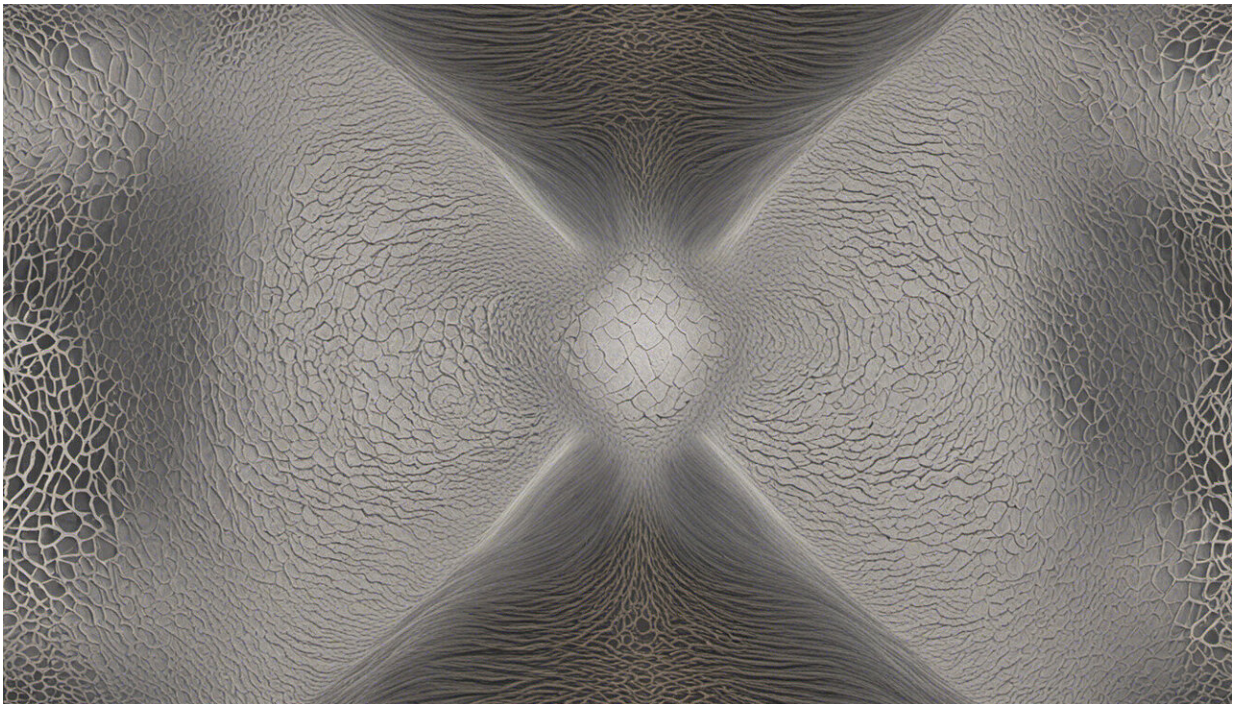


Why blockchain challenges conventional thinking about intellectual property

February 27 2018, by Alexandra Sims



Credit: AI-generated image ([disclaimer](#))

Cryptocurrencies are getting a lot of attention, but finance is only one of many applications of the blockchain technology behind it.

Blockchain technology is poised to revolutionise almost everything from supply chains (including illegal fishing and human rights abuses),

insurance and [health](#).

It is flourishing in an open-source environment, which raises the question whether our current intellectual property laws are fit for purpose to foster innovation.

Intellectual property law's incentive theory

Intellectual property laws, such as patents and copyright, are premised on the [incentive theory](#). To incentivise people to create, they are given, in effect, a monopoly (with some exceptions) on their creations and can go to court and stop others from free-riding on their work.

The digital world has made the tension between innovators and free riders even more acute. In the pre-digital era, copying a book incurred considerable costs for the copier. Now, given that digital files can be copied indefinitely for near zero cost, one could argue that we need even stronger IP laws to prevent rampant and unfair copying.

But theory does not always match reality. History is littered with examples of patents [harming rather than aiding innovation](#).

James Watt's steam engine was an advance over existing steam engines, yet the technology could not be built upon because of [Watt's patents](#). It was not until the patents expired—one of which had inexplicably been extended by Parliament—that steam power came into its own in [driving the industrial revolution](#).

We should not be surprised that [patent law](#) can harm innovation. The English Crown used patents to raise revenue and patents were granted over common goods such as salt. Such was the public outcry, James I was [forced to revoke the existing monopolies](#) and only grant them for novel inventions.

In the United States, patents were granted for inventions, such as a textile spinning machine, that the [government knew were stolen](#) from the United Kingdom. In 1950, in his review of the patent system for the US congress, the distinguished economist [Fritz Machlup](#) wrote, "If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it."

Countries' use of law to protect themselves at the expense of others is, of course, not limited to patents. At one time the United States was an [unabashed copyright pirate](#). The US was keen to educate its population and refused to grant copyright protection to works published by non-citizens such as Charles Dickens.

Open source and IP laws

The first blockchain application, Bitcoin, was not patented. It is not unique in this regard. Sir Tim Berners-Lee did not patent the world wide web. Likewise the internet was released to the public free from patent restrictions.

The lack of patents has meant that blockchain's rate of development has been nothing short of breathtaking. Bitcoin, released in 2009, has a block time (the time it takes for a transaction to be recorded) of around 10 minutes. Ethereum, released in 2015 and designed to fix some of Bitcoin's shortcomings, has a block time of around 14 seconds.

The key for blockchain's rapid development is that the [source code is open source](#). People are free to copy the code and improve upon it. A deliberate decision is made not to use copyright law to protect the source code, unlike proprietary software.

In addition, traditional industries work on products in secret for many years until they are released. In contrast, many blockchain entrepreneurs explain what they are doing before they have anything to release. Some even provide that information before they have started to build anything. Others are able to use those ideas and create competing products.

Indeed, blockchain has turned conventional thinking on its head. If the community does not like what a [blockchain technology](#) is doing, it can fork the blockchain (copy the blockchain and its data) and create a competing one. This happened when [Ether Classic](#) was created (a copy of the Ethereum blockchain), and [Bitcoin Cash](#) (a copy of Bitcoin).

Innovation is progressing so fast that Bitcoin's blockchain is now comparatively primitive technology. More recent technology such as [IOTA](#) and [Hashgraph](#) makes blockchain look dated. However, without Bitcoin there would be no IOTA or Hashgraph – both were designed to fix blockchain's limitations.

Open source is a viable business model

People can make money in the absence of intellectual property protection. Large corporations have made their money through using open source software and providing additional services, for which they charge.

Red Hat, an open-source software company, generates more than US\$2 billion in [revenue](#). IBM is [building blockchain solutions](#) for numerous multinational companies such as Maersk and Walmart using Hyperledger Fabric, an [open source](#) programme from the Linux Foundation.

The question is: are our current intellectual property laws fit for purpose if three paradigm-shifting technologies – the internet, the world-wide-web and now the [blockchain](#) – are flourishing in the absence of

protection under such laws?

Granted, with Machlup's words in mind, it would be irresponsible to abolish patent law unless other systems were put in place. In the short term, in regards to copyright law, the Australian Law Reform Commission recommends that to foster innovation, fair use needs to be implemented in Australia. New Zealand should [follow this recommendation](#).

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