Blockchain as an External Enabler of New Venture Ideas:

Digital Entrepreneurs and the Disintermediation of the Global Music Industry

Abstract

Our study explores the work undertaken by entrepreneurial ventures when engaging with external enabling technologies. Specifically, we examine a unique sample of early-stage ventures who are using blockchain technologies in an attempt to disintermediate the music recording industry. We carry out a preliminary analysis of 36 venture 'white papers', before constructing and inductively analyzing 11 new venture case studies. In doing so, we identify three interlinked enablers of new venture ideas in this context: blockchain, ideology, and market volatility. Furthermore, we identify a range of venture-level shaping practices and field-level work that describes the framing and legitimizing activities undertaken by entrepreneurs to unlock the potential of external enablers. This extends recent conceptual work on external enablers of entrepreneurship. In particular, we propose a novel category of actor-dependent enabler should be advanced in order to capture engagement with the uniquely editable, interactive, distributed properties of digital technologies.

Keywords: digital entrepreneurship; blockchain; digital platforms; external enablers; ideology; music industry

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1. Introduction

A growing body of entrepreneurship literature has focussed on the role of digital technologies in entrepreneurial processes and practices (Nambisan 2017; Srinivasan and Venkatraman 2018). Scholars suggest such technologies represent actor-independent external enablers of new ventures, the properties of which can be utilized by entrepreneurial agents to create new forms of value (Davidsson, 2015; Davidsson et al., 2018). Digital technologies are considered to embody properties that other enablers of new ventures do not. For instance, they are editable, reprogrammable and distributed (Ekbia 2009; Kallinikos et al. 2013); characteristics that pose some intriguing implications for the ways that new venture ideas are developed and exploited (Nambisan 2017; von Briel et al. 2018b).

Recent theorization at the intersection of external enablers and digital technologies has focussed chiefly on the mechanisms through which digitization influences entrepreneurial outcomes (von Briel et al. 2018a). As yet, there has been comparatively limited attention devoted to how entrepreneurial agents engage with these broad external forces. How, for example, do entrepreneurs learn about the properties of digital enablers that might be relevant to their ventures? How do they interpret the capabilities of digital technologies in conjunction with other enablers that relate to broader socio-technological trends (see, for example, Browder et al's 2019 study of the maker movement)? And, how do they adapt and assimilate these complex exogenous enablers within a given industry or market context?

Extant research finds that entrepreneurial actors must carry out various forms of work to engage with and activate sources of external value (Yli-Renko et al. 2001; Thorpe et al. 2005; Qian and Acs 2013). To date, however, forms of engagement work have been subject to minimal integration with the external enablers concept. The objective of our study thus is to unravel the everyday organizational practices and varied forms of routine work associated with

the development of new digitally-enabled venture ideas, in the hope that we can develop a better understanding of the dynamics linking entrepreneurs and external enablers.

Our study explores blockchain – a distributed public ledger that allows for trustless exchange – as its focal digital enabler. We are specifically interested in an emerging community of entrepreneurs within the global music industry who are utilizing blockchain to disrupt industry incumbents, typically through offering innovative services that promise to make transactions cheaper, automated and more secure. The music industry has already faced waves of disruption over the previous 15 years as peer-to-peer networking, the illegal sharing of music, and shifting consumption patterns have challenged dominant business models (Borja et al., 2015). Recent commentary suggests that the industry is again on the precipice of substantial change (Bernstein, 2018; Boudillet, 2017), this time owing to the diffusion of blockchain and associated technologies such as cryptocurrencies and smart contracts (PWC 2018; Baym et al. 2019). We explore this next innovation surge through analysis of a unique sample of new blockchain-enabled music industry ventures. Our methodological approach employs a preliminary analysis of 36 venture 'white papers', before constructing and inductively analyzing 11 new venture case studies. We thus offer a novel empirical window into the practices associated with the interpretation and adaptation of an emerging digital technology phenomenon.

We found there were three influential external enablers of new venture ideas in this industry context: ideology, market volatility, and the focal technological enabler blockchain. We further discovered that entrepreneurial actors engaged in a set of venture-level work practices that allowed them to: discover and learn about enablers; scan the industry context to establish a differentiated value proposition; and synthesize and ideate a range of new venture ideas. Somewhat unexpectedly, we also discovered an array of field-level shaping activities that entrepreneurs engaged in, including legitimizing and framing activities, which influenced

engagement with enabling forces not just for individual ventures, but also for peer organizations in the same networks.

These findings allowed us to make some important contributions to the external enablers and digital entrepreneurship literatures. Firstly, by analyzing the practices associated with developing blockchain-based venture ideas, we find that entrepreneurial actors can play a notable role in shaping, at an aggregate level, the properties of the external enablers they are exploiting. This offers a valuable extension of external enabler theory, which has thus far focussed on the effects of enablers on new ventures rather than on ways in which new venture processes might themselves shape external enablers. Our findings, therefore, challenge the notion that enablers are largely actor-independent and suggest that a new category of actor-dependent enablers (such as open-source and distributed technologies) might coexist alongside more typically actor-independent enablers that entrepreneurs have less scope to control or influence (e.g. an earthquake, demographic change, etc.).

Secondly, using the enabler framework to conceptualize the objective characteristics of enablers, we contribute to an understanding of why enablers are used the way they are within a community of start-ups, and consequently, why an enabler's potential is - or is not - realized. We suggest that entrepreneurs engage in purposive and non-purposive framing activities that create a window through which an enabler is understood by other competitors. These framing activities, therefore, influence the enabling mechanisms that are activated by other firms as they develop their new venture ideas.

Thirdly, we surface the important relationships between technological enablers such as blockchain and underexplored socio-cultural enablers such as ideology. We discovered a fascinating ethos within the music industry context, derived from cyberculture and 'hacker' culture, that directly influences ways in which specific properties of blockchain technology are activated by entrepreneurs. For example, notions of open-source information and anti-

authoritarian decentralized governance structures are used to shape the activation of different blockchain mechanisms by firms in our study. Thus, we demonstrate the importance of understanding the interplay between distinct external enablers in a given industry or social context.

Finally, we contribute to the burgeoning literature on commercial applications of blockchain technologies. Much of the work undertaken on this topic has, to date, been limited to speculation about potential industry applications (White 2017; Morkunas et al. 2019). By advancing an empirical account of a novel industry context, our study builds towards a conceptual understanding of some key issues associated with the adoption of blockchain (Saberi et al. 2019).

We begin our article by first expanding on our external enabler framework and then provide an overview of recent developments in blockchain technology.

2. Literature review

Research on external enablers and digital entrepreneurship is relatively embryonic, despite a potentially promising theoretical overlap. We, therefore, discuss key advances in both literatures, before outlining the research questions and empirical context that shape our study.

2.1 External enablers of entrepreneurship

Recent efforts to reconceptualize fundamental entrepreneurial processes have pivoted from the study of 'elusive' opportunities (Davidsson 2015). This has led to an increasing interest in how external environmental factors influence new venture activity (Davidsson et al. 2018). External enablers refer to aggregate-level circumstances that influence multiple entrepreneurial actors to establish a new venture. They can include factors such as regulation, technology, demographic and political change (Davidsson, 2015; Davidsson et al., 2018).

Scholars have recently argued that external enablers present a more fruitful avenue for studying new venture creation, owing to the apparently irreconcilable conceptual difficulties that hamper established meta theoretical perspectives in entrepreneurship theory. The discovery approach, for example, acknowledges the role of external enablers (e.g. see Shane (2000) who examines the enabling potential of 3D printing technology) yet downplays the creative agency of entrepreneurial actors. Opportunity creation approaches (Alvarez and Barney 2007) meanwhile capture the dynamic, evolving nature of venture creation, though do not adequately acknowledge the role of external factors in shaping new ventures. Davidsson's (2018) 'external enablers' framework thus proposes to reorient stalled theory development by better integrating external conditions with fundamental aspects of entrepreneurial agency[1].

Theoretical development of external enablers has thus far elaborated on the properties of specific enablers such as digital technology in the IT sector (von Briel et al. 2018a) and infrastructure investment (Bennett 2018). Davidsson et al (2018) develop a detailed framework that proposes external enablers have *characteristics, mechanisms, and roles*. *Characteristics* refer to the structure and form of external enablers and can be measured along *scope* and *onset* dimensions. *Scope* reflects the market potential of ventures that capitalize on an external enabler and *onset* refers to the suddenness or predictability of an enabler (e.g. sudden jolts such as terrorist attacks can enable new ventures as can more predictable enablers such as demographic change). Mechanisms meanwhile account for *how* ventures can utilize an external enabler to start a new venture (von Briel et al. 2018a). They can include, for example, 'compression' which reduces the time for an activity or 'combination' which involves coupling external resources to provide new functionality (Davidsson et al. 2018; von Briel et al. 2018a). Notably, some ventures can take advantage of a mechanism inherent to a particular enabler

[1] We should note however this remains a contentious proposition and others engaged in the 'opportunity wars' argue strongly against 'dislodging' the opportunity construct (Wood and McKinley, 2018).

while others cannot (e.g. as they have insufficient technological capabilities, or regulation prohibits particular applications of the mechanism). Finally, *roles* acknowledge that external enablers are utilized at different stages and for different purposes in the venture formation process. Accordingly, external enablers can contribute to the *triggering, shaping* and *outcome-enhancing* activities of new ventures.

