Blockchain for Music Business: Preventing the Threat of Disruption

Content

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Keywords:

blockchain, music industry, disruption, transition management, metadata

Abstract

As evidence proves, blockchain has the power to start a disruptive process. If the blockchain concept is considered useful for music industry a framework has to be defined to prevent damage. A collaborative approach, agile methods, and transition management are identified and suggested as a toolset to allow for successfully shaping the impact of disrupted processes. In particular, transition management is presented as a suitable back-up in research and matched to the music industry by examples.

Introduction

Since 2015, the music industry sees a growing hype (Silver 2016: 9) in discussions about blockchain concepts[1]. There hardly is a field in music business that blockchain is not being applied to: Projects are ranging from ticketing (Membran Entertainment (Healy 2017)) to streaming (Resonate[2]), from ID solutions for band names (Music Business Worldwide 2016a)

[1] This article intentionally does not refer to Blockchain "technology" because there is no specific technology. It rather is the concept of combining several approved technologies such as cryptology, swarm intelligence, peer-to-peer networks, hashes and more to form a unique and new concept or architecture (Schütte et al. 2017: 11).

[2] https://www.resonate.is

to licensing for User Generated Content (One Click License, OCL[3]), from distribution (Imogen Heap (Perez 2016) and RAC (Oberhaus 2017)) to global licensing platforms (DotBlockchain Media[4]) – and beyond.

The focus on specific solutions and their feasibility is one on proof of concept (PoC). The aspects the discussion omits or at least circumvents is that on evaluation and integration management. The evaluation of blockchain is necessary due to its short history and, by way of comparison, few approved applications. Experience from practical application and theoretical research in any industry is reaching back for nine years at maximum. A challenge of how to integrate a revolutionary and disruptive concept such as blockchain into the music industry without putting the business at risk has rarely been tackled before.

It clearly is not just a problem that is relevant for the music industry, nor for blockchain only. Increasingly shortened innovation cycles lead to a general cognitive interest in how to deal with disruption. In the music community, blockchain is the one example that currently stands out when investigating how to cope with future changes caused by a disruptive concept. Can it be done, and how?

The objective therefore is to identify one or more approaches to integrate blockchain in the music industry, and to sketch a path towards managing the evolution. Actually, it is the attempt to find a way towards solving a paradox: bridging the disrupting gap. The author assumes that any scheme to manage this task would involve the entire industry, as it has to be a concern of all stakeholders. In order to realise this approach, collaborative methods and yet another new direction in research, namely transition research, represent the core of a hypothetical toolset.

[3] https://what.ocl.is

[4] http://dotblockchainmusic.com

One challenge of this research paper eventually is that both, blockchain and transition management, have rather not been explored in detail yet. The scientific basis – in terms of existing papers – is scarce to say the least. Some additional evidence has been taken from a series of interviews with experts from music business, technology, and research. The interviews have been conducted earlier in 2017 as part of another article (Senges 2017b: 49).

Additionally, besides early works on blockchain architectures, analytical reports and more current magazine and newspaper articles, this paper builds upon the work of the Blockchain Working Group Germany, formed in November 2016 (Senges 2017a).

To set up the framework for the main questions, the first chapter explains which other tasks have to be worked on to prepare the ground for blockchain and why it is necessary to do so. Next, chapter 2.1 discusses the disruptive power of blockchain. Chapter 2.2 takes a look back at previous (disruptive) changes that haven't been dealt with successfully by the music industry. In Chapter 2.4, blockchain and its disruptive potential in music industry are explored. To follow up, chapter 3 goes into detail as to if and how disruption might be managed: Is it possible to define a specific set of requirements to succeed? While tools, methods, and framework as requirements are identified in chapters 3.1 and 3.2 respectively, chapter 3.3 investigates. As a final round-up to chapter 3, the article takes a look at the opportunities and the impact of applying transition management and the afore mentioned toolset while integrating a disruptive concept.

1 Structuring the Challenge

1.1 The metadata chaos

Quoting Benji Roger's metaphor, the change from today's music business towards integrating the blockchain concept is like inventing new *"rails"* (Benji Rogers 2016). It's not about changing objects, and it's not about replacing stakeholders. It's comparable to inventing an internet protocol.

