

# Bitcoin Blockchain Technology In Financial Services: How The Disruption Will Play Out

[Laura Shin](#), Sept 14, 2015. Opinions expressed by Forbes Contributors are their own.

Both the financial services and Bitcoin communities perked up last week when Citi, Nasdaq, Visa and other large financial institutions [invested in Chain.com](#), a Bitcoin blockchain services provider.

In a year marked by announcements of financial incumbents' interest in the technology underlying the digital currency — startup investments, lab experiments, board appointments and Nasdaq's intention (partnered with Chain.com) to [pilot using blockchain technology to manage shares in private companies](#) — the funding underscored the fact that Wall Street is serious about using so-called distributed ledger technology in its offerings.

But while most everyone seems to agree that the technology will disrupt financial services, there's no consensus as to how it will play out.

When researching [my magazine article on how this technology will change the industry](#), Dan Morehead, founder and CEO of Pantera Capital, a blockchain investment firm founded in 2013 that has invested in Chain.com, said, "The Chain/Nasdaq deal is a watershed event — a high-profile global brand like Nasdaq is using the blockchain, and using it for something where the blockchain can add a lot of value."

Yet, Wences Casares, who first heard about Bitcoin in late 2011 and is CEO of Xapo, a bitcoin wallet known for state-of-the-art security, said that though the Nasdaq/Chain pilot is a good example for demonstrating the virtues of the blockchain, he doesn't view it as significant.

"If you had told me [back in the day] that AT&T was going to be using TCP/IP in the backend to move all their traffic to Europe or over Voice over IP, I would say, that makes a lot of sense. Would that be something that is talked forever and change the Internet? Not really," he said.

While these two views seem to conflict with each other, they could both be right. As the Euro Banking Association predicted in a May report called [Cryptotechnologies, a Major IT Innovation and Catalyst for Change](#), "The first wave [of innovation] will concentrate on deeper automation of existing processes. The second will arise from new innovations based on the application of the exclusive features of cryptotechnologies."

In other words, distributed ledger technology is likely to disrupt financial services first by making existing processes more efficient, secure, transparent and inexpensive, and then later by creating new products that we can't even dream of. So while Chain.com's work with NASDAQ and the other incumbent players matters for the first phase, the greater innovations may be yet to come.

Nasdaq CEO Robert Greifeld said, "I certainly believe that people who worked on ARPANET [which formed the basis for the internet] back in the day didn't conceive of the internet we have

today. We know that blockchain is important ... and where that goes over time — unfortunately we don't have the imagination to predict that.”

However, for the first phase, the advantages that financial institutions have and the challenges that they face are becoming clear. Though I only had room to scratch the surface of these ideas in [my magazine story](#), here's a deep dive into why the financial services industry seems so eager to disrupt itself, and how this first stage of transformation is likely to play out.

### **Why Banks Are Funding Their Own Disruption**

“For an entire industry to be focused on a new technology within three years [of it being known beyond the initial core of enthusiasts] without it actually even disrupting them even 1% yet is an interesting reality,” says Chain.com CEO Adam Ludwin. For instance, he notes that in 2000 the recording companies' reaction to Napster was not to invest in digital models but instead to sink money into lawsuits. “Maybe it's because financial institutions haven't fully internalized the change to their business model that's going to happen, and they continue to look at [the blockchain] as just a better database,” he says. “Or maybe they know — they've seen the movie. They've seen this play out six, seven times across several different industries across the last couple decades. They've helped take many of these companies public that have assaulted different industries and they're smart enough to know they should get ahead of it.”

While fear could certainly be playing a role, big players could also be paying attention for a more pragmatic reason: many of the industry's processes are overdue for an upgrade. “The basic elements of the current value transfer process have been in place for over 150 years,” stated a June 2015 World Economic Forum report, [The Future of Financial Services](#), in its section on how decentralized payment systems like Bitcoin could change financial services. While many people describe the legacy architecture in place today as dating back to the '70s, the WEF was referring to the fact that transfers facilitated by central authorities such as banks and clearinghouses has not changed in the last 150 years. (Distributed ledger technology can obviate the need for that trusted middleman.)

Another reason financial institutions have been quick to act could be due to the inroads financial technology (or fintech) companies like Betterment, Square, SoFi, Zenefits and others have made into their territory. In recent years, numerous banks have launched labs and venture arms to test new technology and invest in startups. For instance, in 2010, Citi launched Citi Ventures. “Part of [Citi Ventures'] value proposition to the firm is to make sure that we're scanning the horizon of emerging technologies and business models, making sure that we are testing them, that we invest in startups,” says Debra Brackeen, managing director and global head of the Innovation Network. Citi Ventures has not only invested in Chain.com, but is also testing three blockchains and a product called Citicoin and even discussing state-backed digital currencies with governments.

