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## Blockchains and Identity

With the speed at which the digital is merging with the physical, there is a more intense and vital need to critically analyze what this means for the users and for their identities. We live in an age where the younger generation does not remember an age without the Internet. Social media and messaging applications have become the epicenter of communication and networking in an age where the common user can be profiled simply by Googling their name, or searching popular SNS. Digital networks have reshaped and transformed the social networks, along with our online and offline identities. With the condition of more secure profiles and networking systems comes the question of the future of anonymity.



@CyberCorn



@JTeayoStake

One of the main current uses for blockchains are within business and security. Businesses favor blockchain technology because it takes out the bank when making transactions (which decreases cost), reduces errors or alters, combat money laundering, smart contracts for insurance.<sup>1</sup> When it comes to business transactions, verifying identities becomes very important. The blockchains are used to verify identities when conducting a transaction, which come with a great security benefits. When a person signs up for a bank account, they need to provide several pieces of information about themselves such as birthdays, social security, address, etc. These are called “bundles” and when a person tries to hack into someone’s bank account, they also have access to all the information about this person.<sup>2</sup> By using blockchain technology to verify an identity, the “bundles” are no longer needed. Only the bare minimum is needed to verify one’s identity.

— Nov 29, 2017 at 12:30:45

Though blockchains offer great security and identity benefits for businesses there are still some risks. If an identity thief attempted to pose as someone, the blockchain would be able to tell that the thief is not using its real identity. What they can do to work around this is to create a “synthetic identity.” By using a person’s name, a different person’s address, and another different persons



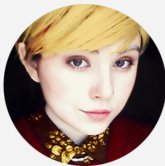
@CutieeAngel

<sup>1</sup> <http://www.businessinsider.com/blockchain-technology-applications-use-cases-2017-9>

<sup>2</sup> <https://fin.plaid.com/articles/identity-privacy-and-the-blockchain>

way of identification, an identity thief is able to create a synthetic identity that the blockchain cannot detect.<sup>3</sup> Though blockchains can verify the identity, it cannot verify if the person using the blockchain is the same person. Some demographics may have trouble trying to verify their identity. For example, young people do not have a long transaction history nor do they have any significant government records. Seniors and people living in rural areas tend to be computer illiterate, which may turn them away from this technology. Information about the identity is stored on one's smartphone, not on a server. Those that do not have a smartphone are not able to access this kind of technology.

— Nov 29, 2017 at 12:42:20



@Victoria  
Chase

Even though there are still security risks when using blockchain technology, the good outweighs the bad. The strength in security is way better for businesses and identity protection. However, these strengths in identity protection bring to question whether or not anonymity will be possible with blockchain technology. Transactions using bitcoin is put on a public record, however, not all information about the user is public. The bitcoin address is public, but the user's personal information such as name and address is not.<sup>4</sup> Even though the public records may not show personal information, many users still do not like the idea of being tracked. Tracking a history of transactions can help form an identity of a person. It is similar to creating a profile on reddit. You can spend your entire time on there making posts without giving any kind of personal information, and people will still be able to form an identity of you. By using this method, using blockchain technology may not be so anonymous.

— Nov 29, 2017 at 13:08:33

Within many social platforms, like Facebook and Google, identity that is considered authentic is non-anonymous, meaning information such as real names, real photos, and real connections and relationships attribute to the profiles of users on social networks. The success of many of the largest networking sites lies in the feature to store large amounts of non-anonymous information and visualizing relationships between its registered users, usually as 'friends' or 'followers'<sup>5</sup>. The latter also strongly defines the authenticity of an identity, both online and offline. Upon registering new accounts, many organizations request for personal data such as date of birth, home and work



@0LDT1MER99

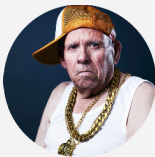
<sup>3</sup> <https://blog.id.me/identity/fintech/5-identity-problems-blockchain-doesnt-solve/>

<sup>4</sup> <https://securingtomorrow.mcafee.com/mcafee-labs/staying-anonymous-on-the-blockchain-concerns-and-techniques/>

<sup>5</sup> <https://fin.plaid.com/articles/identity-privacy-and-the-blockchain>

addresses, credit card information, and/or proof of identification in order to verify the registering user is indeed a real person that exist in the real world. Many platforms will limit access to their some of their features, or deny any usage at all, to those users who don't enter the listed credentials above.