To date, the analytical focus has been on the aforementioned properties of enablers, with few studies examining how enablers are discovered and then used in practice by entrepreneurs. This is a significant limitation as an understanding of how multiple enablers interact, and ways individual entrepreneurs might shape said enablers, is key to delivering on the promise of Davidsson et al's (2018) emerging perspective.

2.2 Digital technologies as external enablers of entrepreneurship

We suggest the aforementioned limitations are particularly salient in the digital technology context, where enablers are viewed as editable, interactive, reprogrammable, and distributable, and hence open to shaping by various actors (Kallinikos et al. 2013). The proliferation of digital technologies represents one of the most widespread and impactful technology trends to emerge in recent years. This broad class of technology enabler, which encompasses technologies such as cloud computing, 3D printing, and blockchain, has stimulated fresh debate about how new forms of entrepreneurial activity are facilitated. Recent research suggests that academic interest in the topic is coalescing around a specialist *digital entrepreneurship* sub-field (Nambisan 2017; Dong 2018). Much of this work has sought to integrate concepts from information systems literature (e.g. von Briel et al. 2018b), and has emphasized the distinctive properties of digital technologies.

As a broader understanding of digital systems and infrastructures has progressed, so too have efforts to conceptualize them within an entrepreneurship context (Xu and Koivumäki

2019). Research by Nambisan (2017) suggests that digital technologies have the potential to fundamentally alter the structural boundaries of entrepreneurial outcomes and processes; for example, where entrepreneurial activities are carried out, or the nature and scope of key stakeholder relationships. Scholars have since used digital technologies as a lens through which to operationalize the external enablers construct. Von Briel et al's (2018a) study of the IT hardware industry, for example, conceptualizes the specific mechanisms by which digital technologies enable new venture processes. Browder and colleagues (2019), meanwhile, apply the external enablers concept to the makerspace movement, melding broad technology, social, and ideological trends to conceptualize the conditions under which entrepreneurial outputs emerge. Notably, there are only a limited number of empirical studies that explore the relationship between digital technologies and entrepreneurship (e.g. Ghezzi and Cavallo 2018), and fewer still that examine the next wave of distributed digital enablers (e.g. Ingram Bogusz and Morisse 2018).

2.3 Blockchain and associated technologies

At its most fundamental, blockchain is a digital record-keeping system that removes the need for the third-party intermediaries who traditionally facilitate a range of essential transactions (Crosby et al. 2016). It does so by decentralizing the management of those transactions, using cryptography to enable distributed verification of information and thus support secure and transparent peer-to-peer exchange (Swan 2015). In basic terms, a blockchain is comprised of blocks that store data (currencies, software programs, contracts, etc). These contain a unique identifying hash and a further hash that links to a previous block (hence, 'the chain'). The ledger of activity is shared publicly with everyone on the network, and when a new transaction is executed, all nodes on the network must validate its legitimacy before it is accepted on the blockchain (Pilkington 2016). These factors together make

blockchain nearly immutable, leading some to suggest that blockchain represents a new paradigm in information and asset exchange (Swan 2015).

The application of blockchain technologies thus carries widespread implications not only for commercial activity but for societal behavior more generally (Kewell et al. 2017; Manski 2017; Shermin 2017). Some commentators have described blockchain as a foundational technology, the impact of which has been compared to that of the early world wide web (Iansiti and Lakhani 2017). To date, the most noteworthy applications have been cryptocurrencies, reflecting the technology's foundations within the peer-to-peer currency Bitcoin (Nakamoto 2008). The subsequently meteoric, and often controversial, rise of Bitcoin (Yermack 2015; Narayanan et al. 2016; Tuttle 2018) has served to highlight blockchain's potential for facilitating financial transactions (Chen 2018). Consequently, a number of the early research incursions at the intersection of blockchain and entrepreneurship have been situated within inquiries into the disruptive potential of 'fintech' startups (Haddad and Hornuf 2016; Larios-Hernández 2017; Gomber et al. 2018; Gozman et al. 2018).

As is typical of early research into developing technology trends, much of the literature has been broad-ranging and speculative in espousing the far-reaching possibilities associated with blockchain (Adams et al. 2017; Tapscott and Tapscott 2017; White 2017). There remains, however, a dearth of empirical work at the intersection of blockchain and core entrepreneurship theories. Accordingly, we integrate external enablers, digital entrepreneurship and blockchain literature to ask: What are the primary external enablers of new venture ideas within a specific industry? And; what practices or forms of work are associated with integrating multiple external enablers to develop a new venture idea?

3. Methodology

Our study was designed to generate an understanding of the work undertaken by entrepreneurial actors when engaging with blockchain as an external disequilibrating force. Reflecting the developmental nature of our empirical and theoretical context, our study was exploratory and aimed to build rather than test theory. Our research design principally relied upon analysis of 11 case studies, which were constructed using a range of primarily qualitative data sources. Theory development was achieved through an inductive coding process (Gioia et al. 2013), which emphasized iterative 'back and forward' analysis between emergent empirical data and existing theoretical constructs (Eisenhardt and Graebner 2007). The key dimensions of our methodological process are detailed below:

3.1 Empirical Setting

The focal setting for the study was the music recording industry. Generating $17.3b in global revenue (IFPI 2018), the industry is an oligopoly, which, following recent consolidation, is dominated by the 'Big Three' of Universal Music Group, Sony BMG and Warner Music Group (Eiriz and Leite 2017). The music industry has undergone significant structural change over the past 15 years, driven largely by the introduction of digital technologies. The first wave of disruption followed the introduction of mp3 file compression, which enabled the dematerialization of recorded music (Anderson 2013). With the consumption of music separated from physical goods (i.e. CDs or vinyl records), the value of music collapsed as digital sharing became easier (Borja et al. 2015). This was exacerbated by disruptive P2P file-sharing technology, famously pioneered by Napster (and later Limewire and Pirate Bay), which enabled (illegal) decentralized sharing of music across the internet. As a response to increasing, sometimes harsh punishments for piracy (Sinha and Mandel 2008), consumers began migrating to the legitimate digital platforms that started to emerge (led by Apple Music) and consumption

progressively moved from physical to digital sales (Sinclair and Green 2016; Hampton-Sosa 2017). More recently, advances in mobile phone technology and falling data costs have led to a decisive swing towards 'streaming' rather than owning songs (IFPI 2018). Digital platforms such as Spotify and Deezer have enabled users to access massive repositories of music using either an ad-funded freemium business model or a premium monthly fee, and as a consequence, there has been an improvement in overall industry revenues since 2014 (ibid). The next wave of disruption is set to come through the use of distributed blockchain technologies, which have the potential to disintermediate a range of actors in the existing value chain (PWC 2018; Baym et al. 2019). It is on the new ventures within this community that we place our empirical focus.

3.2 Sample development

Owing to the novelty and specificity of our research focus, there were certain challenges associated with the identification of relevant cases, respondents, and data sources. There are, for example, no established databases containing details of new blockchain-enabled music industry ventures. Our first task was, therefore, to compile a study-specific directory of ventures that we considered to be directly instructive to our research inquiry. The rationale here was that this list would provide a well-defined and comprehensively-derived frame through which we could subsequently search for potential data sources and research respondents. To compile this initial directory, we employed a multi-stage process designed to identify ventures that possessed all of the following characteristics: 1) their primary offering was fundamentally underpinned by blockchain technologies; 2) their offerings were inherently tied to, or were being used within, the music industry (thus excluding general blockchain-enabled exchange systems or media/content platforms that hypothetically work across multiple industry contexts i.e. where music is simply one potential application); 3) they were commercial, profit-seeking enterprises; 4) they were independent ventures and not subsidiaries of established firms; 5)

they were founded no more than eight years ago (reflecting our focus on new entrants). The stages of our initial sample development process were as follows:

As with other recent studies of blockchain-enabled entrepreneurship (e.g. Fisch 2019), we identified ICO tracking websites as a potentially fruitful source of relevant ventures. We commenced by searching a range of these directories (coinschedule.com, icobench.com, icoranker.com, trackico.com, icoslot.com, icodrops.com) using appropriate keywords (e.g. "music"). Following the consolidation of duplicates and a review of company websites to assess criteria eligibility, we compiled an initial sample iteration of 24 ventures.

Our initial information gathering efforts quickly indicated that many potentially relevant ventures had not undertaken, or did not intend to undertake, an ICO. We, therefore, initiated an additional open search phase. Specifically, we identified the five highest traffic online digital music publications and searched for all articles, features, and blogs that contained the term 'blockchain'. Two members of our research team read these separately, noting mention of any firm that might potentially match our desired case parameters. We similarly searched specialist platforms that were typically utilized within blockchain networks (Medium and Github). After cross-checking and consolidating these lists, then reviewing for eligibility, our sample was brought to 59 relevant ventures.

