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Is Blockchain a New Creative Industry?

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Abstract

Creative industries are at the core of innovation and economic growth. Ideas and not goods or resources are now considered to be the source of economic development as a result of the continued movement towards a knowledge-based society. The inclusion of software in the creative industries' classification in 2001 has acted as proof of the importance of the internet for the production, distribution and communication of economic value. In the past 25 years, extensive research has been focused on the impact and importance of content industries, but very little has been done to acknowledge the potential of new innovative technologies such as blockchain. By reshaping transportation, financial models, digital content, storage, property management and many other industries, blockchain technology is currently gaining traction in many traditional and creative sectors. Our paper aims to explore the possibility of including blockchain as a separate item within the creative industries classification list. We draw on the existing literature and theoretical framework around creativity and innovation in order to lay out the advantages of leveraging blockchain technology and adopting it in policy agendas. We are arguing for a dynamic approach that minds the importance of emerging technologies and adapts the institutional and regulatory framework so that wealth and growth are sustainably generated.

Keywords: creative sectors; creativity; innovation; blockchain.

JEL Classification: O34; F43; E26; J24.

1. Introduction

Innovation and creativity became the major attributes of the digital society in the 21st century. As international organizations such as UNESCO, UNDP, WTO or OECD started to acknowledge the social and economic importance of creative

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sectors, researchers began to explore and build a theoretical framework that would shed some light onto this new and exciting field of study. Although the origins of these *cultural and creative industries* or *sectors* go back to the early 20th century and the *cultural industrialization* (Moore, 2014), they have become part of economic policies since the beginning of the 90's and were pioneered in the United Kingdom and Australia.

In 2001 the UK Government (UK Government, 2001, p. 5) defined the creative industries as:

Those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property.

The sectors included by the UK Government in this definition in 2015 were advertising and marketing; architecture; crafts; design: product, graphic and fashion, film, TV, video, radio and photography; IT, software and computer services; publishing; museums, galleries and libraries; music, performing and visual arts (DCMS, 2015). Since then, plenty of other definitions and classifications were developed, some more broad and some more specific. (Howkins, 2001; Thorsby, 2001; UNCTAD, 2008; World Intellectual Property Organization (WIPO), 2003; UNESCO, 2015). Coming up with a universally accepted definition of *creative sectors* is challenging especially because of the lack of consensus between researchers and institutions across the world. The term is therefore differently understood in different frameworks and the classifications differ according to each society's own cultural, historical and social attributes (Banks & O'Connor, 2009). This also suggests the continuously evolving nature of the concept, as creativity is the prerequisite of innovation and the creation of novelty.

Regardless of how we define them, a few main points can be drawn. Creativity applied to economics means entrepreneurship. Creative industries are producing knowledge that drives innovation and of course, they add direct and unquestionable value that triggers economic growth. But without acknowledging the new sectors that might be considered *creative*, it becomes nearly impossible to develop policy agendas that include them. In a world where products coming from the IT industry start to overspill into more traditional sectors (Cunningham & Potts, 2015), changing the core of their business model, unique new sectors can be identified. Some efforts have focused on digital innovations such as AI and *the data economy* (UK Government, 2018) which appear to be treated as separate sectors but that's about it. Our suggestion is that blockchain might be a new *creative industry* and our paper will focus on explaining why and how this sector should receive more credit.

2. Literature Review and Problem Statement

Creative sectors contribute to the wellbeing of societies as they help them identify solutions to overcome specific barriers (Loveless, 2016). 25 years of research in the field of creative sectors proved there is increasing interest on the

part of societies and their institutions towards fields where human capital, knowledge and creativity drive economic growth. Plenty of definitions and classifications have tried to keep up with the technological advancements and so they started to include more specific IT products such as software, web design, IT consulting and video games (UK Government, 2013).

As creative sectors are at the heart of innovation and economic development, they have become part of most developed countries' policy strategies (Chapain, Clifton & Comunian, 2014). Over the past years technological advancements have provided answers to a lot of the world's pressing issues through new products, services and business models. The challenge for policy makers is to follow the dynamic approach of the *digital revolution* and meet the new requirements of the creative sectors, which are continuously changing and reinventing themselves.

Few studies have referred to the pressing issue of developing the classification of creative sectors to include new digital paradigms. Abbasi, Vassilopoulou & Stergioulas (2017) have presented a roadmap for the technological future of creative industries. Their conclusions suggests a greater focus on technologies that facilitate personalisation, user engagement and interaction and also tech products such as holograms, 3D vision and VR. The European Creative Industries Alliance's (2014) study on cross-innovation acknowledges the *Internet of Things* as a new potential creative industry that brings significant economic value. A very valuable source is de-Miguel-Molina & Segarra-Oña's (2018) chapter on creative industries whose first part studies the markets for creative industries from 2012 to 2015 with a focus on digitalisation in the creative sectors, while the second analysis examines 27 documents of the most important consulting firms in the world and shows the importance of AI, augmented reality, VR, blockchain and digitalisation for the creative sectors. Potts & Rennie (2018) discuss the impact of blockchain on altering creative industries and the potential of creating a new *creative economy*. They explain the possible application of the blockchain technology and its role in improving transparency along supply chains, intellectual property and licensing, royalties and payments.