— Nov 29, 2017 at 13:11:42



@granp0ps

The pursuit of authenticating user information and profiles is emerging into much of the growing social networking platforms. Third party networks and services, such as searches on Google and purchases on Amazon, also build on to the creation and establishment of online identities. Information obtained through said services track and utilize online activities in order to enhance experiences for users. The most known example is when a user searches for one product on one site, advertisements of the same product pop up on a separate site, and vice versa. The more time and effort users spend in engagement in online activities, the more information is input into the collective database that creates the online identity of that particular user. Even browsers and Internet providers are known to collect bits of user data, supposedly to obtain analytical information to enhance usage, speed, and security, but many also collect and sell the history of searches<sup>6</sup>.

— Nov 29, 2017 at 13:12:20

On the other hand, some social online communities—e.g. *Reddit*, *4-* and *2chan*—allow for content to be published through anonymous aliases. In such cases, user data is not collected, rather just statistical information including all posts and responses made on online threads and message boards. In many of these online communities, it is possible for one user to register multiple accounts and engage in activities with their different accounts. Most often, it is difficult to detect whether one account is related to another account, or even if they may be controlled by one user in the first place.



@\_nana\_wawa

— Nov 29, 2017 at 13:15:59



@82hitting83

The question, then, is whether authenticity or anonymity is important with regards to identities and profiles on the Internet. There are many issues that arise when considering the immutability and security behind uploading personal and confidential information, the veracity of that information, and the freedom of expressing thoughts and beliefs in online communities. Christopher Poole, the

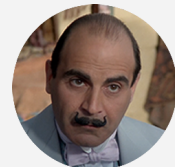
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<sup>6</sup>[https://www.washingtonpost.com/news/the-switch/wp/2017/03/29/what-to-expect-now-that-internet-providers-can-collect-and-sell-your-web-browser-history/?utm\\_term=.caa6de3e0db0](https://www.washingtonpost.com/news/the-switch/wp/2017/03/29/what-to-expect-now-that-internet-providers-can-collect-and-sell-your-web-browser-history/?utm_term=.caa6de3e0db0)

creator the online message and imageboard *4chan*, believes social networks like Facebook set expectations and standards “in terms of what kind of control their users have over their identity online”<sup>7</sup>. Foundations like Juru utilize blockchain technology, allowing for users to store official identifying documents and other personal files and connect with third party services including banks, website, and workplaces<sup>8</sup>. With blockchains, users now are able to take control of their own identities on their realm of cyberspace.

— Nov 29, 2017 at 13:18:05

With blockchains, developing third world countries would have control over their own identities and assets. Without a monopolized form of power controlling personal assets, there will be more access to affordable healthcare and supplies in a decentralized system.<sup>9</sup> Power nations with more resources, for example Europe and Asia, deduced corruption and falsified documentation can be avoided by having no centralized system monitoring land ownerships in rural areas.



@mustachi0\_0

— Nov 29, 2017 at 13:21:00



@411195

Information manipulation from the government encourages rural farmers and small business owners to turn to blockchaining, however, a lot of these property owners are not comfortable with uploading their personal information to the server. In order for them to ensure their own property, they would have to give their social security, their legal name, their personal income, and other assets they own. For the time being they were told their personal information and identities would be inaccessible after giving it to the system. They are aware that giving up their information still means they won't be in complete control, and they also fear the government or other individuals hacking into the system to steal their information.

— Nov 29, 2017 at 13:22:02

However, British law enforcers who wish to help rural landowners found that implementing their identities into the blockchain system would be more complicated than they anticipated. There was an issue of government officials withholding or manipulating the numbers pertaining to all the assets a citizen held within their country. The amount of appliances they use, the level of waste



@xXpinkuniconrxX

<sup>7</sup> <https://www.theguardian.com/technology/2012/apr/19/online-identity-authenticity-anonymity>

<sup>8</sup> <https://juru.io>

<sup>9</sup> <https://hbr.org/2017/05/how-blockchain-could-help-emerging-markets-leap-ahead>

disposal in their area, and the distribution of supplies surrounding their personal property have to be entirely factual for the blockchain to work as an independent economic system. Law officials who wish to intervene have to work within the laws and structure of the country's government in order for rural workers to assimilate into the blockchaining.<sup>10</sup> If their government refuses to cooperate with officials, there is no point for rural landowners to be a part of the blockchain.

