

# [Bitcoin is poised to shake the world: are you paying attention?](#) [1]

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**If you thought technology was already disruptive enough, here's the news. We're just getting started.**

The Roman Rallying sequence in the [Top Gear Middle East Special](#)<sup>[3]</sup> is an exhilarating example of the old world rubbing up against the new. As Jeremy Clarkson and Co charge around the sacred Jordan hippodrome in their battered sports cars, they inevitably start to kick up a lot of ancient dust. Clarkson starts to worry: "someone's gonna see this dust, and then they're gonna come, and then there'll be *anger and rage*".

There was a time when Bitcoin was able to rub up against the old financial world without anyone noticing. Now that time has gone. They're simply kicking up too much dust to go unnoticed any more. Take the recent seminar at Stockholm's School of Economics as a case in point. A simple two hour session featuring the current figurehead of the Bitcoin movement, Jon Matonis, turned out to be their quickest selling and most oversubscribed event in their 100 year history. But for those who know even a small amount about Bitcoin, this comes as no surprise. How could anyone resist a story involving giant stone money, gold, aliens, and the possibility of displacing some of the most significant polices of modern governments with an algorithm?

## **International Man of Mystery**

Let's start with a little background check. It's a given nowadays that the most innovative internet technologies no longer emerge from the R&D labs, but from the world's student dorms. The case of Bitcoin is no different. Well, not entirely different anyway. The twist in this particular story is that the originator - who goes by the name of Satoshi Nakamoto - is closer in style to the techno duo Daft Punk than Mark Zuckerberg. According to modern folklore, Nakamoto could be a combination of any of the following: a gifted Japanese student (or even group of students); a graduate of Trinity College Dublin called Michael Clear; and/or a group of international entrepreneurs who filed a patent for something very similar to Bitcoin only 72 hours before the domain was registered. However all attempts so far to arrive at a real person have ended in either denials or dead ends. Perhaps this is as it should be. All this anonymity is entirely fitting for a distributed P2P network that champions the (somewhat contradictory) dual principles of open source and cryptography. The simple fact that no one seems to own Bitcoin means everyone does.

## So What's Different This Time Around?

The world has seen innovation in ICT and Finance before. In fact, Sweden itself can even claim to be a bit of a world leader in the field. While things like iZettle's iPhone dongle, and services such as Tink, Flattr and Klarna may seem (and indeed are) groundbreaking, they are still little more than a smart interface into the traditional banking world. As such they're not creating a new game so much as simply making it more efficient to play the old one ? and taking their cut to do so too. What's cool about Bitcoin is that it's inventing a totally new ball game altogether.

Here's the rub. In the world as we know it, each institution, credit card, bank or financial service has it's own ledger (or set of ledgers), and every time we ask them to transfer some money in or out of our accounts they do so by adjusting their ledgers. And when they adjust those ledgers, they charge a (not insignificant) transaction fee. Not only that, increasingly these transactions are electronic, and that means they're tagged with our identity too. Depending on your point of view, this could be either good for tracking criminals and/or a convenient tool for governments to snoop on what their citizens are up to.

Bitcoin does two significant things which drive this traditional paradigm into the sand.

First, it makes the transactions anonymous, much like cash transactions. Any transactions you make on Bitcoin are not coupled to your identity. That's bad news for nosey governments.

Second, it has only one giant ledger in the cloud, so the transaction costs of transfers are as close to zero as you can get, and (because of Moore's Law) they will keep falling. Essentially, in the Bitcoin universe, there is no difference in the transaction costs between a) buying a loaf of bread at your local store, or b) sending millions of Bitcoins through the ether from one side of the planet to the other. The cost for both is more or less zero.

## The Go-Betweens

But before we get all excited about hopping up and down on the graves of clearing houses, banks and other financial middleman, it's worth mentioning that there's actually a really sound reason why these kind of institutions exist in the first place. *Convenience*.

Convenience is the reason we buy our chewing gum and cigarettes from the local store and not from the out of town cash and carry. Even though we know the local store charges a premium, that's still better than hopping in the car and driving across town for a small purchase. The same logic applies to the world of traditional banking. However unreasonable a transaction cost may be, it'll still be cheaper than hopping on a plane with a sack full of cash. What makes the Bitcoin solution unique here is that it sidesteps this issue by making all financial transactions *equally convenient*. From the perspective of both the buyer and the seller that's a very attractive proposition ? from the perspective of the (possibly soon defunct) middlemen, it's a nightmare. The emergence of Bitcoin is going to make a lot of very powerful, influential and traditional middlemen-style institutions very nervous.

## Stark Contrast

Jon Matonis tells a great story to demonstrate just how different Bitcoin is to the traditional money world. When he gave a talk on Bitcoin at the monumental premises of Swift HQ in Brussels ? one of the world's largest central clearing houses ? he asked if he could see the ?live transactions? that roll through their computers every nano-second of every day. He was told that the ledger (the bank of computers doing the work) was private and kept in a locked room. By contrast not only is the Bitcoin clearing system totally decentralised, it is also public. Very public. In fact it's so public you can even watch the transactions as

they happen in realtime on the web, and, because the entire enterprise is driven by open source and thereby open to the creative talents of the dorm world, you can even listen to it.

