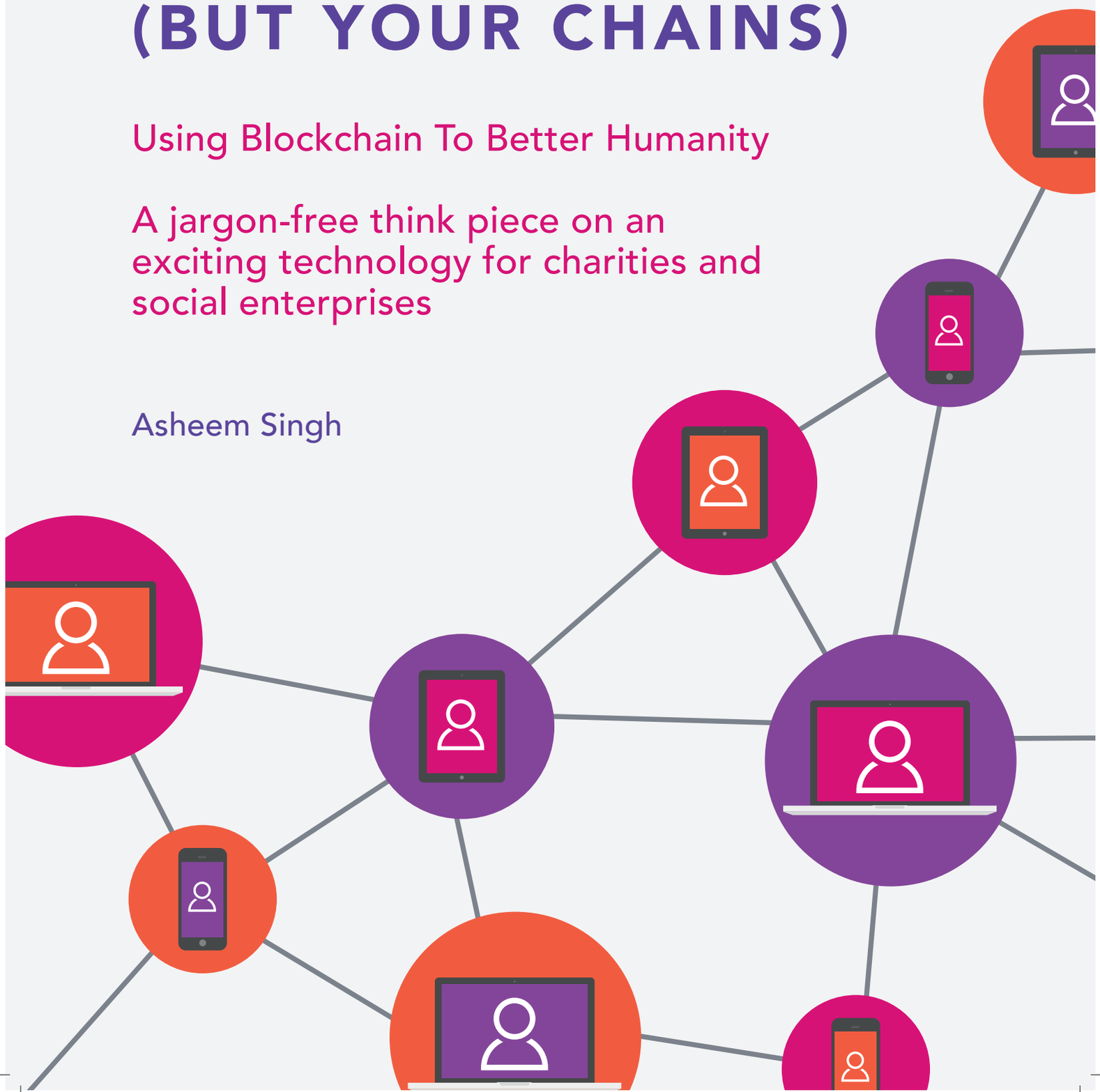
NOTHING TO LOSE

(BUT YOUR CHAINS)

Using Blockchain To Better Humanity

A jargon-free think piece on an exciting technology for charities and social enterprises

Asheem Singh



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All mistakes are our own.

> ***It is absolutely necessary for groups of technology-savvy charity leaders to come together and work with technologists.***

INTRODUCTION

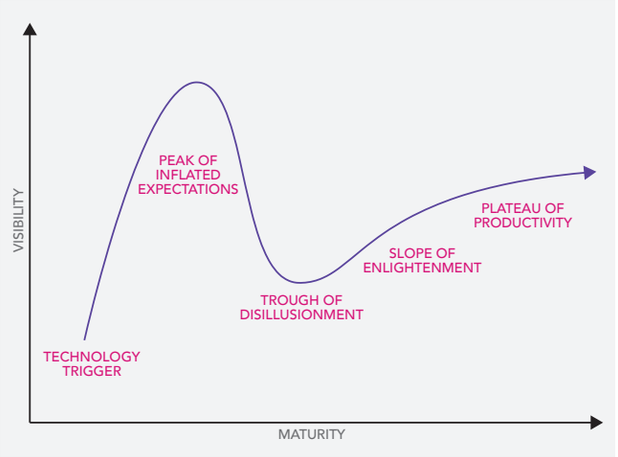
Many people know it as the technology behind bitcoin, the digital currency that is currently on a rollercoaster ride of unrivalled volatility - making millionaires out of thin air, and breaking them just as easily. But the potential uses of blockchain - the technology which underpins bitcoin - extend far beyond digital money.

In this paper, we explore what blockchain is and why so many people - from Bill Gates to Richard Branson - are so excited about it. Specifically, we find out what it means for the charity sector; how blockchain can be used to deliver better services to those in need and help those who help humanity.

In this piece we avoid engaging in whataboutery or utopianism about the future. We consider how to integrate the future with decisions charities need to make about the present, so that the technology helps rather than hinders the work of the charity sector.

We look at the 'here and now' and try to understand what charity leaders need to do this minute to take advantage of the opportunities that blockchain offers. And we guard against the myths and misunderstandings associated with any new technology.

Figure 1. The Gartner Hype Cycle



This is the Gartner Hype Cycle - a visual example of how many emerging technologies evolve. Blockchain technology - referred to simply as "blockchain" from here on - is nearing the peak of inflated expectations. Everyone is talking about it. Many organisations are investing in the technology. Soon enough, we will find some flaws in what it is and what it can do.

Some will become bored and disillusioned with it, perhaps distracted by another emerging technology. But the loyal and the savvy will continue to refine the technology, improve and mature it, and eventually, hopefully, make blockchain a technology that benefits humanity and achieves mass positive impact.

EXECUTIVE SUMMARY

MAIN FINDINGS

1. *Like the internet before it, blockchain has the potential to revolutionise the charity sector.*

   It offers huge but as yet untapped benefits to charities - from ensuring the right recipients receive what they are due, to modernising charitable giving and offering donors real-time visibility of where their funds are being spent and what impact it's having.

