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Blockchain for good and the making of hype. How digital ventures and the media engage in technological prefiguration to co-construct hypes around emergent digital markets.

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Abstract. Technological hypes have always characterized societies because new technologies afford to do things previously thought to be beyond the grasp of humanity. One of the main mechanisms of hype creation is the prefiguration of social disruption: making visible in the present the image of a desired or ideal condition of social change in the future using public talk, symbolization, and commoditization. The consequence is the ‘future industries’ creation of predictions and prophecies by actors involved with the emergent hype. As the hype rises, these actors use the means of the present to perform the desired ends of the future, such that ‘real utopias’ or ‘as-if realities’ emerge as tangible, embodied, and inhabited. This study unpacks how hypes about emergent digital technologies, particularly blockchain technology, are shaped by actors’ efforts to navigate multiple logics to pursue the promise of social disruption. It studies how entrepreneurs’ and media’s different prefigurative strategies contributed to the emergence of hype around the field of blockchain for social good. Specifically, it documents the importance of technological logic to integrate and reconcile multiple logics (market and community) and different prefiguration strategies (long-term and short-term) enacted by different actors (i.e., ventures and the media) in the emergent market. We contribute to the literature on hypes in entrepreneurship, the role of multimodality in entrepreneurship, and multiple logic work in emergent digital fields by highlighting the role of prefiguration and the understudied role of technology as a societal logic with constitutive and performative effects.

Keywords: Blockchain, hype, new technologies, prefiguration, topic model.

1 Introduction

Hypes, crazes, fashions, and other volatile public moods refer to forms of collective behavior that arise when groups or entire communities focus their attention on concrete events, phenomena, objects, or symbols in an attempt to stabilize uncertain or indefinite meanings that are personally relevant [1, 2]. While hype cycles have always characterized societies, today’s digitalized world is particularly affording volatile hype cycles

and amplifying them across the social sphere [1, 3, 4]. As new technologies afford to do things that were previously thought to be beyond the grasp of humanity (e.g., flying, space travel, extensive manipulations of nature, complicated medical interventions), they acquire the select status of objects that transcend the everyday and may even become objects of intense emotions such as wonderment and worship [5]. The American cultural theorist Neil Postman [6] terms this tendency of modern societies as ‘technophilia.’ In their early days, the steam engine, the railroad, and the telegraph were all celebrated as awe-inspiring means of conquering time and space, overcoming poverty, and reaching greater well-being [4, 7]. The commoditization of personal computers in the mid-1980s, the introduction of the Internet, and the rise of the knowledge economy a decennium later released new waves of such faith [5]. In continuation of this trend, emergent digital technologies related to artificial intelligence, blockchain, and virtual reality are triggering unilateral consensus, fascination, and faith in their quasi-magical power to change our world for the better [8, 9]. A triggering factor for such hypes resides in emergent technologies’ ability to generate future visions that prefigure disruptive social change. Through their hybridity, pervasiveness, and editability, emergent digital technologies promise to disrupt existent institutions sedimented around boundaries between physical and virtual realities, humans and machines, science and technology, markets and communities, consumers, producers, and intermediaries, and solve humanity’s most significant challenges in unprecedented ways [8, 10-12]. Blockchain-enabled platforms take things even further: The introduction of smart contracts -i.e., transaction protocols that automatically execute when predetermined conditions are met, removes third-party intermediation, disrupting boundaries between traditional financial markets, the sharing economy, state and community logic and enabling cryptocurrencies to become simultaneously multiple things to the actors operating within each logic: assets, units of account, currencies, tokens, organizing principles and ideologies [9, 13].

Unraveling the mechanisms behind hype creation and understanding how ventures and media navigate through multiple logics to shape the emergence and perception of technologies like "blockchain for good" is crucial. It allows us to critically assess the narratives constructed around these technologies and their promises. A lack of understanding of these processes may lead to unintended consequences, such as misguided investments, policy decisions that do not align with societal needs, or even the proliferation of technologies that do not deliver on their promises of social change.

As will be shown in this work, one of the main mechanisms of hype creation is the prefiguration of social disruption: making visible in the present the image of a desired or ideal condition of social change in the future by means of public talk, symbolization, and commoditization. This paper unpacks the role of digital ventures and media in creating hype around blockchain technology and how they engage in technological prefiguration to co-construct these hypes. We will examine the multimodal prefigurative strategies employed and discuss how they contribute to shaping emergent digital markets. Ultimately, this study aims to comprehensively understand the dynamics involved in creating and navigating hype in the digital age. The present study, therefore, seeks to answer the following research questions: *How do ventures and media contribute to*

the creation and emergence of hypes, particularly in the context of blockchain technology, and how do they navigate multiple logics to pursue the promise of social change? How do multimodal prefigurative strategies play a role in shaping the emergence and perception of these technologies, especially in the context of 'blockchain for good'?

2 Theoretical Framework

2.1 Multimodality Strategies in the Prefigurative Approach to Technology Hypes

Prefiguration refers to showing, suggesting, or announcing something beforehand, making visible in the present the image of a desired or ideal condition in the future. In addition to current language use, the term has been used to refer to means-ends equivalence in activism: a way of doing mobilization where the means reflect the ends [14]. According to a prefigurative approach, organizations and communities performing prefiguration commonly develop in the interstices of capitalist societies and anticipate societal change by enacting through their everyday practices some features of an ‘alternative world,’ for instance, participatory democracy, the sharing economy, or libertarian socialism [14]. However, the envisioned outcomes of activism are not projected into a distant future. Instead, they are expressed, embodied, and reproduced in present everyday practices such as protests and alternative ways of organizing [14-16]. As a hype rises, individuals use the means of the present to perform the desired ends of the future, such that ‘real utopias’ or ‘as-if realities’ emerge as tangible, embodied, and inhabited, thus distinct from pure fantasy or playful imagination [17, 18].