— Nov 29, 2017 at 13:24:18



@maryCooper1  
23

Although Britain continues to survey and test their own ways of implementing a decentralized system, Sub-Saharan Africa has provided their own blockchain system, BanQu, for individuals who have no bank account to their name. BanQu allows women to have a chance at becoming landowners themselves, providing economic growth and stability to their income. This system has also been widely appraised in Nigeria and it has been estimated 300,000 people, 90 percent of which are women, use BanQu.<sup>11</sup> Being able to provide a proof of identity has been beneficial for not only male landowners, but also female landowners as well.

— Nov 29, 2017 at 13:25:40

In response to that solution affecting certain social groups, blockchain innovators believe they can also encourage remaining rural workers to join the system, by implementing a recovery mechanism to the current blockchain for those who could accidentally upload their identities with skewed information. Although the blockchain secures a way for other residencies to see their neighbor's or the overall status of their own land, there is a downside to knowing all these asset numbers.<sup>12</sup> Once a person uploads their identity to the server, their privacy becomes permanently exposed, and it also takes away the government's ownership and ability to recover their past records. This is also an incentive for refugees to provide their information in order for law officials to provide aid. Whether the information is completely factual or not, officials continue to survey if blockchains are able to provide for those who signed up to be a part of the system.



@aNoNyMous

— Nov 29, 2017 at 13:26:37

<sup>10</sup> <https://www.cryptocoinsnews.com/will-bitcoin-blockchain-build-finance-developing-economies/>

<sup>11</sup> <https://blogs.voanews.com/techtonics/2017/04/28/amid-hype-blockchain-has-potential-to-empower-developing-world/>

<sup>12</sup> <https://www.devex.com/news/opinion-in-developing-economies-blockchain-s-benefits-and-risks-depend-on-the-application-90138>



@grossgore

The coexistence of technology and society has created an inevitable codependency between the two, a symbiotic relationship that has transitioned from facultative into obligatory. There is no doubt that the growth of technology has led to the Internet becoming an integrated, permanent aspect of users in First World countries; this integration is in part attributed to the constant growth of these countries who have the resources and minds to research. A majority of the population is accompanied by digital gateways: a smartphone, computer, tablet, or the like; these gateways act as portable, convenient means to access the Internet almost anywhere.<sup>13</sup>

— Nov 29, 2017 at 13:27:20

What the Internet has created is a multifaceted “cyberspace”, a reactive environment that acts as a digital ecosystem for humans and AI alike. The identity of the Internet transitioned from an experimental method of sharing data into a multilayered system of databases, servers, networks, and the Dark Web. It has become a complex environment that enables users traverse between spaces that rely on user identity, and those that rely on user anonymity.



@stacysm0m2

— Nov 29, 2017 at 13:29:37



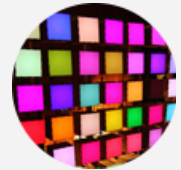
@kawaiiusagi

Interestingly enough, entities such as Google and Facebook have led to a strange paradigm in which these sites take their users' information, and compress users into a generalized, categorical entry.<sup>14</sup> At first glance, this seems backwards from the common conceptions of social networking -- posting and logging personal and live information that would let these organizations know excessive extents of who you are. What Facebook has managed to develop is a streamlined system that herds their users into behavioral patterns using user data and mutual connections to friends, family, and coworkers; this information system is of course supported by an extensive, in-depth monster of a database, constantly feeding off not only what the users provide through Facebook, but the shares, likes, messages, and even usage of other applications owned by this corporation.

<sup>13</sup> Kimberly M. Christopherson, The positive and negative implications of anonymity in Internet social interactions: “On the Internet, Nobody Knows You’re a Dog”, In Computers in Human Behavior, Volume 23, Issue 6, 2007, Pages 3038-3056.

<sup>14</sup> J. O'Dell, "Anonymity or identity? 4chan founder says we need both," VentureBeat, October 17, 2011, , accessed December 06, 2017, <https://venturebeat.com/2011/10/17/chris-poole-identity/>.

