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## **Blockchain-based Crowdfunding: what impact on artistic production and art consumption?**

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**Abstract:** *Crowdfunding relies on the contribution of a large number of individuals in order to finance the production of a particular work. Already a few crowdfunding platforms have been deployed on the blockchain, rewarding people's financial contributions to a project with actual shares of the project. Their interests become therefore more aligned with that of the author, since anyone investing in the project becomes an active shareholder, whose return on investment ultimately depends on the success or failure of that project.*

Ever since the beginning of civilization, artistic production has been funded, and therefore also managed, by a few intermediaries: from public universities and religious institutions in the middle-age, to public and corporate patronage in the early Renaissance years (Kempers, 1994); from the early publisher guilds in the UK, to modern incumbents, including large publishers, record companies and movie producers that established themselves as powerful gatekeepers within the creative industries (Lessig, 2004).

Of course, changes in the production and financing of creative works are inherently connected to technological developments (Rose, 1995). Before the advent of the printing press, the production (and reproduction) of literary works was a difficult endeavor which required many hours of manuscript hand-drafting by scribes—who were, at that time, for the most part hired by the church or governmental agencies. Similarly, in the realm of fine arts, artistic production was mostly focused on unique pieces of art, such as sculptures or paintings, which were mainly intended to decorate public buildings, churches and private houses, without any expectation of financial returns.

It is only with the advent of the printing press —and other mechanical devices for the mass-production of information— that artistic production acquired a more commercial value and the output of such creative practices eventually began to be regarded as an actual object of trade (Benjamin, 2008). This shift in perception was immediately reflected by changes in the law (Gracz & De Filippi, 2014). Although primarily justified by the need to reward artists for their creative endeavor, the regulatory framework of copyright law was also, if not mainly, introduced as a means to secure the investment of publishers or other information intermediaries that became more and more eager to invest in the production of creative works, as a form of a commercial investment that could further their economic interests.

With the advent of the copyright regime, information came to be treated as “intellectual property”, i.e. as an asset that can be owned (even if only for a limited period of time) by one or more entities or rights holders. Accordingly to the law, the owner of the copyright in a work enjoys a series of exclusive rights over the exploitation of that work, which can potentially be sold (or licensed) to third parties in exchange of economic compensation. Thanks to this new regulatory framework, artistic production has thus been turned into a lucrative business, and the market progressively overcame public funding and patronage as the main sponsor for artistic production (Shapiro & Varian, 2013).

Yet, given the high fixed costs required for the production and distribution of creative works, the cultural industries have been rapidly dominated by a small number of incumbents in charge of funding a large portion of mainstream artistic production worldwide. Most of these incumbents —e.g. big record companies like Universal Music Group and Sony BMG, large movie producers like Disney, Time Warner, or Universal, and large publishing houses such as HarperCollins, Hachette or Elsevier— are regarded today as key players in the creative industries, acting as intermediaries between the producers and the consumers of creative works (Caves, 2000).

For a long time, in order for their works to achieve mainstream coverage and widespread distribution in a global network, authors and artists almost inevitably had to enter into a deal with these intermediaries, which would take on all costs related to the production and dissemination of these creative works, in exchange of a (generally very high) profit margin.

Technological advances in the field of information and communication technologies had a disruptive effect on the business of these traditional intermediaries (Manovich, 2009). Digital technologies not only reduced the costs of producing (and reproducing) content in a digitized format, but also enabled anyone to engage in the dissemination of such content on a global scale —in virtually no time and at very low costs— through the Internet network. Hence, with the advent of modern telecommunication

technologies, the process of disintermediation began at the level of both content production and distribution (Gellman, 1996).

**Highlight: With the advent of modern telecommunication technologies, the process of disintermediation began at the level of both content production and distribution.**

And yet, even if it has become much easier (and cheaper) for individuals to produce their own content and to make it available to the public by their own means, people today still rely on a small number of intermediaries (or *infomediaries*) to access most of the content online: from social networks such as Google+, Facebook or Twitter, to online music stores à la iTunes, streaming platforms like Spotify, SoundCloud, or Pandora for music; and Youtube, Netflix or Hulu for videos. In spite of the new opportunities for disintermediation and individual emancipation provided by the Internet and digital technologies, most of the content produced today —by either amateurs or professional artists— is stored, managed, and communicated to the public by few centralized operators, which present themselves as the new intermediaries of the information society (Scott, 2000).

