

THE BITCOIN EFFECT

**Does a new
electronic
payment system
threaten the
future of currency
as we know
it? Noah Davis
investigates
the Bitcoin
phenomenon
and discovers
why the future of
commerce may
already be here**



Imagine that instead of your current situation – high above the clouds, winging to meet a loved one or attend a business meeting – you are a blogger in Nairobi, Kenya, who has gained a following by doggedly covering political corruption in the government. (A stretch but bear with me for the briefest of moments.) To ensure your safety, you remain anonymous but the wider world is starting to pay attention to your WordPress blog. You want to spend some money to upgrade its appearance and improve the features. Vanity is a human characteristic, even for the blogging set.

WordPress, which boasts nearly 60 million sites worldwide, offers the options you desire for a small fee. The only problem: you have no way to pay. You don't have a credit card and PayPal blocks access to Kenya because of fraud concerns. You are out of luck. Until, that is, someone tells you about Bitcoin. In November 2012, WordPress began accepting the digital currency as payment. Bitcoin – which isn't beholden to governments or any other central organisation, only to a peer-to-peer network of users boasting impressive computer processing power – offers one vision of the future of money. It has a small army of fervent supporters who believe the currency, developed by a mysterious Japanese figure, will take over the world. It is complex and controversial, perfect for the post-industrial age. Bitcoin supporters argue that it scares central banks and big credit card companies because of the possibilities it offers. And they might be correct. Even those who don't believe Bitcoin is here to stay recognise there are lessons to be learned from the experiment, important ideas about how the world connects and pays for services. At the very least, Bitcoin shines a light into what may come next.

And if its proponents are correct, we'll all be paying with Bitcoin in the not-so-distant future.

But right now, none of those details matter. All you, my Kenyan blogging friend, need to know is that WordPress accepts your Bitcoins. You procure some, trading real Kenyan shillings for digital bits of code, pay the blogging network, and continue writing away on your new and improved site. In more ways than one, the revolution will be digitised.

WHAT IS BITCOIN?

The idea of currency – that something of value can be exchanged for goods or services – goes back thousands of years to cattle and cowrie shells. Bronze and copper coins pop up around 1000 BC, with silver ones coming into existence roughly 500 years later. The Chinese developed paper money in 806, watched it disappear in 1455, then show up again a few centuries later. Europe, the United States and the rest of the world followed suit. Now central banks regulate money, citizens pay with coins, paper bills, or with debit and credit cards. (The companies distributing the cards profit from fees, of course.)

Satoshi Nakamoto had a different vision: Bitcoin. A document that he uploaded to a cryptology listserve in 2008 – in the middle of the global financial crisis – outlined the plan that didn't rely on governments or central banks. The details are complex, but the simple version is that a network of users keeps track of every Bitcoin transaction by adding each one to the 'block chain.' People use computing power to solve cryptographic puzzles, 'mining' blocks at a rate of about six blocks per hour. The first person to successfully mine the block receives a reward, currently set at 50 Bitcoins. Every 210,000 blocks – roughly four years – the reward is cut in half.

By 2140, 21 million Bitcoins will be floating around the digital world. The fixed supply allows Bitcoins to gain value.

On January 3, 2009, Nakamoto mined the first 50 Bitcoins himself. Over the next two years, two things happened: the open source money slowly, steadily, gained traction among a certain subset of techno-geeks, libertarians and other early adopters, and Nakamoto disappeared.

The second issue first. No one knew the identity of the Bitcoin creator. He might have been a single person, a group or something else entirely. But by December 2010, he – or it – was gone. While the disappearance surprised the growing Bitcoin community, it also helped.

"In a way it's a good thing for the community that he's gone. It's like religion. We had some of the regimes in the 20th century become 'atheist' and replace religion with quasi-religions around their heads of state and look what happened. It's better for society in general when central rallying points are more abstract," Vitalik Buterin, head writer for *Bitcoin Magazine*, wrote over Skype. (That nearly everyone in the Bitcoin community communicates primarily over Skype gives a sense of the currency's worldwide userbase.)

The Bitcoin ethos is one that does not rely on central banks or governments, but on a network of users that keep track of every transaction by adding it to a bitcoin chain that grows over time



Nakamoto was gone, but Bitcoin continued to gain traction. The digital currency, which wasn't worth anything initially, suddenly was. A lot, in fact. In February 2011, one Bitcoin could be exchanged for roughly \$1 USD. Just four months later, on June 9, one Bitcoin was worth nearly \$30 USD. Although the market crashed to around \$3 USD by October, it rebounded and hovered around \$12 USD in December 2012.

WHY BITCOIN?