A consequence of

hypes around emergent technologies have been the creation of ‘future industries’ of predictions and prophecies where digital entrepreneurs, technology gurus, and the media actively promote emergent technologies as paths to ideal societies, generating thus concrete utopias of social transformation - visions of ideal futures which are enacted in the present through the affordances of tomorrow’s technologies [5, 18]. Although these futuristic productions are said to shape venture strategies significantly, audiences’ responses to ventures’ strategies, and the overall configuration of emergent fields, little is known about the relationship between technology hype and digital ventures’ ability to generate concrete visions of social change. Notably, while previous studies have often referred to hypes in an emergent field as homogenization forces that push ventures to converge towards shared ideas, technologies, and standards, we will here argue that hype does not necessarily result from or evolve into shared views, especially when related to an emergent technology which aims at disrupting an established order and thus at dealing with multiple preexisting logics (see also recent discussion by Logue and Grimes [2]). To clarify this aspect, we highlight the need to investigate how ventures’ contributions to hype emergence inform differentiation and homogenization strategies enacted by ventures in a new entrepreneurial field and, thus the overall configuration of such field.

To deal with these challenges, many previous studies have suggested the importance of discursive resources. Accordingly, entrepreneurs are able to both navigate rigid standards and expectations and enact personalized visions of desired futures thanks to the activation of rich collective imagery through discursive resources such as projective narratives and storytelling, which afford plasticity and performativity [19-21]. Others, such as Logue and Grimes [2], have more recently testified the importance of providing social proof in support of narratives and have shown how this latter can prevent rich imagery triggered by narratives from ringing hollow to audiences. Complementary to these proposals, we propose a multimodal prefigurative perspective that takes into account how involved parties co-construct hypes in an emergent field through social, discursive, and material resources. The concept of multimodality stems from the idea that experience is synergistically composed of different sensory modalities that can be separated through analysis but coexist in a field of experience [22, 23]. Multimodal strategies combine visuals and discursive resources into artifacts that perform unitarily and differently from each mode alone, hence the potential for managing institutional multiplicity. The subtle interplay between explicit and implicit linguistic and non-linguistic resources typical of multimodality may serve the strategic purposes of dealing with multiple logics and their potential conflicts in ways that have not been theorized so far. A related issue is the high technicality of disruptive technologies such as AI and blockchain and experts' challenge of explaining their premises and communicating their value to non-expert audiences. For instance, presentation videos and pitches have become almost a standard for digital ventures either in search of funding or market attention: they allow entrepreneurs to prefigure products that are still in the early stages of development, to evoke complex functionalities through commonsensical objects, images and scenes of mundane life and to balance, stabilize, unify, or layer the multiple meanings of their complex digital products [24]. Specifically, visual artifacts are characterized by a certain 'immediacy' with distinct potentials in terms of 'world-making.' Additionally, the high polysemy of multimodal resources can accommodate even seemingly contradictory meanings, thus can be particularly well-suited to reconciling inconsistencies, transcending dichotomies, and addressing topics that are difficult to articulate verbally, as well as enabling rich expression and conveying multiple meanings simultaneously [22]. In addition, multimodal resources can also give entrepreneurial ideas a reality-based strength well before ventures' products materialize, contributing this way to the creation of concrete utopias. Multimodal strategies of prefiguration, then, are potentially useful to all ventures navigating multiple logics and cultural frames, and in particular to digital ventures that mobilize hybrids of human, algorithmic, and material agency where the material functions of user interfaces are commonly visible and easy to adapt and transform, while the underlying algorithms are highly invisible, pervasive, persistent and opaque [25-27]. The literature so far understudied how antecedent types, images, or likenesses of desired conditions are brought into the present, just as hypes have rarely been studied from the perspective of the symbols, words, images, and artifacts, which make them credible and appealing to the masses.

2.2 Blockchain Technology for Global Change

Among the current wave of technological advancements, blockchain technology stands out as one of the most disruptive innovations in information technology since the advent of the Internet [28-31]. Blockchain is a decentralized digital ledger technology that consists of a chain of blocks, where each block contains a list of transactions. These transactions are recorded across multiple computers in a way that ensures the security, transparency, and integrity of the data. Unlike traditional centralized databases, where a single entity has control over the entire database, blockchain operates on a distributed consensus mechanism, allowing multiple participants to have simultaneous access and control. This not only eliminates the need for a central authority but also provides a more secure and transparent method for recording transactions. Any attempt to alter the information within a block requires the consensus of the majority of participants in the network, making unauthorized changes virtually impossible [9, 32]. Its decentralized, transparent, and immutable nature has provided a groundbreaking alternative to traditional record-keeping, spanning a diverse array of sectors such as financial markets, supply chains, industry, public governance, healthcare, and cultural markets [9, 30, 33-35]. The evolutionary trajectory of blockchain commenced with its association with cryptocurrency applications. Since 2016, however, this technology has transcended the boundaries of cryptocurrencies, unfolding across various fields [9, 30, 33-35]. This expansion is attributable mainly to the development of smart contracts, computer programs or transaction protocols that execute automatically upon meeting predetermined contractual terms. By automating agreements, smart contracts eradicate the need for intermediaries, fostering trust without reliance on coordination between parties. This has sparked potential revolutions in diverse sectors, paving the way for what has been termed “blockchain for good.” The emergence of blockchain for good as a seminal field has positioned blockchain as an instrument for addressing global challenges. Its applications have been manifold, ranging from poverty alleviation through low-cost money transfers to safeguarding data integrity in medical records, enhancing healthcare delivery [36-39]. Notably, its implications for environmental sustainability have been recognized in supply chain traceability and renewable energy incentives [40]. Moreover, the decentralized character of blockchain supports democratization in education and assures product authenticity [41, 42]. While these prospects reflect blockchain's potential, concerns regarding privacy, security, and social implications persist [29, 43]. The exponential growth of blockchain technology, particularly among startups within the ecosystem, is manifest. Estimates by CoinMarketCap and CB Insights underline a consistent surge in blockchain venture funding, indicative of its high volatility and growth trajectory. Ventures targeting blockchain for social good are promising solutions to global challenges, aligning with the technological hype surrounding this technology. Central to the transformative wave brought about by blockchain is its most captivating feature: the unprecedented hype. The term 'hype' in this context signifies more than just heightened interest; it embodies the surge of expectations, intense media spotlight, and the consequential market reactions. Such fervor often culminated in what is commonly termed as the ‘bubble effect’, a scenario where the enthusiasm, propelled by media and stakeholder attention, inflates expectations beyond