It is only in 2009, with the advent of Bitcoin, and the subsequent emergence of new decentralized applications based on the same underlying technology —the *blockchain*— that a new wave of decentralization has begun, bringing back promises of individual freedom and emancipation which are reminiscent of the early Internet days (De Filippi & Mauro, 2014). As a decentralized public ledger sitting on top of a peer-to-peer network, the blockchain can be used to store information without relying on any centralized server or intermediary, but relying instead on the contribution of every peer in the network in order to deploy a fully decentralized database, whose security and integrity is ensured by cryptographic algorithms. Paradoxically, trust and transparency increase by eliminating the need for trusted third parties and intermediaries. Modern developments in blockchain technologies also implement additional features allowing for the execution of computer code on top of that distributed datastore, thereby allowing for the deployment of so-called decentralized applications which do not sit on a particular server but are run, in a decentralized manner, by every peer of the network.

**Highlight: The blockchain spurred a new wave of decentralization, with promises of individual freedom and emancipation which are reminiscent of the early Internet days.**

Therefore, just like the Internet has spurred the development of peer-to-peer communications —marking a shift away from the traditional model of mass media broadcasting (*one-to-many*) towards more interactive and distributed communication channels (*many-to-many*)— the blockchain allows for the deployment of a variety of peer-to-peer transactions (both financial and other kind of

transactions) which are not regulated, nor governed by any centralized and trusted authority, such as a central bank or any other centralized operator (De Filippi, 2014)

Indeed, one of the most significant features of the blockchain is that it offers the possibility for people to transact directly with one another without passing through any middle-man. This means that authors and artists can not only communicate directly with the public in order to create a stronger relationship with their audience, but they also directly enter into transactions with them and be rewarded for their work on a peer-to-peer basis —as opposed to relying on an intermediary operator in charge of collecting funds and redistributing them to the relevant authors.

**Highlight: One of the most important feature of the blockchain is that it allows for people to transact directly with one another without passing through any middleman.**

These new technological developments can have a considerable impact on both artistic production and artistic consumption.

Today, there are two dominant models for the distribution of digital content online. One is the subscription model (e.g. Spotify, Netflix, etc), where users pay the platform operator in order to be able to access creative works, on either a flat-rate or pay-per-view basis. The other is the advertisement-based model, where content is provided to users for free, but advertisers pay the platform operators a fee every time their ads are (dis)played onto the platform. The platforms operators thus collect all the funds and subsequently redistribute (usually a very small portion of) them to the relevant artists. While both these business models are highly profitable to the online operators running the platform, the compensation that artists obtain often cannot even cover the costs of artistic production (e.g. Spotify has an average payout to artists of \$0.0007, and Youtube as little as \$.0018)<sup>1</sup>

As a reaction to the general feeling of exploitation by large record companies and online operators, more and more artists have been experimenting with alternative ways of distributing their work and financing their creation in a more independent way (Lessig, 2004; Geith, 2008; Zimmerman, 2009). Instead of relying on the exclusivity provided by copyright law in order obtain economic rewards from the mere consumption of their works, some artists (including renowned bands like RadioHead, Nine-Inch-Nails, and David Bowie) experimented with the use of alternative licensing schemes —such as the one proposed by *Creative Commons*<sup>2</sup>— designed to promote and facilitate the free

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<sup>1</sup> <http://www.theguardian.com/technology/2015/apr/03/how-much-musicians-make-spotify-itunes-youtube>

<sup>2</sup> Creative Commons is a non-profit organisation producing licenses designed to lower the default restriction provided for under copyright law. These licenses are intended to move away from the “all rights reserved” of the copyright regime, towards a more permissive regime where only “some rights are reserved”. For more details, see <http://creativecommons.org>

reproduction and dissemination of creative works (Fitzgerald, 2004; Elkin-Koren, 2006). By eliminating the middleman, these artists have managed to create a much more direct and personal relationship with their audience, which rewards them —out of their own free will—by means of donations.

Yet, today, most of these donations are mediated through a central authority (e.g. Paypal) which takes a commission-fee over every transaction (Carroll, 2006). Catalyzed by the lower transactions fees of decentralized payment systems like Bitcoin or other blockchain-based applications, artists can now be paid directly from their audience without having to rely on the services of any intermediary institution. New business models might eventually emerge based on the execution of a large number of micro-payments by a very large number of people (Swan, 2015).<sup>3</sup> Indeed, given the low costs of transaction of these decentralized systems, people can engage more directly with their favorite artists, by sending micro-tips or micro-donations to these artists whose works they appreciate the most. Perhaps most importantly, to the extent that modern blockchain technologies enable the incorporation of code snippets into any given transaction (so-called “smart contracts”), it becomes possible to embed specific terms and conditions directly into the blockchain instantiation of a digital asset (Fairfield, 2015). Artists can thus make their work publicly available to the public under certain restrictions that will only be removed upon the payment of a fee —akin to Digital Rights Management systems, although deployed in an entirely decentralized manner.