2. *Despite the potential benefits, the charity sector is currently behind the curve on blockchain technology.*

   There are currently too few examples of blockchain use in the charity sector. The sector urgently needs to engage with the technology, given that it is revolutionising sectors - like banking - that charities already rely on.

3. *Blockchain is no silver bullet for all of the problems facing the charity sector.*

   True, blockchain offers new perspectives on the challenges facing the sector, from transparency and efficiency to governance and accountability. But it does not hold all the answers. For example, although the technology can improve the efficiency and transparency of payment-by-results, it does nothing to address the well-known issues with that model.

4. *Blockchain cannot replace the key role of 'charity leader', who has to define what is "right" and where money should be spent.*

   Day to day, charity leaders are responsible for making tough decisions about resource allocation. They often possess knowledge that donors do not. Remove charities as the intermediaries between donor and recipient - which blockchain threatens - and the issues around securing core cost funding would only be exacerbated.

5. *The technology also presents new pitfalls that need to be considered before charities jump on the bandwagon.*

   Most notably, initiatives that have sought to bridge the charity sector with blockchain have been vulnerable to hackers. Charities should be well aware of the challenges of new technologies and make sure they are working with technologists to overcome them.

6. *On its current trajectory, the future of charitable action is developing without the input of charities.*

   Technologists are leading the conversation, yet they do not have the in depth understanding of the problems facing the charity sector or those they help. Some even see charities as the problem to be solved.

RECOMMENDATIONS

1. *The charity sector urgently needs to consider the implications, potential and pitfalls of blockchain technology so that it can future-proof itself.*

    a. A high-level group of charity leaders and technologists should come together as a taskforce to discuss, debate and shape the ethos behind blockchain. That will ensure any disruption benefits, first and foremost, those who need charity.

    b. A trust/foundation interested in issues of innovation should create a charity blockchain encyclopedia, to share examples and developments in this space and foster a charity blockchain culture among the sector.

    c. A joint investment fund is needed to inject finance into blockchain innovations that challenges the current technologist ethos of charity without charities.

2. *Charities and technologists need to engage in dialogue if the technology is to be shaped for the benefit of those most in need.*

    a. The charity sector should champion and develop more hackathons focused on the problems charities try to mitigate. These events would not only guide technological innovation towards the humanitarian sphere, but also bring together the charity sector and technologists.

3. *Charities need to make their voices heard if technological developments are going to truly benefit those in need*

    a. The charity sector must come together to undertake an advocacy exercise which ensures those who develop technological solutions to charity problems are being adequately briefed of the realities of the charity sector.

1. WHAT IS BLOCKCHAIN?

Before we can understand what blockchain can do for the charity sector, we need to answer the question: what is it exactly?

1.1 BLOCKCHAIN: THE BASICS

Blockchain is, at its heart, really rather simple. Imagine it as a digital ledger - an electronic database of transactions. But no one person controls the ledger, and it does not exist in one central location. It's completely distributed and decentralized. Every computer on a network - consisting of a chain of computers connected by the internet - can see it, has access to it, and is constantly updating it.

Figure 2. A decentralised (or distributed) architecture by which components are linked with one another without the presence of central elements

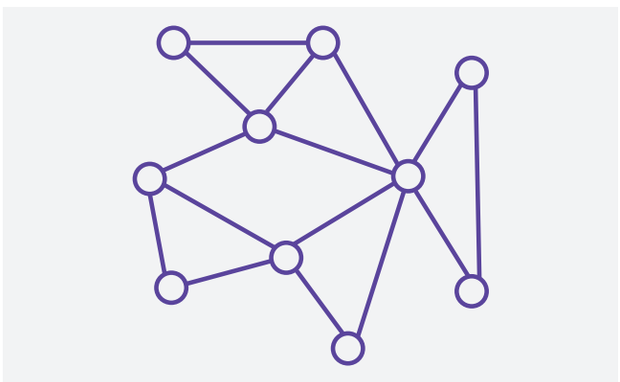
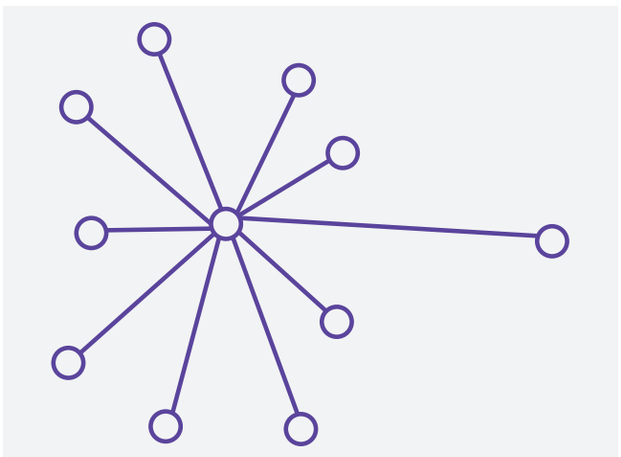


Figure 3. A centralised system in which components are connected only by a link to the central node



Transactions on the network are protected by complex cryptography. Every computer on the blockchain network must approve a transaction before it can be verified and recorded. This means the chain is self-policing.

The technology has the potential to revolutionise almost any transaction involving value - whether money needs to be exchanged, goods need to be traded, or services delivered. Wherever a situation needs a complete record of value transferred from A to B to C, a blockchain can be of use.

Imagine the potential for collecting taxes, recording and managing property rights and cross-border payments to countries where banking is difficult, and verifying the validity of both votes and identities.

Figure 4: How a blockchain works [Source: Financial Times]