realistic projections. This inflation, as observed, inevitably leads to a phase of disillusionment when the anticipated outcomes do not materialize at the expected pace or magnitude [44]. Delving deeper into this phenomenon, scholars have undertaken comprehensive investigations into the lifecycle of the blockchain hype. Kharif [45], for instance, meticulously charted the progression of this cycle, identifying distinctive phases, each characterized by varying degrees of optimism, investment, development, and eventual stabilization or recalibration of expectations. Expanding on this discourse, Crosby et al. [46] enriched the understanding of the subject by analyzing the interplay between the hype and its tangible impacts on the market. Their research shed light on how this heightened anticipation influenced investment behaviors, shifted market dynamics, and evoked varied responses from societal and economic stakeholders. The intricate dance between media narratives, investor sentiment, and the actual technological advancements in the blockchain domain underscores the complexity of the blockchain evolution narrative.

In summation, the blockchain's transition from a cryptocurrency tool to a multifaceted technological innovation has garnered immense attention and investment. The hype surrounding blockchain technology underscores both its potential and challenges, highlighting the need for meticulous exploration and responsible implementation, especially in the context of social change. The dynamic interplay of technological, market, government, and non-profit logics warrants a nuanced understanding, particularly in the burgeoning field of blockchain for social good.

3 Data and method

To investigate prefiguration strategies in an emergent field characterized by technological hypes, we have conducted an empirical study on the emergence of the field 'blockchain for good'.

By using multimodal video and text analysis and topic modeling techniques, we investigated the communicative strategies of 178 'blockchains for good' ventures and their media coverage to unravel the mechanisms of hype emergence around 'blockchain for good.' In particular, we focus on how prefigurative practices of hype production interplay with multiple logics work performed by both ventures and the public press to shape the field's emergence. For all 178 ventures, we collected textual material under the form of white papers, reports, and strategic documents and multimodal material in the form of presentation videos (see Table 1). To compile an initial directory, we departed from a collaboration with PositiveBlockchain, a non-profit association that aims at building a web of knowledge and support collaboration for all those interested in leveraging blockchain technologies in alignment with the United Nation's sustainable goals agenda for social and environmental impact. Currently, PositiveBlockchain lists an open-source database of projects and startups using blockchain technologies for social impact. The database, to which setup we also participated during the 2020-2021 interval, lists projects identified through a combination of web scraping and crowdsourcing, cross-verified and classified by PositiveBlockchain in collaboration with a series of strategic partners and experts in blockchain and social impact (i.e.,

blockchain foundations, associations, and universities such as the one with which the author(s) is affiliated). In addition to PositiveBlockchain’s database, which at the time counted 850 entries, we ran code autonomously to scrape the web for new projects and verified autonomously all the entries in the PositiveBlockchain database, adding, deleting, or reclassifying several entries, coming up with 750 entries. We then employed a multi-stage process designed to identify ventures that possessed all the characteristics of interest for our research questions 1) their primary offering was fundamentally underpinned by blockchain technologies; 2) their offerings were inherently tied to a social impact mission; 3) used multimodal strategies made of text and visuals to communicate their offerings. This left us with a sample of 510 entries.

For each entry, we collected and analyzed white papers and reports, website information including text and photos, and short presentation videos, which were commonly available on the ventures’ websites or were retrieved on the world wide web. During the analysis, we realized that project presentation videos played a highly significant role in conveying multimodal information to potential audiences. Because of their plethora of uses, from documenting tacit and explicit phenomena that are difficult to capture with texts or interviews to accessing “naturally occurring” aspects of social phenomena, video-based approaches have become a popular and recommended form of data collection [47]. From the perspective of cross-modality, video data offer not only a new modality of data but are themselves multimodal, integrating images, movements, persons, and material objects, all unfolding contiguously [47].

Following this theoretical sample logic, we decided to focus exclusively on project entries which provided a presentation video, which left us with a sample of 280 projects. We also used Lexis Nexis database to study the hype emerging around blockchain for social good. We scraped press articles related to each project of our database. We found n. 12,953 press articles for a total of 178 projects cited. The final dataset, therefore, consists of 178 projects for a total of 14,105 documents. Table 1 shows a simplified distribution of the dataset between the categories.