The short answer is that Bitcoin offers another option for payment: a (relatively) safe way to conduct transactions without interference from governments or massive corporations. David G.W. Birch, the director of electronic transaction consulting firm Consult Hyperion, sees a growing need for this type of currency. "In the marketplace, there is a real desire to see some alternatives," he says. "Prior to the financial crisis, I'm not sure people would have been prepared to experiment. Post-crisis, people are."

TRAIL BLAZER / Tony Gallippi, the co-founder of BitPay, the biggest Bitcoin payment processor



Bitcoin's passionate advocates say there are around one million people who use it, although Birch – who is more analyst than evangelist – puts that number lower. But, undeniably, Bitcoin is gaining traction around the world. It is popular in some places you might not expect. The top six countries with the highest number of transactions in 2011 included Ukraine, Poland and Belarus. (The Russian Federation was number 1 and the United States, which has more difficult regulatory laws than most countries and computer systems that only work in USD, was second.) "I suspect that is for two reasons," Tony Gallippi, co-founder of BitPay, the largest Bitcoin payment processor, explained via Skype. "One, people in those countries are accustomed to paying in cash, not credit. Two, the banking system in those countries is not reliable or trustworthy to many people."

Central banks are starting to pay attention. In October 2012, the European Central Bank released a report titled *Virtual Currency Schemes*. The conclusion: "Although these schemes can have positive aspects in terms of financial innovation and the provision of additional payment alternatives to consumers, it is clear that they also entail risks. Owing to the small size of virtual currency schemes, these risks do not affect anyone other than users of the schemes." The report does mention that if the use of virtual currency grows, it could negatively impact the public's perception of central banks as people will link growth with the banks "not doing their jobs properly."

The Bitcoin evangelists – who, it should be noted, have a vested interest in the success of the currency – hope this is eventually the case and believe the banks

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have every reason to worry. "Central bankers have a monopoly on money supply. If people start using an alternative, that threatens their monopoly. Gold, silver, barter, Bitcoin are all in the same category," Gallippi says.

For Buterin, it's not just the banks; it's also a problem of large corporations like Visa and MasterCard that make billions by charging transaction fees. Bitcoin is the brave new world. "If you think about it, they are pretty outdated institutions in many ways. This is 2012. You can send an email to anywhere in the world in an instant with zero transaction fees. Meanwhile, bank wires still somehow occasionally get lost," he says. Buterin has a point. At the same time, there are difficult and concerning aspects of Bitcoin that will likely keep the currency from gaining wider adoption.

WHY NOT BITCOIN?

In June 2011, Adrian Chen published a long, investigative story on the website Gawker.com called *The Underground Website Where You Can Buy Any Drug Imaginable*. In it, he detailed online marketplace Silk Road where users could buy anything from Afghani hash to 'Avatar' LSD using Bitcoins. Because Bitcoins are mostly pseudonymous, they are a safe way to make these illegal transactions. (As the transactions are recorded



on the block chain, it would be possible, but difficult, for legal authorities to track down the buyer.) In short, the flexibility and relative anonymity of Bitcoin allow people to purchase illegal substances and other items in addition to more traditionally acceptable things.

The currency's advocates don't dispute this fact, but they do raise an important point. "It happens, but illegal transactions also take place with dollars every day. Criminals use cell phones too. We are all working very hard on the mainstream uses and adoption of Bitcoin," Gallippi says.

Two other common issues are fraud and theft. Because there is no central organisation overseeing Bit-

