

# A new era of the music industry? Blockchain and value co-creation: the Bitsong case study

Blockchain  
and value  
co-creation

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Giovanna Centorrino  
*Department of Economics, University of Messina, Messina, Italy, and*  
Valeria Naciti and Daniela Rupo  
*University of Messina, Messina, Italy*

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## Abstract

**Purpose** – The study aims to investigate the impact of technological innovation, such as blockchain, in the music field from a value co-creation perspective, highlighting how it is determining a radical change in the business model and value creation process.

**Design/methodology/approach** – To shed light on how blockchain adoption is reconfiguring the music industry, the authors adopted a qualitative-based approach based on a case study, allowing us to investigate value co-creation at three levels (macro, meso and micro) through exchange and integration of multi-actor resources.

**Findings** – The authors found that blockchain adoption in the music industry can singularly shape the business model, representing a powerful tool to enhance inter-organizational cooperation in value creation. It effectively deals with operational and business issues, besides financial transactions, profoundly impacting both the creation and distribution of value within the supply chain.

**Research limitations/implications** – The research contributes to a better understanding of innovation adoption in a specific setting, the music industry, giving support and guidance for players working in this ecosystem. The blockchain-music link helps close the gap between music and society through technology, thus providing a foundation for future research.

**Originality/value** – The paper provides new insights into the antecedents and mechanisms of value co-creation, spanning macro-, meso-, and micro-levels of context. It also illustrates the factors underpinning Bitsong viability to embed the value co-creation perspective in designing the business model within a value network.

**Keywords** Technological innovation, Blockchain, Value co-creation, Music industry

**Paper type** Case study

## 1. Introduction

The Internet and digitization have made technology innovation easy, powerful, cheap and copious. The extent to which the convergence of inexpensive digital information goods and computing and communication devices are changing business and society is under everyone's eyes (Karimi and Walter, 2015; Marrone and Hazelton, 2019; Javaid *et al.*, 2021). This disruptive impact of digital technology and the Internet, revolutionizing information exchanges, is challenging traditional approaches of organizing, producing and capturing value (Karimi and Walter, 2015), gaining prominence both in the business world and in academic debate.

Like any cultural sector, the music industry represents a valuable setting to uncover the opportunities of this innovation. With digitization and transmission on the web,



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the music industry is recombining the value creation process. It shows itself in a new guise, capable of encompassing features and functions that were not imaginable in the past. On the one hand, a new world opens, the digital universe, which allows us to observe the emergence of new ways of creating, distributing and promoting musical works by artists and producers, with equivalent advantages also for its fruition by buyers. On the other hand, such intense technological innovation gives rise to considerable problems, born precisely from the freedom of, and ease of access to, an unlimited amount of shareable and downloadable content in the absence of adequate control over the ownership of this content.

In this industry, many issues have arisen regarding the evolution of music consumption, the increase in bureaucracy and the economic complexity of the music network. Moreover, the continual evolution of music-related commercial activities goes together with the adoption of digital technology, driving an epochal paradigm shift in business models. According to Teece (2010), “a business model embodies nothing less than the organizational and financial architecture of a business” (Teece, 2010, p. 173). The impact of innovation is determining a radical change in the structure and governance of music firms to sustain competitive advantage (Andreassen *et al.*, 2018).

In this scenario, the business model design has become even more critical given its capability to enable improvements and innovations to conduct business activities. In the fascinating and chaotic scenario, the emergence of Blockchain technology (BT) has opened a new world of social, financial and technological possibilities, as it is considered one of the most important, challenging and disruptive recently developed phenomena (Dai and Vasarhelyi, 2017). Thanks to the adoption of blockchain, a new business ecosystem is taking shape in the music field, in which artists, music-loving users, music providers and stakeholders interact to pursue their goals, co-creating value in a harmonious way.

Although literature has widely highlighted the advantages of blockchain as a promising research stream (Nakamoto, 2008; O’Leary, 2017; Coyne and McMickle, 2017; Pimentel and Boulianne, 2020) and as an external enabler of new business ideas in the music industry (Chalmers *et al.*, 2021), few studies have investigated the nexus between value co-creation (VCC) and BT (Skaržauskaitė and Skaržauskiene, 2021; Zhang *et al.*, 2021). Furthermore, critics of BT state that it will be years before we see some of the benefits of such technology in the art sector (Beck *et al.*, 2017). Through debate, an objective and rational analysis is clearly needed to cut the hype of a utopian vision and help us understand the reality of the current landscape, the potential for the future and what the next steps may be to bridge this gap.

Therefore, the necessity for a shift in traditional value creation approaches has evolved in tandem with the vast amounts of data available to organizations’ external stakeholders and expanding digitization.

We adopt the lens of VCC, conceived as an enabling factor of value creation through the involvement of various stakeholders in decision-making (Garcia-Castro and Aguilera, 2015), where each actor offers distinct characteristics to the setting that has an impact on the other actors as well as the overall context.

Following this approach, we observe how recent digital innovation amplifies the boundaries of the new sharing economy, emphasizing the benefits of quick and easy access to a wide range of resources at a reduced cost. Studies have identified the challenges that deserve more investigation (Ranjan and Read, 2016), among which the intricate stakeholder participation, difficulties in opening up value chains, and trust and intellectual property issues. To the best of our knowledge, our research is the first attempt to get insight into the link between VCC and BT in the music industry, observing the phenomenon at *macro*-, *meso*- and *micro*-levels, in which value is created through exchange and integration of multi-actor resources.

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This research aims to provide a theoretical and practical understanding of the interplay between BT adoption and music under the lens of VCC.

Specifically, our study aims to address the following research questions:

*RQ1.* What are the relevant implications of blockchain adoption for the business model of music organizations, from the design of musical projects to the production, distribution and consumption of products?

*RQ2.* How is the paradigm shift determined by this innovation influencing value creation within the network, giving shape to a singular VCC process?

To answer our questions, following prior research (Foss and Saebi, 2018), we used a qualitative methodology based on a case study deemed suitable to investigate how the deployment of blockchain in the music business might benefit the VCC process.

The case study examined is Bitsong, a decentralized music streaming platform that uses BT to provide the global community of artists, fans and music providers with a trustworthy music marketplace.

