

[Tor, Bitcoin and the Silk Road: three forces for good](#) [1]

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Since the arrest of Ross Ulbricht aka 'Dread Pirate Roberts' ? the alleged mastermind behind the Silk Road ? media attention has in part focused on the role of legal technologies Tor and Bitcoin in its operation. Silk Road was an online black market where all kinds of restricted and illicit goods (from illegal drugs to forged passports) were sold in an eBay-style setting. Because of the nature of its wares it made up part of the 'deep web' - accessible only by using software such as Tor, which enables user anonymity by obscuring their location and usage, making surveillance incredibly difficult. Its illegality also prevented customers from paying via card companies or PayPal, so business was done using the crypto-currency Bitcoin.

Whilst talk of Bitcoin and Tor is old hat amongst technophiles, reporting of Silk Road's takedown is probably one of the first times that many people would have heard about such technologies. And, understandably, when their raised profile comes in association with a giant underground marketplace in drugs and a man charged with ordering an assassination, people may be swift to discount them as 'hacker tools', or look upon them unkindly. (The Guardian's leak of GCHQ's presentation 'Tor Stinks', which depicts an apparently typical terrorist Tor user [masked and toting an assault rifle](#) [3] (and sat in front of a giant onion) is in this respect both amusing and depressing.)

However, Tor and Bitcoin aren't used just for shady dealings. Both can be used to great benefit ? Tor in providing freedom and safety online, and Bitcoin in encouraging financial and monetary innovation.

There are huge numbers of people who aren't terrorists, sex offenders or drug barons who benefit from anonymising software such as Tor, and those whose lives may depend on it. Tor allows people across the globe to communicate freely when doing so is risk and the internet is monitored or subject to blocks. It circumvents national firewalls, empowering and educating citizens who would otherwise be restricted. It allows whistleblowers to divulge their information anonymously, journalists to share news, and activists and citizens to criticise, dissent and organise in protest. Millions around the world benefit from Tor.

And it isn't just citizens in oppressive regimes who benefit ? Tor is used by the military in operations to protect their location whilst communicating securely. It could also be argued that concerned parents can help protect their child online by using Tor to mask their location. Whatever else Tor may be used for, its capacity to liberate and protect is great.

Similarly, the development of crypto-currencies such as Bitcoin carry with them great potential. Bitcoin is an open-source, peer-to-peer electronic currency. It has no central issuing authority; the money supply is increased as users's computing power crunches numbers to verify pervious transactions. This has made

crypto-currencies very interesting to those who wish to abolish central banks and establish new forms of currency. But Bitcoin also has a growing number of practical uses.

Increasing numbers of vendors are accepting payment in Bitcoins and it can be used to pay for things from Wordpress services to [pizza](#) [4]. It doesn't require any third-party intermediary such as credit card companies or PayPal to process payments, making transactions cheaper and easier. This can lower transaction costs for businesses, which, were Bitcoin to become widely adopted could also be passed onto the consumer. [The Mercatus Center's primer](#) [5] on the currency suggests that this aspect of Bitcoin could also revolutionise the global redistribution of wealth. In 2012 immigrants to developed countries sent \$401 billion back home to developing countries. The average fee doing so at places like Western Union is close to 10%, whilst fees for similar services using Bitcoin are less than 1% of the transaction. Wiring companies are looking at integrating Bitcoin services into their own, and if they were to do so this would be a tremendous boon for the poorer people of the world.

Transferring traditional currency into Bitcoins can also allow people to overcome domestic economic problems and the consequences of corruption. With tight capital controls and an inflation rate of 25%, it is no surprise that Argentinians are some of the most enthusiastic users of Bitcoin. Other great uses of Bitcoin, such as in conjunction with SMS banking in developing countries, are developing all of the time. Bitcoin definitely has the potential to be more than a plaything for nerds and a way of buying hash.

Cathy Reisenwitz is right: [the world is less safe now that Silk Road is gone](#) [6]. The violence associated with drug dealing is not a consequence of the products, but of their illegality. As a stable, trusted and effective platform Silk Road removed that need for violence. Drug laws need a serious overhaul, and the user rating and delayed payment system of Silk Road offer a great model for a legal marketplace for drugs. I therefore think that it is great that technologies such as Tor and Bitcoin are being put to such use.

However, many will disagree. This is why it is important to point out the great potential and liberating capabilities of these technologies before people discount them, or worse turn against them. No technology in itself is 'good' or bad' - what matters is how it is put to use, and while we worry about the potential dangers of new technology, we should remember its use in positive ways too.

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