Table 1. Dataset documents' distribution into categories

Categories	Projects	Video	Images	White papers	Press articles
Supply chain and consumption	30	30	136	30	3557
Decentralized finance (De-Fi)	25	25	103	25	684
Healthcare management	29	29	172	29	2585
Energy consumption and distribution	14	14	68	14	1984
Privacy, security and infrastructure	42	42	148	42	1901
Public administration & governance	1	1	4	1	53
Humanitarian aid and philanthropy	13	13	65	13	995
Improving living condition	20	20	77	20	1138
Environment sustainability	4	4	23	4	56
Sum	178	178	796	178	12953

We created an integrated dataset on the CAQDAS platform Dedoose¹. We analyzed the data using two different techniques, grounded theory and topic modeling, aimed at obtaining a uniform model applicable to all the data. This methodological approach was chosen to ensure a comprehensive and multi-faceted understanding of the emergent field of blockchain for social good. Data analysis was conducted in three stages, each contributing unique insights, leading progressively to the construction of a unique theoretical artifact.

Stage 1 included open coding of text and video data about the ventures in our dataset, following recommendations by Gylfe, Franck, LeBaron and Mantere [48], LeBaron, Jarzabkowski, Pratt and Fetzer [49] for video analysis and video-text analysis integration. This stage allowed for a granular understanding of the ventures, facilitating a comprehensive visual and textual data integration.

Stage 2 consisted of employing the Latent Dirichlet Allocation (LDA) algorithm to develop a topic model about the media coverage of the emergent field of blockchain for social good. Using statistical association of the words in a text to generate latent topics, we generated theoretical artifacts through an iterative process between theory and topics aimed at identifying models and patterns in the data [50, 51]. We performed our analysis using package ‘topicmodels’ for R [52]. We applied labels to each identified topic, and as we progressed to stage 3, we grouped topics into tentative theoretical aggregates based on comparing keywords and content [50] (see table 3 in the appendix). This stage was instrumental in uncovering underlying themes and patterns, providing a quantitative complement to the qualitative insights from Stage 1.

Stage 3 consisted of developing a grounded theoretical model [53], which combined insights from the qualitative coding of the ventures’ multimodal prefiguration strategies and the topic model regarding the field’s media coverage. This stage led to the development of specific second-order themes and aggregate theoretical dimensions common to all data sources (see Table 2 in the appendix). The final synthesis of the various analyses allowed us to form a coherent and robust theoretical understanding of the phenomena under investigation, thus linking the nuanced insights of individual ventures with broader patterns within the field.

The application of these interconnected stages offered a robust and nuanced analysis, effectively bridging qualitative and quantitative methodologies to produce a rich understanding of the subject matter. This methodological design contributes to the burgeoning field of blockchain research by offering a novel, integrated approach to data analysis.

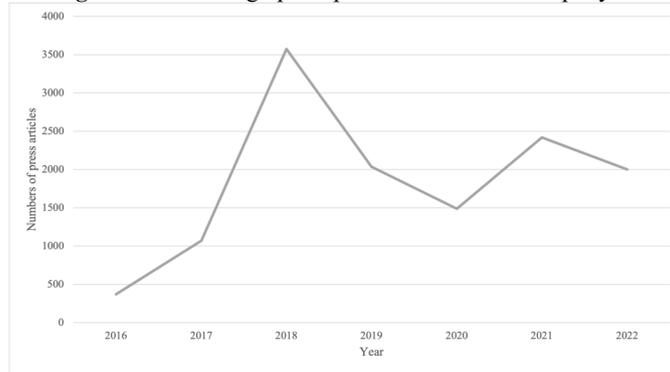
4 FINDINGS

Our findings document how entrepreneurs’ and media’s different prefigurative strategies contributed to the emergence of hype around the field of blockchain for social good. Figure 1 shows the distribution trend of the number of press articles published

¹ <https://www.dedoose.com/>

over the years, showing how the media have contributed to creating hype around the new blockchain technology applied for social good.

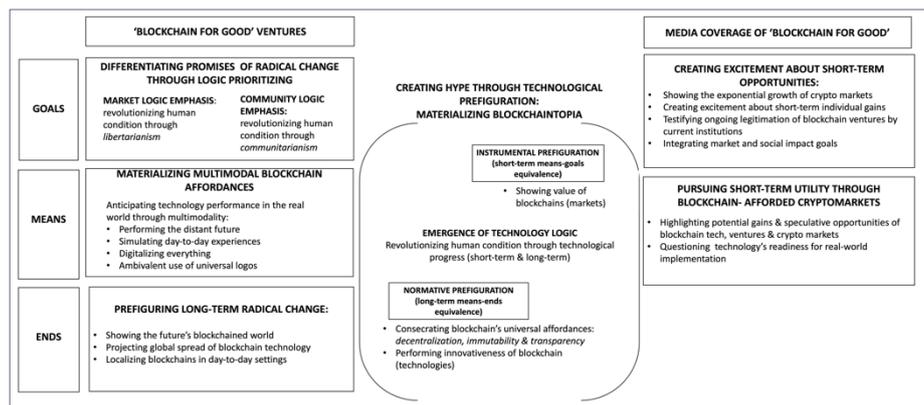
Fig. 1. Distribution graph of press articles' numbers per year



By leveraging logic pluralism, actors created performative visions of a long-term future of global social change, on the one hand, and excitement about short-term opportunities of gain, on the other. Specifically, we document the importance of technological logic (i.e., in our case, blockchain affordances, technologies and markets) as a way to integrate and reconcile multiple logics (market and community) and different prefiguration strategies (long-term and short-term) enacted by different actors (i.e., ventures and the media) in the emergent market.