Our contribution is threefold. Firstly, the research examines the antecedents and mechanisms of VCC across different dimensions and levels of the context within blockchain networks, exploring the associated interdependencies across these levels and dimensions.

Secondly, the research contributes to the knowledge of inductive case study methodology useful for assessing the implications of BT for practitioners and researchers in a real-world setting.

Thirdly, the research contributes to advancing the theory of VCC within a network built on a digital platform by proposing an architectural guideline.

The paper is structured as follows. The next section analyses the available literature on VCC, blockchain and its application in the music industry. Section 3 discusses research methodology for developing and evaluating the case study. Section 4 details the Bitsong case application and the case study's findings in terms of blockchain and VCC. Section 5 concludes with theoretical and practical contributions, including future research prospects.

## 2. Theoretical background

### 2.1 Value co-creation and blockchain

Most research on the linkage between innovation and VCC has emphasized the positive aspects of the roles of buyer and supplier (Chowdhury *et al.*, 2016). Indeed, business models ultimately lead to value generation by effectively facilitating interactions between suppliers and buyers via an innovative platform, such as blockchain (Panayides, 2006). The interaction process between actors is not always harmonious, as is true for all interactions in the context of relationships.

Value creation, a significant issue in economics, business and management studies, has taken on new meanings and consequences over time, developing into co-creation of value at the beginning of the century (Pralhad and Ramaswamy, 2000, 2004; Vargo and Lusch, 2004). The term's beginning may be found in the manuscript of Kambil *et al.* (1996), who used it to underline the importance of consumers in corporate strategy; nevertheless, Pralhad and Ramaswamy (2000, 2004) were the authors that popularized the concept of VCC.

At the definitional level, VCC still has uncertain boundaries, as few studies explicitly clarify its meaning and contents (Neghina *et al.*, 2015). Overall, VCC theory gives a valuable framework for understanding how to add value to "existing value" (Ramaswamy and Ozcan, 2014) or use existing value to lead growth through interplays between firms and actors.

Moreover, it delineates actions related to the participation of actors as active partners in service innovation through various interactive channels.

Several studies have investigated the paradigm of VCC. According to [Hilton et al. \(2012\)](#) value, being a personal evaluative judgement, cannot be co-created; instead, actors realize it as an outcome of service co-creation. Therefore “value is subjectively determined, and it is considered the outcome of the service co-creation process” ([Neghina et al., 2017](#)). The fundamental assumption in such service systems is interaction for the co-creation of value ([Durugbo and Pawar, 2014](#)) where the co-creation process involves customers as part of the value chain, i.e. as an individual that adds value to a service or product ([Prahalad and Ramaswamy, 2004](#); [Vargo et al., 2008](#)).

[Yi and Gong \(2013\)](#) developed and validated a scale to measure customer VCC behaviour in conformity to the two central notions of customer participation and citizenship behaviour. The first notion fits the required behaviour necessary for successful VCC. Customer citizenship is intentional behaviour that is not crucial for VCC, even if helpful to give extraordinary value to the firm.

To further develop the conceptualization of VCC, [Neghina et al. \(2015\)](#) proposed one of the first studies dealing with a conceptual understanding of VCC. They illustrated a framework regarding VCC in six dimensions correlated to more straightforward joint actions (individuating, relating, empowering, ethical, developmental and concerted collective efforts).

These authors also hypothesized nine antecedents of VCC, described as the communication, relating and knowing of customers’ behaviour in co-creating value. Co-creation interactions necessitate both analogical and digital communications and unique management strategies. Parallel to the massive volumes of data that have been available to enterprises’ external stakeholders and the growing digitalization, the need arose for a change of traditional VCC methods. Co-creation, on the other hand, still presents many challenges, including the complexity related to stakeholder participation, problems in opening up value chains, and trust and intellectual property issues.

In an increasingly digital corporate environment, the challenge of innovation asks for a comprehensive grasp of the function of information technologies such as blockchain and how they influence the design of new business models capable of generating value.

Only recently has the potential of new technological innovations, such as blockchain, been given attention as a source of competitive advantage in the ongoing debate on economic value creation ([Erevelles et al., 2022](#); [Mačiulienė and Skaržauskienė, 2021](#); [Zhang et al., 2021](#)).

BT, or Distributed Ledger Technology (DLT), is a database system that preserves every data transaction processed in a network of various nodes or computers ([Coyne and McMickle, 2017](#); [Dai and Vasarhelyi, 2017](#); [Kokina et al., 2017](#); [Tapscott and Tapscott, 2017](#); [Pimentel and Boulianne, 2020](#)); it serves to record and share information through a peer-to-peer network.

BT provides a paradigm change away from the Big Data paradigm, which permits businesses and governments to utilize sensitive customer data also for nefarious reasons. It is gaining traction as a solution to Big Data’s major issues ([Erevelles et al., 2022](#)). Among other things, it establishes:

- (1) Trust through consensus and cryptographic proof: peers validate transactions, and no single party controls the data;
- (2) Security through a distributed and encrypted database, making it more difficult to compromise than a centralized database;
- (3) Privacy using a system of public and private “keys,” where a user’s public information is viewable by anyone in a network, but one’s private information is protected with cryptography;

- (4) Transparency using pseudonymous identities, where transactions are viewable by everyone in a network, with real identities provided if needed;
- (5) Disintermediation, where transactions occur directly between peers, without intermediaries.

In the framework of VCC, the adoption of BT is seen as a powerful tool to alleviate trust issues and intellectual property appropriation concerns (Seulliet, 2016). Ian Grigg is a financial cryptographer that introduced the idea of the value of a digitally signed receipt backed up by financial cryptography between two parties that can be controlled by a shared third entry. By bringing a significant theoretical improvement to the business recording system, this novel methodology minimizes both transaction fraud and the entropy of internal recordings (Cai, 2021). However, BT not only has the ability to create trust in decentralized data storage but also has the potential to bring about radical changes in business automation, digital economic models, investment ecosystems and even transform the governance paradigm by incorporating decentralized participatory governance paradigms into multi-stakeholder digital business environments (Zutshi et al., 2021).

Admittedly, BT can be considered an opportunity and a threat like any other innovation. This latter scenario is primarily due to technological threats, such as ransomware assaults on the BT network (Moll and Yigitbasioglu, 2019), although blockchain ensures highly secure transactions (Deloitte, 2016). Other potential problems could come from the anonymity of some cryptocurrencies, which could be used to trade potentially in suspicious criminal transactions or laundered funds, or to fund terrorist acts (Turner and Irwin, 2017).