One other big paradigm shift in the Bitcoin world is around credit. In the Bitcoin world, there simply is no fictional money. This would make fractional banking (the method by which banks lend out more money than they actually have in reserves) almost impossible. In the Bitcoin world, banks would only be able to lend the money they actually have. Perhaps loans would be spread across Bitcoin's distributed network, much like crowdfunding. However it works in practice, the impact of reduced credit on a world currently addicted to the stuff is anybody's guess.

## **Area 52**

The key point about Bitcoin's decentralised nature vs the centralised nature of the traditional money world is worth exploring in more detail. It's also where our story takes a slight off-road detour into Area 52 territory.

Until recently, SETI (the project whose aim is to Search for Extraterrestrial Intelligence) has been the number one global distributed computing network. However now that Bitcoin is on the rise, it's been bumped down to second place. In fact the surge in Bitcoin's distributed computing power is like nothing we've ever seen before. As Bill Gates said, "Bitcoin is a technological tour de force".

This distributed nature also makes it incredibly resilient. Imagine if the SWIFT was somehow taken out, either physically or by attacks on its network. That would more or less cripple the money exchange markets that depend on it. Compare that to Bitcoin. The loss of a few computers in any given country on the network makes no difference - the system simply adjusts and life carries on as before. In this regard Jon Matonis likes to draw a comparison between Bitcoin and the ancient Rai Stones that were used on the island of Yap, Micronesia. These huge stone wheels were used to demonstrate the wealth of the owner and serve as a public record of significant transactions. Even though the ownership of any given stone would change over time, as long as people knew where it was, the physical location of the Rai Stone did not matter. In fact one Rai Stone even sank to the bottom of the sea during a voyage, but as the villagers could all agree it still existed, the stone was still able to be used.

## **A Dismal Science No More?**

Despite the fact that we've already covered the mysterious origins of Bitcoin, its power to reduce transaction costs to zero, and its distributed, anonymous nature, we've still only scraped the surface of its disruptive powers. What it can potentially do to governments is mind blowing.

While some progressive governments (such as Germany) have already embraced the power of Bitcoin, the majority remain sceptical. Some - such as the government of Thailand - have even opted to ban it (and good luck with that?)

So why all the worry and hoo-hah?

Here's the punchline. Bitcoin would not only effectively sidestep a government's monetary policy, it would severally restrict its fiscal policy too. But what does this mean in practice?

For those of us who are not economists, we can explain it this way. First, on the monetary side of the equation, governments often like to reserve the option of setting the base lending rate (or discount rate) themselves through a central bank. They're also keen on printing more money if needed to help pay for stuff, and they like to control the markets by buying and selling their own bonds (known as open market

operations). In the Bitcoin world, it is the Bitcoin algorithm which controls the flow of new Bitcoins, not a central bank. This would make it much harder (if not impossible) for governments to rely on the fictional money they've grown so used to. That's goodbye to quantitative easing for starters.

Second, on the fiscal side, as income gets harder and harder to trace back to individuals, governments would have to switch taxation to the consumption side of the equation. In turn this would rather limit the governments supply of tax revenues, and may even force them to get real about balancing their books.

As Al Gore has wryly noted, "I think the fact that within the Bitcoin universe an algorithm replaces the functions of [the government] is actually pretty cool."

## System D

So now we've looked at the potential impacts on governments, we're done, right? No.

Some of the most exciting implementations of all this kind of new technology isn't happening in the old world, but the new. While the EU and the States are mired in government bureaucracy, restricted by powerful lobbying bodies, and stunted by military units run with half an eye on health and safety regulations, Africa and Asia are leapfrogging a lot of these issues to implement some truly original solutions.

At the Stockholm seminar, we also got to hear from the amazing Pelle Braendgaard who runs Kipochi. He told us about the everyday use of digital currencies like M-PESA in Kenya, and how people there who have been let down by the traditional banking sector have found an exchange lifeline with digital currencies that run on old cellphone technology and sim cards. M-PESA in effect gives a banking-like infrastructure to those people who would otherwise be "off the grid" and operating in [the System D economy](#)<sup>[4]</sup>. Imagine the possibilities for anyone in Africa or Asia to either wire money in or out of the country for free (or as good as), while at the same time sell their goods without having access to a bank account. They could also shop around for a loan on a global scale, and even pay for their groceries at the local store in the same currency.

## So What Happens Next?

The exponential rise of Bitcoin will no doubt start to generate some heat from here on in. It's only a matter of time before we see the traditional gatekeepers start to cry foul. No doubt we'll see a lot of anger and rage in the courtrooms. At least in the west. In Africa and Asia we'll probably see things take off a little quicker. I predict it will only be a few years from now before we see Bitcoin (or other similar digital currencies) emerge as the exchange of choice for the majority of people otherwise denied access to the established money structures. And when that happens, prepare for the world to shake.

*This piece initially appeared at [File Under Optimism](#)<sup>[5]</sup>.*

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