcoins was, in fact, so great that Castiglione, whose company was limping along, began to think there might be a business opportunity there. If he bought Bitcoins for slightly less than he sold them, he could make a profit on every trade, even if the price of Bitcoin didn't go up. By September 2013, he had become a full-time Bitcoin broker.

In-person Bitcoin trading, as Castiglione does it, happens in many other cities around the world. But if this were the only way to procure Bitcoins, the interest in trading them would not have exploded as it has in the United States and China, where exchanging money directly with strangers — without a trusted middleman, in other words — is not a routine part of business. In most places where Bitcoin has become popular, there have been ways to buy the virtual currency online. This, of course, requires cooperation with banks or other payment networks, which happened in the United States and Europe. The American company Coinbase, for instance, allows customers to transfer money from their bank to a Coinbase account and buy Bitcoins online.

In Argentina, the banks refuse to work with Bitcoin companies like Coinbase, which isn't surprising, given the government's tight control over banks. This hasn't deterred Argentines, long accustomed to changing money outside official channels. For Castiglione and his company, DigiCoins, this means operating at the edge of the law, but he takes comfort from the fact that, at least for now, the Argentine government has bigger problems to deal with.

Instead of bank tellers and branches, Bitcoin users in Argentina have come to rely on Castiglione and his competitors, some of whom are even willing to make house calls. This financial system developed much more slowly than it has in the United States, where American companies could take deposits from banks anywhere in the country. But as a result, Argentina's Bitcoin economy is much more resistant to bank policies, government regulations and full-service companies like Coinbase that undermine Bitcoin's decentralizing spirit.

I first met Castiglione when I visited Buenos Aires in June 2014. At the time, he was working downtown, out of a stuffy single room in the same building as a Berlitz language-school office. A joker playing card was lodged in the corner of the whiteboard on the wall. A friend of Castiglione's son was at a desk, working on the DigiCoins website. His daughter, Fiona, was in touch with customers by phone and online. His son, Marco, was in and out, taking cash to clients, which he carried in his backpack. Sitting behind his own desk next to the door, Castiglione was describing the life of a money-changer, especially when it comes to matters of security. He spoke with tough confidence: "Not many people will like to mess with us."

But he acknowledged that he and his children remained safe largely because they successfully kept their clients ignorant of their location by switching offices frequently: "Right now, maybe God is on our side."

One of Castiglione's main competitors was another Bitcoin broker named Brenda Fernández. Originally from the Buenos Aires suburbs and a college dropout, she previously smuggled electronics into the country and sold them on the local equivalent of eBay. She talked in loud bursts, punctuated with high-pitched laughs, and proudly made provocative statements about breaking the law and ignoring standard business practices when I met her at an event at the Bitcoin Embassy. "I find a way to market myself as the crazy Bitcoin girl," she told me.

In a more serious moment, Fernández, who is 24, attributed both her attitude and her embrace of Bitcoin in part to the gender transition she made in her early 20s, after years of struggling with traditional gender categories. "It feels good, doing things that you are not supposed to, saying to the structures of power that they don't have power over you," she said.

After the event at the embassy, Fernández took a small black-and-yellow taxi to a hostel near the National Congress that wanted to exchange about $1,000 worth of Bitcoins. The Rock Hostel, with band-themed rooms, caters to a young clientele. A number of people were drinking beer in the common area when Fernández showed up. The owner, a tattooed 29-year-old named Soledad Rodriguez Pons, had already transferred the Bitcoins to Fernández online, so after a bit of flirting, Fernández quickly handed over the cash; the transaction took place at the reception desk, where a sign offered customers a 10 percent discount if they paid by credit card. On top of the desk, under glass, were paper currencies from around the world.

The Rock Hostel is one of hundreds of hotels in the country using the Argentine start-up BitPagos to collect credit-card payments from foreign customers. If Rodriguez Pons accepted credit-card payments from American customers through the usual financial channels, customers would be billed in dollars, and when those dollars came to Rodriguez Pons's Argentine bank account, they would be converted at the official rate, about 30 percent lower than the black-market rate. It would also take 20 days for Rodriguez Pons to get her pesos. BitPagos helped counter these drawbacks by taking the credit-card payment in the United States and then using the dollars to buy Bitcoins, generally from Coinbase, before sending them to Rodriguez Pons immediately. When Rodriguez Pons needed to pay the rent or laundry bills, she called Fernández or Castiglione — her two standbys — to sell the Bitcoins for pesos at a rate close to the dólar blue. Rodriguez Pons saved so much money this way that she could offer the 10 percent discount for credit cards and still easily come out ahead. In June 2014, BitPagos moved about $150,000 for the Rock Hostel and other tourist establishments, nearly twice what it handled three months earlier.