Even though DLT is a relatively new phenomenon, it constantly combines some well-known technologies in new and creative ways. As new functions are added to technology, the related value proposition shifts. Angelis and Da Silva (2019), exploring the relationship between BTs and their underlying value drivers, identify four distinct blockchain stages of increased maturity, each of which corresponds to a specific type of value driver. Table 1 synthesizes the fundamental logic that determines how specific drivers generate value along the evolutionary stages of the blockchain (Angelis and Da Silva, 2019).

It is worth noting that the range of applications grows as DLT develops and refines. However, a typical assumption is that some business actions stay the same regardless of which technology is used. But this last choice could be wrong as growing technology usually offers new products or services and changes in the sought-after and derived benefits. Value drivers related to the use of BT can also be referred to as the VCC notion, given the above-described capability of this paradigm to provide a helpful framework for figuring out how to add value to “existing value” (Ramaswamy and Ozcan, 2014). In this context, BT has opened up a whole new universe of possibilities regarding social, financial, economic and technical advancements and gives it its multi-level dimension.

The blockchain notion can be linked to network theory; according to Gummesson (2008), “a network is made up of nodes (such as people or organizations) and relationships and interaction between those. Network theory is part of ‘complexity theory’, recognizing that

Evolutionary stages	Enablers	Value driver
First	Decentralized consensus	Transaction cost
Second	Smart Contracts	Added services
Third	Decentralized application, storage and computing	Organization boundaries
Fourth	Decentralized artificial intelligence	Autonomous decision-making

Source(s): Adapted from Angelis and Da Silva (2019, p. 311)

**Table 1.**  
Blockchain  
evolutionary stages:  
how they add value

numerous variables interact, that the number of unique situations is unlimited, that change is a natural state of affairs and that processes are iterative rather than linear” (p. 2).

In trying to understand the complexity of the subject, great importance is assigned to the “value in context” notion (Chandler and Vargo, 2011), where “contexts” are groups of distinct actors with specific knowledge, abilities and reciprocal relationships. A value network, or context, is a multidimensional phenomenon that presents a distinctive environment with multiple levels of interactive collaborations (Best *et al.*, 2022). As resources are accessible by various actors, they connect actors one to another (and vice versa), and for this interconnection, they are valuable as “together, the connected actors influence the ‘expansion and contraction’ of a resource [...]”. As a result, disparate actors access resources that they do not own or unilaterally control, they become connected because of their joint access to a resource” (Chandler and Vargo, 2011, p. 37).

It is important to recognize that each part of the network is always linked to the systemic context. According to Alves *et al.* (2016): “Depending on the context, resources may or may not hold value to a specific actor; therefore, the context influences the co-creation of value” (p. 1628).

This perspective makes complex system context such as blockchain more understandable by adopting systems-level thinking to explore how actors combine through exchanges within a specific context and investigate how that context frames value creation and exchange (Chandler and Vargo, 2011).

Accordingly, value within our setting – the Bitsong ecosystem as a blockchain network – can be viewed at different levels that coincide with fundamental VCC processes. In this line, Chandler and Vargo (2011) distinguish the three levels at which value is created through exchange and integration of multi-actor resources:

- (1) At the *micro*-level, where individual stakeholders (funder, staff, directors) exchange resources to directly benefit other stakeholders, making knowledge exchange a dyad;
- (2) At the *meso*-level, as a triad of knowledge flows for service exchange in the network;
- (3) At the *macro*-level, the context for service exchange is a complex network in which different stakeholders share knowledge and interact in direct and indirect service exchanges.

These three levels also imply that value created and/or destroyed at one level, such as the *micro*-level, may impact value created and/or destroyed at the *meso*- and/or *macro*-levels (Best *et al.*, 2022). The presence of a meta-layer representing the evolution of each level is helpful in understanding the evolution of each of the three levels over time. For each level, the VCC is unique on that level (Chandler and Vargo, 2011).

## 2.2 Blockchain in the music industry

Since its introduction in 2009, businesses have explored the use of BT in countless ways. In this line, over the last few years, BT has gained popularity in various industries (Coyne and McMickle, 2017; Dai and Vasarhelyi, 2017; Kokina *et al.*, 2017; Pimentel and Boulianne, 2020). In particular, independent music companies are slowly but surely recovering control over their money and art thanks to BT.

From an economic standpoint, blockchains facilitate the transformation of a centralized platform into a free market for the exchange of values. As a consequence, they attract participants (stakeholders), fuelling the participation required for the platform’s existence, at the same time.

Based on the organization and functioning of the music industry in the pre-digital era, the value chain of the record industry had a simple and linear structure, the salient phases of

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which were the creation of musical pieces, their recording, the production of supports, the physical distribution, sale and, finally, consumption. The traditional marketing of music took place through a distribution network whose control was in the hands of the record companies (Vaccaro and Cohn, 2004).

With the advent of digital technologies and the Internet, the dynamics of the sector have changed and evolved. The most significant effects have occurred in the promotional and distribution phases. Digitization and the consequent lowering of costs and entry barriers, on the one hand, have made it potentially possible for artists to record their songs and reach fans without necessarily going through a record company. On the other hand, they have facilitated the entry of new actors into the sector, such as Internet Service Provider companies, ICT companies and digital intermediaries, such as streaming platforms. The advent of digital technology led to the entry of a new category of players in the supply chain: Aggregators.

Aggregators are intermediaries that allow the distribution of music content on digital platforms, such as Spotify, iTunes, Deezer and other players. In addition to uploading and managing songs on the platforms, Aggregators are also responsible for collecting royalties deriving from the sale of music and then distributing payments to artists and record companies.

Hosoi *et al.* (2016) argued that the possibility for artists to self-produce quality recordings and self-promote through digital channels is the result of disintermediation that has shifted most of the time value generated by record companies, small and niche artists, and new digital services. Furthermore, the advent of streaming has resulted in a general decline in revenues shared throughout the supply chain (De León and Gupta, 2017).

The music industry is also one of the most complex markets that have faced and are still facing numerous challenges today (Chalmers *et al.*, 2021), as happened with the paradigm shift brought about by streaming and as is currently happening with the complex licensing and copyright systems that pose considerable problems and difficulties for rights holders.