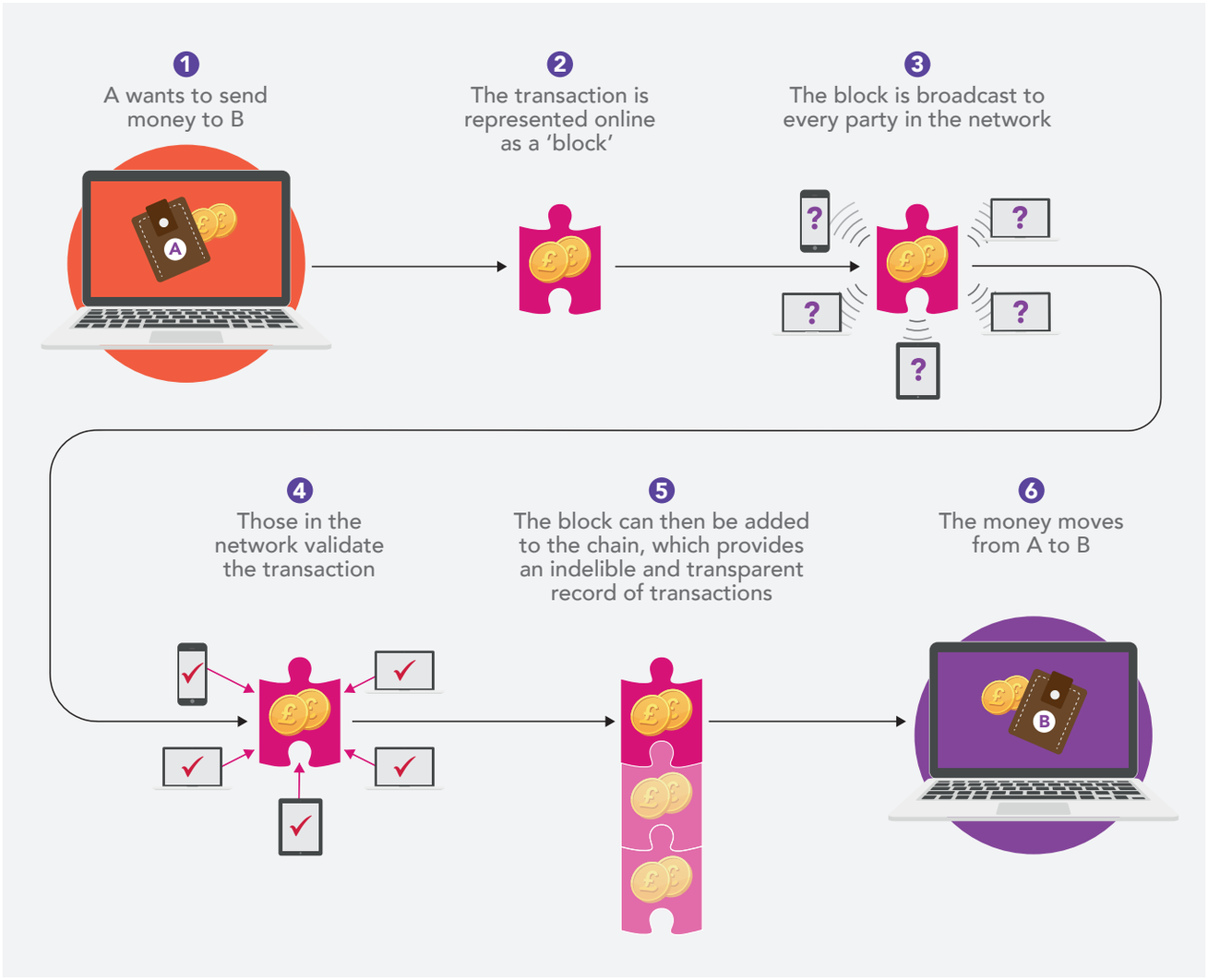
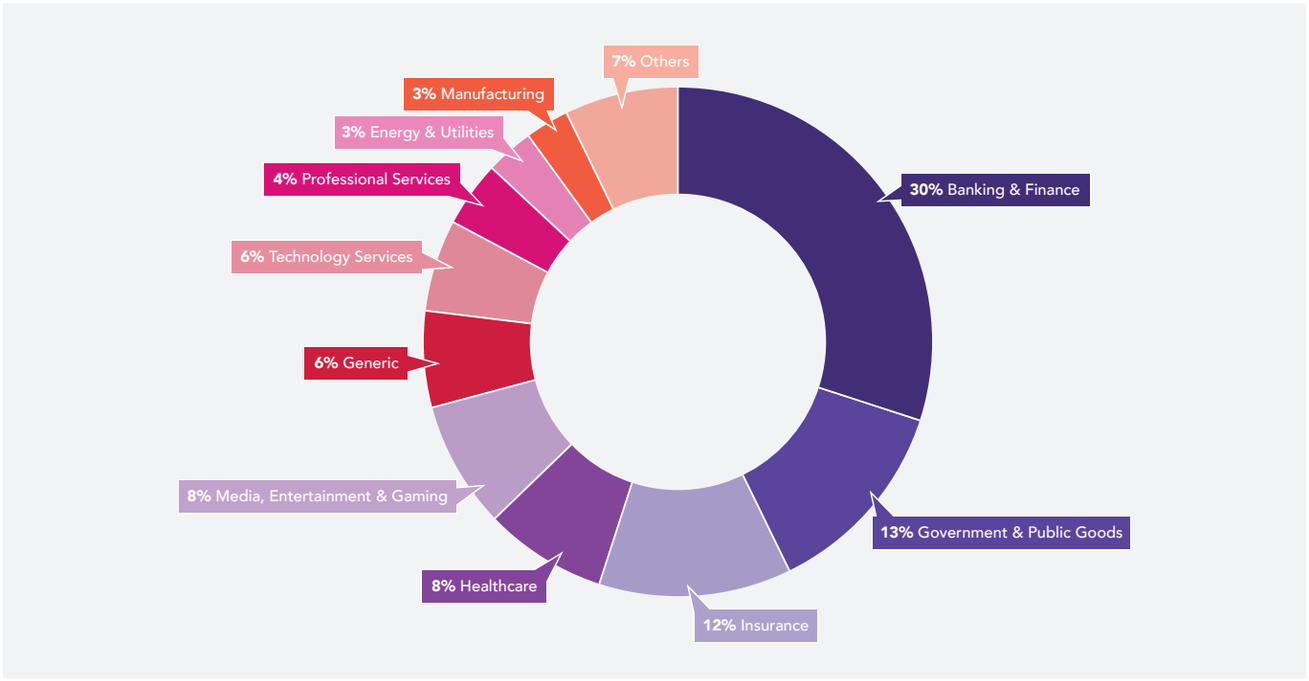
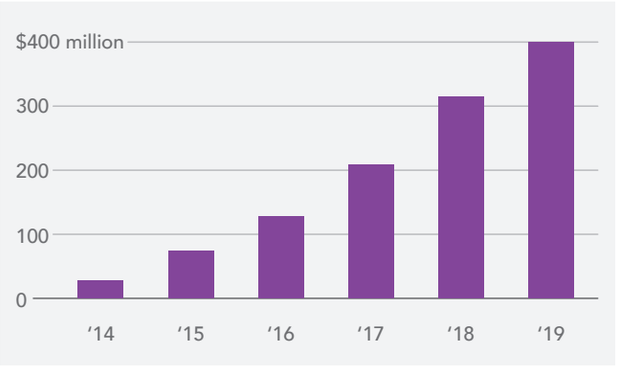


Figure 5: Blockchain uses by industry



Only a very small proportion of global GDP is held in blockchains. Research suggests there will be an increase in the next decade as banks, insurers and technology companies see blockchain as a way to speed up settlements and cut costs. Many are also mindful of the growing uses of blockchain and are ramping up investment in the technology.

Figure 6: Estimated spending on blockchain technology



Now we have an understanding of blockchain, let us delve into some of its better-known applications. Currently the most well-developed uses of blockchain can be found revolutionising the worlds of computing, finance and banking.

1.2 BITCOIN

Perhaps the best-known use of blockchain, Bitcoin, is a form of digital currency. Billions of dollars worth of bitcoins are currently in circulation around the world and millions of transactions are made daily.

Bitcoins are a very special kind of money. They are used to pay friends, merchants and more, just like the currencies we all use every day. But every single transaction conducted using bitcoins is immediately, digitally logged on the bitcoin blockchain. This functions as a ledger, or perfect record, of every transaction ever made.

