WHAT ARE BLOCKCHAIN'S ISSUES AND LIMITATIONS?

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There are treacherous passes in any technological revolution.
Some people in the blockchain industry have pointed out that blockchain has become overhyped, when, in reality, the technology has limitations and is inappropriate for many digital interactions. But through research and development, success and failure, and trial and error, we've learned the current issues and limitations of blockchains.

Complexity
Blockchain technology involves an entirely new vocabulary.
It has made cryptography more mainstream, but the highly specialized industry is chock-full of jargon. Thankfully, there are several efforts at providing glossaries and indexes that are thorough and easy to understand.

Network size
Blockchains (like all distributed systems) are not so much resistant to bad actors as they are 'antifragile' - that is, they respond to attacks and grow stronger.
This requires a large network of users, however. If a blockchain is not a robust network with a widely distributed grid of nodes, it becomes more difficult to reap the full benefit.
There is some discussion and debate about whether this a fatal flaw for some permissioned blockchain projects.

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TRANSACTION COSTS, NETWORK SPEED

Bitcoin currently has notable transaction costs after being touted as 'near free' for the first few years of its existence.
As of late 2016, it can only process about seven transactions per second, and each transaction costs about $0.20 and can only store 80 bytes of data.
There's also the politically charged aspect of using the bitcoin blockchain, not for transactions, but as a store of information. This is the question of "bloating' and is often frowned upon because it forces miners to perpetually reprocess and rerecord the information.

HUMAN ERROR

If a blockchain is used as a database, the information going into the database needs to be of high quality. The data stored on a blockchain is not inherently trustworthy, so events need to be recorded accurately in the first place.
The phrase 'garbage in, garbage out' holds true in a blockchain system of record, just as with a centralized database.

UNAVOIDABLE SECURITY FLAW

There is one notable security flaw in bitcoin and other blockchains: if more than half of the computers working as nodes to service the network tell a lie, the lie will become the truth. This is called a '51% attack' and was highlighted by Satoshi Nakamoto when he launched bitcoin.
For this reason, bitcoin mining pools are monitored closely by the community, ensuring no one unknowingly gains such network influence.

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POLITICS

Because blockchain protocols offer an opportunity to digitize governance models, and because miners are essentially forming another type of incentivized governance model, there have been ample opportunities for public disagreements between different community sectors.
These disagreements are a notable feature of the blockchain industry and are expressed most clearly around the question or event of 'forking' a blockchain, a process that involves updating the blockchain protocol when a majority of a blockchain's users have agreed to it.
These debates can be very technical, and sometimes heated, but are informative for those interested in the mixture of democracy, consensus and new opportunities for governance experimentation that blockchain technology is opening up.

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