Rodriguez Pons, like many BitPagos clients, knew little about how Bitcoin worked and hadn't tried hard to figure it out. She once, somewhat accidentally, held onto her Bitcoins at a time when the price was rising, and ended up with a small windfall when she sold. She used the proceeds to build a rooftop bar and a music-rehearsal space. Beyond those extras, Rodriguez Pons credited the savings from using BitPagos with keeping her business alive in Argentina's very difficult business environment. The hardest part was often reaching Fernández and Castiglione.

"I had to call Brenda four times today," she said with a smile.

As anyone who has dealt with Western Union or wired money abroad already knows, Argentina is not the only place that could benefit from Bitcoin's easier and cheaper way of moving money across international borders. A Hong Kong firm called Bitspark recently opened a shop in a mall popular with Filipino domestic workers, through which they can send money back home using Bitcoin. Another firm, BitPesa, allows customers to convert Bitcoins into Kenyan shillings and deliver them into mobile wallets within Kenya.

Transactions of this sort inevitably stir up fears of money laundering and terrorist financing. Banks currently serve as the front line in stopping illicit money transfers. If these regulated institutions are cut out of the business of moving money, the banks and government officials say, who will ensure that terrorists and organized crime are not using the network to move millions across borders? The fact that there is no single authority responsible for supervising the Bitcoin system has also made it easier for con men and thieves to defraud companies holding Bitcoins for customers — something that became clear last year when Mt. Gox, once the largest Bitcoin exchange in the world, declared bankruptcy after nearly half a billion dollars of clients' Bitcoins were fraudulently transferred out of their accounts. (A hacker generally needs only an owner's password to steal his or her Bitcoins.)

Oddly enough, American regulators have actually been friendlier than banks toward the new technology. Even before the advent of Bitcoin, the Federal Reserve was looking into ways to update the relatively antiquated American payment networks, which often take two or three days to complete a simple money transfer. Several different branches of the Federal Reserve have released research papers over the last few years praising the improvements that Bitcoin might spur, even if Bitcoin itself isn't adopted by the mainstream as a virtual currency. In 2013, when he was chairman of the Fed, Ben Bernanke wrote a letter to a Senate committee studying Bitcoin in which he praised its "long-term promise, particularly if the innovations promote a faster, more secure and more efficient payment system."

Banks are aware that this is an area in which they will likely have to adapt or lose business, perhaps even be made irrelevant. While most of the major banks have criticized Bitcoin and refused to work with virtual-currency companies, many of them are nonetheless spending a lot of time and energy behind the scenes studying the technology. JPMorgan Chase, the nation's largest bank, decided in early 2014 not to conduct business with Bitcoin companies. But it did form its own Bitcoin Working Group, which consists of about two dozen executives throughout the bank who have been meeting fortnightly or monthly to discuss how the technology could change their business.

Banks are captivated, in particular, by the ledger on which all Bitcoins and Bitcoin transactions are recorded: what is known as the blockchain. Unlike traditional financial ledgers, kept by a central institution, the Bitcoin ledger is updated and maintained by everyone on the network, not unlike how Wikipedia is written and monitored by its users. One virtue of this approach is that the network has no central point subject to failure, like Visa and the New York Stock Exchange in their financial realms. It also means there is no middleman collecting fees with each transaction. And because the bookkeeping is publicly accessible, records can't be manipulated in secret or after the fact.

JPMorgan belongs to an association of big banks, the Clearing House, that has been confidentially putting together a "proof of concept" for a decentralized ledger, or blockchain, that would run on the computers of all the participating banks. According to people involved, this network, which is still in the conceptual phase, could allow instant transfers between accounts at all the member banks and eliminate the current risks involved in having billions of dollars in limbo for days at a time. For many bankers, the most valuable potential use of the blockchain is not small payments but very large ones, which account for the vast majority of the money moving around the world each day. The banks, though, are moving slowly, even as several start-ups are trying to use the Bitcoin blockchain to do the same thing on a global basis, cutting out the banks altogether.

One of the most recent entrants into this area is a start-up led by a former top executive from JPMorgan. The Federal Reserve has had its own people looking at how to utilize the blockchain technology and potentially even Bitcoin itself. If someone can find a way to minimize the volatility of Bitcoin prices — as many are trying to do — it would be much easier for people to keep their savings in Bitcoin instead of a bank account.