Bitcoins are not created by banks or governments. They're 'mined' by large networks of computers. Essentially, new 'blocks' of bitcoin are rewarded to those who validate the previous transaction on the bitcoin blockchain. This involves solving complex mathematical problems and requires an increasingly large amount of computer power.

In the absence of a central bitcoin bank that 'prints' bitcoin, the question is usually asked, how is the value of a bitcoin allocated? Each time a bitcoin changes ownership from seller to buyer, the two parties need to agree on its price. There is no 'fixed' price. Usually, it is the seller's responsibility to give a fair price to the buyer based on the rate that bitcoins are being traded across the globe. The overall worth of bitcoin is an aggregate of these trades. It is not 'backed' by taxes or a country's GDP like many national currencies.

This has led many to suspect that trading bitcoin is a bit like trading baseball cards or tulip bulbs - it is only worth what people say it is worth. And yes it may even be a bubble. Even though it's considered a currency, its price fluctuations - rising in value by 900% last year, before crashing in 2018 - suggest it's acted like a speculative asset. People have compared it to the 'dot com bubble'.

People are still debating whether bitcoin will be a feature of our daily lives in the future. But as the first example of blockchain in action - making fortunes, changing the banking industry, altering high streets with new bitcoin ATMs and more - it gives an insight into just how powerful blockchain is and its potential for disruption.

1.3 ETHEREUM

Ethereum is one of the most exciting examples of blockchain and how it can be used. It's seen by many as 'the next big thing', with the potential to push blockchain further into the mainstream.

Ethereum has an associated currency, called Ether. But it's a much more ambitious application of blockchain than just a bitcoin rival. Essentially it's a global, decentralised super-computer powered by blockchain. Through the Ethereum blockchain network you can distribute and execute computer code. This functionality means you can not only transfer digital currency to another person on the network, but also the conditions under which they should be paid.

Once those conditions are met, the money automatically goes to the recipient without any outside interference (and in spite of anything that happens to one computer involved in the network). These chunks of code are called 'smart contracts'. Think of it, in this instance, as an automatic 'payment-by results' system that is as complex as you need it to be.

More importantly, the ability to distribute and execute code means that users of Ethereum can also build decentralised computer programs, like those apps you currently use on your computer or phone. The potential for software developers, communicators, businesses and indeed charities are myriad.

The latter is what interests us here: the potential impact of technology like Ethereum to save lives, renew communities, and improve conditions for the world's poor, marginalised and ignored.

SOME QUESTIONS FOR CONSIDERATION:

1. Is your organisation well versed on blockchain and the revolutions it is already causing in sectors that are different but still directly relevant?

2. Who in your organisation could be made responsible for keeping up to date on the latest technological developments, like political advisors keep abreast of trends and developments in policy?

3. For smaller organisations with limited resource, can social tech pioneers develop consultancy services that can advise on blockchain and new technology, like communication consultancies advise on media and public relations?

"The potential for software developers, communicators, businesses and indeed charities are myriad."

2. CHARITY BLOCKCHAINS (POTENTIAL AND PITFALLS)

Blockchain may be new to many in the charity sector, but there are already many fascinating applications emerging.

This section demonstrates the technology's potential in the charity sector, but cautions against jumping on the bandwagon without careful consideration.

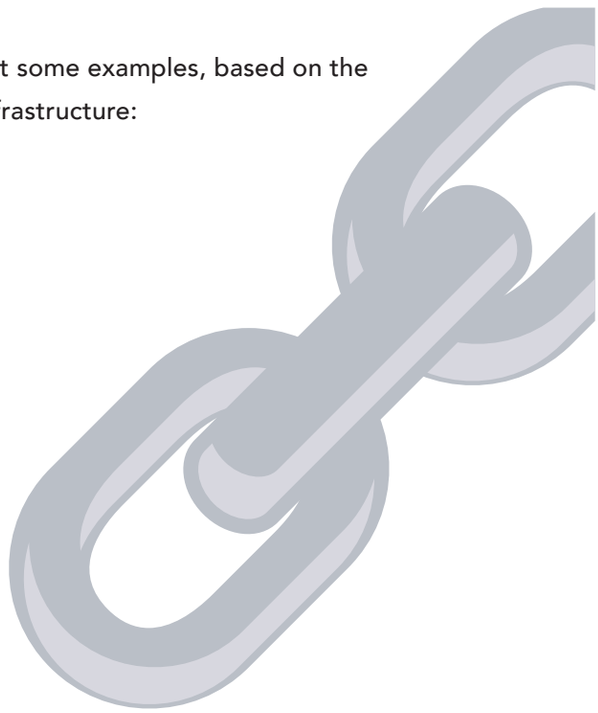
2.1 BANGING THE DRUM FOR BLOCKCHAIN INNOVATION

The case for blockchain innovation is often put like this: there's always a need to tackle waste, inefficiency and the lack of transparency that can occur when transferring value across borders and sectors. By using blockchain technology and its benefits, like decentralised smart ledgers, these problems can be mitigated or even eradicated.

Take international aid as an example. This sector is ripe for blockchain inspired innovation. Foreign aid distribution by the UK government, currently stands at 0.7% of GDP, which in 2016 was £12.7 billion. Yet bureaucracy and corruption are in many cases endemic in certain recipient countries.

Blockchain can help resolve these problems by creating a transparent, end-to-end 'supply chain' for each project. The supply chain can connect all those involved in the delivery of a project or service, including: authorised stakeholders, government departments, funders, NGOs, charities, local offices, delivery partners, and the individuals receiving the benefit at the point of delivery. The chain is made of links, more of which can be added with the agreement of those authorised to do so. It can branch, like a tree, and extend to where it is needed. Each link holds information that can be added to, but not deleted or erased. The links form an immutable record of everything that is happening and has already happened.

Let us look at some examples, based on the Ethereum infrastructure:



2.2 WORLD FOOD PROGRAMME

The World Food Programme (WFP) recently used the Ethereum blockchain to send food and funds to impoverished and vulnerable families in Pakistan.

The experimental project, in January 2017, aimed at testing whether blockchain technology could deliver assistance more quickly to those in need. As and when families received WFP food and funds, transactions were authenticated and recorded via blockchain technology. Transaction reports were generated and then used to match the disbursements with entitlements.
According to the WFP, 'Using the lessons learned in this first phase in Pakistan, WFP is now running a full-scale pilot in Azraq refugee camp in Jordan. At present, more than 10,000 Syrian refugees redeem their cash transfers on the blockchain-based system.'

