Media Decentralisation

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Contents

1 Introduction 2
2 Dissatisfaction with mainstream and corporate media 2
3 Breakdown of Trust 3
4 Networked Society 4
5 Curious Times, New Paradigms 5
6 Control and Centralisation 5
7 Gatekeeping and Manipulation 6
8 Monopoly Marketisation 7
9 Blockchain is a Chance to Think Again 9
10 What is Blockchain? 11
11 References 14

1 Introduction

2 Dissatisfaction with mainstream and corporate media

The Cairncross Report is the latest in a series of demands for urgent reform of the news and media economy in the UK. Appointed by the government in 2018, to investigate ways of securing the future of high-quality journalism in Britain, Dame Frances Caincross has recommended that "there should be a public investigation into the dominance of Facebook and Google in the advertising marketplace."[1] Dame Cairncross recommended that a new regulator be established to "oversee the relationship between news outlets and technology giants, which have taken much of the advertising revenue that used to subsidise reporting."

At the same time, Lord Tony Hall, the Director General of the BBC, has proposed the establishment of a new foundation, building on the work of the BBC Local News Partnership, that will be charged with reversing the decline in local democracy reporting in the UK. Lord Hall wants to "reverse the damage that has been done to local democracy in recent years and bring about a sea change in local public interest journalism."[2] According to Lord Hall, there is "potential to unlock millions from a range of business and institutions who are open to the idea of supporting the foundation." Lord Hall added that there is a "chronic underreporting of events, issues, politics and crime in local communities."[3]

These high-profile interventions come in addition to the report from the Parliamentary Committee for Digital, Culture, Media and Sport into disinformation and 'fake news.'[4] The report calls for a new regulator to be established that would be funded from a levy on the tech and social media companies that operate in the UK, with the power to impose large fines on companies that are shown to be in breach of a proposed new code of conduct that would ensure that citizens rights are established in statute.

Damian Collins MP, the then chair of the DCMS committee, was reported to have said "we need a radical shift in the balance of power between the platforms and the people. The age of inadequate self-regulation must come to an end."[5] Adding that "the rights of the citizen need to be established in statute, by requiring the tech companies to adhere to a code of conduct written into law by parliament and overseen by an independent regulator."

In 2018 the UK government abandoned its commitment, however, to a second phase of enquiry by Lord Leveson into press standards following the phone hacking scandal.[6] The inquiry followed a "series of high-profile cases in which journalists had obtained confidential information by gaining access to the mobile phone messages of celebrities and, in the case of the murdered teenager Milly Dowler, victims of crime." Ministers had promised a second stage in which the relationship between the police and the media was examined, but this was later dropped.

In addition, Ofcom is now undertaking a review of the BBC's news provision, to check that the corporation's online media platforms are not distorting the news marketplace by taking advantage of the broadcaster's dominant market position. Ofcom's review will "assess whether the broadcaster gives due credit to news outlets when following up their stories."[7] According to Ofcom" the role of the BBC as an impartial provider of news and current affairs across all its platforms is just as important as ever. The challenge the

[1] https://www.theguardian.com/media/2019/feb/11/public-funds-should-be-used-to-rescue-local-journalism-says-report
[2] https://www.civilsociety.co.uk/news/bbc-suggests-local-democracy-foundation-to-save-local-journalism.html
[3] https://www.holdthefrontpage.co.uk/2019/news/bbc-and-publishers-in-government-talks-over-launch-of-new-local-news-body/
[4] https://www.parliament.uk/business/committees/committees-a-z/commons-select/digital-culture-media-and-sport-committee/inquiries/parliament-2017/fake-news-17-19/
[5] https://www.digitaltveurope.com/2019/02/18/dcms-committee-calls-for-regulation-of-online-platforms/
[6] https://www.theguardian.com/media/2018/mar/01/leveson-inquiry-part-2-cancellation-condemned-by-labour-as-breach-of-trust
[7] https://www.thetimes.co.uk/article/ofcom-to-investigate-bbc-news-clickbait-2zbxj0p75

BBC faces is to remain a relevant and trusted source of news, which delivers high quality content for all audiences. The aim of this review is to understand how well the BBC is adapting to meet that challenge."[8]

Each of these inquiries and reports indicates that there is a deep disquiet with the way that news and media is understood and regulated in the UK, especially as the formally dominant legacy news providers lose ground to the emergent tech companies. The role of traditional news broadcasters and newspaper publishers is clearly changing, but It would be simplistic to pin the responsibility for this change simply on the shoulders of the tech companies, without having examined any of the more fundamental social changes that are also taking place, which are now becoming more pronounced. With the shift to smartphones, for example, and other internet enabled devices, we are experiencing an accelerated process of change for which the legal, regulatory and governance models of the past are ill-prepared to deal with the emerging economic and civic processes that support news and information provision, let alone adapt and change to meet the needs of the future.