In the final stage, we sought to validate our sample by reviewing the first 500 webpages for the Google search "blockchain music". This process predominately uncovered a range of wider commentary on the topic but also acted to confirm previously identified ventures. Only one additional eligible firm was found, thus indicating sample saturation. We believe that our final sample of 60 firms (table 1, below) provides a comprehensive list of new blockchain-enabled entrants within the music industry (at the time of collection in June 2019).

3.3 Preliminary collection and analysis phase

We commenced our initial engagement with the data by carrying out a preliminary collection and analysis phase. The overall objective here was to develop a broad understanding of how new blockchain-enabled entrants perceived the external forces surrounding the industry and technology context. The phase encompassed the collection and analysis of a range of secondary and publicly-available data during late 2018 and mid-2019. We opened by reviewing company websites, social media posts, online forum activity, and publicly disseminated content (conference and seminar outputs, video content and blogs) for each venture in our sample directory. The rationale here was that such sources were reflective of the settings within which digital ventures carried out many of their activities.

An additional source of secondary data came from 'white papers' that were published by 36 of our identified ventures. White papers are documents used by startups to disseminate their vision for a new offering. They typically include appraisals of existing industry, market, and technology trends, as well as technical specifications and business model outlines. The blockchain community has placed notable emphasis on the white paper as a means of early concept codification, particularly in the context of ICO launches (Pilkington 2016), and scholars working at the intersection of blockchain and entrepreneurship have thus recognized their value as an empirical window into venture activities (e.g. Fisch 2019). For our study, they represented a means to examine how new firms expressed their "imagined futures" (Davidsson, 2015: 684) in the context of wider external forces.

Table 1. Sample of new blockchain ventures in the music industry

Venture	Project Commenced	Registered HQ	Primary Offering
Audiocoin*	2013	UK	D2F and Tokenized System
Audius*	2018	USA	Music Rights & Metadata
Bitchord	2018	UK	D2F
Bitsong *	2017	Malta	Tokenized System and Music Rights & Metadata
Bittunes	2015	UK	Music Rights & Metadata and Tokenized System
Blokur	2016	UK	Tokenized System and Music Rights & Metadata
Bravo*	2013	USA	D2F
Chimes	2013	USA	Tokenized System
Choon*	2018	UK	Music Rights & Metadata
Citizen Ticket	2013	UK	Ticketing
Current *	2017	USA	Tokenized System
Custos Tech	2016	South Africa	Music Rights & Metadata
Cyber Music	2018	UK	Tokenized System
Decibels*	2018	USA	Music Rights & Metadata
Dench Music	2018	Netherlands	Music Rights and Metadata
Digitix	2018	USA	Ticketing
Dot Blockchain	2016	USA	Music Rights& Metadata
Emanate *	2017	Australia	Music Rights & Metadata
eMusic *	2017	USA	Music Rights & Metadata
Fanbase	2018	USA	Tokenized System and D2F
Fans Time*	2018	Singapore	Tokenized System
FENIX*	2018	UK	D2F
Guts Tickets	2017	Netherlands	Ticketing
Hearo.FM*	2011	USA	Music Rights & Metadata
ILINK2MUSIC*	2016	Belize	D2F
IndieOn *	2018	USA	Music Rights & Metadata
Imusify*	2018	Germany	Music Rights & Metadata
Inmusik *	2012	USA	Tokenized system and D2F
JAAK	2015	UK	Music Rights & Metadata and licensing
LabelsCoin	2017	Lichtenstein	Music Rights & Metadata
Lava	2016	Australia	Ticketing
Maestro	2018	Korea	Music Rights and Metadata
Moosecoin *	2015	Netherlands	D2F and Music Rights & Metadata
MusicLife *	2018	Singapore	Tokenized System
MusiCoin *	2017	Hong Kong	D2F and Music Rights & Metadata
Musiconomi	2017	Caymen Islands	D2F
Muzika	2017	South Korea	D2F
Mycelia	2017	London	Music Rights & Metadata
Opus	2017	Poland	Music Rights & Metadata
Pindify	2015	Netherlands	D2F and Music Rights & Metadata
Potentium *	2017	UK	Tokenized System and D2F
RChain	2017	USA	Tokenized System and Music Rights & Metadata
Repertoire	2018	USA	Music Rights & Metadata
Resonate	2016	Germany	D2F and Tokenized system
Soniq	2018	USA	Tokenized System
Peetracks	2015	USA	Music Rights & Metadata
Soundeon	2017	Estonia	Music Rights & Metadata and Ticketing
Stayge *	2016	South Korea	Tokenized System
The Tao	2016	USA	D2F
Token.fm	2017	Canada	Tokenized System and D2F
Tune *	2017	Caymen Islands	Tokenized System
Ujo	2015	USA	Music Rights & Metadata
Utopia Music	2016	Switzerland	Music Rights & Metadata
Valyou X	2016	Australia	Tokenized System
Vezt *	2017	USA	Music Rights & Metadata and Tokenized System
Viberate *	2015	Slovenia	Music Rights & Metadata
Voise *	2018	Canada	Tokenized System
Volareo	2018	Netherlands	Music Rights & Metadata, Tokenized Systems, D2F
Voxxo *	2018	Turkey	Tokenized System
Z-Pop Dream	2017	Hong Kong	D2F and Tokenized System

* Denotes companies with white papers available to access

These secondary data sources were not without limitations. White papers, for example, had considerable variance in format, focus, and depth of detail. Social media posts, meanwhile, offered an attractive means of capturing the changing perspectives of entrepreneurs (Obschonka et al. 2017), but as curated content, arguably suffered from certain presentational biases. Nonetheless, our preliminary analysis served as a foundation upon which to develop initial first-order observations relating to venture-level perceptions of external enablers. As an example, commentary on inequitable profit distributions in the music industry that was made in a blog or white paper would be registered under a "fairness" code, which itself would be allocated to a broader grouping of socio-cultural enablers that we considered to be key within the research setting. By developing a range of such codes, we began to construct thematic groupings for various pertinent enabling factors. These preliminary themes fed-in to a subsequent analysis phase, which eventually formed the basis for our theorization (see figure 1).

3.4 Primary data collection phase – case study development

While open-access sources offered a valid empirical window to the broader commentary of new ventures, we found that they were limited as a means of capturing certain venture-level practices. To address this weakness, we implemented an additional phase of primary data collection, which led to the construction of 11 venture case studies. Cases were selected from amongst our directory of 60 firms. Representatives from all 60 cases were invited to participate in in-depth semi-structured interviews, and approaches were made during the first half of 2019. In total, we interviewed 19 founders and entrepreneurial team members across 11 ventures (see table 2). Final case studies were comprised of an amalgamation of all primary and secondary data sources. We elected to culminate the collection and analysis period when we judged that new rounds of collection (e.g. additional interviews) were simply replicating,

or adding only slight variation to, the themes that were emerging from our analysis i.e. theoretical saturation (Bowen 2008; Aguinis and Solarino 2019). Interviews ranged from 30 to 90 minutes in length and focused on two primary lines of questioning. Firstly, we sought to elicit founder views on their new venture ideas in the context of wider technology, market, and industry trends. Much of this involved interrogating interviewee commentary against the wider public-facing narratives that we had developed through preliminary analysis. Secondly, we probed for details on the everyday engagement practices carried out by each entrepreneurial team.

Table 2. Cases study overview

Case	Venture offering	Case Overview	Primary Data Sources
Venture A	Music Rights; Metadata and licensing	Founded: 2015, UK; No ICO undertaken	R&D leader interview (A1), 45 minutes; Founder interview (A2), 45 minutes
Venture B	Music Rights; Metadata and licensing	Founded: 2016, South Africa No ICO undertaken	Founder interview (B2), 45 minutes; White Paper (16 pages)
Venture C	Tokenized System; Direct to Fan	Founded: 2015, USA, ICO completed	Founder interview (C1), 45 minutes; White paper (28 pages)
Venture D	Tokenized System; Music Rights & Metadata	Founded: 2015, UK; No ICO undertaken	Founder interview (D1), 40 minutes; Founder interview (D2), 30 minutes
Venture E	Direct to Fan; Music Rights & Metadata	Founded: 2017, Hong Kong; ICO completed	Founder interview (E1), 55 minutes; Founder interview (E2), 30 minutes; White paper (29 pages)
Venture F	Music Rights & Metadata	Founded: 2016, Switzerland; No ICO undertaken	CTO interview (F1), 40 minutes Founder interview (F2), 30 minutes
Venture G	Tokenized System; Music rights & Metadata	Founded: 2016, USA; ICO completed	Founder interview (G1) 100 minutes; Founder interview (G2), 30 minutes
Venture H	Music rights & Metadata; Licensing	Founded: 2019, Sweden; No ICO undertaken	Founder interview (H1), 50 minutes; Founder interview (H2) 35 minutes;
Venture I	Tokenized System; Direct to Fan	Founded: 2017, UK; ICO completed	Founder interview (I1), 40 minutes; White paper (22 pages)
Venture J	Music Rights & Metadata	Founded: 2015, USA; No ICO undertaken	CTO interview (J1) 30 minutes; Founder interview (J2), 35 minutes
Venture K	Direct to Fan; Music Rights & Metadata	Founded: 2018, Netherlands; ICO in progress	Founder interview (K1), 35 minutes Founder interview (K2), 30 minutes; White paper (8 pages)