Figure 2 below represents our grounded model.

Fig. 2. Grounded model on the role of the technology logic in the making of the blockchain-for-good hype: How digital ventures and public press leverage technology to navigate logic (market and community) and temporal prefiguration (long-term and short-term) pluralism.



Our results show that the prefigurative strategies implemented by ventures and the media pursue specific goals. We have categorized the ventures into nine categories (see Table 1) grouped by two macro-categories regarding 'blockchain for good' ventures.

The first macro-category is populated by ventures that emphasize market logic, market-oriented ventures which propose blockchain-based solutions for supply chain and consumption, decentralized finance (i.e., De-fi), healthcare, and energy. The second macro-category is that of ventures that emphasize community logic. These ventures proposed new block-chain-based solutions for public governance, humanitarian aid, living conditions, and environmental sustainability.

The goals of these ventures spanned the logic of the market and social impact in different ways, which we referred to as differentiating promises of radical change through logic prioritizing. Specifically, venture markets anchored their promises of disruption in the market logic. Their prefigurative strategies promised to revolutionize the human condition through libertarianism and create a polycentric world characterized by the absence of centralized mechanisms of coordination where blockchains would maximize autonomy and political freedom and minimize the state's encroachment on individual liberties.

“While the majority of energy customers fall into the low involvement category, Lition strongly believes in providing customers the freedom of choice to receive direct nodes and trading access to the energy exchange while using their own nodes. As another layer of trust, Lition provides the source code to the client and the blockchain smart contracts as open source to the developer community. This allows every user to verify for themselves that energy transactions are carried out as intended. This applies to the producers as well, who use the same blockchain node client, however, as selling (as opposed to buying) smart contracts and functions.” (Lition Whitepaper, 2019, https://www.lition.io/docs/Lition_Whitepaper.pdf)

On the other hand, community logic emphasis ventures proposed new block-chain-based solutions for disruption in the logic of community, particularly in the promise to revolutionize the human condition through a radically new model of place-based and technology-supported communitarianism.

“The mission of the Project is to create the foundation for a viable future for the stateless Rohingya by connecting them digitally to opportunities to learn, equip and empower themselves. Through the creation of a Financial and Social Inclusion platform, those Rohingya who for years have been sidelined can be given access to a range of virtual services, including online education, digital identity, and reward tokens. The platform will tap into the potential of the Rohingya community and other marginalized people and offer options to counter their exclusion from the mainstream.” (Rohingya Project, 2021, <https://rohingyaproject.com/about>)

In order to achieve goals, whether they are more market-oriented or more community-oriented, ventures use prefigurative strategies that anticipate technology performance in the real world. They allowed the public to have a realistic and detailed view of how the technology works and how it will enable achieve the venture's goals. To do this, they use multimodality techniques in video and images that perform the distant future, simulate day-to-day experiences, digitalize everything, ambivalent use of universal logos (see figure 3 and figure 4). We labeled these prefigurative means: materializing multimodal blockchain affordances.

Fig. 3. Examples of multimodality frame-video and/or images used by market-oriented ventures.

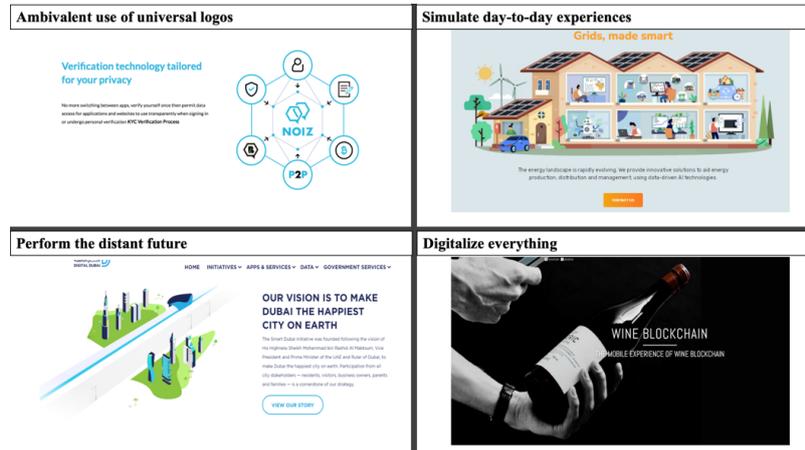
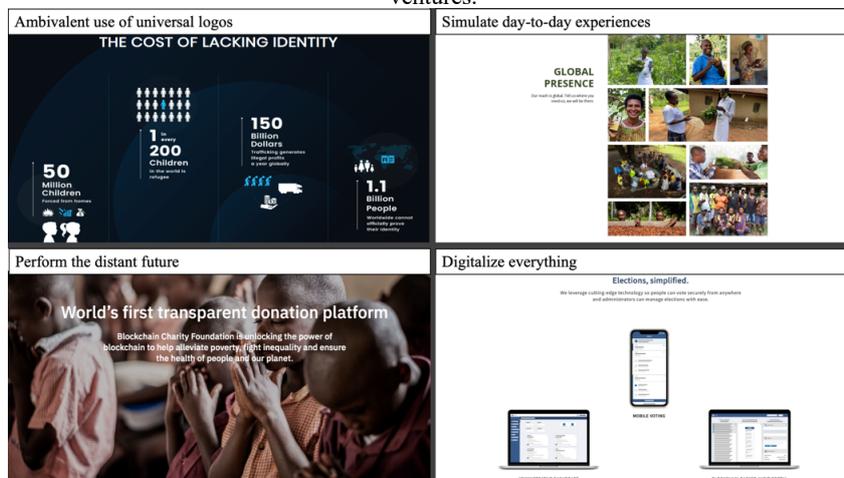


Fig. 4. Examples of multimodality frame-video and/or images used by community-oriented ventures.