The company is just one example of how established institutions are pursuing fintech. “Most major financial institutions now have some kind of strategy team or a SWAT team or an incubator of some sort to try to keep the firms abreast of new technologies,” says Susan Athey, economics of technology professor at the Stanford Graduate School of Business and a board

member at digital currency company Ripple Labs. She says, of CEOs of top financial institutions, “As opposed to a year or two ago, I’ve seen a big change in their level of interest and engagement. They have opinions about specific technologies and how they can and can’t be used.”

Wall Street may also be acting fast because much of the industry currently makes its revenues by acting as the middleman. However, the technology itself is likely to take over that role, reducing profits. “The blockchain reduces the settlement window from X number of days to maybe a few hours,” says Eric Piscini, a principal in banking technology at Deloitte. “What’s very interesting to us is all the financial industry is based on managing that window.” For instance, he says that an international transfer could take as long as five days to settle, during which the counterparty can fail or the exchange rate can change or you can have a credit risk. “You have a lot of people — a *lot* of people — working on managing that risk,” he says. “By reducing that window from a few days to a few minutes for a few hours, the amount of risk that you’re taking is completely reduced — even eliminated — and all those people and technologies that you have in place to manage that risk are becoming irrelevant.”

Athey says, “In the future, [people] are going to make a lot of smaller payments. That’s going to increase economic activity ... That, in principle, makes a larger pie with lower fees.” So, many of the incumbents getting in on the action today are, in effect, competing to maintain or grow their share of what could someday be a less lucrative pie.

### **Increased Efficiency, New Markets: What Early Disruption Will Look Like**

How banks utilize the technology depends on their particular areas of focus. “Some [banks] have management arms, some do trading, some commercial banking, some are big on cross-border payments, some, SME [small and medium-sized enterprises] banking services,” says Barry Silbert, Wall Street wunderkind and founder of SecondMarket, who now heads up Digital Currency Group, which has investments in more than 50 companies in 15 countries and also sees a lot of interest from established financial institutions. “So there’s not any one particular use case that they’re all interested in. The way they look at it is, where are the opportunities to reduce costs without creating incremental risk whether that’s compliance risk or otherwise? Then, where are the opportunities to generate revenue?” Finally, he said, they are looking ahead to that second phase of disruption, when the financial industry, including the digital currency startups of today, offers services we have yet to dream of.

The first two types of opportunities that Silbert outlines are subsets of the Euro Banking Association’s first phase: improving existing processes. Two partnerships Chain.com has announced are good examples. The Nasdaq Private Market pilot will use a private blockchain network to [automate the burdensome process of managing shares of private companies](#), and Chain.com’s partnership with Gyft, owned by First Data, one of the largest global payment processors, will make gift cards, which are prone to fraud, more secure and cheaper by [putting them on a private blockchain network](#).

Even less obvious beneficiaries of distributed ledger technology are exploring it. “The efficiencies you can drive using the technology are as far-reaching as the Internet,” says Vic

Pascucci, head of corporate development at USAA. The banking, investing, and insurance services provider is looking at both the currency and the technology for a variety of services, including insurance, operations and compliance. “So, can we use this to help out in the call center? Yep, we’ll probably look at that,” he says. “Can we look at that in the titling process or in [smart contracts](#) or in asset tracking or in claims? We are looking at all these things.”

The second type of opportunity Silbert mentions, a new revenue stream, would be exemplified by, say, a credit card network using the blockchain to enable micropayments whose value would typically be too small to process in the traditional manner due to the fixed costs of credit card payments. Many of the ideas targeting developing economies fall in this category. “If I’m a large, incumbent commercial bank, five to six billion people that don’t have access to a credit card or checking account but do have a smart phone or cell phone in their pocket, that’s an interesting business opportunity for me,” says Bart Stephens, a managing partner at Blockchain Capital.

Disruption will come from the fact that not all financial institutions will exploit these opportunities, or that some will do so too late. Companies that already have established revenue streams may find it hard to innovate. Their current profits could make them reluctant to capitalize on the new technology. Noting that many of them make money by holding on to the deposits of their customers, Athey says they could be reluctant to cut fees and make money available to customers faster than startups would. “There’s good reason to think that they may lose share and they certainly will lose fees,” she says.