3 Breakdown of Trust

It is said that social media companies, such as Facebook, Google and Twitter, cannot any longer hide behind the privilege of being regarded simply as a 'platform,' and that they can't continue to claim to have only limited responsibility for the content that they share on their sites.[9] Platform neutrality and self-governance only go so far, but with the data-manipulation techniques used by the tech companies to shape and channel the newsfeeds of millions of users being entirely opaque and shrouded in business confidentiality, there are many questions that need to be asked, and which are often left unanswered.

The scandal surrounding Facebook, for example, and the manipulation of data by Cambridge Analytica in the Brexit and Trump campaigns, has been partially reported, but remains largely unexplained by any regulatory and legal authorities.[10] A significant air of mistrust surrounds what might be described as a murky set of business and political practices. Even Chris Hughes, who along with Mark Zuckerberg in 2004t was one of the co-founders of Facebook, now says that "the Facebook that exists today is not the Facebook that we founded in 2004;" and that "the one that we have today I think is far too big. It's far too powerful. And most importantly, its CEO, Mark Zuckerberg, is not accountable."[11]

The question that needs to be considered, then, is are these phenomena independent of one another, or are they linked and thereby represent a more fundamental set of challenges? Furthermore, are these individual concerns the evidence of systemic failures in the existing model of media engagement and governance; or, are they the result of external pressures from forces and challenges that are happening elsewhere, but aren't quite so apparent in the reporting and the back-and-forth of the contested claims and counterclaims that are staked out in the media itself? Do these problems, moreover, amount to a systematic crisis that is able to undermine and challenge the certainties that our social and civic foundations have been based on? For example Habermas' model of the 'public sphere'(Habermas, 1989). Or, are they the birthing-pangs of a new regime of media and information engagement that has yet to assume its full status as the natural paradigm of interaction and engagement across the world?

[8] https://www.ofcom.org.uk/tv-radio-and-on-demand/information-for-industry/bbc-operating-framework/performance/review-bbc-news-current-affairs
[9] https://www.theguardian.com/technology/2019/feb/08/instagram-heads-off-regulations-with-ban-on-self-harm-images
[10] https://www.theguardian.com/uk-news/2018/mar/22/cambridge-analytica-scandal-the-biggest-revelations-so-far
[11] https://www.nbcnews.com/tech/tech-news/facebook-co-founder-says-zuckerberg-not-accountable-calls-government-break-n1003606

4 Networked Society

In 1995 Don Tapscott coined the term "*Networked Intelligence*" (Tapscott, 2015), which he used to describe how a "network would be smarter than its smartest node in one domain after another." Since then, the network society he was writing about has grown substantially, bringing considerable transformation to many of the ways that we do business. By lowering the cost of transactions, enabling faster data processing and communications, and with the ability to store large amounts of data from these transactions at a minimal cost, it has been possible to speed-up supply chains, lift small businesses that would otherwise have only operated locally onto a global stage, and introduce marketing techniques that are focussed on individual preferences and needs, as opposed to mass marketing which is focussed on whole populations.

The business models that emerged with what has been called Web 2.0 promoted interactive functionality, based on the use of algorithms capable of reading and coordinating multiple, large-scale databases that had been used to sweep-up data linked to our personal preferences and life experiences. We gave this data freely in return for access, and we self-reported vast amounts of information about ourselves into this system, without even thinking about the consequences, or how and for what purpose it would be used. This link-up, between engagement and participation, with data surveillance, data-recording and large-scale analysis techniques, has been the dominant - but largely unaccounted for - engine of communications and information exchange for the last twenty years. It is only now, however, as the remaining legacy industries that it has displaced finally start to crumble, that it is being challenged and questioned. As the potentially undesirable outcomes of "civil passivity" or extremism are being felt, which as Tapscott and Tapscott suggest, "remains constant" in whatever forms of representative democracy we choose to look at (Tapscott & Tapscott, 2018, p. 211).

The network society, it must be said, has given us many valuable and desirable resources that we would now find difficult to live without. Online shopping, electronic maps, real-time travel information, international hotel bookings, secure knowledge and information exchanges, collaborative production tools and social communication platforms. These, and many more like them, have all been provided as part of a set of packages that we get when we subscribe to an online service. They are either given to us freely, or at a significantly reduced cost when compared to trying to access and maintain these tools separately. The bundles of tools that we get from Google, Amazon, Apple, Microsoft and Facebook, to name only some, are well organised, responsive to human interaction, responsive to business, social and cultural needs, and are priced at pretty-much next to zero, thus facilitating a wide take-up and use by the global population. As Casey and Vigna describe, however,

> "The 'freemium' model, in which we view these companies' services as 'free content,' is a myth. While we might not be paying US dollars to Google, Facebook, and co, we are handing over a much more valuable currency: our personal data. Control over that currency has turned these players, quite simply, into monopolies" (Casey & Vigna, 2018, p. 39).

If your preference isn't for full-blooded commercial applications, however, there is an alternative and plentiful supply of open-source and creative commons-based software applications, platforms and media that exists outside of the corporate digital supply chains. These commons-based tools are built around models of peer-to-peer collaboration. They have given us Linux, Wikipedia, WordPress, Apache, Android and many other platforms that drive access to and content for the Web. Not only that, but they are also increasingly influential with consumers and are capable of driving widespread and non-expert take up of these systems. In a mark of their success, many of the tech companies are moving to open-source and peer-to-peer network and collaborative production models in order to take advantage of the enhanced development ethos and crowdsourcing mindsets that they are based on.