In the cultural sector, the music industry was the first to be affected by digitization. Digital transformation of music products began in the 1990s with the appearance of mp3 and continued with the spread of peer-to-peer networks and streaming, until today, when the affirmation of Pay per Play systems continues unbounded.

According to International Federation of the Phonographic Industry (IFPI) data, the size of the global recorded music market grew by 7.4% in 2020. Due to steady growth in paid subscription streaming revenues, which offset a fall in physical and performance rights revenues, this was the sixth straight year of increased revenues. Streaming was responsible for growth in eight of the top ten markets worldwide. Subscription streaming revenues, in particular, grew across the board. Record firms' continued investment established the groundwork for the dominating digital industry and strengthened its resilience in the face of the unprecedented circumstances of the pandemic in 2020. Despite these developments, many artists complain about a lack of transparency in administrating their licenses, months or years of waiting for royalty payments, and insufficient and unjust pay-out levels. The music industry, despite adversity, is growing steadily all over the world. Sector bureaucratization, information asymmetry between the creative and distribution sectors, growth in the number of intermediaries, unfair distribution of royalties and the spread of piracy (Borja *et al.*, 2015), however, threaten the sustainability of the system, mainly to the detriment of the artist, who receives only a tiny part of what is generated by his work. In this regard, online streaming services certainly do not help since the commissions paid per listen are extremely low. Listeners are not doing too well either, being forced to navigate different platforms (and their subscriptions) to listen to their favourite music.

Today, with the advent of blockchain, the music industry is facing another potentially disruptive innovation: blockchain may undermine and question many aspects such as centralization and intermediation on which it has always relied; firstly, the power of the big

record companies and secondly, streaming services and other features on which the structure of the music industry as a whole has been based.

In recent years, DLT protocols have attracted the attention of many artists and musicians who have seen the potential for a new era of innovation for the music industry, able to create conditions for the development of a more sustainable business model capable of solving many of the main problems outlined above, such as the need for adequate levels of remuneration, faster and more efficient payments and, in general, greater transparency in the management and monetization of music rights.

### 3. Research design

#### 3.1 Methodology

To shed light on how the application of blockchain in the music industry can lead to a VCC process, we adopted a qualitative-based approach (Plakoyiannaki and Budhwar, 2021) constructed on a case study research methodology (Eisenhardt and Graebner, 2007; Ojasalo, 2008; Yin, 2009). This method is suitable to investigate the adoption of innovation in a specific setting. Our case study (Bitsong), being a pioneer and in some way a unique case, allows contextualizing the multi-level implications of blockchain adoption representing a complex and context-bound phenomenon that is not suitable for study in other modalities (Halinen and Törnroos, 2005). Compared to other methods, this method is regarded as appropriate for the study since it provides a more accurate and complete evaluation of the subject matter; the case-oriented methodology makes specific facts understandable (Ragin, 1999).

Regarding the type of approach, we preferred to perform interviews based on open questions, since they present certain advantages over closed questions: (1) the respondent can answer in their own terms; (2) the questions do not suggest certain kinds of answer to the respondent; (3) they are useful to explore new areas or ones in which a researcher has limited knowledge.

As Alles and Gray (2020) point out, it is essential to place BT within the business environment in which it operates. In this regard, case study research enables in-depth and contextual analysis of a real-life phenomenon (Yin, 2009), highlighting the complexity detected in an activity involving various sources of evidence and a large amount of data. Another reason to investigate this specific case in depth is that Bitsong today represents a starting point of an essential cultural change (Ragin, 1999) in the music industry.

A preliminary literature review was conducted at the start of the study. As the data analysis progressed, a second literature review was conducted to compare and relate the findings to earlier studies.

The phenomenon's complexity required a holistic approach. For this reason, the research uses combined data collection tools constructed from various sources: official documents, Internet documents, the Bitsong website, published interviews, scientific papers, direct observations, semi-structured interviews with key informants, and informal follow-ups based on e-mails and short phone interviews. Semi-structured video and face-to-face semi-structured interviews were deemed the principal source-gathering instrument for the study and helpful in offering flexibility in approaching the respondents (De Villiers *et al.*, 2019). It is important to note that observing facial expressions or body language can help the researchers better understand the interviewees. However, in some cases, video interviews can lead to substantial advantages (De Villiers *et al.*, 2022). Due to the Covid pandemic, this solution became preferential owing to the safety linked to reducing contact and travel. Significant open questions were formulated as broad statements, followed by more specific questions to obtain relevant data for the study. At the same time, some questions do not precisely match our research questions with the intent of encouraging interviewees to talk about a topic.



Specifically, 12 interviews focusing on the VCC phenomenon surrounding Bitsong were conducted between September 2021 and April 2022.

On average, 60 min interviews were audio-recorded, transcribed and analysed.

The interview questions help to understand the motivations underpinning the organization's development of the value network; the different forms of value experienced at the personal, organizational and network levels; and how the value was created, provided and captured. The general approach helps understand VCC factors and outcomes at different levels of the blockchain and the interactions among the three levels investigated.

The diverse respondents and the various circumstances allowed a wide range of opinions to be apprehended. After each interview, transcription was an essential point for subsequent discussions. Data were analysed and interpreted using steady comparative analysis to find starting concepts, link this evolving set of ideas to higher-level categories, and then, when required, establish potential linkages between classes (Sarker *et al.*, 2012). The constant comparing process implicitly involves data triangulation across respondents, types of organizations, and respondents' organizational responsibilities, among other things. Secondary documents allowed us to verify this information. This process improved the validity of the data and allowed for better understanding of the phenomenon under investigation (Piekkari *et al.*, 2010).

The key informants (KI) and interviewees were the Founder CTO (KI\_1), the Artist Manager (KI\_2), the brand Director (KI\_3), the project manager (KI\_4) and one of the musicians (KI\_5) (see Table 2). Moreover, the role of participant observation allows us to produce a reliable portrayal of the case study phenomenon and better check the validity of VCC in the three levels of analysis. For this reason, the investigators twice met KI\_1 to participate in a practical explanation of the mechanisms underlined in the Bitsong Blockchain. Each author, under his guide, pretended to be a possessor of the crypto token, the virtual currency and used it to participate in the blockchain. Apart from allowing better understanding of the process, this training made us aware of the potentiality of the technology (Figure 1. Data process).