### **Financial Institutions’ Starting Advantages**

But firms that endure the pain of disrupting themselves will have an edge or two in the competition against startups. First, complying with regulations and obtaining the necessary licenses can cost a few million dollars, and maintenance fees can run a few hundred thousand dollars annually. This is not going to be like the first round of the Internet in which websites and social networks could be launched from garages and dorm rooms. This time around, startups that hold clients’ money will need venture capital funding just to be able to afford to comply with regulation. “I joke sometimes with my banking clients and I say, the regulators are your friends in that way,” says Piscini.

Incumbents’ other starting advantage is the ability to leverage their trust with consumers. Though Bitcoin was originally conceived as a way for people to transfer money without the need of an intermediary, leading many in the community to call it the first “trustless” currency because it does not require trust in a third party, the average consumer doesn’t trust Bitcoin the way they do, say, Amex or the U.S. dollar. That makes room for existing companies to create digital assets (like a digital version of an American Express travelers cheque) that consumers will be more willing to use. (This is less the case in countries with unstable currencies or developing economies.)

“If I give you a network dollar, what I’m actually giving you is a digital token to get a real dollar,” Ludwin says. “You need to trust that when you show up at the doors of that brand, if it says American Express dollar or Citigroup dollar, when you go to Citigroup, you need to be able

to get a dollar from their vault.” Startups issuing digital assets — whether shares in a company or land titles or energy credits — may face consumer concerns about whether they’ll survive to live up to this promise.

## **The Challenges Financial Institutions Face**

But the trust advantage that incumbents have could be short-lived. In the Internet of information (as opposed to the Internet of value), new tech companies have rather quickly garnered consumer trust and taken some share from banks. A recent Javelin Strategy report showed that consumers trust Apple, Google, Facebook, PayPal-eBay and Amazon (80%) with their financial information more than they do banks (44%) or card networks (79%). In fact, over the last four years, trust in these tech firms has almost doubled while consumer confidence in the banks has decreased. So, who garners trust in the long run — existing financial institutions or new digital currency startups — is an open question.

Similarly, financial institutions can’t be sure that they will capture new markets. Though Bitcoin could potentially allow existing players to tap into markets in developing countries, it could find competition from mobile phone companies. One of the six large companies to invest in Chain.com last week was Orange, which Olawale Ayeni, principal at Orange Silicon Valley, said last week at the Bitcoin conference Consensus, held by CoinDesk, has 240 million subscribers, with 100 million based in Africa and the Middle East, noting that that gives the company ownership of the so-called last mile. “The unique thing about Orange is that we are both in developed markets in Europe and in frontier markets,” he said. “Orange goes to Niger, Senegal, Mali, Côte d’Ivoire, a lot of markets that people don’t understand. We’ve been there for a while. When you talk about things being digital, particularly in frontier markets, people are getting digital via their mobile phones first” — before bank accounts.

This, he said, is leading to the blurring of the definition between a mobile phone and a bank, particularly in frontier markets. “When people say financial inclusion, a lot of people think about giving you a bank account. But fundamentally, it’s about providing you services like credit, insurance, so that notion of what a bank is in our view is quite different. If we can give you access to the same service and not have a bank in between — we already have the customers, we have the network, we can provide similar services that banks in frontier markets cannot,” he said.

And the blurring of that line is not restricted to frontier markets either, he said, noting that Orange is applying for a banking license in France. “We don’t think the banks know more than we do in this new space,” he said.

Another great challenge incumbents face in trying to harness this technology for their benefit could lie in their willingness to work with each other. “For [shared ledgers] to have traction, there needs to be industry-wide adoption, because if you’re the only one doing it, in a distributed ledger concept, there isn’t much to gain from that,” says Bank of New York Mellon chief information officer Suresh Kumar.

One player in this space, who did not want financial institutions to know that this was his personal view, said that though a number of banks have expressed interest in creating a network

themselves, separate from the open Bitcoin blockchain, he doubted it would happen: “I just don’t see a bunch of banks coming together to do anything. In the history of our financial markets, there’s been no examples of a consortium of banks saying let’s go build this together and it getting off the ground in five years and being the best solution.”

Perhaps the investment in Chain.com by Visa, Nasdaq, Citi, Capital One, Fiserv and Orange — none of them competitors — is the first step toward creating such a network. The companies will come together twice a year in a Blockchain Working Group to discuss their learnings.

Beyond companies collaborating, what would really bring us into our digital asset future is government-backed digital currencies. As mentioned earlier Citi already has had conversations with governments about digital fiat currencies.

When Ludwin spoke on a panel at Consensus last week, the moderator asked what the government could do to spur the use of blockchains. Ludwin said, “They could issue U.S. dollars on a blockchain.”

The audience, moderator and other panelists laughed.

“You laugh,” Ludwin said. “Next year, whoever’s organizing the conference — ask that question again, and see how far we’ve come.”