With these broad changes in mind, Don and Alex Tapscott, writing twenty years later, note that a further set of challenges and innovations are feeding into the global marketplace as we speak, and that these innovations are going to significantly affect the systems and the cultures that connect a greater proportion of people with information and news services in more significant ways than ever before. According to Don Tapscott and Alex Tapscott, "blockchain technology will accelerate this process," which when it is linked via 5G mobile network technology to create the Internet of Things, "these trends will go into hyperdrive" (Tapscott & Tapscott, 2018, p. 164). It is theses trends and technologies that will be looked at and summarised here.

5 Curious Times, New Paradigms

It seems that we are living in curious times. It seems we are facing two ways at the same time. We have embraced the flow of digital innovation and the network intelligence, with its offer of surplus digital value. However, and at the same time, we are increasingly disillusioned and mistrustful of the people, institutions and civic processes that we use to manage and negate the social and existential risks that we are faced with and are challenged by as we act out our social relationships, build communities and invest in institutions. As Michael Casey and Paul Vigna note, this mutual mistrust is seen in the way that institutions are forced to keep information from one other. They are forced to "keep data in closed, inaccessible corporate silos," (Casey & Vigna, 2018, p. 153), which means that efficiencies and value has to be found elsewhere in the supply chain. In Facebook's model this is extracted by using the data in these silos to link advertisers with user profiles based on a model of their underlying social-psychological biases. However, Facebook keeps tight control of this vast and plentiful supply of data, warehousing it and charging a considerable amount of money for access to the datasets that it creates.

We have entered, it seems, a new paradigm of social engagement, but have we done so without properly planning and thinking about the capacity and capability that we have as individuals, communities and societies, to transition from one state of cognitive engagement to another. The institutions that we have built up over centuries, and in which we have invested our trust to handle these issues, such as courts, universities, national and local governments, the press and broadcasters, etc., are now being challenged by new forms of social engagement and information exchange. As Casey and Vigna ask, are we at risk of undoing the "centuries of cultural and social formation that goes into the creation of institutions"? (Casey & Vigna, 2018, p. 256). Are we undermining the very principle of "institutionalised trust [as] a societal virtue" itself?"

Furthermore, and according to Casey and Vigna, "It seems that trust as a form of social capital is in short supply across the world, and "in those places where we have it, it's not clear that we should be doing away with it." (Casey & Vigna, 2018, p. 257). In each case where trust has been built-up its value to society is arguably greater than the specific purpose that the institution plays. But this long-term practical and symbolic capacity and institutional investment is being eclipsed by emergent counterforces that are creating a complex of disruptive tensions pulling in opposite directions. As Tapscott and Tapscott explain, the "new communications and data analysis tools have also allowed ideologically driven groups to hijack social and political debates," and that "both liberals and conservatives are using them to create echo chambers that undermine the potential for compromise, let alone consensus" (Tapscott & Tapscott, 2018, p. 213).

6 Control and Centralisation

The tech giants dominate our day-to-day lives and our mundane daily living experiences, in ways that other social organisations and social systems have never done so before. The church might have dominated the mindset of the middle ages in its totality, but it could not find out about what impact it was having in real time across whole population, or where the variations in behavioural response might be happening. The church of the middle ages could only influence a population symbolically and holistically, and it usually did this with overwhelming force and emblematic power. The tech companies of today, on the other hand, can influence the micro-decisions and gestures that we make continuously as we move about in our homes, in

the street, as we drive about, as we work, and even as we sleep. They not only govern our global outlook, they also shape our civic and social experiences, which is in addition to shaping our private and individual experiences. We are using technology to enhance our sense of personhood, while also using the technology of networks and social interaction to share and exchange these experiences within globalised marketplaces and so-called social networks. The problem, however, is that we have very little control over these processes, and there is marginal accountability and scrutiny of the way that these networks and organisations operate. There is a democratic deficit.

How the data interactions are set and designed, how the algorithms are managed and regulated, remain largely unknown to the vast majority of the global population. As Casey and Vigna note, "the Net was designed to let anyone publish and send information, at near-zero cost, to anyone else anywhere. That opened up vast new economic opportunities, but it also posed unique challenges for trust management" (Casey & Vigna, 2018, p. 49). The resulting surveillance culture that has come with the network society, and the sweeping-up of vast amounts of data from seemingly innocuous personal and social interactions, has thus become the norm, and is extenuating this pervasive sense of mistrust in our public institutions and civic processes. As information is monopolised and processed using secret algorithms, by parties that are not publicly known and not publicly facing, and who are un-willing to interact with the people they make money from, the principles of trust that regulate our social interactions are being disrupted by shadowy corporations who centralise and control these processes.