The problem is, new rails won't change existing essential failures. If the motor used in all trains' motor coaches bears technical errors by design than a new rail doesn't help much. The one problem that paralyses the music industry for decades is the "metadata chaos". Correct and complete metadata is the premise to licensing as well as to generating revenues.

Current metadata models and workflows can be made to fit into new technologies and new concepts in technology. Nevertheless, existing shortcomings of the metadata models themselves and errors within will be passed on to the next generation. It's necessary to take a step back and dedicate effort to cleaning up. Metadata defines the value of content, they form the very core of music economy (Senges 2017b: 36–8).

A remodeling of metadata structures and workflows is where to start. Due to their fundamental nature, it is a challenge in itself. It is one requirement to enable blockchain's full scope of advantages.

1.2 Evaluation of the blockchain concept mapped on to music

Current blockchain projects in the music industry focus on proof of concept approaches for specific market sectors and solutions. These projects are in a rather experimental and nascent stage and do not provide a solid basis for mapping the blockchain concept on the music industry's daily workflows and demands. In contrary, they require the latter. Bettina Schasse

de Araujo[5]: *"[…] a potential integration of blockchain can only be successful after a thorough analysis of an integration with upstream and downstream processes."* It is necessary to launch and establish a *"dialogue with relevant stakeholders […] – an intensive multi-stakeholder dialogue"* (Senges 2017b: 39).[6]

A multi-stakeholder dialogue merges the work on issues such as the metadata challenge with a mapping of the concept on to the music industry. At first sight, the main objective is the requirements specification for the music industry and the system's implementation. But the approach extends beyond. As Matthias Hornschuh[7] states in an interview: *"[…] structural [and] systematic problems of [the music industry] as well as those of adjacent, respectively intersecting industry sectors (in particular media/broadcast/IT)"* that are in demand to be included to draft *"a comprehensive and sustainable requirements specification"* (Senges 2017b: 39).

The synergy in establishing a multi-stakeholder dialogue is almost more important than solving the challenge in itself. The dialogue brings together parties confronting each other for a decade or more (Senges 2017: 4).

This is the technical and infrastructural premise to consider blockchain as an integral layer of the music industry.

1.3 How to integrate blockchain?

The third task that can't be separated from a research in blockchain is the challenge of how to introduce and integrate blockchain – or any other disruptive concept – into music industry.

[5] Innovation Strategies & Community Manager, Institute for Applied Informatics (InfAI)) e. V.

[6] Quotation translated by the author.

[7] Composer for film and television.

With blockchain there is the rare opportunity that stakeholders are very aware of a concept that might develop a significant and disruptive impact. Evidence that it actually has disruptive power can be found in the next chapter. It is neither possible to exactly predict the degree of impact, nor do we know about the time that is available for preparing. The momentum may develop fast. More dangerously, the hype around blockchain may find some stakeholders or innovators to call for action too quick, leading to deployments that are not based on safe knowledge.

The main objective of this paper is to identify tools, guidance and a backing in research to allow for an integration rather than a confrontation between blockchain supported approaches and a music industry that yet has to adopt blockchain.

Integration of disruption means shaping the change. It means to distillate potential opportunities from a new technology for realisation, and it means to filter and separate threats and misconception resulting from the same technology that are causing damage to the ecosystem. It is a highly sensible task because preventing damage does not stand for conserving the old. Any framework to guide integration has to balance existing workflows principles and newly drafted ones. Therefore, the respective framework must be conceived first with a non-biased approach in mind.

1.4 Summary

Hence, the precondition to apply blockchain not only requires investigating the metadata challenge and executing a thorough evaluation. It also is a requirements specification that is in demand, and a plan how to control the evolution of a radically changing environment. This paper focuses on drafting, accompanying, and shaping the change that might evolve.

2 Blockchain and the power of disruption

2.1 Evidence of disruption

The title of this paper implies that blockchain has disruptive power by definition. Unfortunately, innovations that cause radical changes in a market are often called “disruptive” although they are not. At least it is difficult to call blockchain disruptive as of today. Disruption is more complex as Christensen et al. (Christensen, Raynor & McDonald 2015) explain. While products, services, or technologies can rather not be labelled as “disruptive” themselves it is the process they may initiate by innovation that is disruptive.