Over the past decade there have been waves of cautiousness of the effects of online profiles on a person's private and professional life, causing several revisions to social networking sites' policies to define the state of accessibility and usage of user data. However, as the Tor Project co-creator Jacob Appelbaum explains, is "privacy by policy" rather than "privacy by design"<sup>15</sup>. "Privacy by policy" merely provides the user with the illusion of allowing users to "control" what you provide and what they share, while the sites continue to collect data about users through several features the user interacts with. This data collection system is completely intentional. Websites such as Twitter and Tumblr are examples of similar websites while still providing the ability to remain anonymous, to control the identity users take on.



@leavemeoutofit

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<sup>15</sup> [The Tor Project, protecting online anonymity: Jacob Appelbaum at TEDxFlanders](#)





















## Bibliography

1. Meola, Andrew. "The growing list of applications and use cases of blockchain technology in business & life." Business Insider. September 28, 2017.  
<http://www.businessinsider.com/blockchain-technology-applications-use-cases-2017-9>.
2. Pratini, Napala. "Identity, privacy, and the blockchain." Fin.  
<https://fin.plaid.com/articles/identity-privacy-and-the-blockchain>.
3. Hall, Blake . "5 Identity Problems Blockchain Doesn't Solve." ID.me Blog. July 6, 2017.  
<https://blog.id.me/identity/fintech/5-identity-problems-blockchain-doesnt-solve/>.
4. Trivedi, Francisca Moreno and Shivangee. "Staying Anonymous on the Blockchain: Concerns and Techniques." McAfee Blogs. October 10, 2017.  
<https://securingtomorrow.mcafee.com/mcafee-labs/staying-anonymous-on-the-blockchain-concerns-and-techniques/>.
5. Pratini, Napala. "Identity, privacy, and the blockchain." Fin.  
<https://fin.plaid.com/articles/identity-privacy-and-the-blockchain>.
6. Fung, Brian. "What to expect now that Internet providers can collect and sell your Web browser history." The Washington Post. March 29, 2017.  
[https://www.washingtonpost.com/news/the-switch/wp/2017/03/29/what-to-expect-now-that-internet-providers-can-collect-and-sell-your-web-browser-history/?utm\\_term=.caa6de3e0db0](https://www.washingtonpost.com/news/the-switch/wp/2017/03/29/what-to-expect-now-that-internet-providers-can-collect-and-sell-your-web-browser-history/?utm_term=.caa6de3e0db0).
7. Krotoski, Aleks. "Online identity: is authenticity or anonymity more important?" The Guardian. April 19, 2012.  
<https://www.theguardian.com/technology/2012/apr/19/online-identity-authenticity-anonymity>.
8. "Your Digital Identity." Welcome to your juru account! <https://juru.io/>.
9. Knight, Vinay GuptaRob. "How Blockchain Could Help Emerging Markets Leap Ahead." Harvard Business Review. May 17, 2017.  
<https://hbr.org/2017/05/how-blockchain-could-help-emerging-markets-leap-ahead>
10. Coleman, Lester. "UN Paper Claims Bitcoin Solutions for Developing Countries Could Be Interpreted as Neo-Colonialism." CryptoCoinsNews. February 15, 2016.  
<https://www.cryptocoinsnews.com/will-bitcoin-blockchain-build-finance-developing-economies/>.
11. Aki, Aida. Hype Aside, Blockchain Could Empower Developing World « Techtonics. April 28, 2017.  
<https://blogs.voanews.com/techtonics/2017/04/28/amid-hype-blockchain-has-potential-to-empower-developing-world/>.



12. Adamson, Greg. "Opinion: In developing economies, blockchain's benefits and risks depend on the application." Devex. May 12, 2017.  
<https://www.devex.com/news/opinion-in-developing-economies-blockchain-s-benefits-and-risks-depend-on-the-application-90138>.
13. Kimberly M. Christopherson, The positive and negative implications of anonymity in Internet social interactions: "On the Internet, Nobody Knows You're a Dog", In Computers in Human Behavior, Volume 23, Issue 6, 2007, Pages 3038-3056.
14. J. O'Dell, "Anonymity or identity? 4chan founder says we need both," VentureBeat, October 17, 2011,  
<https://venturebeat.com/2011/10/17/chris-poole-identity/>.
15. TEDxTalks. YouTube. November 16, 2012.  
<https://www.youtube.com/watch?v=gCWeVYCckXw&t=3s>

| Writers             | But on the Internet you can be anyone, even...   |  |   |   |
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