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Blockchain, Property Rights, and Public Policy

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If you have not tried it yourself, you probably know someone who trades bitcoins. Bitcoin is a digital currency designed for peer-to-peer transactions by the pseudonymous Satoshi Nakamoto. Although the real identity of Nakamoto remains unknown, we do know that Bitcoin has soared in popularity and application in the decade since it launched, with an estimated global value of \$156.7 billion as of January 2020. This blog briefly introduces the relevance of this emerging transactional realm for public policy and urban planners.

More important than bitcoin in the public policy realm is blockchain, the underlying system that legitimizes and secures data, and thus value, for bitcoin. Blockchain is a decentralized ledger or record-keeping system. Members of this decentralized blockchain community, known as miners, verify digital transactions in which a sender authorizes payment with a private "key," after which blockchain software generates a hash or sequence of numbers that records the public "keys" of the sender, receiver, and value exchanged. Miners group verified transactions into blocks. Although multiple miners verify blockchain transactions, the first miner to add proof of the transaction (or a new block in the blockchain) earns a reward in the form of bitcoin. This verification process—which requires intensive processing power and electricity—creates important data privacy and security advantages. Once legitimized within the block, private information about the transaction is protected but the public ledger is difficult to change.

So what is the importance of blockchain for public policy? The answers to this question relate to blockchain's reliable capacity to store data about transactions of all forms. Beyond cryptocurrencies like Bitcoin, researchers are looking into the use of blockchain in voting to eliminate fraud and increase voter turnout. Blockchain is also expected to take on increasing importance in the realms of smart contracts, where negotiations between buyer and seller under certain terms of agreement are legitimized and secured. Property records are a vital area where smart contracts through blockchain may dramatically shift current processes and paradigms.

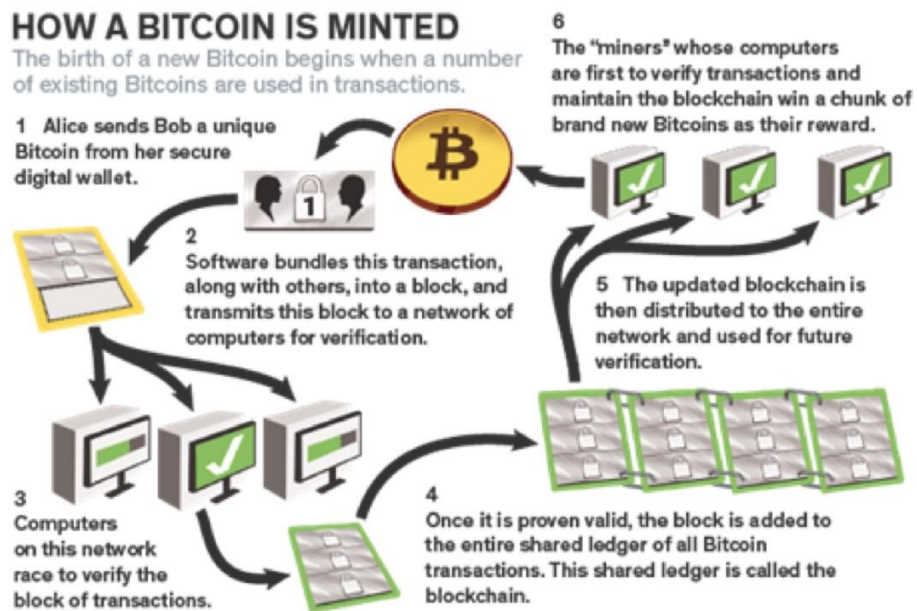


Image Source: Salzman, Avi. Beyond Bitcoin, How Blockchain is Changing Banking. Barrons.com, July 1, 2017.

Fresh back from presenting research at the Planning, Law, and Property Rights conference in Ústí nad Labem, Czechia (Czech Republic), I had the privilege of working with scholars from around the globe who interact with planning in contexts where land use law, planning, property rights—as well as humans rights—are conceptualized and performed in sometimes radically different ways. Issues of property record legitimacy and security are of paramount importance in places where institutions for economic and political stability are emergent or unstable. Property rights—and the land titling mechanisms that ensure such rights are secure, well-defined, and equitable—are increasingly recognized as a lynchpin for economic development and the expansion of human rights and liberal democracy.

Peruvian economist Hernando de Soto Polar is well known for championing property rights protections for the world's 5.3 billion persons who lack full property rights. Providing title to land, homes, and businesses could unlock trillions in assets and stimulate investment, borrowing, and entrepreneurship, potentially bringing people in the poorest nations into the global economy and empowering increased rights that can transform socio-economic conditions. The geo-political implications of new schemas for property rights are evident in places like the Middle East, where the Arab Spring was triggered by police confiscation of an unregistered fruit cart, or the millions of inhabitants of informal settlements in the global South, such as Mumbai's slums and Brazil's favelas. In nations transitioning out of communism, such as the Republic of Georgia, new processes for transparency and security for property rights provide hope against forces of corruption and oligopoly that threaten nascent market economies and hopes for democratic governance. The potential for blockchain to facilitate change in these contexts is tremendous but not yet fully understood and certainly far from implementable.

Applications for blockchain for property rights are also relevant in the U.S. Imagine a home purchasing transaction that is as quick and easy as buying a book on Amazon. Cook County, Illinois (where Chicago is the county seat), is the leader in examining how blockchain can be implemented into property records and transactions in the U.S.

Blockchain's impacts on property title may go far beyond facilitating record-keeping and transactions. Because blockchain converts assets into digitally-traceable tokens such as Bitcoin (a process referred to as "asset tokenization"), and allows owners of assets to more readily buy and sell tokenized assets, some see blockchain as revolutionizing the way ownership of property of all kinds works. Researchers are examining how blockchain will distribute ownership of complex assets like businesses. Even for assets as simple as cars, blockchain may produce new forms of ownership that may distribute rights and responsibilities amongst owners, insurers, and lenders. In Florida—the poster child for condominiums, second homes, and time shares—there are many questions about how this will affect asset ownership.

For answers to the many questions surrounding blockchain, all eyes are now on Australia. The nation is chairing the International Organization for Standardization (ISO), a group charged with developing international standards for blockchain and decentralized ledgers. The standards are set to be released in 2021 and may reduce risk and increase adoption of blockchain technologies across both the private and public sectors. In the meantime, I will be watching the Republic of Georgia, which became the first national government to use blockchain to secure and validate land titles and where I hope, in future research, to examine the implications of this system for planning interventions.