The ends reached by the ventures through prefiguration strategies implemented with multimodal techniques are what we have defined as prefiguring long-term radical change. In fact, the result obtained by all the ventures (both market and community ordered) shows the future's blockchain world, projecting the global spread of blockchain technology locating blockchains in day-to-day settings.

Concurrent with the distinctive practices observed among various ventures, an additional aspect of our study pertains to the identification of homogenization pressures

exerted by the media, further contributing to a nuanced characterization of the field's emergence. Notably, through our implementation of topic modeling, we have discerned a discernible inclination within the media landscape to propagate sanguine viewpoints regarding blockchain, portraying it such a short-term opportunity for attaining practical gains. The media serves to galvanize widespread interest in this emerging domain by skillfully leveraging captivating visual depictions of cryptocurrency markets, thereby synthesizing the divergent focal points centered around community-driven and market-driven strategies inherent in different ventures.

“Some couples opt for a traditional wedding, while others go for the Elvis impersonator in Las Vegas. But David Mondrus and Joyce Bayo may be the first to have incorporated Bitcoin. Before about 50 guests at a Walt Disney World hotel in Florida recently, the couple used a Bitcoin automated teller machine to record their written vows on the currency's so-called blockchain, an open ledger that permanently stores information. ‘A diamond is forever, a marriage is forever, but when was the last time anyone looked at their wedding vows?’ Mr. Mondrus said. ‘This technology allows us to get that data and store it in a way that is retrievable and not corruptible.” (“Data Security Is Becoming the Sparkle in” - The New York Times - 15/02/2019)

“GrainChain, a suite of software to bring easy and secure payments to farmers, buyers, and grain elevators through blockchain, announced Medici Ventures, the leading blockchain accelerator and subsidiary of Overstock.com , Inc. (OSTK), has purchased a \$2.5 million equity in the company. [...]The system furthermore creates documentation to track harvests from farm to table, eliminating the potential of fraud. “We are making the grain transaction extremely efficient, transparent, safe, and secure, and we're giving not only the farmers but also the buyers a safe marketplace to do business in” said GrainChain co-founder and CEO Luis Macias.” (“GrainChain Announces Equity Purchase From Medici” - Plus Media Solutions Private Limited All - 27/03/2020)

Moreover, in addition to accentuating potential profitability and speculative prospects inherent to blockchain technology and cryptocurrency markets, the media also introduces an element of skepticism concerning the technology's readiness for real-world deployment. We documented the means prefigurative way by the media to pursue short-term utility through blockchain - affordances cryptomarkets.

“[...] It was not always this way: the now-definitely-in-a-bubble cryptocurrency is making a comeback following years in which its association with crime and darknet drug markets kept it away from the spotlight. During that period, technologists and corporate evangelists had stopped touting the qualities of Bitcoin, turning instead to a technology that underpinned the cryptocurrency without being tainted by dodgy connections: blockchain. [...]Does blockchain offer hype or hope? [...] The narrative that started spreading at some point in 2013 was that blockchain technology should be decoupled from Bitcoin and used for more than exchanging digital currency. [...] It's never the first generation of a technology that delivers the hit, always the second - or the third [...] Jessi Baker thinks that public blockchains “have a long way to go before they can be applied at scale.” (“Does blockchain offer hype or hope?” - The Guardian - 10/08/2018)

Therefore, we found that ventures brought to life and materialized their long-term visions of radical societal change through multimodal strategies whereby the affordances of blockchain technology were anticipated, materialized, and performed in the present. We refer to this strategy as creating an equivalence between means (present blockchain technology) and ends (distant future radical change) as normative prefiguration.

In parallel with ventures' differentiating practices, we also document a set of homogenization pressures the media brings to further characterize the field's emergence. The media mobilized broad interest in the new field by using luring images of crypto markets to integrate ventures' divergent emphasis on community and market logic. We refer to this strategy as instrumental prefiguration, which creates an equivalence between means (present blockchain markets) and goals (short-term individual utility).

In sum, our study highlights that the emergence and evolution of hypes around an emergent field related to a digital technology depend on actors' efforts to prefigure a new logic of technological progress which draws on vivid and seductive images of short and long-term future by navigating multiple pre-existing logics (market and community). Importantly, we document the hype through technological prefiguration: materializing blockchaintopia. Specifically, we identify a process called the emergence of technology logic which accomplishes performative functions concerning promises of disruptive social change. By creating hybrids of discursive anticipation and material representation, ventures in a new field and the public press covering developments in that field turn emergent technologies such as blockchains into 'concrete utopias,' which plant the seeds of the society of the future in today's soil. In particular, we identified a set of multimodal prefiguration strategies whereby technological means come to equvalate desired social states, and the ability to witness them equivalates that of taking part in a much-awaited social revolution. Through the multimodal strategy of 'digitalizing everything,' ventures consecrated the pivotal affordances of blockchain technology (i.e., decentralization, immutability, and transparency). Ventures used multimodality to equvalate blockchain affordances to visions of idealized end states. On the one hand, the future was prefigured as an all-blockchain-governing world where blockchain acquired global spread and rendered distinctions between technology, market, and community values obsolete. On the other, however, ventures used multimodality to simulate differentiated experiences of blockchain according to their potential reference users' specific settings and sectors.