Although most studies performed on the importance of re-designing the creative sectors' classification in the age of technological advancements explore the new possibilities of AI and blockchain, almost none of them stresses the possibility of including blockchain as a new creative sector. This is important because creative industries in their current form shape policy agendas and the regulation environment. There is also a lack of theoretical and conceptual understanding of how we can determine what should be considered a creative sector. Our article aims to provide some insight and explore the possibility of including blockchain in the creative sectors' classification list.

3. Methodology and Research Questions

Our research is based on a theoretical and descriptive approach. We draw on the existing research regarding creative industries and we try to assess if blockchain could be considered a creative industry. We base our premises on the UK

Government's (2001) definition of creative industries and we conceptualise and compare blockchain to the 9 other categories of creative sectors. A theoretical analysis of the literature review is performed as basis for our study. We also perform a qualitative analysis on the main applications of blockchain technology in order to determine a) its innovative aspect and b) its socio-economic impact, using secondary data from Statista, LinkedIn and Cointelegraph.

The aim of our research is to explore the possibility of considering blockchain a creative sector. For this aim, we plan on answering the following research questions:

- Q1. How is Blockchain different from software or other IT products?
- Q2. How is Blockchain a driver of innovation and economic growth?
- Q3. Does Blockchain fit into the original definition of creative industries?

4. Discussion

4.1 Blockchain – disruptive technology vs. founding solution

In 2016, the World Economic Forum has acknowledged blockchain as one of the top 10 emerging technologies (Cann, 2016). Since then, blockchain has been continuously on the top journals' covers as more of its applications were discovered. As a technical solution, the blockchain is a decentralized and encrypted digital ledger which stood at the core of Bitcoin, the first and most spectacular cryptocurrency (Nakamoto, 2008). Each of the blocks contains the cryptographic hash of the previous block, a timestamp and the transaction data (Narayanan, Bonneau, Felten, Miller, & Goldfeder, 2016). From the point of view of the technology, blockchain can be considered disruptive because it changes the way we understand and use trust, governance, money and transactions. Blockchain removes middlemen by creating a non-alterable database with potentially infinite numbers of contributors, regardless of geographical, social and political barriers (in the case of public blockchains). It also offers high transparency, ease of access and security, as there are no single points of failure, and it is so far proven to be very reliable technology with lots of practical applications.

However, as creative industries go, it would be wrong to only focus on the technical solution blockchain is providing. Like architecture, design or even music, when we talk about blockchain as a creative sector, we do not refer to how blockchains are created from a technical perspective, but to how they are used, from a creative standpoint. Who envisions the possibilities to apply blockchain to generate value? How is the creative process of innovating using blockchain performed? These are questions that blockchain, as a creative industry, should be able to answer on its own.

And here is where the answer to our first research question comes. Blockchain is in fact a creative software product, that has its origins in the open-source phenomenon that is a core attribute and a statement of the informal economy and the digital 21st century. However, unlike most software products that are built to satisfy a certain need and solve a specific issue, blockchain is building a

completely new economy around it because it provides a very large number of solutions to a very wide array of different problems, many of which are yet to even be discovered. Thus, from the perspective of creativity and innovation, blockchain is a *founding solution* because it provides new infrastructure for the digital economy (Potts & Rennie, 2018).

4.2. Blockchain as a driver of innovation and economic growth. Applications

Creativity and innovation form the basis of creative industries. The 2008 UNCTAD report explains (UNCTAD, 2008, p. 4):

Creative industries are at the crossroads of the arts, culture, business and technology. In other words, they comprise the cycle of creation, production and distribution of goods and services that use intellectual capital as their primary input. Today's creative industries involve the interplay of traditional, technology intensive and service-oriented subsectors.

Blockchain is maybe one of the most innovative technologies of the 21st century. Its numerous applications range vastly, according to their functional typology. An overview of the possible applications and the typology of blockchain is provided by Pilkington (2016) and it includes:

- Crypto monetary or financial instruments (mining and non-mining crypto-coins and token-free ledgers);
- Crypto-governance (data storage, smart contracts, voting systems, digital identity verification, health record storage);
- Other instruments (crypto-communication protocols, social networks, art, prediction markets).

While the aforementioned applications are non-negligible because they result in new types of technical infrastructure, a second category of innovative effects is related to the creative understanding of production and consumption. Blockchain is reinventing trust and facilitates collaborative production at very low costs. This means more direct peer-to-peer interaction in a new eco-system that develops parallel to the traditional forms of economics and governance. It is solely based on knowledge transfer and it empowers human capital.

4.2.1 Case studies

Artory & Christie's – bringing trust on the art market

When it comes to art auctions, tracking provenance and authenticity is probably the most challenging process. In November 2018 one of the biggest auction houses in New York partnered with Artory (AlleyWatch, 2018), a blockchain-based registry, to move all its transactions into the blockchain. The created registry tracks all historical, provenance and archival data and it allows buyers to remain anonymous, which is key for big art sales. Their wish is to expand the records to multiple auction houses that might eventually lead to a fully integrated system where all art pieces can be tracked, thus generating enhanced confidence and lowering verification costs.