3.5 Primary phase analytical process

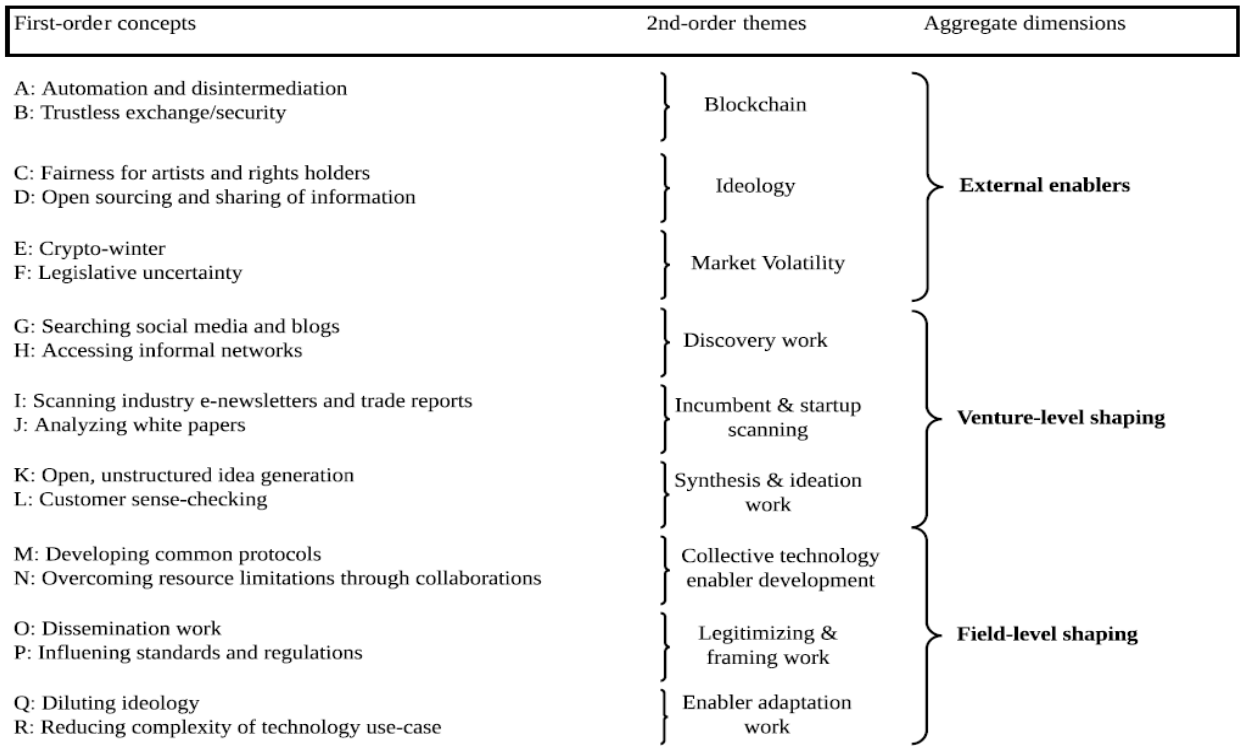
Case study development occurred in tandem with an open coding process (Gioia et al. 2013). Coding initially focused on the external enabler themes that had emerged from our preliminary analysis, with founder interviews being used to flesh out and modify previously-derived thematic groupings. In particular, our primary data helped us to cultivate a fuller understanding of the characteristics, mechanisms, and roles of the different enabling forces embodied within our empirical setting. By iteratively interrogating emerging observations against the external enablers framework (Davidsson et al. 2018), we were able to develop detailed descriptions that served as a basis for our findings (see Table.4)

Additional codes also emerged to represent the everyday work of entrepreneurial actors. Following common practice in qualitative data analysis, we initially recorded key engagement activities using the specific language employed by our various responding actors (e.g. Gawer and Phillips 2013). Similar venture practices were then grouped into common labels (e.g. "Developing common protocols"), and from there into broader thematic second-order codes (e.g. "Collective technology enabler development"). The development of each second-order code also involved a continuous review of relevant literature, so that empirically-derived codes could be connected to emerging theoretical concepts; for example, legitimacy (Suddaby et al. 2017) and framing (Cornelissen and Werner 2014).

As consistent analytical themes for various forms of engagement work materialized, we could also be more targeted in uncovering data that was directly representative of these emerging phenomena. For example, interviews became increasingly granular in their lines of questioning about working practices. We were also able to search secondary data sources for more specific activities. For example, we could capture "synthesis and ideation work" by following evidence of changing venture offerings detailed on social media commentary. Or, we could follow "dissemination work" by examining venture participation in specialist

conferences and other public forums. Our emergent aggregate codes indicated the presence of distinctive *venture-level* and *field-level* engagement work, and the relationships between these served as a foundation for our conceptual model (figure 2). We provide a representation of the links between our raw data and the theoretical categories in figure 1 and table 3, below.

Figure 1. Data Structure



4. Findings

4.1 External Enablers

In the first section of our findings, we describe the most salient external enablers of new blockchain-enabled music industry ventures, including in our analysis the focal blockchain technology and other closely linked innovations such as smart contracts and cryptocurrencies (see Table 4, below, for a summary of the enabler properties derived from the empirical analysis).

Table 3. Exemplar data representing analytical codes

Overarching Dimension: External Enablers	
1. **Blockchain**	
A. Automation/Disintermediation	A1: "…blockchain can be used to store information without relying on any intermediary" (Potentium, white paper) A2: Our primary goal is to remove all middlemen and close the gap between the musician and the listener (Case E whitepaper)
B. Trustless exchange/security	B1: "…blockchain technology will allow us to deploy a trustless, low cost decentralized marketplace for music and near-real-time royalty payments for the regular (non-blockchain-savvy) user" (Choon, white paper) B2: "…[blockchain's] security and integrity is ensured by cryptographic algorithms" (Potentium, white paper)
2. **Ideology**	
C. Fairness for artists and right holders	C1: I'm a big believer that anybody who is contributing to success, should be fairly rewarded and ideally in a simplistic way, in an idea world, in a measurable way, based on the volume they contribute. Actually, for the first time in history, Blockchain can allow that to happen" (Interview C1) C2: The current structure of the music industry concentrates power in the hands of relatively few middle men. It's outdated institutions not only restrict growth but also consume a majority of the wealth the industry generates (Case I whitepaper)
D. Open-Sourcing and sharing of information	D1: I think I completely resonate with the ideological side of it, but I'm also quite pragmatic about how you need to build a business as well…I think this definitely comes from an ideological place, and that is why it's so important that we have this kind of open source public ledger. (Interview A1) D2: I have some themes I want to state very clearly to people in this sector and online is a great way to do this (Interview G1)
3. **Market Volatility**	
E. Crypto-Winter	E1: There was a time a couple of years ago, where you had what they called crypto VCs, and on the face of it, they understood that the value will accrue at the infrastructure level and so they needed to invest. They're less common now, because they all got smoked out in the sort of crypto winter, and now traditional VCs are much more cautious around tokens. (Interview A1) E2: Our market value also has a very huge fluctuation, especially in the past 12 months. This has affected how we do the business. We should be more cost controlled now in order to survive this winter season. (Interview E1)
F. Legislative uncertainty	F1: In the USA they have a much stricter definition of what security is. So that kind of makes your sellable market a lot smaller who you can sell to. (Interview A1) F2: This whitepaper contains direct references to cryptocurrency and Blockchain technology and the legal parameters are not clearly defined yet. (Case I whitepaper)
Overarching dimension: Venture-level sharping work	
4. **Discovery Work**	
G. Searching social media and blogs	G1: Everything you need is online. The community is open to sharing certain ideas which is great. We watch other projects and see what they are doing. We are really curious and we find that it is the best way to learn about what is happening in the industry. (Interview A2)