7 Gatekeeping and Manipulation

Data regulation is largely inaccessible to the general population. Fees for admission to the warehouses of data are set in a way that excludes most people from being able to access that information (gatekeeping), while the analytic methods that are used to interrogate the datasets are massively complex and complicated (value warehousing). There is a need for high levels of technical expertise to navigate and understand these systems, so no wonder the economics of data management are restricted to intermediates who reinforce the inaccessibility of these data resources. The rewards and wealth that can be accumulated by those fortunate enough to be able to access them, goes largely to the small number of people who act, as Tapscott and Tapscott call them, as "data frackers" (Tapscott & Tapscott, 2018, p. lii). Clearly, the potential profits are considerable, and in a dog-eat-dog, winner-takes-all casino-style capitalist economy, they are seemingly unfailing and inviable.

While the day-to-day interactions of the apps on our smartphones have remained novel, we have failed to notice that they are also designed to exploit our psychological weaknesses. Nir Eyal calls this the habit-forming "superpower" of the digital tech industries, which keeps us hooked and constantly engaged with our smart phones and tablets (Eyal & Hoover, 2014, p. 10). Furthermore, and as our attention has been focussed on these psychologically engrossing interactive transactions, we have failed to notice the much bigger set of problems that have formed in the background. Problems related to the formation of new techno-social scenarios that have created a bias toward individualised and atomised social experience, or the "zombification" of social life, at the expense of an interdependent, connected and truly meaningful social experience (Vervaeke, Mastropietro, & Miscevic, 2017).

The problem, moreover, is that there has been a hollowing out of our faith in the principles of notions of "'democracy' and 'citizenship'… as compass points for a free society" (Casey & Vigna, 2018, p. 224). As Filippi and White point out, with the tech companies operating freely as intermediaries of our social experience they have

> "Taken a larger role in shaping the information that billions of people access worldwide. They influence the type of content that people can view and consume by using proprietary algorithms, which often are not publicly disclosed, and unilaterally decide what content should be allowed or prohibited on their platforms" (Filippi & White, 2018, p. 118).

What was promised in the early surge of optimism associated with the first stage of development of the Internet, was a radical decentralisation and diversity of supply, propelling forward the early growth of new forms of business interaction and social network-building that was only possible via the Internet. This has now largely been negated, as we have chosen to replace one set of seemingly immutable intermediaries and gatekeepers, with another set of seemingly immutable intermediaries and gatekeepers.

As Filippi and White point out, "online intermediaries stubbornly persist" (Filippi & White, 2018, p. 118). Only rather than the broadcasters, newspaper publishers, libraries, schools, universities and record stores of the past being the being the pivot-points for information and cultural exchange in society, the intermediaries of today are the tech-giants, Google, Apple, Amazon, Samsung, and so on. They sell the hardware, the platforms, the applications, and the content they produce in sealed and vertically integrated complexes defined by entertainment and productivity eco-systems that are designed to maintain the 'walled-garden' mentality of user benefits. Like a shopping mall experience, they don't mind which consumer items you purchase and use, as long as you are paying for it in one of their shopping complexes.

Even in this scenario, the institution remains the focal point for trust, only in the marketplace it goes under another name. It's called a 'brand' and is supported by marketing and public relations manipulation that ensures that trust is communicated and understood in particular ways – i.e. as consumer utility. The value that is invested in a brand is ultimately realised in consumption and spending patterns. Retaining the position of trust as an institution, or as a brand, requires considerable levels of investment in relationship management and market-positioning techniques, i.e. price-points and celebrity endorsements. This means that the potential users and subscribers of these services can identify with the promise of the brand, perceiving the simulated symbolic value as a practical or social utility, with a perceived use-value associated with the purchase of the products on offer. Indeed, with social media applications like Instagram, it is now entirely possible for this approach to dominate the way we construct our 'selves' and our public persona, and many people live in the hope of emulating successful celebrities and become *influencers* in their own right. This is what Theodore Levitt described as the interplay between the "miniscule segments and niches" of personal consumption, and the "interstices of global homogenisation"(Levitt, 1986, p. xvii).

However, and in considering the wider processes of social trust, a set of challenges and issues have grown around these ways of thinking, due in part to the sheer scale and speed by which transactions and exchanges can be undertaken. The simplicity of tracking trust in a face-to-face or word-of-mouth social environment, is vastly different to the global scale and magnitude faced by transactions carried out via the Internet, and across all other forms of networked, synchronous and interoperable computing systems. At the present time we largely handle issues of trust by continuing to invest in the intermediaries and institutions that validate and assure the trustworthiness of the people and the transactions that are being undertaken. These institutions and the brands, when done well, represent *immutability*, *reliability*, *dependability* and *accountability*. They come in the form of state institutions, non-governmental organisations, public service broadcasters, or as independent firms that are recognised as providers of services in the marketplace. Trust is a valuable commodity, however, and once lost, as happened in the 2008 financial crash, it is difficult to regain.