When investigating whether blockchain is capable of initiating a disruptive process or not it is important to first separate two facets. On the one hand, blockchain can be viewed as an integral part of a product, e.g. Bitcoin. On the other hand, blockchain as an abstract concept may serve as an underlying infrastructure for many industries or products.

In conjunction with Bitcoin, blockchain helped to challenge finance industries by its innovative way of combining security, transparency, and control within distributed peer-to-peer networks. This is an example for *low-end footholds disruption* (Christensen, Raynor & McDonald 2015) targeting a very specific group of customers at the low end. Blockchain for Bitcoin launched into a new phase when financial industries explored added values of the blockchain concept. Far from being mainstream and still only tested, blockchain as a concept got separated from Bitcoin and went upmarket from the innovators’ niche. More than that, it spread to other industries within only a few years.

Separated from Bitcoin, blockchain now appears to have launched into a *new-market footholds* disruption process. Start-up companies like Ethereum[8], ConsenSys[9], JAAK[10], BigchainDB[11] and many others have established services as providers of concepts, infrastructure, developing, and technology. Blockchain in itself created a new market. Incumbents include enterprise software providers like IBM who tend to find and implement their own blockchain infrastructures to escape the innovators' pressure.

Still in evaluation phase in all industries, blockchain entered music business. The question is: Can blockchain initiate a disruptive process when applied here? Given the fact that blockchain entered music in 2015, it is too early to be sure about. Looking at early evaluations for various industries (McWaters et al. 2015; Allianz 2016; Schütte et al. 2017) it has the potential to maybe start a disruptive process. How blockchain can eventually perform in music industry will be dealt with in chapter 2.4.

The challenge that has yet to be solved is how to cope with the accompanying changes that will arise in case disruption is initiated.

2.2 Disruption in music: failed approaches to coping with disruption

The impact of disruptive technologies in the past resulted in a predominant fear. The reason for fear is the feeling of being pressed to react when your organisation is not able, not willing or not capable to (Mulligan 2015: 19, 60): the fear to be overrun and outperformed. The negative connotation overshadows that the same radical changes may lead (and have led) to improvements. Potential opportunities became a threat. The negative impact of a radical

[8] https://www.ethereum.org

[9] https://consensys.net

[10] http://jaak.io

[11] https://www.bigchaindb.com

change for incumbent players now appears to define disruption: The consequences of disruption seem to equal financial loss and a downshift of status that is due to not expecting the change, and to not being able to adopt as fast as necessary.

Example 1: Napster

Napster (1999–2001), in its first incarnation, and other platforms like Kazaa or Mule didn't really change the paradigm of a product. It was a one-to-one transfer of a physical to a digital product – and it was free. The peer-to-peer networks, the technology that empowered distribution, the comfortability, and the fact it was free launched into a disruptive process. It changed users' behaviour instantly and ultimately. There was no chance to convert it back (Mulligan 2015: 19).

The effects were unprecedented and came unexpected. Later, legal actions were prepared to prevent or stop similar services. But the industry had been shaken and deeply hurt already. Yet, the music industry was not able to transfer the digital model and adopt it. The key players were too slow to move (Mulligan 2015: 60). At least, they didn't start trying to embrace it in way that the music industry and the artists would benefit. Despite of that the user experience was here to stay – hence, users' behaviour led to pressure. Finally, with iTunes, the music industry started to react (Mulligan 2015: 129). But the disruption also paved the way for a new dominant partner: Apple. Apple adopted digital distribution in a reasonable and legal way, shifting disruption to the end of the disruptive process: mainstream acceptance.

It took more than a decade to close most illegal download platforms. The aftermath of the result from the *low-end footholds* disruption is a severe damage to monetising downloads which could be successfully sold only within a relatively narrow timeframe (Mulligan 2015: 291).

Example 2: User Generated Content

While Napster draw attention to illegal sharing of music the services of YouTube focused on creating. This time, the music industry tried to stop illegal use (and thereby sharing) immediately – either by negotiating contracts as major labels did in the USA, or by first to no avail negotiating, and later suing YouTube (Music Business Worldwide 2016b). But, concentrating on aspects that were known to cause damage it was another field of interest that escaped the industry's attention: User Generated Content (UGC) as a new competitor.