Blockchain in Transport Alliance (BiTA) – revolutionizing trucking

Blockchain can solve the inefficiencies of the transportation industries and help cut a large part of the costs. In the US, truckers drive more than 29 billion miles every year with almost empty truckloads while manufacturers cannot find trucks to transport their goods (Salama, 2018). In this case, a blockchain application managed to match shippers with carriers and cut a lot of company losses and time wasted on order-related paperwork. Many more applications for the transportation industry exist as blockchain can help track products from the manufacturer to the client.

BitLand – protecting property rights

Keeping records of land properties used to be a function of local authorities. However, in Africa and parts of Asia, high costs are associated with manipulated, lost or non-existing proofs of ownership over land. BitLand is an initiative created in Ghana in 2015 (Zwitter & Boisse-Despiaux, 2018) and tested in Honduras and even Sweden (Keane, 2017) that uses GPD, Openmap and other APIs to allow users to enter a land survey. This makes mortgages more secure and efficient in countries where citizens lack land registry records and where property fraud is a frequent occurrence. The app would have a tremendous impact on the African continent, where 90% of all land is unregistered, and in countries such as India where, according to Zwitter & Boisse-Despiaux (2018) the lack of property ownership proof is one of the biggest causes of poverty.

These three very diverse examples from three different sectors highlight the unique attributes of blockchain technology and underline a major difference between blockchain and other types of software. The spill-over effects are very high and the the potential for creativity and innovation allows for entirely new economic models to be explored.

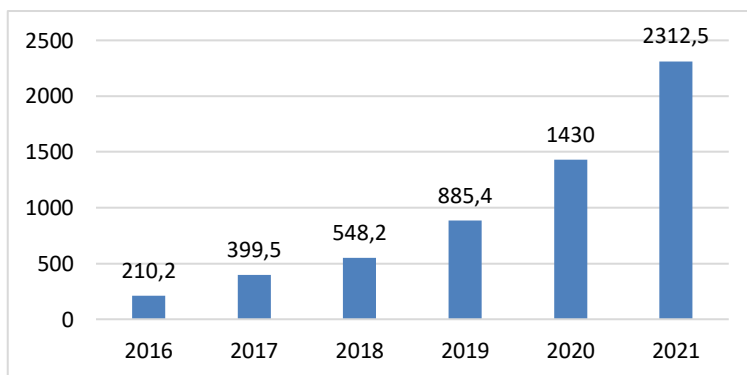


Figure 1. The size of the blockchain technology market worldwide from 2016-2021 (in million USD)

Source: Statista (2019)

As for the economic impact of the Blockchain industry, Figure 1 suggests a more than double increase in output from 2016 to 2018 with a prediction that the sector could reach \$2.3 billion by 2021. This would make the blockchain industry one of the best performing industries overall. This is supported by the fact that a 2018 Deloitte-commissioned survey applied to 1053 senior executives in seven countries at companies with over \$500 million in revenues showed that 39% of the respondents reported that their companies will invest \$5 million or more in blockchain technology in 2019 and 84% of them agreed that blockchain technology would rapidly achieve mainstream adoption (Deloitte, 2018).

4.3 Blockchain as a creative sector

Following the UK Government's (2001) definition of creative industries and drawing on the findings in the previous two sub-sections, we suggest that blockchain has proven its added value and impact on creating wealth and jobs across different sectors and over geographical barriers. This is proven by the fact that, according to estimates (Kelso, 2018; Magas, 2018) in 2016 a number of 645 vacancies tagged with the word 'blockchain' were published on LinkedIn, by 2017 there were 1800 and by May 2018 over 4500. By december 2018 the LinkedIn search system showed 13816 blockchain-related records. Although most of the jobs are for software developers and programmers, there are also opportunities for economists, copy writers and project managers within the industry. With respect to the *intellectual property* characteristic, blockchain is innovative because it mostly provides transparent, and usually open source products, while protecting intellectual property if the owner wants it so. It therefore revolutionizes the way we understand products, distribution and attribution. Blockchain fits the description of a creative industry and it even takes it further, making it more comprehensive and adapted to the needs of the digital era.

5. Conclusions

Technologies can change the fundamental core of both traditional and creative industries and have a profound impact on society. Blockchain has grown out of the software industry, building its own environment and reshaping business models and governance practices. From the creative industries' perspective, blockchain is not a disruptive but a founding technology because it offers solutions to institutional, business and humanitarian issues and it also opens new opportunities for wealth and job creation. Our paper aimed at assessing if blockchain could be considered a creative industry. Examining the definition and attributes of creative industries our study has shown that this sector is perfectly suited to be included in the list as it generates innovation and economic growth. As blockchain is reshaping cultural and creative economies there is an urgent need for it to be placed on the policy agendas of countries everywhere. Not acknowledging the importance of this technology might lead to growing gaps between societies that are able to legally leverage the potential of blockchain and countries that lack the dynamic approach

to become adaptable. Further research into the potential and impact of blockchain as a creative industry should consider regulatory, institutional, social and economic challenges and suggest solutions.

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