8 Monopoly Marketisation

We assume that when we make a transaction, either with governments or with commercial agents, that we can trust and believe in the integrity of the organisation that is vouching for that transaction. That they are not going to rip us off, nor are they going to double-deal with anyone else for the same service or product. In the marketplace we can shop around and compare other services for better prices, better value and for better capacity to provide a service we are seeking. This mantra has also been used to inform policy planning about public services for the last forty years, and has been at the heart of the so-called modernisation agendas of most governments since the 1980s. Schools, hospitals, universities and other social value-based institutions, have all been told, and continue to be told, that they should emulate the market

mechanism of free enterprise businesses, as this will improve efficiency, accountability and performance, while offering more choice to the service users who are dependent on them. If the public sector can't get this right, then they are told to make way for the private sector to use its commercial management skills to achieve higher levels of capacity and engagement. Or so has been the mantra.

In the marketplace, however, trust, as with all forms of rational decision making - and contrary to Adam Smith's belief in the virtue of the unseen guiding hand of the market - is not a neutral process. Trust does not remain undistorted by other factors, but is clearly subject to cognitive and other psychological biases. Instead of being part of a seemingly free-flowing rational exchange, trust is subject to the living conditions, histories, biographies and frailties of the people who are seeking to establish meaningful relationships in their communities. Trust, like all human endeavours, is subject to the contortions of human fallibility and emotionality. Emotional states of being, such as greed and avarice, at one extreme, are as important to recognise as altruism and selflessness. However, in the logic of shareholder value and perceived competitive market advantage, these emotional states are often denied and supressed.

Similarly, in the supposedly rational public sphere, trust can also be distorted by political interests that capture the process of social deliberation for group or class advantage. The suspicion that populations are being asked to give their trust to so-called elites of different kinds, be they technocratic, metropolitan or cultural, is at the heart of political populism. There is a complex interplay between these issues. They can be accounted for as market-based advantages on the one hand, or, they can be accounted for as – increasingly - nationalistic or class advantages on the other hand. At each point there are insiders and outsiders who stand to benefit or lose from the maintenance of the status quo, and the markers and boundaries of trust that they are prepared to battle for, and which are played out in the marketplace, or in public-political discourse. They are, however, heavily weighted to pre-determined biases, and can be contested by alternative frameworks of self-interest, cognitive development, or even just being left to pure chance and random luck.

What we lack, then, and too often in either scenario, is a recognition that transparency in the process of engagement is too often absent. The market claims of commercial confidentiality get rolled out even when they are used to mask illegal and criminal activities. In the public realm any suggestion that governments are engaged in social engineering is quickly frowned upon, even though maintaining the status quo is, itself, a form of social engineering. In both cases, the suspicion is that the systems of business and government are being run without any form of widespread public engagement, participation and deliberation is widespread. Either way, the opaque nature of the algorithms and record keeping processes that govern the collection and use of data and economic value are closely guarded and important secrets, meaning that they are subject to the struggle for control of the ability of an organisation to set the parameters under which they it will operate. They are the digital means of production and social control. The people who control the means to record information and data exchange are the ones who have the power to shape the world. There are very few ways to bypass the gatekeepers who control these social exchanges, and they maintain the inviable position because of the complexity of tracking transactions and records without resorting to centralised intermediaries and record keepers.

Globalisation has been used as an excuse, moreover, in the name of efficiency, to centralise and monopolise, rather than to extend and diversify the marketplace. The mantra of shareholder value has taken over from freedom from social accountability. Local taxation is simply an irrelevance, and a commitment to communities has become a hindrance. This process of value gauging has led to significant "social capital deficits" (Casey & Vigna, 2018, p. 6), in which a lack of empowerment and control by users or consumers is the result of an overbearing empowerment of the gatekeepers and intermediaries that monopolise the distribution of content, tools and services. Far from giving us a marketplace that supports the common good, the Internet has been colonised by anti-commons forces who viscerally defend their contractual rights over digital services and property, while they seek ever higher returns on their investments. They do this by warehousing vast quantities of data and information that is collected.

Economically this has created a systemic imbalance between the end-producers and users, as proportionally very little value is returned to the originators of content and services, even as significant amounts of value are siphoned-off to pay the intermediaries who hold the keys to the database. As Casey and Vigna point out, "our collective content has generated great value for the corporate owners of those platforms but rarely converts into the same for us, the creators" (Casey & Vigna, 2018, p. 237). Like a Ponzi scheme designed to suck-in new, naïve investors, there is a promise of getting rich by developing our own YouTube channel, or becoming an Instagram influencer. But to engage in these practices one has to be attuned to the dominant transactional model of self-presentation. One has to have a product and a brand to sell which other people have been designated as likely to purchase.