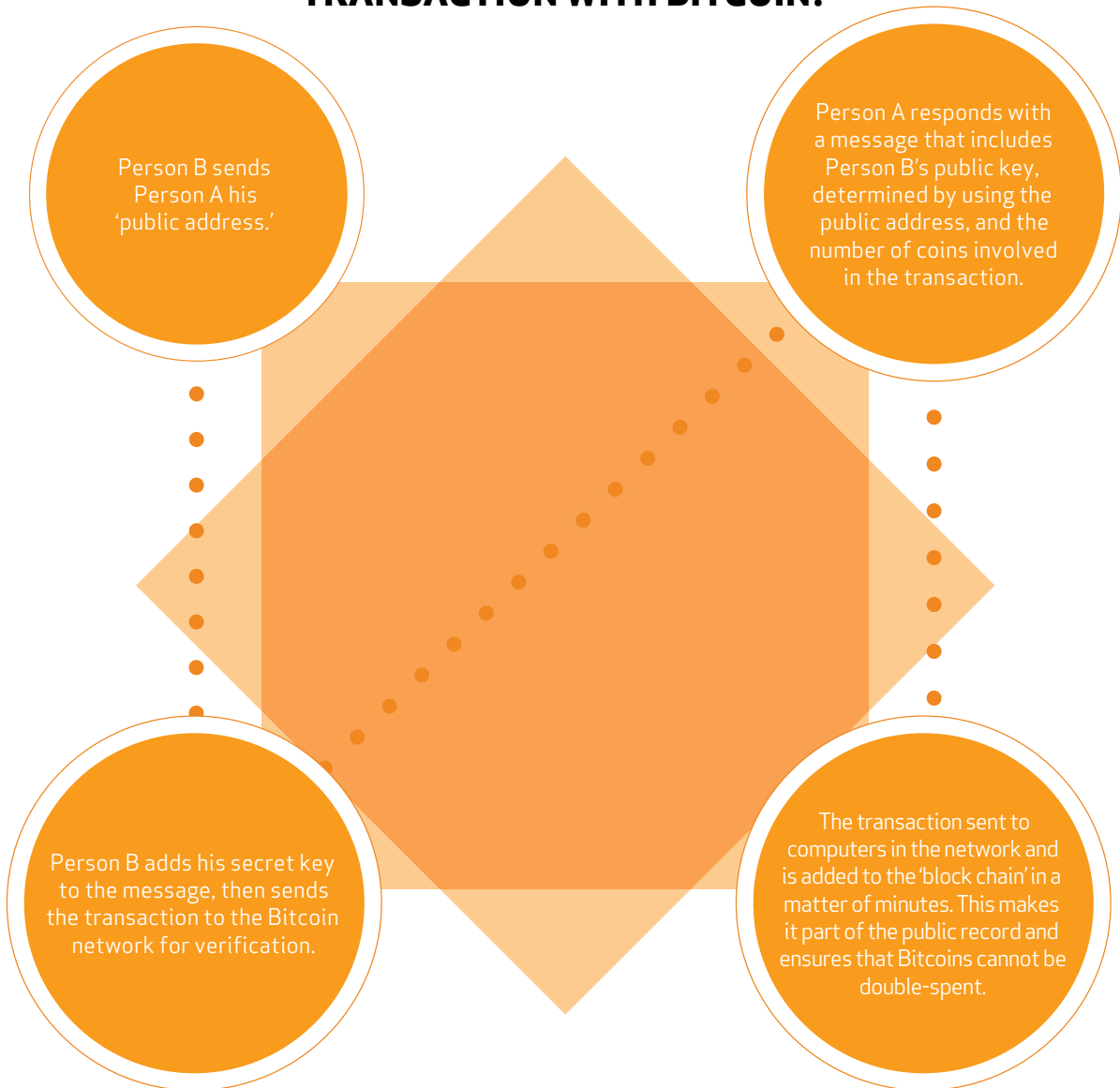
coin, it's much harder to police problems. When something goes wrong, the answer to "Who ya gonna call?" is, by Bitcoin's very design, no one. The community hopes to limit these types of issues, but the very type of early adopter who is attracted to Bitcoin is also frequently someone who wants to avoid rules and regulations, not necessarily to do something illegal but rather because they don't believe the government should interfere. That attitude makes regulation difficult, and will turn off the less adventurous.

WHAT'S NEXT FOR BITCOIN?

The currency finds itself in a bit of a Catch-22. It clearly has a cachet and a usefulness for a

certain subset of people, many of whom want to see it grow into the mainstream. But if it gets bigger, it may lose some of the things that initially attracted the devoted audience. It is also currently too complex for the common person. "At the moment it is too difficult for most people to use. It is like the Internet in the early 1990s, when you had a command line console to telnet, FTP, and use IP addresses. Then came domain names, Netscape and the World Wide Web. Bitcoin is in the pre-Netscape phase right now," Gallippi, the man most responsible for the WordPress partnership, says.

HOW DO YOU MAKE A TRANSACTION WITH BITCOIN?



His BitPay company helps make transactions easier. Others are working to simplify other aspects of Bitcoin. Slowly, the digital currency is moving beyond the fringes of the Internet. The Finnish central bank announced its support for Bitcoin and New Hampshire Congressman Mark Warden accepted Bitcoin donations during his successful 2012 campaign. Gallippi believes

that between 10 and 100 million people will use Bitcoin within three years.

Birch thinks that there are reasons to pay attention to the currency, but he's not sure it will find the success Gallippi and Buterin believe it will. It's too new, too strange, too weird, and it's not the best use of the technology. Digital currencies will continue to gain traction, but Birch posits that they

will be based on energy, reputation or other things that are more stable over the long term. "What's the thing that we learn most from Bitcoin? It's that people are prepared to consider alternatives," he says. "Bitcoin is important. We have to study it and learn lessons from it, but the lesson isn't that Bitcoin is going to rule the world."

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