		G2: My co-founder and myself and our most senior engineer are very interested in Blockchain technology and we keep close with developments from reading and the news and that kind of thing. (Interview B1)
H.	**Accessing informal networks**	H1: And then of course, we're in, our VC is based in New York, the Digital Currency Group and DCG has, in its investment portfolio, pretty much the most Blockchain related companies you can think of. So, this is also a very good resource for us to tap into, when we need any type of information, or anything Blockchain related. (Interview B1) H2: We will establish a consortium of actors from the music industry and governmental agencies to collaborate on the creation of this entity. (Case K whitepaper)
5.	**Incumbent and Start-Up Scanning**	
I.	**Industry e-newsletters and trade reports**	I1: I'm following the space closely, like really really closely with newsletters that I read a lot. (Interview F1) I2: "…we will continue to maintain transparent communications with our community and provide them with additional channels to get up-to-date information about the latest developments in the project, including BitcoinTalk, Github and Reddit. (Case E whitepaper)
J.	**Analyzing white papers**	J1: We try and study industry incumbents – but we also believe in our own ways. (Interview B1) J2: There were not so many companies in 2016, diving into music and Blockchain and we put out a white paper and after a year I saw pieces of my information actually copied word for word (Interview I1)
6.	**Synthesis and Ideation Work**	
K.	**No formal structures for idea generation**	K1: We don't have any formal meetings – the team is no longer big enough. No one is in charge of R&D we each come with ideas in an informal setting – for us this works best - nothing needs to be formal it is just early stage. We all share ideas it works well in a small team. (Interview A2) K2: The ideas are generated very much based on the philosophy we are working on – sharism. For musicians, they are giving up their creations and what is working for them – as the industry doesn't really listen to them. The industry failed to listen to them so we do. (Interview E1)
L.	**Customer sense-checking**	L1: We do get ideas from talking to customers about their feedback, we do that a lot. From a strategic angle we try and talk to important people in the industry and learning about new regulatory changes. (Interview D1) L2: Consumers are important in driving growth of the ecosystem. They buy, sell and use our currency on the platform and thereby help circulate value within the network. (Case E Whitepaper)
	Overarching dimension: Field-Level Shaping Work	
7.	**Collective Technology Enabler Development**	
M.	**Developing common protocols**	M1: The great thing about this space is that everyone is really friendly and they are willing to work together so we do get to talk to some of our potential competitors a lot using online websites – it is great in terms of keeping up with policies and trading stories and potentially technologies. (Interview J1) M2: Aim to give the industry a single currency to allow distributions of pay-outs. (Case C whitepaper)
N.	**Overcoming resource limitations through collaborations**	N1: There is plenty of reasons to cooperate and plenty of opportunities…I would personally be inclined since I don't care for coding and I don't care for

	the tech side, I prefer to trust people…so yes I would collaborate there all day long. (Interview G1) N2: There is a long list of strategic alliances we are well positioned to consummate. We plan to launch a steady stream of partnerships with many of the most visible music, Internet and media companies, where we believe there are mutual economic and strategic benefits. (Initial white paper analysis)
8. **Legitimizing and Framing Work**	
O. Dissemination work	O1: Our CEO is pretty well know at this point, particularly in the music and Blockchain world, so we do a lot of publicity and the chance to talk to different people. For example, right now there is Blockchain week in New York which has been great to meet more people and talk to industry experts – (Interview J1) O2: Our CEO goes to all the big Blockchain conferences, we get to work with people who are competing with us its, at least in my view, its not a zero-sum game, so everyone is going to win. (Interview J1)
P. Influencing standards and regulations	P1: We have collaborated with some industry standard groups, so if there is things that we all need to do, we can collaborate together to do it in a standardised way – (Interview D1) P2: Spotify have acquired a lot of companies that are in the same space as them. (Interview F1)
9. **Enabler Adaption Work**	
Q. Diluting Ideology	Q1: I think I completely resonate with the ideological side of it, but I'm also quite pragmatic about how you need to build a business as well" (Interview A1) Q2. We would try and incorporate fairness into the system from an ethical point of view but we cannot oversee what will happen with the technology we are creating. This is a difficult question for the whole community. (Interview K1)
R. Reducing complexity of technology use case	R1: People who talk about it are often in an echo chamber when they understand the lingo and they really see the possibilities. But the problem is they add up to no money or they don't solve anything major for most musicians. (Interview G1) R2: When you talk to artists you should just sell them the benefits. In the case of case X, we don't talk about the underlying technology. (Interview F1)

4.1.1 Blockchain

Blockchain technology is considered a foundational technology by music industry entrepreneurs. This is largely owing to its wide sectoral and temporal scope, and the potential it has to radically disintermediate the music-industry value chain across global markets. Many of the firms in our study activate different combinations of enabling mechanisms of blockchain, depending on their distinct value proposition and some used derivative innovations such as cryptocurrencies (ICOs) to fund ventures and mediate exchange within platforms, in addition

to smart contracts to automate artist royalty collections (Venture F, Venture K). An important feature of blockchain is the enhanced security afforded to transactions on the network, and the so-called 'trustless' exchange which many ventures emphasize in white papers as a key component of their value proposition.

A further key feature of blockchain is its rapidly evolving nature. Ventures recognized that new technological developments around processing speed, energy/power consumption and security could have an important effect on their new venture idea, changing it from unviable to viable in a short space of time. As one firm recounted, *"We are now in our third round of the development of the technology, the first two didn't work. The technology was too slow before"* (Venture H). Thus, ventures are required to continually update their knowledge of technological developments and their alignment with venture ideas, with one entrepreneur observing "*when it comes to the blockchain space, you're going to need to follow things very closely*" (Venture D).

4.1.2 Ideology

The entrepreneurs in our study all explicitly expressed or alluded to the role of ideology, which we define in line with the Oxford English Dictionary (2019: 1) as "a system of ideas and ideals, especially one which forms the basis of economic or political theory and policy" in enabling their new venture ideas. Central to the main 'challenger' music industry ideology was the notion that 'artistic effort' was not being fairly rewarded within the current system (e.g. through the revenue models used by dominant streaming platforms such as Spotify and Apple Music), and that dominant business models within the music industry were not a sustainable way of supporting content creators and rights holders. A variety of reasons for 'fairness' being a driving enabler were offered. These included: a dissatisfaction that intermediaries were taking significant cuts of revenue (e.g. Venture F, Venture I , Venture E); to discontent with the

processes of royalty collection and copyright protections (Venture J, Venture A); subscription models that allow 'all-you-can-eat' streaming for a fixed fee (Venture I); and, a lack of transparency over streaming figures provided by dominant incumbent actors (Venture I). Thus, the emerging ideology in the music industry was positioned in opposition to incumbent models by reorienting smaller artists as focal actors in the value chain while rewarding the contribution of secondary actors based on 'effort' rather than as rentiers exploiting an asset (Venture G).

Table 4. Properties of Key External Enablers Used by Music Industry Challenger Firms

Enabler	Enabler Type	Characteristics	Mechanisms	Roles
Blockchain & related technologies	Technological	Wide sectoral and spatial scope (may affect entire value chain) Uncertain temporal scope Rapidly diffusing onset (the technology takes expertise to apply, which is why adoption is happening over a 10-year window)	Compression; conservation; substitution, combination; generation; demand substitution; enclosing.	Triggering, Shaping
Ideology	Socio-cultural	Significant but not universal sectoral and spatial scope Medium/long term temporal scope Gradual and predictable onset (activating an established enabler but applying to a new context)	Legitimation; demand substitution; enclosing	Triggering, shaping
Market volatility	Macroeconomic/ Regulatory	Wide sectoral scope and global spatial scope. Uncertain temporal scope, though likely to reduce over the short term as technology and legislation become more stable. Rapid onset, though predictable within the context of technology bubbles	Generation; uncertainty increasing; demand substitution	Triggering, Shaping, outcome enhancing

Some respondents offered more contemplative and even radical perspectives on ideology as an external enabler of new venture ideas. One entrepreneur, Venture E, had previously developed the concept of Sharism while at the Berkman Center for Internet & Society at Harvard University. He was now applying these concepts to solve what he viewed as some of the more intractable problems within the music industry:

> *"Yeah. So, the idea (sharism) is that, how we can connect creators with the future consuming path which eventually lead back the return to the creators. So, this sharism is about the path, that creators feel confident and feel assured in our internet-connected world."* (Venture E)

While the broad 'fairness' ideology was cited as an influence on new venture idea formation, there was also some cynicism around how it was interpreted and used. For example, some felt the 'positive' ideology was used as a cynical market entry strategy and was soon sacrificed as the venture grew:

> *"[blockchain] does have such a potential to change industries, that there is so much unfairness in just now. It's just a shame that maybe some companies, once they start getting money or getting a bit more publicity, it fades away from them." (*Venture G)

4.1.3 Market Volatility

The unpredictable nature of blockchain technology development, and the general volatility of activity in the music industry start-up field emerged as notable positive and negative enablers of new venture ideas. Most significant was the effect of the 'crypto winter' of 2018/2019, a market crash which shrunk the value of cryptocurrencies by "up to 90%"

(Venture J) and caused a crisis of trust in such currencies. This was cited by a number of the case-study organizations (e.g. Venture A, Venture E) - many of whom had planned to launch 'initial coin offerings' (ICOs) to fund their platforms - as an unanticipated exogenous event that caused a radical rethink of their new venture ideas. The initial gold rush mentality towards ICOs led to "a lot of scams" (Venture G) and as a result, the overarching legitimacy of blockchain as a foundational technology, with customers, users and investors, was damaged.