All of these mechanisms, however, are only useful for recouping the costs of production after a work has been done. Yet, some artists —especially those in a precarious economic situation— might be unable to produce a work in the first place, unless they can secure an external source of funding. With the exception of public subsidies and private patronage grounded in philanthropic commitments, artistic production is nowadays mostly dependent on corporate funding, provided by large publishers, record labels and movie producers (Cobb, 1996; Wu, 2003; Klamer & al, 2010).

Recently, a new mechanism for artistic production has emerged, under the name of “crowdfunding” (see e.g. Kickstarter, Indiegogo, etc.), which consists in collecting a large number of financial contributions from a significant number of people who often do not know each other (Brabham, 2008). Those who financially contribute to a project —the backers— are generally rewarded with a perk whose value depends on the overall value of their contribution (e.g. they might get access to a

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<sup>3</sup> Of course, micro-transactions were possible even before the advent of blockchain technologies; they were just not as easy to implement because of the fixed transactions costs involved per each transaction. For instance, Apple was reluctant to cope with the 30 cents + 3 percent for every credit card transaction on iTunes store. The solution was to lump together multiple purchases, so as to distribute the transaction costs over a larger batch. See: B. Schlender, *Becoming Steve Jobs*, Crown Business, 2015

pre-order under privileged conditions, or they might receive a T-shirt or other types of merchandising).

**Highlight: Crowdfunding consists in collecting a large number of financial contributions from a significant number of people who often do not know each other.**

In spite of their more decentralized flavor (in comparison to more traditional funding models), most of these initiatives are nonetheless coordinated, and thus regulated by large middlemen acting as trusted third party responsible for collecting and redistributing the funds. Blockchain technologies eliminate the need for these middlemen, by enabling the establishment of decentralized crowdfunding platforms, which operate autonomously on top of a peer-to-peer network. Even though the technology is still very experimental and not entirely mature, several of these platforms are already up and running—see e.g. Swarm, Koinify and Lighthouse, to name a few.

But the decentralized character of the crowdfunding platform is only one side of the coin. The real innovation introduced by the blockchain can better be observed when one looks at the way in which the project is being funded. Indeed, the technology of the blockchain can be used by anyone to create new types of securities—generally referred to as “cryptoequity”—through cryptographic tokens (akin to Bitcoin, but without any financial connotation) which represent shares of the project for which the funds are sought (Dietz & al., 2014). Instead of being rewarded with a predefined perk (whose value does not evolve over time), backers can be rewarded with a share of and vested interest in the project they are supporting—and therefore benefit from any additional revenue that might derive from the subsequent appreciation in value of these shares. This creates a more symmetric relationship between those who are promoting the project and those who are contributing financial resources to it. As illustrated by the Oculus Rift campaign, under a traditional crowdfunding campaign, projects are not required to give anything back to their backers except for the perks they had promised—and this regardless of the success that they might subsequently enjoy (e.g. Oculus Rift raised \$2.4 million on Kickstarter, and subsequently was bought by Facebook for \$2 billion). Conversely, in a cryptoequity-based crowdfunding campaign, backers are in fact investing in the project they fund; they become actual shareholders of the project, and the success of their investment thus become inherently dependent on the success or failure of the project.

**Highlight: Blockchain technology can be used to create new types of securities (cryptoequity) which represent shares of the project for which the funds are sought.**

Of course, this technological breakthrough also needs to comply with the regulatory framework in which it operates. The sale of equity is regulated in many jurisdictions, especially in the U.S. where the Security and Exchange Commission (S.E.C.) requires anyone offering and selling equity for

investment capital to comply with really harsh (and generally very expensive) formalities. These regulations historically emerged to protect unsophisticated investors who might not understand the substantial and highly opaque risks associated with these classes of investments. Crowdfunding platforms therefore need to be carefully designed to avoid selling anything that resembles a security. Indeed, many players operating in the blockchain space have argued that cryptographic tokens should not be regarded as securities, but rather as access-tokens that can be purchased in advance, often at a lower rate, in order to subsequently enjoy the services provided by the blockchain-based application that is being backed.<sup>4</sup> This line of arguments has, however, yet to be tested in court. Currently, the viewpoint of the S.E.C is that *“if it walks like a duck and quacks like a duck, it is a duck”*. This notwithstanding, recent legal reforms concerning equity crowdfunding<sup>5</sup> are creating a more lenient regulatory framework, gradually opening the path for legalized cryptoequity crowdfunding.