2.3 DISBERSE

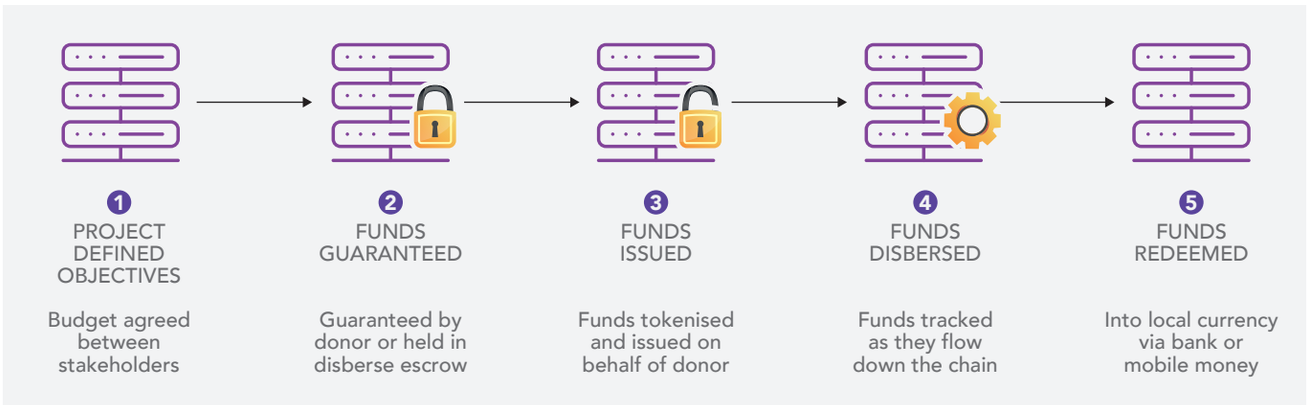
Disberse is a fund management platform that uses blockchain to enable the flow and delivery of development and humanitarian aid.

Disberse enables Governments, Donors and NGOs to track the flow of funds throughout the chain, from donor to beneficiary. It simultaneously generates complete and immutable data for reporting, auditing and compliance trails.

Beginning in early 2017, Disberse transferred and traced funds to the following pilot projects:

1. A girl's education project in Swaziland, funded by the charity Positive Women
2. An environmental project in Uganda, tackling deforestation, funded by the Welsh Government
3. A solar energy project in the Philippines, funded by the US Embassy.

Figure 7: The Disberse Chain [source: Disberse]



2.4 ALICE

Alice is a platform that allows charities to set up fundraising appeals using Ethereum technology. The homeless charity, St Mungo's, was one of the first organisations to use the platform, recently raising funds for rough sleepers in London.

Users that donate to charities on Alice can track how their donation is used, and choose to receive a refund if the charity fails to achieve its promised goals.

An Alice donor page provides an intuitive platform to track the impact of donations. Funding goals, like 'I helped a homeless person find work', are easy to understand. When achieved, they are logged in real time and this information is fed back to the user.

Figure 8: Alice donor page [source: Alice.si]

All of this is possible because of the information stored on a blockchain. 'Smart contracts' ensure that information is passed on from the beneficiary to the user.

2.5 HYPERGIVE

Hypergive is similar to Alice, but an altogether different beast. It allows people to donate to the homeless and hungry, so they can buy food and other essentials.

The money is stored on care cards distributed by charities, and the cards use blockchain technology to verify identities. This ensures both charity and donors can be sure that the money is reaching the right people and allowing them to make purchases at approved retailers.

2.6 CHAINS OF DISRUPTION AND BONDS OF INTIMACY?

It is clear from the examples above that blockchain offers charities a number of different benefits. Disberse ensures greater efficiency and transparency, from fund to final destination. Alice modernises charitable giving; donors use blockchain to better understand a charity and so create greater bonds of intimacy.

But charity leaders will likely question the extent to which blockchain can positively disrupt the third sector. Put simply, blockchain offers a medium through which payment by results contracts can be structured and executed.

Granted it may offer a more transparent and efficient way of implementing transfers, but it only serves as a platform. Many will therefore point out the well-known problems with payment-by-results more generally. These include:

1. The difficulty in defining certain humanitarian outcomes as 'successful'
2. The challenge of linking a programmatic outcome to a sustained environmental- or life-change
3. The political question: who defines the outcome in question - the donor or the deliverer?

Blockchain solutions offer no easy answers to these questions. Indeed, speaking to technologists for this project, it was clear that many see payment-by-results as an obvious and always-desirable goal. Charity workers, operating in the field and on the ground, know that this is far from true.

It is noticeable that many of the justifications for charity blockchain projects centre upon the idea of improving 'trust' in charitable endeavours. Trust in charities is a divisive issue. The absolute connection between trust, reported trust and control mechanisms such as those outlined above is far from proven.

Only further conversation can bridge the divide between the charity sector and technologists on these issues, and allow blockchain innovations that are truly beneficial to those in need. A number of initiatives, such as charity hackathons - discussed later - can bring the two sides together and ensure that those who develop technological solutions are being adequately briefed of the realities of the charity sector. A proliferation of resources like these would be welcome.

SOME QUESTIONS FOR CONSIDERATION

1. What challenge does each of the disruptions mentioned above pose to your organisation? How welcome is this disruption?
2. Can charities develop their own versions of these examples, for use in their own sub-sectors?
3. What can social tech pioneers do to make appropriate software and code available to achieve these ends?
4. Can the charity sector envisage alternative uses of blockchain in this context that the sector should focus its limited development funding on? What are these uses?

3. INNOVATIVE GOVERNANCE (WITH AN EXISTENTIAL TWIST)

The watchwords of blockchain are decentralisation and distribution. In this section, we introduce a new governance model for the charity sector's consideration: decentralised autonomous organisations (DAOs).

3.1 WHAT IS A DAO?

A DAO is a digital, decentralised charity or company. It is a collection of conditions, all recorded online, that govern the interactions of individuals who choose to become members of the DAO (usually through the purchase of 'tokens' or 'coins'). Like Ethereum, these conditions exist on a blockchain. A mechanism for joint decision making can exist there to create consensus when something is deemed contentious.

'The DAO' was a landmark example of this new type of organisation. It was essentially a decentralised venture capital fund for software project development. It had no employees or managers, but worked in a uniquely democratic way, using a series of automated governance protocols established by smart contracts. The company was therefore automatic.

The revolutionary governance and economic implications of The DAO and other organisations like it have already stimulated debate in the business community. Technologist and social entrepreneur Seth Bannon has argued that DAOs represent a 'paradigm shift in the very idea of economic organization. It offers complete transparency, total shareholder control, unprecedented flexibility and autonomous governance. 'DAOs could offer new opportunities to democratize business. Currently only the privileged can found and fund new companies.'

This argument has been challenged by other commentators, most often with the objection that 'crowdsourced' decision making can lead to paralysis and ultimately reduce financial returns.