“In the long run, Bitcoin will be very disruptive to the developed world,” Dan Morehead, a former Goldman Sachs executive who now runs a hedge fund focused on Bitcoin, told me. Things are happening sooner in Argentina, he said, because its financial system creates hassles for the people there. But, he added, “Argentina is just a more extreme example of the situation in every country.”

When I returned to Argentina in February this year, the price of Bitcoin had been falling for some time, scaring off many speculators in the United States. There was no sign of waning interest in Argentina, however. Several new companies were trying to provide a more seamless and reliable version of Castiglione’s service. BitPagos had recently started a service allowing its users to buy and sell small quantities of Bitcoin online and was closing in on a million-dollar fund-raising round with Silicon Valley venture capitalists, including Dan Morehead’s firm. A new company, Bitex, which had its own office down the street from the Bitcoin Embassy, was focused on using Bitcoin to transfer money among Latin American countries. All of the Argentine Bitcoin companies were working on expanding into Venezuela, where inflation is an even greater problem.

Castiglione was so busy running around the city, trying to keep up with the competition, that he was hard to pin down. When we finally met near the Bitcoin Embassy, late at night, he was with a tough-looking friend who was joining DigiCoins to help with the physical deliveries of cash, bringing with him a motorcycle and experience handling large amounts of money. The men had just come back from a trip to a town three hours west of Buenos Aires, where they had sold $20,000 worth of Bitcoins. They had been forced to make the trip at the last minute because another big sale had fallen through, and they did not otherwise have enough dollars to conduct business for the next few days. “If I hadn’t gotten that cash, I was done,” Castiglione told me, before heading out for a last trade just before midnight.

Earlier that day, as I sat with Fernández in a Subway sandwich shop, which was her temporary office, chosen for its free Wi-Fi, she did not try to hide her difficulty in adapting to the more competitive environment with her “crazy Bitcoin girl” routine, which was making it hard to keep big customers. She did have one business in the United States that sent her about $5,000 worth of Bitcoins each month and had her exchange the money and deposit the pesos into the company’s Argentine bank account, in order to make payroll. But a lot of her customers were young people who wanted to buy a few hundred pesos worth of a Bitcoin so that they could pay online for a Netflix subscription or a video game. “The market moved in another direction,” she said, “and I didn’t move in that direction.”

She had come to have serious doubts about whether Bitcoin would end up being any better than the old system if it was dominated by the ruling class, which would be immune to any popular backlash, thanks to the lack of a central Bitcoin authority. “The key turning point is when the rich elite see it as a way to safeguard their wealth,” she said.

Among the people Fernández and Castiglione were both contending with was Wences Casares. He decided in late 2013 that he cared too much about Bitcoin to leave its development to others. He quickly sold his digital-wallet start-up and started his own Bitcoin-centric company with one of the friends from the bus trip, Federico Murrone, an Argentine who was the head programmer on Casares’s past start-ups. Within two months of selling their old company, Casares and Murrone had secured $40 million in funding from investors like Reid Hoffman, the LinkedIn co-founder.

The office that Casares’s new company, Xapo (pronounced “zappo”), opened in Buenos Aires has none of the scrappiness of other virtual-currency players in the country. It occupies a full floor of a building in a fashionable part of the city; amenities included table tennis, glass walls and large, wall-mounted televisions. Xapo initially concentrated on ultrasecure storage for customers who own lots of Bitcoins — it holds the Bitcoins of many of the wealthy tech moguls who followed Casares’s advice. But Casares has ambitions to turn the company into a one-stop financial provider for the virtual-currency industry. The global aspirations were evident from the Hindi-language site that I saw his staff creating.

Casares spent months establishing a partnership with Taringa, the most popular Argentine social network. This month, millions of Taringa members in Argentina and the rest of Latin America automatically had a Xapo Bitcoin wallet opened for them. Users will be able to put Bitcoins or fractions of Bitcoins in their wallets by depositing cash at local drugstores, in the same way they pay utility bills. From those accounts, Argentines can pay for things online without a credit card or make online micropayments of 5 or 10 cents for video games and other digital goods (credit cards usually charge a minimum of 25 or 30 cents for each purchase).

When I asked Castiglione what he thought about a global venture like Xapo, he evinced a workingman’s skepticism. “We might not be as big as Wences, but the real thing happens here,” Castiglione said, as we sat in his temporary office between client visits. “People get the cash to spend.”

Whether his endeavors would help Bitcoin live up to its grand promise — supplanting Wall Street and central banks — was something Castiglione would consider only in the most pragmatic terms.

“If people don’t use it, it will go to trash, like anything that isn’t used in this world,” he told me. “If people use it, then it has a future.”