We used quotations to provide a better sense of meaningfulness to the case description and offer real examples of fundamental concepts and relationships (Eisenhardt and Graebner, 2007).

### 3.2 The case profile

**3.2.1 Bitsong: the case study.** Based on theoretical sampling considerations, we selected the case of the Bitsong platform for our exploratory case study for the following reasons.

First, the Bitsong company represents a suitable example to understand the endogenous mechanisms underlining the VCC of a blockchain in the context of the global music industry, which is utilizing this technology to disrupt industry incumbents, offering innovative services that promise to make transactions cheaper, automated and more secure (Chalmers *et al.*, 2021).

The second reason regards our understanding of the meaning Bitsong gives to BT as the next-big-thing technology or the ability to seize these opportunities holistically within its business context (Alles and Gray, 2020).

Bitsong, conceived in 2017, was built on the Ethereum blockchain and the InterPlanetary File System (IPFS) distributed filesystem to create a decentralized and trustworthy hub focused on interconnecting the various market players of the music industry. This was the initial concept, since at that time the only ecosystem which allowed project building with potential impact on a large scale was Ethereum: the founders then realized that it did not suit their vision and/or goals for Bitsong. Therefore, in the second half of 2018 they adopted Cosmos as an ecosystem, which completely changed the scenario

*Interviews*

Interview participant  
 Founder CTO (KI\_1);  
 Artist Manager (KI\_2);  
 Brand Manager (KI\_3),  
 High-level manager responsible for the project  
 (KI\_4);  
 Artist (KI\_5)

**Interview questions**

“What prompted you to create a blockchain in the field of music?”  
 “What are the core features of the platform?”  
 “What challenges arose in the process of implementing the blockchain?”  
 “How did the interaction with partners change with the introduction of the blockchain?”  
 “What practices needed to change when the blockchain was introduced (if there was another form of agreement before)?”  
 “What is the problem for which blockchain is the solution?” “What is Bitsong’s business model behind the platform?”  
 “Can you describe your relationship with Bitsong?”  
 “What is your Company’s motivation to contribute to the Bitsong platform ecosystem?”  
 “What resources does Bitsong provide to support your development of complementary applications?”  
 “What is your company’s business model behind the collaboration with Bitsong?”  
 “Given the diffusion of blockchain-based technology solutions, do you think that Italy has the potential to be an important player in this nascent market?”  
 “How do you imagine the future in the blockchain landscape?”  
 “What are the benefits of involving individual players in blockchain ecosystems?”  
 “How is the value co-creation process created in Bitsong?”  
 “What are the costs, and what is the financial perspective?”  
 “What challenges and risks arose in the process of implementing the blockchain?”

*Secondary data*

**Type of data**

Documentation  
 official documents, Internet documents, the blockchain website, published interviews, scientific papers, direct observations

**Materials**

Bitsong White Paper,  
[https://businessandleaders.it/bitsong...](https://businessandleaders.it/bitsong)  
<https://en.cryptonomist.ch/bitsong>  
<https://www.audible.com/Intervista-al-team-di-BitSon...>

**Table 2.**  
 Data collected for the case study

and allowed them to start building their own Blockchain from scratch, customizing it to their vision and standards.

Bitsong differs from a streaming platform as it is a decentralized system of services supporting an active community of artists, music providers, fans and investors. It represents a technological environment – a new way to listen, watch and enjoy the content. It is a locus where every artist can distribute their music and sponsor it on world music channels; where users can be rewarded by simply enjoying their favourite kinds of content; and where precise, transparent and automated rules enforced through BT run the ecosystem –and not a small number of influential record labels. Accordingly, user activities, such as downloading or streaming a song, are recorded on the blockchain, and the artist or distributor can verify data in real-time about the performance of their product.

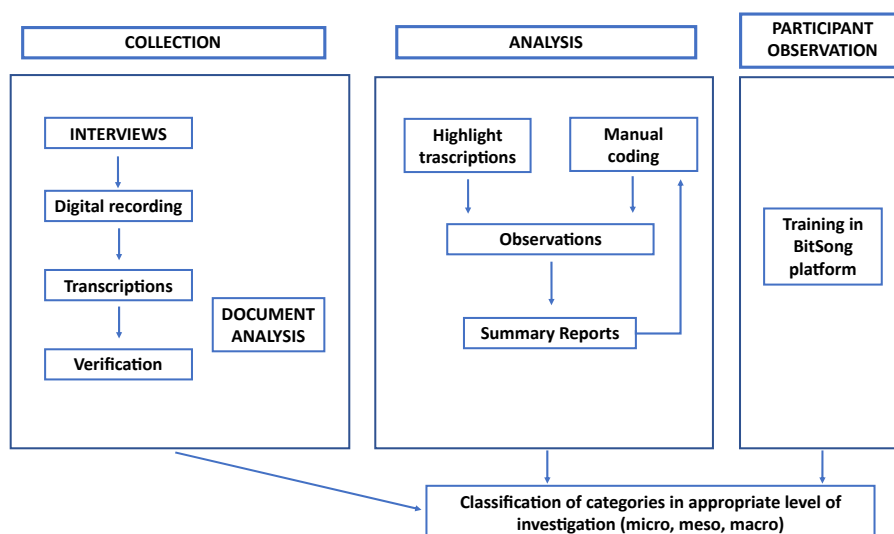


Figure 1.  
Data process

Indeed, as aforementioned, many artists complain about the current unfair remuneration level and the lack of transparency in managing their licenses, waiting a long time to obtain the payment of royalties, and the ecosystem is today characterized by significant inefficiencies, high confusion levels, difficulties in identifying and monetizing music rights, and consequent payment flows.

As per KI\_2: *“In this scenery, blockchain is seen as the technology that may resolve this impasse in favour of the musician, and with this in mind, Bitsong was born. In the Bitsong ecosystem, we have gone behind the gap between producers and consumers, bringing together record labels, musicians, and fans in creating the value they search for, both from an economic point of view and artistic”.*

Indeed, thanks to technological innovation able to do without many of the intermediaries, artists are allowed to distribute their music independently without losing money and at the same time protect their work of art. Bitsong can efficiently mitigate the piracy phenomenon that, as unauthorized use of an artist’s music production, invention and conception, especially with copyright infringement, represents one of the main factors that has led to the music industry’s decline and regression.