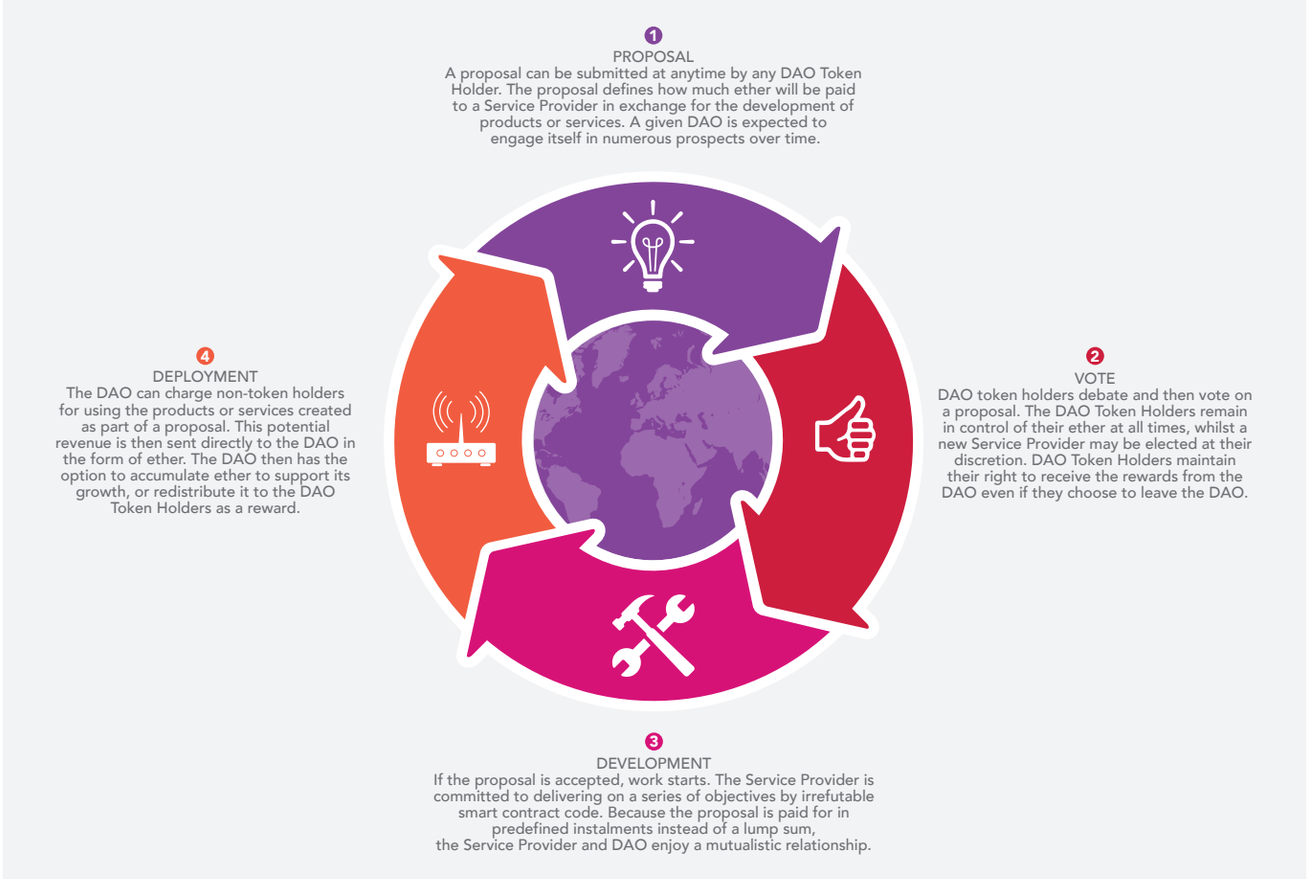
3.2 APPLICATIONS FOR THE CHARITY SECTOR

Interestingly, objections against democratising decision-making actually tend to favour DAO experimentation in the charity sector. While charities demand control over their programmes, 'too much control' can lead to problems. For example, questions can be asked about who legitimately defines what counts as a humanitarian outcome. If a project is owned and directed by more than just a charity's leadership, it can add a degree of democratic legitimacy.

Indeed, DAOs offer fascinating case studies for charities, seeking to improve and modernise their governance and its democracy. Such blockchain-based organisations offer considerable opportunities to diversify, help those in need, teach us more about what good governance looks like and how it is achieved.

However, a note of caution: their development is not without challenge for the charity sector. Although few examples currently exist in the charity world, a few interesting projects are emerging. The Giveth platform is one example.

Figure 8: The DAO in practice



3.3 GIVETH

Giveth allows users to build and join what they call Decentralized Altruistic Communities (DACs, essentially philanthropic DAOs). Each DAC is a group of people united around a cause they want to support.

The DAC funds and directs campaigns, which are essentially a set of specific agenda items or milestones. Once milestones are completed funds are released to reimburse and reward people for the good work they've achieved. All of this is conducted in the spirit of democratic ownership to achieve certain jointly agreed outcomes. The entire system is powered by blockchain and smart contracts.

3.4 GOVERNANCE IMPLICATIONS: PROMISE AND PERIL

Innovative governance mechanisms like those offered by DAOs offer considerable possibility for charities and need to be explored further.

The most immediately obvious application is how technology can be used to engage people to charitable causes. In this sense, as with Alice in the previous section, a modern, empowering, bottom up experience can mobilise more people to support social change. Others have commented on the possibility of 'giving circles' which comprise self-organising communities that support the fundraising efforts or broader work of a charity.

Likewise, DAOs could be of interest to charities looking for new ways to involve and mobilise already-existing supporters in decision making. Innovation will almost certainly yield more case studies.

However, one point to note is that internet-only organisations like DAOs are vulnerable to hackers. TheDAO itself was disbanded after a high-profile hack. Others have suffered a similar fate. Those who move into these spaces must do so factoring in and mitigating against these risks.

There is also a question of legal personality. In the private sector, DAOs have been treated with suspicion as they have no legal personality - this has led to difficulties with transactions. There are workarounds, but the charity sector and its regulator will need to find their own. This is a matter for urgent consideration and needs to be researched further.

3.5 CHARITY WITHOUT CHARITIES?

The journey of charity in the twenty first century is often couched as a voyage from organisation to movement. As more charities make this trip, DAOs offer a way to help. Blockchain allows a charity to decentralise its services in the same way that the internet allowed charities to decentralise their voice. Put this way, the possibilities become clear. There are some who suggest that the presence of DAOs means that the charity sector itself faces an existential threat. Websites like CharityDAO make setting up new charity DAOs easy. Anyone can

establish one to support a cause and receive funds to help do so. It is posited that with the tools for specifying problems and transferring value to solve them accessible to all, there may no longer be a need for charities.

This may well be the view of technologists. Certainly, we have noted among the more breathless tech evangelists, a tendency to perceive charitable institutions themselves as the problem that they are trying to solve.

Blockchain offers a new perspective on some of the issues of charity governance, democracy and accountability. It does not, however, negate the need for charities to explain why they behave as they do. Nor why a mixed decision-making process - not only the whims of the crowd - is prudent and necessary to help others. Or even why charities have evolved as they are, in part, because of the recognition that the eternal tension between donor, field worker and expert is what ensures that beneficiaries' needs are served best. We are unconvinced that technologists fully appreciate the nuances of these issues.