5 DISCUSSION

In sum, our study highlights that the emergence and evolution of hypes around an emergent field related to a digital technology depend on actors' efforts to prefigure a new logic of technological progress which draws on vivid and seductive images of short and long-term future by navigating multiple pre-existing logics (market and community). We contribute thus to literatures on hypes in entrepreneurship [2, 17], on blockchain hype [44-46], on the role of multimodality in entrepreneurship [23, 54] and to multiple logic work in emergent digital fields [55, 56] by highlighting the role of prefiguration and the understudied role of technology as a societal logic with constitutive

and performative effects. According to Logue and Grimes [2], participation in hypes regarding future realities is not a homogeneous phenomenon, and the consequences of drawing on hypes are not the same for all ventures; they depend on how entrepreneurs enact hype in their daily interactions with audiences. This phenomenon exemplifies the dual nature of hype, where it can function as a cultural tool to foster shared visions and mobilization, while also serving as a catalyst for divergent entrepreneurial outlooks, ideologies, and operational approaches [57]. Aligned with this inherent duality, prior research underscores the significance of discursive resources. These resources enable entrepreneurs to navigate established norms and expectations, facilitating the enactment of personalized visions of desired futures. This is achieved through the utilization of collective imagery facilitated by discursive tools like projective narratives and storytelling, thereby affording adaptability and performative potential [58, 59].

In parallel to these perspectives, our study introduces a multimodal prefigurative framework that considers the collaborative construction of trends within an emerging field, encompassing social, discursive, and material components. Prefiguration, as defined [14] involves the advance demonstration, suggestion, or announcement of something, thereby making visible in the present an image of a desired or ideal future state. Our research underscores that the rise and evolution of hype for emerging technology hinge on all actors' endeavors to prefigure a new rationale for technological advancement. This entails leveraging captivating and enticing representations of both short and long-term future possibilities while navigating pre-existing market and community logics. Discursive strategies such as narratives, rhetoric, inductive analogy, metaphorical reasoning, polysemy and polyphony [19, 54, 60] are fundamental for hype prefiguration because they have the power to 'selectively distill a complex jumble of otherwise ambiguous and contradictory activities [...] into a simplified and relatively coherent portrait' [60]. Our study expands research on discursive strategies towards more encompassing multimodal strategies which can further explain the under-investigated interplay between venture-level strategies and emergent patterns at the field level related to technological hypes. Significantly, our study captures the essence of hype through technological prefiguration, and identifies a phenomenon termed "materializing blockchaintopia." This concept centers on the identification of a process termed the "emergence of technology logic," which undertakes performative functions in relation to the promises of transformative societal change. Our contribution to the ongoing discourse extends to these pivotal insights, encompassing the elucidation of the prefiguration process, whereby the attainment of equilibrium between aspirational goals and practical means, as well as the alignment between means and ultimate ends, is orchestrated. In essence, this process serves as the transformative bridge that transitions visionary utopias of distant futures into tangible realities. The prefiguration process is underpinned by the materialization of technological utopia, an intricate phenomenon that emerges concomitantly with the development of a distinct technological logic. This logic serves as the underlying framework that empowers the formation of a coherent and alluring vision of a far-reaching future (characterized by means-ends relationships) that resonates with imagination and comprehension. This resonance is engendered by the careful construction of this future vision through the art of prefiguration, grounded in the incorporation of familiar and experientially recognized facets of technology.

These facets, representing short-term goals and means, function as building blocks that forge a connection between the envisioned utopia and the present context, ensuring the attainability and perceptibility of the envisioned aspirations.

Our work shows the potential of multimodal strategies of prefiguration to address one of the digital ventures' biggest challenges: navigating technology hypes to accommodate potentially divergent meanings into socially acceptable forms and do so in ways that simultaneously escape homogenization and guarantee distinctiveness [2, 54].

6 CONCLUSION

In conclusion, this study offers a groundbreaking exploration of the multifaceted nature of blockchain hype, synthesizing and expanding upon previous research [44-46] through the development of a comprehensive multimodal prefigurative framework. Our insights illuminate the delicate balance that entrepreneurs and stakeholders must strike between crafting alluring technological utopias and ensuring that these visions remain grounded, plausible, and resonant with diverse audiences [21]. In doing so, we capture the inherent tensions and dualities within the blockchain hype phenomenon, recognizing its potential to both inspire innovation and set up unattainable expectations [22, 23].

Our work contributes to the existing literature by detailing the process of "materializing blockchaintopia" and introducing the concept of "technological logic." We elucidate how these processes bridge the gap between distant utopian visions and tangible present realities, reflecting a nuanced understanding of the complex dynamics at play in emergent technological markets. This process, grounded in the art of prefiguration, enhances our understanding of the ways in which blockchain's future possibilities are navigated, legitimized, and materialized within the context of multiple competing logics and frames. Furthermore, we underline the practical implications of our findings for entrepreneurs, policymakers, and researchers involved in blockchain innovation. The insights garnered in this study offer guidance in strategically utilizing hype as both a resource and constraint, shaping the development and reception of blockchain technology within broader societal and economic landscapes.

Finally, this study opens new horizons for interdisciplinary inquiry into the dynamics of hype, imagination, and materiality in the digital age. Our contributions not only enrich the academic discourse on blockchain but also provide a robust foundation for future research, promising to shed further light on the transformative potential and challenges that blockchain and similar emerging technologies present in our rapidly evolving world.