The use of existing and therefore "shared" content is one aspect. But its impact extends that by far. Innovators such as SoundCloud[12] established the concept. The rise of UGC changed users' behaviour yet again. UGC saw users involve as consumers and simultaneously as producers. The result was another *new-market footholds* disruption that withdraw attention of audiences from professional artists. Some UGC creators even circumvented artist development of the creative industries and successfully entered the commercial market.

2.3 Learnings

Structure and workflows of an organisation are supposed to be flexible to react to or to adopt changes and trends from the surrounding environment fast. It doesn't matter whether the source that starts the change is located within the market (a new player) or even externally (social trends or politics). Most importantly, any reason that might cause a disruptive change has to be identified first. Innovations and concepts – new or surfacing yet again – have to be constantly monitored and evaluated regarding potentially upcoming developments. With essential and evolutionary developments in technology, an early effort helps avoiding damages. It encourages building new and improved infrastructures as well as workflows.

[12] http://soundcloud.com

Instead of watching innovation (and disruption) happen in order to consume and harvest the resulting financial benefit later, it is more beneficial to shape and improve the market for continuously increasing revenues and growing a higher market value.

This requires a joint effort by all stakeholders in the market. Even in a competitive market it is reasonable to work on the potential of new concepts collaboratively. One example for a coordinated development is the WorldWideWeb Consortium (W3C)[13].

Therefore, any new technology or concept on the market (and even before entering the music industry) should be inspected and evaluated in detail. Innovation cycles have significantly accelerated. The best way to prevent being overrun is to watch and examine the innovation in advance while doing its first nascent steps.

2.4 How Blockchain might cause disruption in music industry

The most likely use cases of blockchain that can develop a disruptive potential are licensing and "structure as a service".

Licensing

Licensing is the basis to the monetisation of music and other intellectual property. If workflows around licensing are affected by innovation there is an instant impact on music industry. To a large extent, revenues depend on existence and quality of metadata connected to musical works (Senges 2017: 36–8). Matthias Hornschuh: *"The economic core of business with content that is not physical lies in the data"* (Senges 2017b: 36).

[13] https://www.w3.org

If the metadata problems can be solved blockchain may allow for a significant rise in revenues by more comfortable licensing processes, correctly identifying creators, and accelerating transactions. Low cost of transactions may enable paying fractions of amounts for single plays which supports independent and non-established artists as well as smaller labels and publishers. Improvements in time-to-market and increasing revenues lead to a higher penetration of the music industry by blockchain supported companies. Stakeholders shying away from blockchain and not participating in a new shared metadata model are to suffer from the disruptive fall-out.

Structure as a service

Compared to licensing, bundling various services into one may initiate more changes in the negative meaning of disruption. Some players already are offering services on demand for artists: label services, marketing, and most of all digital distribution. With blockchain as a backbone connecting smaller services, there is an imminent opportunity in the music industry for new players. Similar to Uber, Airbnb, Facebook and Amazon, these new players can be categorised as enterprises that do not produce, own, or offer services themselves. Business models like these are fast to build and cost efficient to maintain.

But, a "structure as a service" bundle offering that includes transactions, distribution, one-stop profiles, administration, and APIs to synch-catalogues could potentially translate to rendering public rights organisations (PROs) obsolete. While today's unsigned artists would definitely benefit from a presumably much better access to market, the backlash of a possible death of PROs would hurt the majority of professional and semi-professional artists. The legal backing and representation of these artists would be gone. It is assumptions like these that may stimulate the hampering of and the resistance towards blockchain by certain stakeholders like PROs.

Nevertheless, PROs themselves may benefit from blockchain (Senges 2017b: 31–4). Despite of resistance by ignorance, opposing stakeholders most certainly will rather promote or at least just delay what they try to stop. It's strategically more constructive to investigate if and how blockchain can be deployed.

Balancing access to market for all artists

Instead of shifting benefit from one group of creators to the other, the challenge is to balance the benefit for both.

Therefore, an essential problem of the music business has to be tackled: The integration of the commercial market with truly independent artists who are no members of PROs and who are not signed by labels or publishers. This target group in some part is related to more topics like Creative Commons licensing and User Generated Content (UGC). The process as described in chapter 2.3, example 2, that has already launched into disruption production-wise could be amplified by blockchain based structure-as-a-service offers.