As a public blockchain, Bitsong does not require any authorization to access the network, perform transactions, or participate in verifying and creating new blocks. It is useable from any smart device and places artists and fans as the main protagonists, eliminating costly bureaucracy, giving musicians more control over their music-based revenue.

Another important Bitsong feature regards the use of the Cosmos-SDK infrastructure, one of the most widespread in the world for building blockchains with specific applications. As pointed out by one of the interviewees (KI\_4):

“We must add that the Bitsong network was created using the Cosmos-SDK infrastructure. As most actors within the network know, Cosmos has the ambitious goal of connecting a galaxy of independent Blockchains, the so-called “Internet of blockchains”. This infrastructure, together with the inter-blockchain communication (IBC) protocol, the Tendermint Core consensus mechanism and the Application BlockChain Interface (ABCI) interface, allows Bitsong to communicate with other blockchains based on different applications, as well as allow transferring and exchanging Bitsong

token with other networks. BTSG is the native token of the Bitsong Blockchain and is used in network governance to vote on network development proposals and validate transactions".

The idea was born with Angelo Recca and Julian Anghelin: the aim was to propose a rapid income model to artists without intermediaries, and a way to listen to music and earn money to users.

Under the leadership of Mr Recca, Bitsong was launched on the mainnet. Since its creation, it has attracted over 3,000 users and approximately 2 million blocks, increasing the team by over 300%. These words represent his main idea about his contribution: "*Either I create, or I manage. I have chosen to create*".

In recent times Mr Recca decided to end his term as Bitsong's Chief Executive Officer (CEO) to become the Chief Technology Officer.

#### 4. Results and discussion

The study aims to understand the nature and dynamics of VCC processes in an innovative network within the music field. We adopted a multilevel perspective at the *macro*-, *meso*- and *micro*-levels to comprehend this process better. This approach led us to pay attention to different phases in the entire innovation process, zooming in on value creation factors in which the stakeholder relationship (*micro*-level), the business unit (*meso*-level) and the ecosystem (*macro*-level) form an indissoluble whole in which value is co-created.

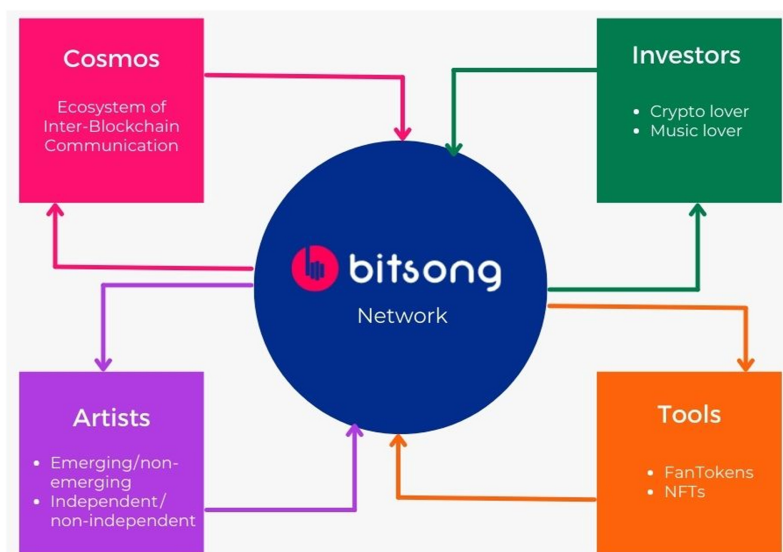
It is worth noting that each level is influenced by events that occurred in the past or by a present situation or future perspective. Moreover, the three modes are interconnected as past influences present as expected futures. According to Halinen and Törnroos (2005), it is crucial to "*be alert to the 'past loadedness' of a network, which entails how the network actors are guided by their past and to what pasts they are connected with. This should be done to find explanations about how networks evolve, develop and dissolve, or expand and contract over time*" (p. 1291). Understanding how value is embedded within an innovative network context with multi-actor collaboration is complex and practically problematic due to the multidirectional flows spanning various network groups (Best et al., 2022).

In the Bitsong case, the actor categories involved (stakeholders) in the architecture of the new business are not only the many parties in the process of producing the final work as artists and producers but also the consumers, fans, investors and the governance. For any category, the value logic is different (Foss and Saebi, 2018); nevertheless, VCC processes appear clear for each one of the categories, and this awareness emphasizes the motivations related to participation in the blockchain mechanism (Figure 2).

In this line, facilitating value creation in collaboration with other stakeholders is considered a co-evolutionary process (Best et al., 2022). The different typologies of values as part of a value-network, jointly creates a "value space" in which, according to Best et al. (2022): "*differentiated value outputs accruing to individual partners are captured and aggregated by the network through resource and knowledge exchanges. Outputs and success factors across stakeholders within a value network need to be differentiated and measured at individual, firm, and network levels*" (p. 478).

##### 4.1 Value co-creation factors at the macro-level

The Bitsong network embedded in the various actors represents the case study *macro* level of analysis. At this level, the context is an innovative ecosystem where multiple simultaneous service-for-service exchanges occur (Beirão et al., 2017). According to Granstrand and Holgersson (2020) "An innovation ecosystem is the evolving set of actors, activities, and artefacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors." (p. 3).



**Figure 2.**  
Bitsong network

Here, a critical value co-creating factor is the governance of the blockchain that comprises rules and common language definitions. According to [Beirao et al. \(2017\)](#), “Value cocreation factors at the macro level are related to resource access, resource sharing, resource recombination, resource monitoring, and governance/institutions generation” (p. 24).

The Bitsong decentralized network is based on a crucial system of governance. In our paper, we refer to governance defined as: “the means of achieving the direction, control, and coordination of stakeholders within the context of a given blockchain project to which they jointly contribute” ([Pelt et al., 2021, p. 21](#)). In describing the governance structure of these blockchain projects, the key respondents have identified several variables: the blockchain consensus mechanism, the role of validators and delegators, and the process that allows members to become involved in the network.