Others were equally concerned with overheating in the market as excessive sums of money were being circulated and invested in new blockchain-enabled start-ups, often when there was no proven use case for the technology. Respondents (e.g. Venture A, Venture H) believed this risked a possible crash, similar to the dotcom collapse of the 1990s, where the entire sector was paralyzed. As one entrepreneur noted: *"I've never seen money fly in and out like I have in blockchain. It's dangerous"* (Venture G*).*

However, despite most respondents declaring 'ICOs are dead' (Venture A and Venture D) others predicted they would come back quickly in another form, for example as a security token offering (STO) or similar (Venture I). This general model of funding was considered important as *"it's good for exposure, and it limits the power of VCs"* (Venture I)

The rapid emergence of new venture ideas demonstrates that unpredictable market jolts were providing fertile terrain for entrepreneurs, as no individual firm has been able to establish dominance within the marketplace due to disequilibrating changes.

4.2 Venture-level Shaping Work

Our next section examines how nascent ventures learn about the external enablers described in the previous section, and how they subsequently engage in activities to synthesize and shape these enablers into new venture ideas. We identify three primary categories of action

at the venture-level, beginning with a collection of activities that we categorize as 'discovery work.'

4.2.1 Discovery Work

How do entrepreneurs, or actors within entrepreneurial firms, learn about external enablers that might shape their new venture idea? We found this discovery work consisted of three primary activities. First, by far the most important sources of information on blockchain and its application in the music industry were the online publishing platform Medium and the video-streaming site Youtube. As venture K noted:

> *"Medium I do use a lot, but also YouTube and a little bit of Twitter too. I try to avoid following the news, I usually don't follow any mainstream media, but I can find information on Blockchain whenever I am working on it. If I really think about it, it is Medium posts and YouTube that are the most important to me'.*

These information channels have the benefit of being free, timely and well-curated, something that was considered important by the entrepreneurs in our study owing to the rapidly evolving nature of the technology and the diffuse sources of information available online. In particular, companies found it useful to identify *"a small number of....kind of....influential people on there and you can see what they are up to"* (Venture D) and hence these 'influencers' played an important role in filtering the information many leading blockchain companies accessed and consumed.

A further important source of blockchain and cryptocurrency information came through informal networks, developed through previous joint projects, personal friendships and at music industry conferences. For example, Venture B said *"we also have a friend who we are very close with from [company x, a leading blockchain music firm], who is their advisor, he is*

a very good friend of ours, and he has been on the forefront of Ethereum innovation through... an Ethereum think-tank innovation hub, and he is a really good guy to have chats with to hear what is developing."

4.2.2 Incumbent and Start-up Market Scanning

Given there were around 60 blockchain-enabled music industry challenger companies at the time of our data collection, differentiating new value propositions was an important and necessary activity for venture survival. Thus, to identify potential industry problems to address with blockchain and other external enablers, the companies in our study engaged in work to scan both the incumbent firms they were seeking to disintermediate (or partner with) and tracked others in the start-up community who were using blockchain to launch new ventures.

To scan incumbents, companies relied on a range of industry email newsletters, including Digital Music News, and other established trade publications. For example, the founder of Venture F shared with us that *"I'm following the space closely like really, really closely with this newsletter, like I read a lot."* Other companies, who had more formalized research structures also sought out and analyzed industry publications: *"We have our research team we work together to study those industry reports and also try to connect to different media sources especially reporting those statistics back from reports"* (Venture E).

To scan competing start-up firms, the first source of information ventures tended to seek out were white papers. These mostly contained concise articulations of the company target market and value proposition and helped firms develop a proto-categorization of the different types of ventures in the space. We did note however that the sharing of information through white papers and other means was becoming problematic for some firms, as rather than using it to ensure differentiation, new ventures were using it as a template. For example, Venture I complained that following the publication of their white paper*, "after a year I saw pieces of*

my information actually copied word for word." Similarly one entrepreneur had hoped to use the white paper to draw attention to the firm, and to spark new ideas, however they reflected that "*we didn't update the white paper, the reason being is actually that we saw other companies also using the same concepts, they read about it and copied many of our concepts. So, we decided to no longer share our ideas." (*Venture K).

4.2.3 Synthesis and Ideation Work

Despite working on advanced technical innovations, blockchain entrepreneurs largely eschewed formal or systematic means of combining mechanisms from multiple enablers. Many companies highlighted their small size, and suggested that new venture ideas emerged organically from office discussions:

'*We don't have any formal meetings – the team is no longer big enough. No one is in charge of R&D we each come with ideas in an informal setting – for us this works best...we all share ideas and it works well in a small team'.* (Venture A)

Other firms who had more organized processes, still emphasized the co-created nature of enabler-led new venture ideas:

*My role in the company is very much to have regular meetings with my team members, discuss new ideas with them, bounce around new concepts to develop into technology for the business… that way we do a very collaborative R&D implementation. (*Venture B)

Finally, an important component of the idea shaping process involved bringing customers into the ideation and rapid prototyping activities. A key feature of the companies in

our sample was that very few had arrived at a fixed business model or value proposition, even as they started beta-testing and trading. Thus, the development of venture ideas was a continual process, reflecting both the pace of development of blockchain technology and the market volatility around cryptocurrency and legislation: *"…you pivot, as you get feedback, market feedback, you start changing things based on the market conditions, the feedback from your customers and then the reality, whatever it is. So originally, we were going to do a lot more with blockchain…."* (Venture J)

4.3. Field-level External Enabler Shaping

Owing to the emergent and malleable nature of distributed digital technology enablers such as blockchain, we found music industry start-ups engaged in field-level work to alter and influence the trajectory of the enabling technology and its acceptability to stakeholders. This was often a necessary component of the new venture idea, which would be less likely to succeed in absence of this external shaping work. Notably, much of this external activity created field-level value (for example, by legitimizing the technology), meaning that all start-ups in the space could notionally appropriate value that spilled-over from individual efforts. We identified three key forms of work here: collective external enabler development, legitimizing and framing work, and enabler adaptation work.

4.3.1 Collective external enabler development

As blockchain and derivative technologies are complex and not yet at a level of technological maturity, we identified a trend towards co-developing underlying technology architectures by competing firms. On the one hand, given decentralized technologies are required to interact seamlessly across networks, users and intellectual property owners, there was a trend towards developing common protocols and ensuring interoperability between

entities. While there was some recognition that one protocol would emerge as a standard, we found companies were approaching this in collaborative ways by creating open-source technology platforms "that anyone can contribute to" (Venture A), and then developing adjacent businesses that operate on a different layer in order to capture private revenue: *"I think if I'm being honest, I think that there will be one protocol that wins, in the same way that kind of like we had the internet protocol that kind of dominates how we communicate to each other."* (Venture A)

A lack of resources and the ability to address complex technology problems also led to an open, generally collegial, environment amongst peer-firms. This was further influenced by the 'ideology' external enabler in which many firms felt they were contributing to a greater good, and additionally, the 'market volatility' enabler, whereby collaboration was recognized as a means to reduce the risk of market volatility:

> *I've had a few of our competitors, reach out and say, what are you working on and we've been completely open and just said, here's the white paper, have a look at it, we'll have a chat about it, we'll discuss our view-points. Honestly, the problem is too big for any one team to solve, it needs collaboration." (*Venture C)

Yet despite these claims, there remained some tensions between open sharing of resources such as code, and the ability to capture a sustainable portion of revenues generated from blockchain platforms. Some firms felt the notion of collaborative work was overplayed, and that companies were equally engaged in more traditional competitive activities, for example, Venture G claimed: *"They're not collaborating. They may say that. Maybe they are. I mean behind the scenes there might be a dev [development] person working here whose*

talking to one who works over there, that can happen. No, everyone's trying to grab some territory and get an advantage."

4.3.2. Legitimizing and Framing Work

As with most foundational technologies, there is often significant resistance to adoption from both potential users and incumbent firms (who might later become partners). Therefore, although an external enabler can be loaded with technological potential, specific enabling mechanisms can only be activated and exploited if the external environment is conducive. Accordingly, we found that entrepreneurs engaged in forms of legitimizing work that served to mitigate some of the barriers to full enabler use, including through dissemination work, influencing regulations and standards, and forming strategic associations.

In terms of dissemination work, a notable feature of blockchain-based music start-ups was the open publication of 'white papers' outlining notionally valuable information around protocols, business models and tokenization strategies. This was seen as an important way for an organization to establish credibility within the competitive space (to attract employees for example) while also contributing to the legitimacy of blockchain as an enabler of music platforms. It is also notable that many of the entrepreneurs actively engaged and contributed to industry newsletters and conferences (which often publish talks on youtube.com) in which they shared expertise and opinion around core business activities and competitive. Such work was instrumental in demystifying blockchain to incumbent firms (e.g. the major record labels and streaming platforms who dominate the current market) and fostering the potential collaboration options that are considered necessary to open up existing intellectual property rights on blockchain platforms (for example the back catalogs of established artists).