This should not be mistaken, though, for the same motivations and drive for community-building or meaningful social exchange. It would be essentialist to conflate and collapse the two. Yes, there is a powerful argument to be made that social media platforms allow people to experiment with alternative forms of creative self-presentation, however, we must also be realistic and accept that the algorithm that selects the content and the performers who are going to be most prominent, are not subject to public scrutiny. Indeed, they have as likely to produce a dangerous nexus or web of voices and personalities who advocate for alternative realities, often based on nefarious and reactionary views by people who wish to destabilise the democratic and liberal consensus of the last couple of centuries. We have been down this route before, and it leads to mass destruction. When actors of bad faith seize the memes of production, there follows a struggle to return to pragmatic common-sense. When we lose transparency, we lose our ability to make judgements. As Casey and Vigna summarise

> "In the twenty-first century economy, power is defined by whoever has authority to collect, store, and share data. Currently, that authority is centralised. It is concentrated among a narrow number of giant tech companies. A societal system of trust, identity, and record-keeping that ties our past to our present, anchors us as human beings, and lets us participate in society. The amalgamation of information that goes into proving that we can be trusted as a member of society has historically depended upon institutions that record and affirm our life events and credentials – bank accounts, birth certificates, changes of address, educational records, driver's licences, etc. – and keep track of our financial transactions. To lose all of that, as refugees often do when thrust into 'statelessness,' is to be put in a highly vulnerable position, one that's inherently easy for the worst of the world's criminals and terrorist organisations to exploit. If you are unable to prove who you are, you are at the mercy of strangers" (Casey & Vigna, 2018, p. 3).

9 Blockchain is a Chance to Think Again

Given these challenges, this is clearly an opportune time to rethink how models of public and institutional trust are enacted in our community and social lives, and how news, community discussion and civic deliberation can be supported and enhanced. In the light of the aforementioned challenges, a useful starting point will be to identify and map-out the values and principles that that might help provide, if not a complete solution, then at least a partial solution to some of these problems? If we are to enhance the social processes and technologies that support democratic and civic engagement, what can we learn from discussions and debates about blockchain technologies, and how might they be used to help us reappraise existing and emerging forms of media engagement? If we do this, in what way might it be possible to reconfigure our media in order to maximise the principles of trust and validation that are essential to the common good and a healthy community life?

Blockchain is one technology, or combination of technologies, that is attracting considerable attention and investment in the search for solutions for many of these issues. In some quarters the combination of transparent network-based ledgers and cryptographic security protocols, is being heralded as the basis for Web 3.0. While there are many questions about blockchains future development, there are some significant

concepts and principles associated with the underlying techniques and ideas that are worth exploring in the context of community media, citizens journalism and mass media engagement. If we are to find a long-term solution to the problems of trust and the viability of our media democracy, then the principles of the blockchain may be helpful? Even though they are designed to go beyond many of the issues that have been identified here, there is little doubt they will prove to be useful in helping us to identify the route to a radical shift in the way we think about economic activity, civic discussions, information exchange and personal identity expressions, or as we might call it, a new paradigm of social value. As Casey and Vigna have noted, the "blockchain is seen as capable of supplanting our outdated, centralised model of trust management, which goes to the heart of how societies and economies function" (Casey & Vigna, 2018).

The introduction of blockchain technology brings with it an opportunity, it seems, to look in more detail at these issues, and to make policy choices based on our emerging understanding of the potential that these technologies offer to decentralise and promote dispersed participation, engagement and innovation. Whereas the old world was slow to change, because it was based around strong hierarchies that sought protection in their relatively fixed and immutable social structures of the past, the new networked world has to go beyond the opaque, closed and fixed. It has to reduce, if not eliminate, the control exerted by established and inherited gatekeepers and intermediaries – though only if they have limited utility and serve no useful purpose. This will be a world that will be strengthened by peer-to-peer solutions but will disrupt and eliminate the remaining vestiges of centralised command-and-control thinking. Blockchains aim to operate, moreover, from a different paradigm of security, transparency, inclusivity and innovation (Tapscott & Tapscott, 2018, p. 86).

In looking at blockchain technologies and practices, then, the impulse is to recognise how the present system of information distribution fails to benefit everyone. While this new approach may not be able to create a platform in which everyone is treated equally, it can at least, as Casey and Vigna assert, seek to ensure that "those with most access to these tools don't abuse others and that the opportunity to harness innovation and new ideas is spread as widely as possible" (Casey & Vigna, 2018, p. 245). Consequently, the challenge for civic leaders, business leaders and managers, as Tapscott and Tapscott identify, is to think about how we can "take advantage of these new opportunities to change and grow?" How will our organisations respond to the further disruption of their existing operational concerns? Indeed, how will we "compete with the creative new models of start-ups and collaborations" that emerge from the development of the blockchain mindset (Tapscott & Tapscott, 2018, p. 155)?

The potential of blockchain technology, as with network technologies before it, are quite radical and will impact not only on the jobs that are done now, but also the type of lives that we want live and are enabled to lead. As Casey and Vigna describe

> "One potentially constructive way to think about [blockchain] is that we must design a post-industrial existence that puts at its centre the encouragement of human creativity, regardless of whether that creativity is monetarily rewarded" (Casey & Vigna, 2018, p. 225).