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Appendix

Table 2. Data Structure

First order	Second order	Aggregate analytics dimensions	Aggregate dimensions
Peer-to-peer transactions	Revolutionizing human condition through libertarianism	Market logic emphasis:	Goals: differentiating promises of radical change through logic prioritizing
Supply chain optimization			
Absence of intermediaries			
Poverty	Revolutionizing human condition through communitarianism	Community logic emphasis:	
Digital identity			
Healthcare			
Community growth and development	Performing the distant future	Anticipating technology performance in the real world through multimodality:	Means: materializing multimodal blockchain Affordances
Showing the future to identify hypothetical future needs			
Showing the future (better) with the project's innovation			
Showing a dystopian future	Simulating day-to-day experiences		
Simulating users' experiences in detail			
Digitalizing products	Digitalizing everything		

Digitalizing services			
Using universal logos to explain the potential/functionality of the project	Ambivalent use of universal logos		
Using logos to distinguish yourself from competitors			
Showing the future without blockchain technology (dystopia)	Showing the future's blockchained world	Prefiguring a long-term radical change	Ends: prefiguring long-term radical change
Showing the future with blockchain technology (utopia)			
Forecasting the spread of blockchain technology	Projecting global spread of blockchain technology		
Blockchain in the users' experience	Localizing blockchains in day-to-day settings		
It leads to the disruption of traditional economic markets	Showing value of blockchains (markets)	Instrumental prefiguration Short-term means-goals equivalence	Creating hype through technological prefiguration: Materializing "blockchaintopia"
Market and financial services			
Cost savings			
Profits that can be made thanks to the project			
Financial benefits	Revolutionizing human condition through technological progress (short-term & long-term)	Emergence of technology logic	
How the project will change to increase its value and its users			
How to reward the users	Consecrating blockchain's universal affordances	Normative prefiguration long-term means-ends equivalence)	
Decentralization			
Immutability	Performing innovativeness of blockchain (technologies)		
Transparency			
Security, encryption			
Transactions			
Traceability of transactions			
Privacy			

Table 3. Topic Model Output and topics labels

Topic number	Keywords	Label	Categories label	Second order label
Topic 7	social, centre, people, church, hall, free, community, strollers, odem, original	Help the community with social initiatives	Humanitarian aid and philanthropy	Creating excitement about short-term individual gains
Topic 12	token, blockchain , platform, digital , tokens, world, sovrin, decentralized , nft, crypto	Token platforms (cryptocurrencies)	Decentralized finance (De-Fi)	
Topic 14	financial, payments, digital , crypto, bank, payment, cryptocurrency, bitcoin, money, services	Digital payment	Privacy, security, and infrastructure	

Topic 1	services, solutions, business, technology , digital, companies, data, customers, technologies , customer	Payments solution for improve living conditions	Improving living conditions	Highlighting potential gains & speculative opportunities of blockchain tech, ventures & cryptomarkets
Topic 9	million, capital, consensus , share, company, sales, play, reports, quarter, revenue	Potential gains & speculative opportunities of blockchain ventures	Decentralized finance (De-Fi)	
Topic 10	table, acquisition, performance, market, nasdaq, therapeutics, comparative, class, company, holdings	Healthcare companies improve economic performance	Healthcare management	
Topic 2	real, estate, property, offer, million, paris, world, office, portfolio, investment	Real estate solutions (DAO)	Improving living conditions	
Topic 3	wisekey, iot, international, cybersecurity, digital , secure , holding, swiss, blockchain , security	Cyber-security for any IT field	Privacy, security and infrastructure	
Topic 18	call, lincoln, road, social, centre, club, street, meet, church, hall	Social infrastructure	Humanitarian aid and philanthropy	Integrating market and social impact goals
Topic 13	energy, world, technology , global, innovation, power, solar, blockchain , startups, economic	Energy	Energy consumption and distribution	
Topic 17	patent, food, issued, titled, japan, carbon, farmers, method, device, system	New sustainable business models	Environment sustainability	
Topic 15	data, health, medical, healthcare, care, information, patients, patient, research, genetic	Reliable, accurate, and big health data to improve research	Healthcare management	
Topic 22	blockchain , data, market, global, management, iot, industry, technology , companies, genomics	New solution for data management regarding the market and social intents	Privacy, security and infrastructure	
Topic 5	blockchain , technology , supply, chain, data, network, transactions , ledger, platform, use	Supply chain and consumption	Supply chain and consumption	
Topic 20	shares, etf, price, fund, holdings, value, high, market, management, unrealised	Trading in cryptocurrency	Decentralized finance (De-Fi)	Questioning technology's readiness for real-world implementation
Topic 23	price, shares, overstockcom, past, stock, section, management, value, total, quarter	Questioning the stability and future of cryptocurrencies		

Topic 21	blockchain , healthcare, market, technology, global, chain, supply, food, research, data	Supply chain and consumption solutions	Supply chain and consumption	
Topic 6	traded, dollar, trades, btc, newstex, content, bitcoin, coin, exchanges, ethereum	Trading in cryptocurrency	Decentralized finance (De-Fi)	Showing the exponential growth of cryptomarkets
Topic 11	million, statements, company, financial, revenue, forwardlooking, release, results, news, assets	Trade/financial		
Topic 19	market, blockchain , report, global, analysis, growth, research, key, industry, forecast	Trading in cryptocurrency		
Topic 8	company, capital, million, startup, funding, venture, ventures, investment, startups, companies	Founding for new vendors or start up	Decentralized finance (De-Fi)	Testifying ongoing legitimization of blockchain ventures by current institutions
Topic 4	university, company, team, freehills, partner, law, australia, website, united, source	Public governance	Public administration and governance	
Topic 16	high, limited, speed, company, source, website, national, defence, government, security	Government digital infrastructure to ensure security in the digital world for citizens		