This relates to further efforts by some blockchain start-ups to develops strategic alliances that might help legitimize blockchain-enabled music platforms. Venture J for

example, partnered with high-profile artists such as Timbaland and Justin Timberlake to lend weight to their new venture. A further strategy has been to accept investment from incumbent record labels (e.g. Sony) to ensure that the blockchain platform is considered a viable outlet for future content artistic releases:

> *So if they [record labels] see, hey we have an artist that's really awesome on the platform that might be good for Warner's next song or whatever, next production or whatever, we'll just call them up and they'll actually talk to them and then sign them up or whatever.* (Venture J)

A further important activity we discovered (that relates to our 'discovery work' category), involves examples of entrepreneurs purposively using platforms such as Medium to frame blockchain utilization for other competing firms: *"I have a to-do list and I did get a medium account…I have some themes I want to state very clearly to people in this sector and online is a great way to do that."* (Venture G*)*

While not all entrepreneurs appeared to purposively try to shape the field-level understanding of blockchain and its uses, they often did so as a by-product of their network position and utilization of social media to update others on projects and personal opinions.

In sum, across all examples of such legitimizing and framing work, it is recognized that the properties of the external enabler cannot be activated until the external environment is appropriately conditioned.

4.3. Enabler Adaptation Work

As new venture ideas gained exposure to external stakeholders (through white papers, beta launches, ICOs and conference presentations), most entrepreneurs responded to feedback

by engaging in activities that adapted how enablers were used and what for (i.e. mechanisms and roles). Although this is a venture-level activity, we found the rapid dissemination of information within the start-up community (through primarily social media and conference channels), and the collaborative working between ventures, led quickly to aggregate norms emerging around ways in which various external enabling mechanisms should be activated by the start-up community. We observed two primary activities here, 'diluting ideology' and 'reducing complexity' by limiting use cases.

While many venture white papers draw heavily on 'ideology' enablers to frame their venture idea, we noted a subsequent dilution of 'fairness' and 'sharing' concepts as commercial reality sunk in. Venture A, for example, argue: *"there's a balance to be made. Like, you want to carry out your vision, but, equally, to do that you want to bring along the major rights. And so, there's constantly a kind of balance we have to strike." (*Venture A)

Hence, while activating the ideology enabler appears to be important for generating investment in ICOs (perhaps as this is a form of crowdfunding, and it is notionally more ideologically inclined 'music fan' investors that become involved), when it comes to latter stages of new venture creation (around establishing commercial partnerships with rights holders), the ideology enabler is minimized.

A further notable trend we observed, was the scaling back of technology-enablers, and limiting of the use cases that had been established. This is because 1) the technology enabler was being used for purposes in which existing technologies appeared to perform better (e.g. streaming through existing platform networks), 2) the complexity of the technology was off-putting for stakeholders and 3) the venture idea was being led by the capabilities of the technology rather than customer needs. These issues are best summarized by Venture J who realized after publishing their white paper that:

"Reality hits and we have to gauge what the users are because we get to realize, part of the blockchain world is that it, it's sort of like, they're in their own bubble, right. A lot of people don't realize that the vast majority of people don't know anything about blockchain, they don't even care about blockchain."

It was considered to be important for the field that the technology use case was successfully refined and translated in order to secure adoption: *"we need to figure out how to explain to people, we need to simplify it so that everybody gets it, it's shared and we obviously need to find the core group of users who will benefit the most from it."* (Venture C)

4.4 An Emerging Model of New Venture Idea and External Enabler Shaping in the Music Industry

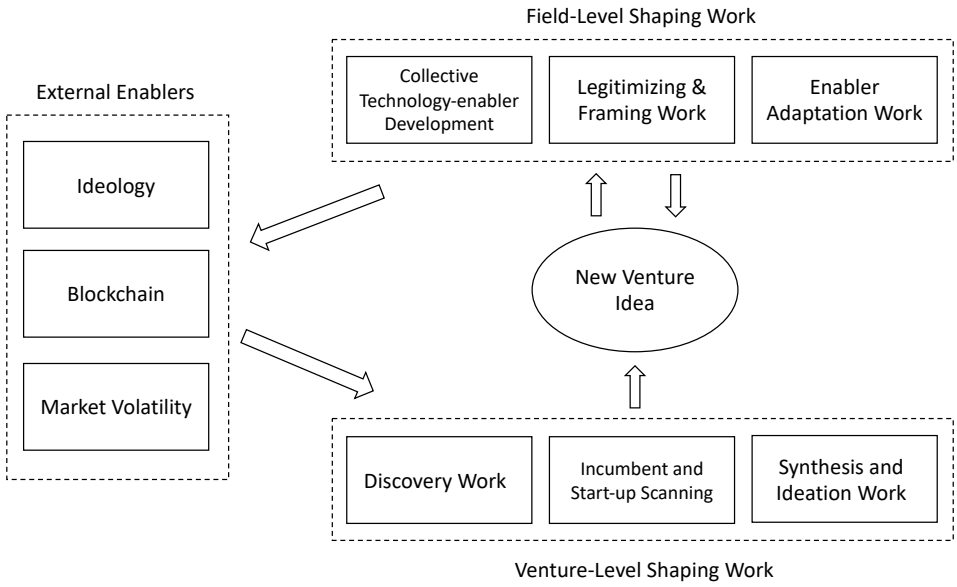
As our findings show, entrepreneurs at the vanguard of blockchain-enabled music ventures engage in distinct venture-level and field-level shaping work that underpins the development of their new venture ideas. Notably, these entrepreneurs treat external enablers as dynamic entities, and accordingly, expend significant effort in updating their understanding of enablers as they evolve (sometimes radically changing in a short timespan) and then attempting to shape how they are activated at a field level. To explain the relationship between entrepreneurs, external enablers and new venture ideas in our data therefore, we developed the model in figure 2 (below).

The model proposes that at a venture-level, firms purposively search for new information relating to the core enabling technologies and other non-technological external enablers. This is largely done through social networks (e.g. twitter) and attending conferences and events. It is also through these channels that ideological norms are fostered, reinforced and then activated by new ventures. Through internal shaping work, that can include structured

‘ideation’ activities, and more often, informal discussions between colleagues, information is synthesized, and proto-ideas emerge. They are continually sense-checked against other ‘challenger’ competitors by examining white papers and industry blogs/newsletters and against developments in the larger music industry value architecture (particularly relating to incumbent firms). From here a new venture idea is articulated.

Once an idea has been proposed, perhaps even in a formalized document such as a white paper, entrepreneurs engage in field-level work which attempts to manipulate external factors to increase the acceptability of the idea to stakeholders. This field-level work can involve participating in collaborative work that seeks to develop the external enabler (e.g. by developing an open protocol), participating in conferences and producing other artefacts that reduce perceived risks or uncertainty around consumer/investor adoption of the core technology (i.e. legitimizing), and attempting to influence norms on the use case of the technology with peers (i.e. framing). A final notable feature of our model, is that external enablers can have an impact on each other, for example, in our case where poorly executed ICOs contributed to market volatility around cryptocurrency investment, field-level activities by entrepreneurs that involved enhancing the stability of decentralized systems and clarifying product/service use-cases was seen as a means of minimizing the impact of this enabler.

Figure 2: Model of New Venture Idea and External Enabler Shaping



5. Discussion and Future Research Opportunities

In this section, we consider two primary areas where our study of blockchain-enabled ventures has implications for entrepreneurship theory generally, and digital entrepreneurship theory specifically. First, we discuss implications for Davidsson et al's (2018) external enablers framework by examining the activities that constitute the shaping of new venture ideas. And second, we address calls to explore the role of multiple enablers in shaping new venture ideas (von Briel et al. 2018a), specifically by considering the relationship between ideology and technological external enablers.

5.1 Contributions to External Enabler Theory

Through our analysis of a unique community of blockchain-enabled music ventures, we make several novel observations that relate to the shaping role of external enablers. Principally, by examining the microfoundational 'work' undertaken by individuals within these

organizations, we offer an insight into *how* entrepreneurial firms learn about external enablers and subsequently combine multiple enablers into new venture ideas. Second, we suggest these same firms engage in field-level work that seeks to shape how external enablers are discovered and interpreted by competitor firms. These are important extensions of recent external enabler theory (Davidsson et al. 2018; von Briel et al. 2018a), which has focussed primarily on what enablers can do (e.g. their role and mechanisms) and to a lesser extent on broader processes relating to how they are discovered, combined and then externally framed and legitimized during new venture ideation processes.

5.1.1 Incorporating an Actor-Dependent View of External Enablers

For our first discussion, we return to Davidsson's (2015) controversial theorization of external enablers (Davidsson 2017; Wood 2017; Wood and McKinley 2018). Although these are conceptualized as external, objective and actor-independent, Davidsson (2015: 684) nonetheless acknowledges that "Actors themselves can have some influence on some External Enablers and occasionally have a major role in them, as when entrepreneurial Actors are also the inventors behind new technology or successfully lobby for the regulatory change they subsequently try to exploit." We believe this constitutes a significant yet underdeveloped aspect of the external enabler concept and suggest an additional focus on what we propose may be categorized as 'actor-dependent' enablers is required to further develop external enabler theory.