The Delegated Proof of Stake (DPoS), a specific variant of the Proof of state consensus, allows users to commit their balances as votes, supporting electing a fixed number of delegates to validate incoming transactions on the blockchain. As such, validators manage operations on behalf of their delegators, guaranteeing security and consensus. Any change to the Bitsong network is subject to governance votes. Examples of decisions that may be put to a governance vote include mainnet upgrades, changes to the voting period, changes to the size of the validators set or allocation of Community Pool funds.

The Bitsong set of validators is responsible for committing new blocks in the blockchain. The validators participate in the consensus protocol by broadcasting votes which contain cryptographic signatures signed by each validator’s private key. Validator candidates can bond their BTSG (the currency for music, powering all the features of the Bitsong ecosystems) and have BTSG delegated or staked to them by BTSG token holders.

The delegators choose validators and stake the BTSG to them. The rewards may vary according to various factors, including the amount of BTSG staked to the chosen validator and the commission of the validator charge. Rewards are in cash and can be re-delegated for a compound effect, spent in the Bitsong music ecosystem, or traded for crypto or fiat currency.

At this level, it is evident how resource monitoring can lead to VCC outcomes, generating benefits to the actors and the ecosystem. Another crucial point at this level is the legislative

setting that has not yet been regulated in Italy. It is worth noting that VCC involves resource integration with actors (who provide services reciprocally) and through comprehensive experiences in integrated and interconnected service ecosystems. Thus, institutions that govern the ecosystem are vital in facilitating a joined environment for VCC. The lack of regulation on blockchain represents a critical aspect, as interviewee K\_1 explained. *“I believe that to better continue my activity, if it is necessary, I will transfer to a country where there exists a better legal framework that offers consumer protection and bans hazardous practices related to the blockchain. Here in Italy, our legislative system has not yet sufficiently regulated the blockchain in the music industry, which needs a strong set of rules also aimed to protect each actor of the network.”*

#### 4.2 Value co-creation factors at the meso-level

According to scholars, communities are the locus where people share and create new knowledge, common interests such as the development of innovations of a given product or service and goals and values (Troise, 2022). The *meso*-level of the Bitsong platform, as a virtual community place, is characterized by the flow of information and communication among the music world and some Bitsong actors. At this level, VCC is particularly linked to the organizational aspect of the blockchain. It includes resource access, quality of services, the network's reputation, financial aspects related to each participant, the cost and time saved for participating in the network, and the relationship between the artist and his fans through Fan Tokens. As digital assets representing a loyalty formula with great potential, Fan Tokens are an innovative form of digital membership for fans, giving them access related to the music entities/brand that they had previously never had. This new asset gives its owner both the power to influence the decision of his favourite musician and access to exclusive promotions and other services. In the words of KI\_4: *“With the NFT and Fan Token, it is possible to create a privileged bond between artists and followers. Accordingly, it is possible to obtain benefits from the revenues of a tour or an album financed with the tokens. Fan Tokens allow voting on songs to be included in the line-up at a concert. Each artist can easily create their Fan Token and associate it with a social profile even outside of Bitsong (Twitter is an excellent first candidate), allowing fans to participate, for example, in a virtual meeting with their favourite artist by linking their BTSG wallet to the social network and using Fan Tokens”*.

Fans can use Fan Tokens to get digital collectables, purchase non-fungible tokens (NFTs), and take advantage of gamification features connected to fan benefits or unique experiences. As expressed by a musician (K\_5): *“Fan Tokens allow artists to ‘tokenize’ their music and create a new equilibrium where art, real engagement, and passion win. With my Fan Token, engagement becomes a currency of exchange between me as the musician and my fans who establish a relationship based on trust and shared contribution to the success of musical projects and products”*.

At the *meso*-level, co-experience and co-accountability processes enabled shared values to emerge as an essential predecessor to the Bitsong value propositions. The Bitsong Community Pool is a self-managing fund to support the ongoing development of the Bitsong ecosystem and community.

The findings revealed that the development of a network improved the network's professionalization by allowing for greater administrative efficiency, reduced costs and a considerable number of performance outputs. Shared values connected the network's nodes and qualified for the co-creation of value propositions (Best *et al.*, 2022).

#### 4.3 Value co-creation factors at the micro-level

At the *micro*-level, VCC factors enable dyadic interactions between individual actors (Cucino *et al.*, 2022) to integrate resources so as to co-create value with other actors through the

blockchain: VCC outcomes benefit individual actors (Beirão *et al.*, 2017). Another crucial point is seeking service quality representing a precursor of value delivery at the *micro*-level. The enabling factors are a series of mechanisms, including bi-lateral communications, set out to resolve problems jointly. Moreover, from in-depth analysis of customer profiles, the Bitsong network could fine-tune innovative processes to better handle the latest trends in the music field.

As the platform's purpose is to develop technology for the collective good, crypto tokens represent the value linked to the platform's success, giving economic benefits to all the ecosystem stakeholders.

Thanks to the VCC process, artists can save money by cutting out intermediaries. The benefit is doubled because the blockchain and tokens provide both transparent monetization and the ability to raise profits through the sale of the token should its value improve. In the word of one of the interviewees (KI\_4):

The blockchain world manages to issue unique digital securities, and blockchain bases value on uniqueness, and they acquire value when there is more demand than supply. The advantage it has over normal coins is that it is not reproducible; phasing does not exist. The NFT acronym of "non fungible" token is a unique digital certificate that allows the encamping of content that can be digital, a foot, a video, etc. Being a unique NFT it acquires value.

Musicians can receive equal royalty payments, venues can avoid counterfeit tickets and record labels can easily track music streams and reimburse all artists who contributed to songs or albums.

Moreover, because of blockchain's immutability, it is possible to protect copyright, avoid costly legal services and reduce, if not eradicate, piracy. If a piece of music is on the blockchain, it is as if it were recorded and signed by a notary with the owner's name, date and time. The song will be recognized as belonging to the legitimate owner given that no one can alter the blockchain data.

Artists can upload the metadata of their musical works (audio and video) independently or through music providers and then start earning at once.

Supporters pitch blockchain's DLT as a method to release music quickly, streamline royalty payments, cut out expensive intermediaries and give music composers a single point of origin. *"Blockchain can restore a fair and transparent system for making, purchasing, selling, listening to, and managing music. Such characteristics make blockchain fast spreading all over the world also due to the Covid pandemic that has profoundly changed habits regarding music."* (KI\_3).

