

Blockchain: New Avenues for the SDGs?

Blockchain has the power to redefine essential aspects of our lives. From communication, financial and legal services to governmental functions, the technology outlines substantial disruptive potential begging the question what opportunities it holds for the most ambitious development agenda of our times – the 2030 Agenda for Sustainable Development. In an attempt to find facts among dreams and fears and separate the hype from the substance, the CSP-Salon 2018 held on 13 February in New York, provided a platform to debate blockchain's revolutionary potential for the Sustainable Development Goals (SDGs). Thanks to the inputs of a distinguished panel with speakers from the United Nations, the private sector, academia and civil society, a spectrum of key benefits as well as challenges was highlighted:

Key messages

Blockchain has far-reaching potential to help achieve the SDGs. The technology offers a range of opportunities for the 2030 Agenda, including SDG 1, 7, 8, 10, 13 and 16. The next step must be to make the potential reality.

Blockchain development is still in its Wild West phase. Many governance challenges remain unsettled and pitfalls loom around the corner. Sound and inclusive governance models will be critical.

Multi-stakeholder dialogue is crucial. To allow blockchain to unfold its true value for sustainable development, the tech world and the international development community must learn to understand each other and join forces.

Potential use cases to reach out to the furthest behind



Today, exercising many rights and accessing services like healthcare, voting and education comes in lockstep with legal proof of identification – if you don't have it you can't participate. Considering that the birth of one out of four children under the age of five remains unregistered worldwide, this fact has alarming consequences for a lot of people. Yet, remedy seems within reach: blockchain offers the hitherto unprecedented possibility of providing citizens with a digital ID. An open-source, self-sovereign, blockchain-based identity system can allow people to handle all necessary governance services such as birth registrations, elections and healthcare through uniquely assigned digital identities without the need for cumbersome legal procedures. As promising this all sounds, it has nevertheless to be acknowledged that the implementation of such IDs might face substantial barriers in regions with low literacy levels and cell phone penetration rate as well as a lack of broadband connectivity.

Transparent, effective and swift delivery is crucial in aid and development financing. By bypassing intermediaries, making information verifiable and thus transaction more transparent and resilient to corruption, blockchain empowers donors as well as aid agencies to map the supply chain of aid and development cooperation. This in turn guarantees that the support indeed reaches the intended beneficiaries, while maintaining the public trust in the delivering agencies. This, admittedly, implies that such transparency is actually also wanted. Experiences from the field show that this is not always the case.

"When developing blockchain use cases for increased transparency, we have to be ready to face the resistance to such openness."

Yoshiyuki Yamamoto,
Special Advisor UN
Engagement & Blockchain
Technology, UNOPS



Although it may seem surprising, two billion people nowadays still do not own a bank account – most of them women. Consequently, they do not have access to many financial services, excluding them from participation in the global economy. Blockchain, as the backbone of cryptocurrencies, provides unbanked people with an opportunity to access basic financial services, overcoming the limitations of the traditional banking system. But the benefits of cryptocurrencies go beyond individuals. Banking the unbanked could help reduce income as well as gender inequality, create new jobs and foster economic growth at large. It is estimated that digital finance will generate \$3.7 trillion and an increase of 6% in global GDP by 2025. Hence, blockchain might be paving the way for a more inclusive financial architecture. Notwithstanding, it has to be pointed out that smart contracts, self-executing contractual states, might replace many jobs humans currently perform.

"Blockchain might reach 2 billion unbanked people, which in turn will spur the economy by creating new job opportunities"

Dr. Sean Stein Smith,
Lehman College CUNY

"Blockchain can empower many women to gain financial independence."

Feresteh Forough,
Founder & CEO Code to Inspire



According to recent figures reported by Oxfam, 82% of all wealth created in 2017 went to the top 1% of the global population, whereas the bottom 50% saw no increase at all. These figures underscore the deeply concerning trend of increasing social inequality worldwide. As heavy centralization drives our global economy, a pyramid is created where the powerful and rich feed off the masses. So what role does blockchain play? Thanks to its decentralized nature, blockchain makes it possible to distribute wealth more equally even prior to its creation. The key word here is sharing economy. By transferring assets peer-to-peer via blockchain platforms instead of going through centralized companies like Uber or Airbnb, every citizen can become a co-owner of the sharing platform – everyone would be put into the same boat and no central actor can solely reap the benefits. Nevertheless, some words of caution are needed. As

"Human networks and financial elites have been responsible for increasing inequality levels."

Sandra Navidi,
Founder & CEO Beyond Global

access to the internet is still unequally spread across world regions, many people remain excluded from such a sharing economy. The reliance on such blockchain use cases will ultimately also be limited by market logics: for mass adoption, they must become economically more attractive than their centralized alternatives. Plus, state interests and regulatory constraints might also become hurdles on the way towards a true sharing economy.