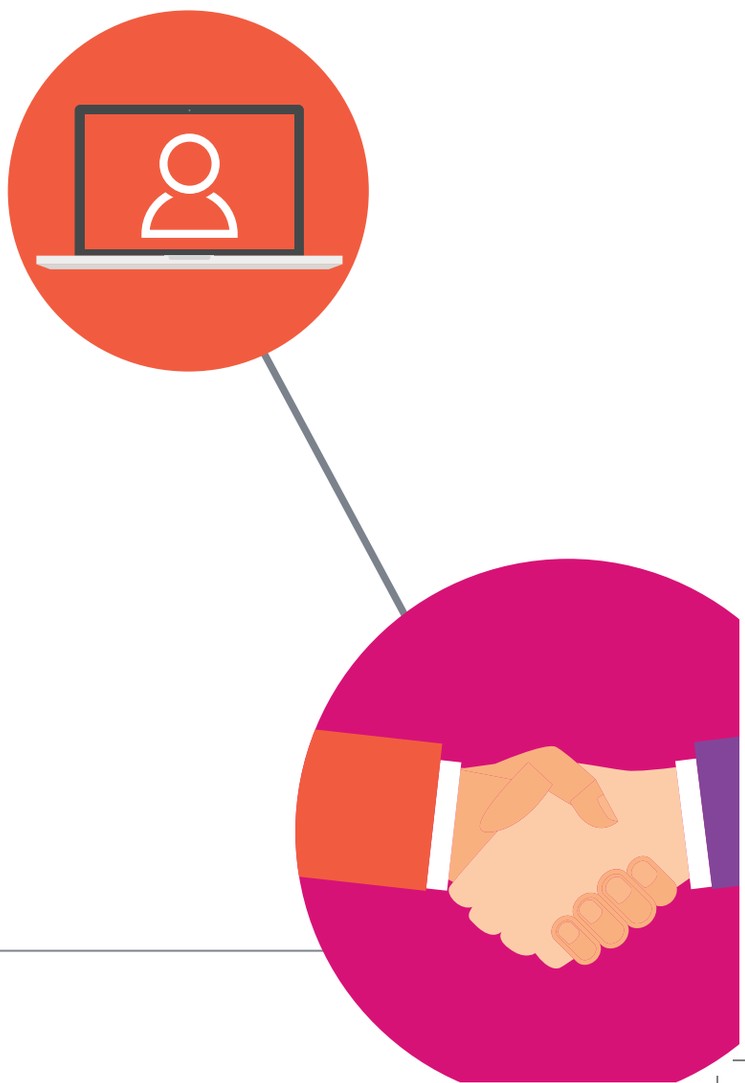
As well as working with and pushing the boundaries of this technology, it is absolutely necessary for groups of technology-savvy charity leaders to come together and work with technologists to discuss, debate and shape the ethos behind this technology. That will ensure any disruption benefits, first and foremost, those who need charity, rather than the visions of tech heads, or the whims of charity leaders.

QUESTIONS FOR CONSIDERATION

1. How could DAOs develop services and build communities of interest across the charity sector?

2. To what extent is disintermediation in the charity sector desirable?

3. How can the ideas inherent in DAOs - decentralisation, distribution, democratisation and disintermediation - be deployed within or alongside existing charity governance structures?



4. WHERE IS THE CHARITY VOICE?

Charities have a dual function: they deliver services and they advocate for the reallocation of resources.

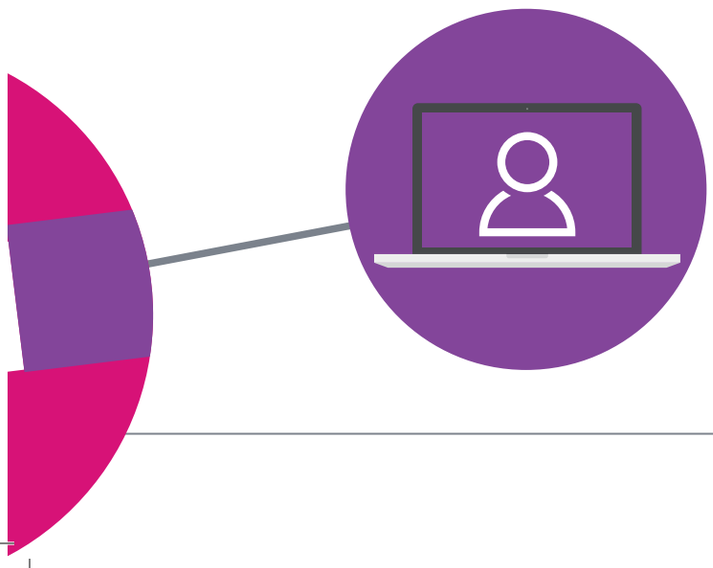
The ascent of blockchain in general and DAOs in particular has multiple ramifications for the charity voice. In this chapter we outline some of them.

4.1 THE ADVOCACY CHALLENGE

A considerable advocacy exercise needs to accompany the ascent of blockchain in the charity space. It is clear that many of the technologists have a particular vision of the charity sector, its weaknesses, and how it needs to change.

The archetypal technologist's prescriptions are that reform of the sector must:

1. Have donors specify and decide what kind of projects they wish to create and fund (self-organise)
2. Give more power to donors to make restricted funding decisions
3. Remove power and discretion from charity staff (disintermediate)



There is of course a place for all of these reforms, however charity workers and leaders will recognise that the above do not represent unquestionable goods. Consider the following:

1. Self-organisation and self-specification of projects risks leaving vast swathes of charitable need unmet.
2. Increasingly restricted funding decisions mean that charity workers on the ground will not have enough power or latitude to address unmet need. Allocating charity resource to supporting ex-offenders rather than, say, leukaemia sufferers may be politically unpopular but it is the right thing to do on occasion in a complex, civilised society. We pay charity staff for their judgement to make, at times, politically unpopular decisions.
3. The removal of power and discretion from charity staff means that there's a question about who should make difficult administrative decisions. Questions of resource allocation for example, are often best made by staff members.

As such, an advocacy project is needed, to make these arguments to technologists driving the development of blockchain for charitable causes. Donor empowerment, disintermediation and

self-organisation are the principles of our age of transparency and networked connection, but they must sit subordinate to the larger substantive principle of positive social impact.

It is for charities, with their years of experience, to avoid playing Canute. They must not try to stop the flow of technology, but rather understand it, articulate social change, and inform, debate and discuss with those whose foresight and skills will change the operating environment.

4.2 ARTICULATING THE GOOD: 'ORACLES'

Technologists are already outlining how charity leaders might articulate 'good' in a world of DAOs and smart contracts. The germane concept here is that of the 'oracle.' An oracle is an agent that finds and verifies real-world occurrences and submits this information to a blockchain to be used by smart contracts.

The website blockchainhub.net differentiates between different kinds of oracle. For example, hardware oracles provide data from the physical world - maybe a person crossing a movement sensor. The humanitarian blockchain startup Provenance makes extensive use of this sort of oracle, enabling users to ensure that their products are ethically and sustainably sourced at every step of the supply chain (and therefore ethical overall) by making use of swipe codes and infrared scanners as a checking mechanism.