## 5. Conclusion

This paper presents the Bitsong case study, a suitable setting to investigate the impact of innovative technologies, i.e. blockchain, through a paradigm of VCC in a new network context (Halinen and Törnroos, 2005). Our findings offer an in-depth and comprehensive understanding of the linkage mentioned above, uncovering relevant interconnections between the actors involved, for various reasons, in the music network; the consumer, seen here in the evocative role of "music lover", is placed at the centre of this ecosystem, consistently with the most advanced managerial philosophy.

This study offers several contributions. First, it allowed the analysis of the Bitsong case to be integrated into its context that, although fundamental in any case study, became highly critical in analysing a blockchain as a unique and problematic issue. Accordingly, we paid much attention to avoiding the lost inherent nature of the network, particularly the co-creation aspect. To this aim, the paper conceptualizes how co-creation occurs through joint exploration of the three most important levels, i.e. *macro*, *meso* and

*micro* of Bitsong by highlighting different elements of a complexity deemed sufficiently significant to detect.

Business partnerships and networks are often created because of the adoption of technological innovation. Within a competitive network, an invention should be viewed as the consequence of numerous players' interactions rather than as the output of a single actor (Ojasalo, 2008). One characteristic of a network is its natural flexibility and ability to change and adapt to the various modifications of the environment. Since business change and environment dynamics are concepts which are deeply rooted with time and temporality, the temporal dimension cannot be overlooked in research, particularly regarding the nature and scopes of networks, as specific contexts suitable to explore concrete issues of the adoption of an innovation through in-depth case studies.

Second, the temporal dimension was taken into consideration during the whole case-study process as it "*ranges from narrow to broad, indicating that the co-creation of experience can be approached as taking place at isolated moments in the present, or as also encompassing past memories or imagined future experiences*" (Jaakkola *et al.*, 2015, p. 192). This last aspect is deemed of interest, also given the growing attention attributed to the development of virtual currencies linked to the blockchain, and issues regarding its stability that question the fate of the cryptocurrencies sector.

Third, the conceptual model presented here also demonstrated how value operates through various interactions, considering co-creation and value dimensions from different levels of analysis. The study helps advance understanding of the co-creative processes occurring thanks to adopting innovation in a specific context, such as the blockchain network in the music sector. Results offer guidelines for actors involved in this system, facilitating them in envisaging the main features of the emerging business model, providing a framework to build future research.

Each level of context frames service-for-service exchange in a way that impacts VCC uniquely at that level. The context at the *macro*-level frames exchange as it occurs among triads, at the *meso*-level it frames exchange as it occurs among dyads, and at the *micro*-level it frames exchange as it occurs among individual actors (Chandler and Vargo, 2011).

Finally, this study allows us to understand the multi-level implications of blockchain adoption, which poses direct threats of disruption of traditional incumbents. Accordingly, investigation in the specific setting enables us to capture the advantages of the innovation in a new business model, compared to the traditional one.

Indeed, blockchain has begun to receive more media interest and funding from a variety of areas, including government, finance and the creative industries (Andreassen *et al.*, 2018). The potential use in the context of music is particularly intriguing as it seems to provide answers to issues that musicians have been highlighting for years regarding transparency, value sharing and relationships with third parties who stand between them and their fans, the fundamental and most significant relationship in music.

Blockchain technology has the potential of being genuinely transformative if it can assist commercial and contractual connections in the music industry to keep up with both technology and communication between artists and listeners.

Obviously, there are certain limitations to this study that could be addressed in future research. It was previously impossible to obtain sufficient data on the performance of platforms already in use due to the early stages of development. Future studies could extend the analysis to similar cases and the music industry as a whole if its evolution confirms, as it seems, that a new business model can influence the competitive system profoundly. Furthermore, we are conscious that the originality of the paper is affected by the results of the Bitsong case study, and therefore the results cannot be generalized.



Finally, not much research has been carried out on blockchain in the music industry. Not only is literature restricted, but so is the public's opinion of the effectiveness of technology in this field.

The impact of blockchain on the entertainment and creative sectors is just getting started. New cases will continue to emerge in the coming years, which will enable opportunities for further theoretical development through contextual explanation, which can allow generalisability (Plakoyiannaki and Budhwar, 2021).

Some critical instances will be required to convince the industry that the new technology is viable. This paradigm shift will distinguish market leaders who are the first to innovate and provide new and gratifying solutions. Media firms that use blockchain to increase efficiency can create shared value, providing a unique method to stand out and attract new members to the ecosystem.

Understanding innovation technology is critical for generating strategic planning that can assist media organizations in differentiating themselves from the competition and potentially develop a new level of collaboration and trust in the future music industry.

What is certain is that blockchain technology has only recently begun to reveal the potential of its adoption in specific sectors, and the full implementation of this innovation in the music industry is still far from replacing traditional business models. That is why, as for any other innovation, knowing its potential and implications on value creation allows us to better appreciate the feasibility of its promises.

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### About the authors

Giovanna Centorrino is an Associate Professor SECS/P07 in the Department of Economics at the University of Messina. She completed her studies at the University of Messina. She is coordinator of the Master in Business Consulting and Management. Her main research interests concern the area of accounting, National and International accounting standards, environmental, social sustainability and accounting History. Giovanna has published more than fifty monographic scientific works, articles and

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contributions in scientific journals and national and international volumes. Her teaching activity concerned the topics of Accounting, Financial Statements, and national and international accounting principles. She has taught in various degree courses, Master's and Specialization Schools at Italian and foreign universities.

Valeria Naciti, Ph.D., is a research fellow at the Department of Economics of the University of Messina in the Horizon 2020 Leading Towards Sustainable Gender Equality Plans in research performing organizations project. Her main research interests concern social, sustainability and gender accountability in companies and public administrations, integrated reporting and corporate governance mechanisms. Valeria has published her research in some of the most relevant peer-reviewed scientific journals in the sector.

Daniela Rupo PhD is a Full Professor of Business Administration at the Department of Economics, University of Messina, Italy. Her teaching assignments range from financial and management accounting to business valuation. She has participated and is currently working on various national and international research projects about: intangibles, business valuation, corporate social responsibility and sustainability reporting, value co-creation and governance. She is an author of several journal papers and books. She is a Certified Public Accountant and Certified Auditor. Daniela Rupo is the corresponding author and can be contacted at: [drupo@unime.it](mailto:drupo@unime.it)

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