As Tapscott and Tapscott remind us, moreover, "technology, especially the distributed kind, creates opportunities for everyone, but inexorably humans determine the outcome" (Tapscott & Tapscott, 2018, p. 307). The question is, how can we form a society that is able to maximise the contribution and creativity of all? To answer this question means challenging the warehousing, gatekeeping, intermediation and hording of social value, the opportunities for social and economic value creation, and most importantly, the tools that enable this value creation to take place. There is a surfeit of information and opportunities available in the digital domain. It is the first time that human engagement is defined by a resource surplus, combined with an extended capability that means that virtually all people will be able to contribute in some way to the global discussion. What we need next above all else, though, is to establish some governance and civic engagement principles that will ensure that as many people benefit from that contribution, that all are held accountable for their contribution, and that as much social good is created as possible.

10 What is Blockchain?

The promise of blockchain technology is that it can improve the level of openness and transparency that we experience in society. Combined with a potential for a broader recognition of social merit and contribution, blockchain technology has the potential to change the way that we account for social value. Predicated on a radical decentralisation of who is empowered to produce economic and social value, blockchain represents both a cognitive and a regulatory shift in our thinking about the places in which our social and economic contributions are made. Blockchain has the ability, if used wisely, to move expectations about the creation of value away from the established and narrow frameworks of private and secluded interests, i.e. banks, media institutions, universities, etc., and instead suggests that it is possible to radically open the process of value creation outwards to a globalised, inclusive and developing network of economic and social participation. Blockchain technology will therefore be pivotal in the formation of the *value commons*, in the same way that the Internet has been pivotal in the formation of the creative commons.

Moreover, and as with the first wave of innovation associated with the Internet, blockchain technologies promise to "upend business models and transform industries." (Tapscott & Tapscott, 2018, p. 310). As Filippi and White explain

> "Blockchains enable parties to coordinate activity in an automated and decentralised way, and are viewed as a new technology that transforms pillars of industrialised society into entirely or primarily code-based systems. With blockchains, payment systems, financial markets, information systems, and – more generally – the allocation of labour between people and machines can be governed by technical rules" (Filippi & White, 2018, p. 55).

This is because blockchains work differently than many of our present social-technical organisation and management processes. In the future, many of the mundane functions of administration will be automated and regularised in code-based contracts that will remove the need for expensive layers of administration. Blockchain will therefore also challenge the need for extended and embedded hierarchical structures, but will seek instead, to record transactions in a transparent and open network of ledgers that are linked via smart contracts, regulatory code and open-source software. Blockchain technologies are designed to maximise participation, embed distributed trust, and offer greater opportunities for permissionless innovation, not only in the economic realm, but also in the cultural, civic and social realms. With blockchain no single person or entity can (practically) control the information that is processed in the network. Nor is the blockchain dependent on any single centralised organisation to maintain the systems of operation and ensure that they have working integrity. This is because blockchains utilise a set of shared databases that are linked globally. There is no single gatekeeper, and there is no central authority to control the flow of data or verify the integrity of that data across the blockchain.

Blockchain is a technology that decentralises trust-building and verification across the network, and it is open for all to access by downloading and accessing open source applications that can retrieve and access the data recorded in the entire blockchain. According to Filippi and White, "blockchain technology enables information to be stored and shared in ways that reduce the need for centralised control" (Filippi & White, 2018, p. 119). Daniel Drescher suggests that "the blockchain is a purely distributed peer-to-peer data store with the following properties:

- Immutable
- Append-only
- Ordered
- Time-stamped
- Open and transparent
- Secure (identification, authentication and authorisation)
- Eventually consistent".

According to Drescher the "properties of the blockchain are independent of the specific data stored in it," which means that the principles of data management it uses can be applied to many different uses and functions (Drescher, 2017, p. 224). Blockchain technology is open to a wide variety of applications, which can be used to support "a range of application protocols," not just those involved in just transmitting information, but also in storing that information and "executing computational processes in a way that does not rely on any centralised group" (Filippi & White, 2018, p. 48).

The advantages of using blockchain technology, moreover, rest on its capacity to act as a multimodal form of information management and exchange. Blockchain can assist with a decentralised approach for several crucial social-technical functions. These functions underpin the nature of social trust, having largely formed the basepoint on which our economies and much of our social order has been established, and which are in crisis as identified earlier. The limited capacity that we have had in the past to manage these processes has been one of the considerable challenges for those wishing to bring about radical social reorganisation. Whereas in the past it has been difficult to change the relationships and social bonds that have been established through analogue and face-to-face trust networks, in future, and with the promise of networked, peer-to-peer, transparent and immutable technologies like blockchain, these challenges may be fundamentally superseded.

Drescher lists the properties of the blockchain on the basis of its characteristics as a "generic data store for all kinds of data," including:

- Proof of existence
- Proof of nonexistence
- Proof of time
- Proof of order
- Proof of identity
- Proof of authorship
- Proof of ownership (Drescher, 2017, p. 224).

According to Filippi and White, blockchains will open the flow of information because they will be able to power

> "New peer-to-peer file-sharing applications, decentralised communication platforms, and social networks, which rely on the tamper-resistant and resilient nature of a blockchain – and other peer-to-peer networks" (Filippi & White, 2018, p. 5).