In 2016, global remittance flows to developing countries have been registered at \$429 billion, with the cost of sending money across borders continuing to be exorbitantly high. Remaining well above the targeted 3% envisaged by the 2030 Agenda, the average cost of sending \$200 stagnated at \$7.45 in 2017. By removing the need for a trusted middleman, blockchain is able to reduce fees and transfer remittances more quickly. This facilitates the process of sending money, which still makes up a large part of GDP in developing countries. Besides easing the burden of migration and alleviating poverty, the reliance on blockchain could therefore also reinforce economic development.



The technology could also influence energy trading by circumventing centralized markets and giving consumers the possibility to engage in peer-to-peer virtual energy networks using local sources. This would not only decrease costs, but also allow buyers to favor renewables. When talking about the blockchain-energy nexus, one has however also to address the massive energy consumption of crypto-currencies. Estimates show that Bitcoin alone uses more energy than Iceland, causing excessive negative externalities on the global ecosystem. But solutions are already on the way: To make transaction verification processes of crypto-currencies more sustainable, the tech community is, inter alia, increasingly shifting from Proof of Work mining to Proof of Stake forging. Moreover, companies are increasingly relying on renewable energy sources for mining. Either way, now that governments too are creating their own cryptocurrencies, new ways to limit their massive electricity consumption are urgently needed.



Beyond these use cases, blockchain can benefit many other SDGs. For instance, smart contracts can automate greenhouse gas certificate transactions, enforcing climate change accountability at a low-cost level. Furthermore, blockchain can provide an open, decentralized voting record to citizen, giving them the option to verify whether voter fraud has occurred. In addition, the technology's characteristic of recording property transactions can also be harnessed to ensure more effective property management, for example, in the areas of land ownership.

Blockchain is still in its infancy

In light of the above, it is not surprising that the hype surrounding blockchain is not ebbing away. Start-ups are shooting up like mushrooms, new cryptocurrencies are created every week and investors are spoilt for choice with blockchain initiatives to buy into. Yet, amidst all this activity, one cannot help but wonder whether blockchain can indeed be seen as a panacea for sustainable development. At the moment, the technology still hovers somewhat uneasily between forecasts emphasizing its huge potential and real application cases where the technology's added value materializes. Contrary to the

internet, which relies on sophisticated governance models, blockchain is thus still very much in its Wild West phase. To ensure that blockchain can follow up on the potential it outlines, several showstoppers have to be addressed.

A much-debated issue is the lack of accountability blockchain use cases bring along. As a counter-reaction to centralized power structures, blockchain was designed to be

"As aid agencies, we cannot play with people's lives without due diligence and attention to ethics. Regulation matters."

Rahul Chandran,
Executive Director Global Alliance
for Humanitarian Innovation

inherently resistant to modification of data being decentralized by nature. However, while its immutability and sidestepping of a trusted third party has often been praised as the ultima ratio to its success, these characteristics also raise significant questions. Are we in the process of creating an absolutist technology-driven world? What about our access to remedy in light of automated smart contracts and irreversible transactions? Or what if the data logged into the blockchain is wrong to begin with or has been achieved through cohesion? Currently, no legal recourse systems are available and watchdogs overseeing the blockchain ecosystem analogously, for instance Amnesty International for the human rights sector, are inexistent. Proper legal and accountability frameworks leaving room for human beings will thus have to be developed, keeping in mind that although slow, centrally controlled and fee-based trusted middlemen might still offer some undeniable advantages.

Besides this, governance debates also center on a wide range of other issues. For example, major concerns include how our current financial and political systems will adapt to the new ways of interaction offered by blockchain. What barriers to cultural adoption exist? And on a very technical level, will our search for solutions in terms of scalability and interoperability be successful?

Building bridges

Finally, to make blockchain work for the 2030 Agenda, the tech world, the private sector and the international development community have to find ways to leapfrog their core differences. On the one hand, with technology enthusiasts and social entrepreneurs ready to go beyond private-sector blockchain applications and explore avenues in the humanitarian and development field, development experts have to jump over their own shadow and embrace new approaches to their work. On the other hand, the tech and business community has to adequately address negative impacts and unintended consequences of the technology for sustainable development. It will be imperative to understand blockchain's capacities and center use cases around recipient's vulnerabilities and needs. For the development of such human-needs-focused blockchain applications, multi-stakeholder cooperation will be vital. The capacity of all involved actors to understand each other and move into the same direction will be the judge of whether blockchain can deliver on the promises it holds for a more sustainable world. We are at a tipping point, and it is up to us to ensure that we get it right.

Sources

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