In spite of these legal challenges, decentralized crowdfunding platforms deployed on top of the blockchain present two important advantages over their centralized counterparts. On the one hand, to the extent that the blockchain eliminates the need for any central authority or middleman, the costs necessary to achieve a successful crowdfunding campaign are significantly reduced, given that there is no commission to be paid to the middleman.<sup>6</sup> On the other hand, to the extent that there is no legal entity operating the platform, the previously described legal challenges might be less of an issue, given that there is no one to blame for failure to comply with the required formalities. Particularly interesting in that regard is the Popcorn Time case,<sup>7</sup> where companies supplying and/or running the application were held to be vicariously liable for copyright infringement, although no charge were brought against the developers or users of such an application.

Besides, and specifically related to the artistic realm, such a decentralized form of funding is more in line with the decentralized ideals of many artists and creators, who would rather be rewarded directly

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<sup>4</sup> For instance, neither Swarm nor Koinify sold equity directly. Rather, they sold tokens for the use of their platform while their platform was still being built. In some way, this model can simply be regarded as a particular form of pre-sale, where people invest in a specific amount of tokens that will enable them to use the platform afterwards. For more details on the various approaches to deal with cryptographic tokens in the U.S. regulatory regime, see Dietz & al., 2014.

<sup>5</sup> See e.g. in the U.S., where the new exemption mandated by Title IV of the Jumpstart Our Business Startups (JOBS) Act enables small companies to offer and sell up to \$50M of securities in a 12-months period without being subject to state security law registration and qualification

<sup>6</sup> Note, however, that —as opposed to Lighthouse which operates as a decentralized application on the blockchain, without any organisation behind it— both Swarm and Koinify are actually run by two for-profit companies which actually charge users with a commission in order to operate their business.

<sup>7</sup> Following an injunction motion made by five members of the Motion Picture Association of America, a U.K. High Court has ruled that several websites supplying the Popcorn Time application should be blocked, even if they are not themselves communicating copyrighted works to the public. However, the developers of the Popcorn Time application were not held liable of the uses made of the application.



by their audience, instead of relying on the services of centralized intermediaries, whose commercial interests are often in contradiction with theirs.

In particular, cryptoequity-based crowdfunding campaigns could have significant implications in the context of artistic production (Swan, 2015) to the extent that they make it possible for emergent artists (with a small budget, but with a strong and visible potential) to secure an external source of funding necessary to fund the production of works which they could not produce otherwise. Regardless of the underlying reasons why people might contribute financial resources to the production of these works (*e.g.* because they want to support the artist, because they want the artist to produce more works, or merely because they want to speculate on the future value of these works), a specific number of shares will be distributed to each backer, who will consequently benefit from a portion of the profits arising from the sale or commercial exploitation of these works.

The concept of cryptoequity can also be deployed in the traditional art market, by selling or granting shares of an artwork to individual patrons or collectors, in order to reward artists, *a posteriori*, for their creative endeavor. In this sense, blockchain technologies could to a large extent democratize investments in the cultural sector — especially in the realm of fine arts characterised by artworks whose market value is often too high for many individuals to consider. With cryptoequity, many individuals can become partial owners of a particular piece of art, and benefit from their success of that piece, at the same title of a gallery or collector. This is, for instance, the value proposition of *Artlery*, a blockchain-based application rewarding those who appreciate an artwork with a gift representing a percentage of the future revenue stream related to that work, not only for the initial sale, but also for subsequent “secondary” sales. In this way, blockchain technologies could also make it easier for artists themselves to enforce their resale rights, which are mandated by law in many jurisdictions but are often not or poorly applied, mostly due to the difficulty to implement these rules, by aligning the incentives of both the artists and their patrons.

**Highlight: Cryptoequity could democratize investments in the cultural sector, especially in the realm of fine arts characterized by works of really high market value.**

The implications on artistic consumption are also worthy of note. Both with regard to cryptoequity-based crowdfunding and the sale of cryptoequity shares, the public is no longer a passive consumer but becomes instead an active stakeholder in a cultural work. As a result, the interests of the public become increasingly aligned with that of the artists, since they all have an incentive to promote their works, in order to eventually reap the fruits of their success. This could, eventually, shift the art market away from the current state of artificial scarcity and exclusivity, towards a more collaborative state of affairs grounded on dissemination and sharing.

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Primavera De Filippi is a permanent researcher at the CERSA / CNRS / Université Paris II. She is a faculty associate at the Berkman Center for Internet & Society at Harvard Law School, where she is investigating the concept of governance-by-design as it relates to distributed online architectures, such as Bitcoin, Ethereum, etc. Primavera holds a PhD from the European University Institute in Florence. She is a member of the Global Agenda Council on the Future of Software & IT Services at the World Economic Forum, as well as the founder of the Internet Governance Forum's dynamic coalition on Network Neutrality and Platform Responsibility. In addition to her academic research, Primavera acts as a legal expert for Creative Commons France and the P2P Foundation.