The aim of blockchain, then, is to disintermediate and globalise services that have otherwise been managed and delivered by centralised social institutions who provide validation and verification based on their reputation, brand or governance arrangements. Blockchains, however, will allow actors and parties to engage more directly with one another so that they can undertake increasingly trustless, frictionless and therefore cost-effective transactions in a speedier manner. The establishment of smart contracts, the transferring of value and information in open ledgers, and the protection of pseudonymous identities, will be used to coordinate and support diverse ad dynamic economic and social exchanges at a much lower level than previously, at a much lower cost to the participants, and without the need to pass through "centralised choke points" (Filippi & White, 2018, p. 34). The mantra of the blockchain is don't trust, verify.

Blockchains, moreover, offer a way to exchange information and economic value globally and transnationally by storing data across the pooled resources of the network of users, rather than in a centralised data warehouse. Combined with techniques for achieving dispersed and real-time consensus in the network, and ensuring that information is not represented twice, i.e. it doesn't get double-spent, blockchains aim to facilitate an immutable record of transactions that are tamper-proof, and which are securely protected using cryptographic information storage techniques. This is achieved encrypted keys that control the private data of pseudonymous agents acting across the blockchain network. As Filippi and White point out, "no single party has the power to modify or roll back information stored on a blockchain," so therefore, "no

single party can halt the execution of a smart contract once it has been deployed, unless provided for in the code" (Filippi & White, 2018, p. 35).

The critical idea, then, is that by attaching metadata about a financial transactions to the financial transaction itself, likewise with a product, or a digital service, or a digital artefact, such as the artists, the date of creation, the title of the piece, or other items relevant to the authorship and proof-of-work associated with the digital work, then the blockchain itself provides an immutable register of transactions that can be used to monitor and track the acquisition and use of these works and assets. As Casey and Vigina point out, "it's possible to turn something that's now completely replicable and untraceable into a uniquely defined piece of property whose journeys around the Internet can be followed and managed" (Casey & Vigna, 2018, p. 232). If this process works, and can be incorporated in easy to use production and exchange mechanisms, then in theory the work of artists, producers and creators can be significantly empowered, because they would finally be recognised for the value they have created based on the principles of *proof-of-work* and *proof-of-stake*, without having to be commissioned by a centralised organisation, aggregator or republisher who takes a significant fee or adds significant management and distribution costs.

Blockchain has the potential, in theory, to complete the function promised by the early phase of the internet, to challenge the centralised and hierarchically embedded organisation that control the economic and social spheres, by offering alternative, decentralised pathways to reach consumers and users who are organised in socially-emergent and reciprocally defined networks. These networks will be looser than in the past, and they will identify their social purpose using different techniques for consensus building. They will, furthermore, use the properties of the blockchain to open-up the decision and engagement process by incorporating distributed democracy protocols that will be coordinated through the use and application of smart contracts and code, what Filippi and White refer to as "*lex cryptographical*" (Filippi & White, 2018, p. 138), or code as law.

Blockchains will open the flow of information, they will allow for value to be tracked at all levels, and they will allow for low-cost transactions and payments in near or in real time. No more waiting for invoice approvals. No more claiming copyright from rights management intermediaries, and no more being blocked or held in queues by commissioning editors. Crowdsourcing, and direct engagement in networks, will be of equally attractive and economically valuable to independent producers, coders, creators, writers, reporters, and facilitators as membership of large-scale, centralised organisations seems now.

The question that we need to consider in the light of these potential development, therefore, is how these decentralising and auto-verifying technologies, and the wider affordances of blockchain technology, be applied and incorporated into the news and civic deliberation processes? How would, for example, independent journalism or community reporting benefit from a secure, decentralised and permissionless system, in which the originators and the creators of content, stories and programme material got paid immediately as their work is circulated? What is the social ground that needs to be cleared to get people ready to think and act in this way, without the needs to accommodate the needs or concerns of intermediaries and gatekeepers? The significance of the shift from a media landscape defined by capacity scarcity, to one that is defined by capacity abundance is significant. But rather than doubling-up on the trusted social status of the existing institutions and social networks who benefit from our present lack of capacity, we have to consider how we will disperse and decentralise the decision-taking processes, the accountability and governance processes, and most importantly, the economic exchange processes that will enable them to be resilient and independent.

There are a range of factors that the blockchain is founded on that can be usefully explored in more detail and cross-referenced with existing patterns of civic and community news and media practices. These include how data and content is assessed for its integrity and its transparency, how security is handled, how power is reassigned through the process of de-intermediation, how the principle of trust is articulated in practice, how users privacy and rights are maintained, what proof-of-work concepts will achieve, and what standard of interoperable engagement will be needed across different platforms and networks. If we are to

unlock value, we will need to model value in its different forms, the economic, the social, the cultural, the personal, and so on. This modelling of value is important because it means that we will be able to use it to extend and support the type of participation that is encouraged in the blockchain networks, through inclusion practices, by promoting stability, by promoting permissionless innovation, and most important, by decentralising the operation and governance of the networks. These are all significant challenges, and we have to start preparing the ground now for how they will be implemented in the future, because they will affect us all, whether we like it or not.

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