Accordingly, we suggest that scholars might look to integrate insights from literature that examines the sociology of markets and technology (Beunza et al. 2006), and neo-institutional theory (Powell and Colyvas 2008), with particular focus on strands of literature that examine varied forms of institutional work (Lawrence et al. 2009; Smets et al. 2012). We make this recommendation as we find it possible to draw parallels between external enabler

theory and earlier critiques of institutional theory, in which scholars highlighted the static and deterministic conceptualization of institutions that were then prevalent (Greenwood and Suddaby 2006). Instead, by recognizing the socially constructed nature of institutions, empirical focus could be trained on "the practices of individuals and collective actors aimed at creating, maintaining, and disrupting institutions' (Lawrence et al. 2011: 52).

Translating these insights to external enabler theory, we contend that the separation between external enabler and entrepreneurial actor has perhaps been overstated. Rather than neatly constituting exogenous raw materials which are discovered and then used by entrepreneurs, our findings point to scenarios in which entrepreneurial firms actively contribute to the development of the enablers they seek to activate and the field-level ideologies they seek to draw upon (e.g. Sharism). Thus, while a particular open-source blockchain protocol may exist objectively (that is, it would exist independently of Entrepreneur A), we also must acknowledge that same entrepreneur can have a significant role in shaping the enabler for their own use, but also, consequently, for others.

It is perhaps the case that decentralized and open-source technologies lend themselves to co-development by entrepreneurial firms (more so than, say a piece of hardware such as a 3D printer), though it remains possible to look at other fields of enterprise where individual actors have materially shaped macro-level external enablers. For example, one can reflect on the London Inter-bank Offered Rate (LIBOR) scandal that occurred when individual traders sought to fraudulently manipulate an aggregate interest rate for their own financial benefit as an illustrative example (Ashton et al. 2015).

Thus, in short, we consider it a fruitful avenue to examine literatures that examine the 'shaping' of apparently objective material technologies and economic systems (MacKenzie et al. 2007) as a means of avoiding the trap of static or overly deterministic conceptualizations of external enablers. Where this happens, the scope of entrepreneurial agency is apparently

reduced to developing and executing a new venture idea, and not shaping the broader environment (including external enablers) to incubate the idea. We suggest a way forward may be to pursue MacKenzie and Wajcman's (1985: 2) fundamental questions, which we believe have particular salience for the study of external enablers. They ask: "What has shaped the technology that is having 'effects'? What has caused and is causing the technological changes whose 'impact' we are experiencing?"

5.1.2 Framing How Others Discover and Interpret External Enablers

Our second observation is that firms in our study engaged in forms of 'framing' work (Orlikowski and Gash 1994; Leonardi 2011) which influenced, or attempted to influence, the discovery processes and learning activities of other competing firms. For example, as the blockchain-enabled music industry ventures existed as a rather vibrant community, with conferences, blogs, and social practices, those with more powerful positions in the community (e.g. those who publish widely-read Medium articles or post YouTube videos with high view-counts) effectively framed the information on blockchain other start-ups consumed.

This has some notable implications. Firstly, it suggests that entrepreneurial actors can materially influence the new venture ideation processes of competing firms by influencing their comprehension of an enabler. And second, in lieu of cognitive or absorptive capacity-based explanations for why some firms can benefit from objective external enablers and others are not, we can see that an enabler may only be partially utilized because understanding of the enablers has been framed in a particular way by influential members of a particular community. These insights shed some light on Davidsson et al's (2018) theoretical proposition that context influences the enabling potential of global technological innovation, and paves the way for future research to further integrate external enabler theory and framing theories (Cornelissen and Werner 2014) to understand field-level external enabler work.

5.2 Contributions to Theories of Digital Entrepreneurship

Our findings, which inductively surface the role of 'ideology' in shaping new venture ideas, also extend recent attempts to understand digital entrepreneurship (Nambisan 2017). Ideology has been a driving force in recent entrepreneurial trends such as social entrepreneurship (Short et al. 2009), the sharing economy (Uzunca et al. 2018) and sustainable entrepreneurship (Shepherd and Patzelt 2011). Going back further still, critical scholars have scrutinized the notion of 'enterprise culture' and the ideological prioritization of the entrepreneur in opposition to the bureaucratic state (du Gay 2004) alongside the role of ideology in the formation of entrepreneurial discourses and praxis (Ogbor 2000).

We suggest that digital entrepreneurship provides a fertile new area for examining the role of ideology in entrepreneurial processes. Our findings describe a fascinating coalescing around ideas of 'fairness' and 'openness' of information in developing new venture ideas, whereby those creating music are given greater shares of revenue at the expense of intermediaries and the 'big players'. Below this surface ideology, we detect a more radical libertarian ethos shaping new venture ideas (Cockayne 2016; Ingram Bogusz and Morisse 2018). For example, we find some ventures (e.g. Venture E) are influenced by cyberculture theories and draw (whether explicitly or not) from the 'hacker ethic,' first articulated by Levy (1984: 27-33) and recently developed by Durand and Vergne (2012a), which specifies values that include "all information should be free" and "mistrust authority – Promote decentralization." This is an intriguing development, as it positions emerging blockchain-enabled ventures alongside successful peer-to-peer (P2P) companies such as Uber and AirBnB, who have arguably gained rapid traction by ignoring, or at best cynically interpreting various local and national regulations (Ahsan 2018). We observe a similar trend with cryptocurrencies such as Bitcoin, which circumvent many of the centralized checks and balances placed on traditional fiat currencies (Böhme et al. 2015; Cohen 2016). In such examples, these new

organizations and organizational forms have gained popular legitimacy by adopting a 'pirate' perspective (Durand and Vergne 2012b) to address what is perceived as oppressive or otherwise unfair legislative or commercial burdens.

To understand digital entrepreneurship, therefore, we suggest scholars must develop a deeper understanding of the cybercultural norms which influence entrepreneurs in this field to pursue seemingly irrational economic choices and ignore established regulations (e.g. Ingram Bogusz and Morisse 2018, do so in their empirical analysis of ideology and Bitcoin entrepreneurs). Such a perspective, we suggest, provides a necessary complement to emerging digital entrepreneurship research, which has largely focussed on technologies and the ways they are used to shape a new venture (von Briel et al. 2018a).

A more sociological analysis, focussing on *why* new technologies are used for the purposes they are would, therefore, provide a more holistic understanding of digital entrepreneurship phenomena. This might be achieved through integrating seminal work by philosophers such as Althusser (2008), who explores how ideologies are produced and maintained in society and more recent critical perspectives on ideology by Žižek (1989; 1994). Our findings nonetheless have provided an initial insight into the machinery (i.e. communication channels and artefacts) used to propagate elements of the 'hacker' or 'pirate' ethos, however further work is required to theorize the link between venture ideas and ideology.

5.3 Implications for Practice

Our findings have implications for entrepreneurs and other music industry stakeholders. Firstly, while new blockchain-enabled ventures undoubtedly benefit from engaging with peers and learning from influential bloggers/competitors, we can foresee scenarios where this will limit competitive advantage by reducing exposure to more varied modes of thinking. Therefore, based on our identification of framing work undertaken by competing firms, we suggest

entrepreneurial firms should be more cognizant of potentially negative effects of uncritically accepting community norms around what an enabler is and can be used for. In short, we see the potential for more radical innovations through combinations of more distant knowledge sources (Taylor and Greve 2006), that challenge the music-industry framing of the blockchain enabler.

Second, our study highlights some of the tensions associated with adopting features of a 'hacker' ideology while running a successful commercial enterprise. Our paper suggests that firms should approach open-sharing and collaboration with some caution, as our findings identify that firms typically dilute their commitment to these ideological goals as they seek funding and grow. Therefore, firms should evaluate carefully whether they might be subsidizing the later commercial success of peer-firms by doing a disproportionate share of external enabler legitimizing and development work.

5.4 Limitations

Our study is not without limitations. Firstly, through our inductive analysis, we only categorize three key enabler types (blockchain, ideology, and market volatility). While these were undoubtedly significant to the new venture idea development process, it is highly likely that we excluded potentially important enablers by distilling only three for reasons of parsimony. Second, we acknowledge that our study is potentially subject to the effects of survivor bias. While we did not explicitly exclude non-surviving ventures from our sample gathering process, we were ultimately unable to examine any such companies as case studies. We must emphasize that it was not the intention of this study to assess the efficacy of shaping work as it pertains to new venture survival or performance. Nonetheless, the rapid birth, death, and rebadging of blockchain projects was a common aspect of commentary emerging from our data collection, and future studies may wish to take steps to reflect this through their empirical

material. Finally, while we have been interested in practices, we have relied on post-hoc interview data to develop our insights. Future studies may consider the use of longitudinal methods, which could better capture shaping work and its effects as an unfolding process.

6. Conclusion

Our study of entrepreneurial firms who are using blockchain to develop new venture ideas in the music industry has provided a novel perspective on intersections between external enabler theory and digital entrepreneurship. We firstly identify a range of key external enablers and show how technological, socio-cultural and macroeconomic enablers can interact to shape new venture ideas. Perhaps most significantly, we begin theorization of *how* actors go about shaping those same enablers and how the industry context is shaped to make it more conducive to new venture ideas that draw on specific enablers. Moreover, as one of only a small number of studies examining entrepreneurship and blockchain, we have provided some potentially useful insights into how new ventures are using this foundational technology to disintermediate industries.

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