Others, like software oracles, find data and feed it into a smart contract from online sources. This might include figures from government or companies. Imagine a software oracle identifying new government data on the national number of prisoners for example.[1]

In a world where charities are specifying what 'good' looks like and encouraging independent convenors of smart contracts to invest their time and money wisely, taking the post of oracle, reporting from the ground and encouraging independent philanthropists to do the right thing in this way, seems to be where this technology is headed.

> ***They must not try to stop the flow of technology, but rather understand it.***

[1] Other types of oracle can be found at https://blockchainhub.net/blockchain-oracles/

4.3 ARTICULATING WHAT 'GOOD' LOOKS LIKE: THE FUTURE OF DEVELOPMENT

The stepped reduction of charity influence to 'oracle status' may concern many. Taking this direction of technological travel to its furthest end brings us to a similar place as earlier in this piece - is this really about charity without charities?

There is no doubt that in a world of decentralised services, disintermediation and DAOs, the role of charity organisations becomes less about actual service delivery and more about advocacy, quality standards, ratings and tools of oversight.

The idea that the advent of blockchain means a whole sale move of the charity sector away from service delivery towards service specification may seem a long way away at present. The obvious pull of habit and the trust placed in charities as intermediaries between donors and the needy means that services may be kept in-house for some time yet. But as successive generations rapidly develop this technology, we may find that the future slips away from the sector quicker than it realises. The call, as elsewhere in this piece, is for the charity sector to begin its internal and external discussions about its future here and now.

QUESTIONS FOR CONSIDERATION:

1. Are charities the best entities to both specify problems and deliver services to solve those problems?

2. Is the idea of charity-as-oracle a reasonable evolution in an environment of future technological change or should charity leaders agitate for a different future? What would that future be?

5. FROM B-CON TO HACKATHONS: SOME MODEST PROPOSALS

This report is less about specific recommendations for charities, policy makers and government, and more concerned with informing, promoting discussion about the future and fostering collaboration between technologists and the charity sector.

We do, nevertheless present some proposals here to help charity leaders and workers, and the sector more broadly.

5.1 THE BLOCKCHAIN TASKFORCE AND BLOCKCHAIN ORACLE NETWORK (BCON)

On its current trajectory, the future of charitable action is developing without the input of charities. Technologists are leading the conversation. This needs to change.

As such, it may be time for the sector to convene a high-level taskforce that brings together charity leaders and technologists. The taskforce would aim to articulate the contribution blockchain can and should make to the charity sector and the problems it is trying to address.

To ensure the taskforce is effective, the people on this taskforce need to be:

1. Charity and policy aware
2. Able to speak the language of technology. At a minimum, they should have a proficiency in one programming language and/or a science or technology background
3. Able to problem solve
4. Able to debate and establish policy stances swiftly

The traditional avenues of charity advocacy - namely umbrella bodies and large charities - do not have anything like the required expertise to handle this sort of conversation. Although large innovation charities might seem to be natural leaders for this project, it is incumbent on the whole sector to step up - charities old and new, big and small.

One aspect of this group might be to create a network dedicated with developing DAOs and DACs, to ensure that, as these projects are developed, appropriate oracles are created in conjunction with charity input and knowledge.

5.2 THE 'HACKATHON' PROGRAMMER/CHARITY NEXUS

Hackathons bring together groups of programmers with those who have a programming problem to solve. There are a number of charitable campaigns and organisations that serve this function. Datakind, for example, brings charities and data scientists together.

Humanitarian blockchain hackathons are a new but developing phenomenon. The charity sector should come together to develop more of these events. These events would not only encourage technological innovation to humanitarian problems, but also bring together the charity sector and technologists. This would help foster an exchange of ideas between the two - bringing the language and culture of tech into even the smallest charity, while briefing technologists on the charity sector and the realities of tackling some of the world's most pressing and difficult problems.

> ***Humanitarian blockchain hackathons are a new but developing phenomenon.***

5.3 A 'SOURCEFORGE' FOR CHARITY BLOCKCHAIN PROJECTS AND APPROACHES

There seems to be a clear need for the charity sector to share amongst itself all of its developments and experiments in blockchain. This would help foster a unique culture of charity blockchain. Such a project, like a kind of charity 'sourceforge' - a library of free and open-source software projects - would sit well within a foundation interested in innovative issues. Alongside this project, a charity blockchain wiki to provide an encyclopedia of work in this space would be a welcome development and we note a few have started this journey.

5.4 A JOINT INVESTMENT FUND IN BLOCKCHAIN DEVELOPMENT

Another idea that would work well, especially if it was situated in the same foundation as the recommendation above, is a joint investment fund for blockchain development. There is certainly scope for foundations and funders to come together and request solutions to problems that challenge the current 'blockchain ethos' of charity without charities and disintermediation at any cost.

Moreover, a sector-wide commitment to being ahead of the blockchain wave could be a reality if this joint fund offered training and development on these issues. The initial outcomes of this training might be quite simple - currently, there are only a few charities that accept cryptocurrency donations. But ambition could be scaled up as more charities become familiar with the technology.

5.5 A JOINT FUND FOR INVESTING IN BLOCKCHAIN CURRENCIES

Finally, in this report we have not really discussed whether currencies based on blockchain are a sound investment or not. This is certainly beyond the scope of this paper, but there is a case for groups of organisations to come together and try to overcome understandable trustee reluctance at entering the cryptocurrency market by pooling risk. We leave others to discuss the desirability or otherwise of such a proposal and welcome this discussion.

AFTERWORD

The charity sector is already losing out due to a lack of blockchain awareness. Even financially. There are, for example, several entrants into the market, using the name of charity to raise money and pull donors into their orbit. Yet they lack the legally specified public benefit of the conventional charity sector. Unchecked and unaccountable, they hoover up cash and curiosity. If interest in the future seems like too nebulous-a-goal, surely losing money in the present is prompt enough for our sector's leaders?

Over and above this, as we have argued throughout, charities have an interest in having a say in the future of blockchain development. Just as the internet revolutionised charity communications, so blockchain could well revolutionise charity services. Either charities will be left behind while the future happens around them, or its leaders can step forward and shape it, here and now.

> ***Blockchain could herald the sort of seismic changes in the charity sector as the digital revolution before it.***

The language of blockchain often seems unfamiliar, even alien; its proponents tend to speak breathlessly, in terms of unreachable or improbable futures. We have tried to avoid falling foul of that tendency in this paper and to keep it grounded in the central message that needs to be conveyed: charities need to come together, articulate our collective position on this technology in a convincing and dynamic way before it is too late. This must be done using a mechanism that is fit for purpose, with the benefit of our beneficiaries paramount. That is the only way we will ensure that this technology is used for truly humanitarian ends. Blockchain could herald the sort of seismic changes in the charity sector as the digital revolution before it. But the future is happening now, with or without our help. It's better for those who need our help and humanity more broadly if charities play a key part in shaping where we are all heading.

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