Any serious approach that intends to benefit from blockchain should include the draft of an extended concept by a multi-perspective view. It's supposed to bridge the gap between do-it-yourself (DIY) artists and music industry. The objective should be described as a concept that embraces the diversity of cultural evolution. It helps aspiring artists to move between both worlds.

If failures can be avoided and existing aberrations erased it is a good start to shape disruptive evolutions. Of course, any approach like this demands broad communication across the market and between all stakeholders.

3 How to manage disruptive changes

Managing a disruptive change does not translate to “how to strategically face or fight new and innovative competitors”. Neither it is a form of “traditional” project management in terms of clearly defined tasks, deadlines, or closed processes. It extends the impact on a single organisation, and it often extends beyond an industry because of the reciprocal effect between entities within an organisation and beyond.

3.1 Tools and methods

The goal is to first identify the requirements: How can tasks be described? What are the challenges in actively dealing with and shaping radical changes that may affect the entire market or even larger systems?

The domains and aspects of work are as numerous and vast as the challenge is. The outcome of the process is unpredictable. It is elusive in its entirety, and the knowledge available at present is limited. Due to the dynamics of the project, the most important requirement is to move on gradually in repeated iterations which allow for a continuous customisation of task lists and goals. In addition, frequent iterations allow for early feedback of requirements, supported by regular communication starting with first iterations. Similarly, teams may change to match the current tasks and requested skill sets. An approach that applies agile methods and tools seems most suitable (Beck et al. 2001; Agile Alliance d. u.).

Teams should include members of various stakeholder categories (horizontal excerpt of market) to enable a multi-stakeholder dialogue. In addition, members representing diverse vertical levels of implementation have to be involved:

- users (artists, composers, producers, licensees such as broadcast services),
- manufacturers and service providers (PROs, labels, publishers, distributors, manufacturers of musical instruments and software),

- implementing teams (system providers of blockchain services),
- researchers (institutes and universities).

Core to successfully and collaboratively work on the challenge is extensive communication which again requires trust and transparency. As a precondition to trust, all participants have to:

- share the understanding of the demand,
- share their motivation to engage,
- support and promote transparency.

Regarding the afore mentioned tools and methods it is open frameworks and an open infrastructure that qualify for a basis. This must not be mistaken for Open Source software. Since teams and tasks may change anytime, the choice of software must not be limited to either type or kind of tools. The equivalent in management structures is collaborative management ("wiki management") which also enables cooperation between a large number of participants and stakeholders at a relatively low cost (Collins 2014: 122–24).

The variety of teams and sub-tasks might be realised best by establishing a working group or a virtual platform to connect between all participants: a hub or broker structure.

3.2 Framework

Apart from a set of tools and methods, an approach to prevent the unexpected surfacing and fall-out from disruption requires a framework. The framework, or research work, should back-up the approach and provide a template: It should present objectives and guidelines according to which any analytical and steering efforts are executed.

The process that will have to be examined is one that either initiates a *low-end* or a *new-markets footholds* disruption. Both apply innovative technology, workflows, data models, concepts or similar approaches that share a capability to initiate a transforming process. Therefore, the framework must be able to map the changes induced on to a transforming scheme that allows for guidance and shaping.

Management approaches that spring to mind first are migration management and change management. Yet, neither of both does fit.

Migration management is applied to closed (sub-)systems where one part of which is replaced by a new (sub-)system. Typically, these are software products, services, or formats that require a change in workflows. Any blockchain architecture that would be introduced at a single company within the music industry, or across the entire music industry will be highly specific. It rather requires innovative concepts to replace one part of the system. Either they are designed to change workflows, interfaces and more, or they may replace the entire technical backbone. The implementation includes processes that generate innovation by integration. Also, multiple migrations may be in demand when blockchain concept is integrated. Impact and challenges exceed those of migration.

Change management goes beyond migration and manages transformational processes. It represents the customisation of an existing system and its adaption of changes that are taking place in the surrounding ecosystem (Litke 2004: 259–60). The reaction towards on-going changes extends from technical systems to workflows, from personnel structures to job cuts or hirings. As with migration, all actions are planned and executed internally within the organisation or group of organisations. Coordination efforts are limited and common project management tools may be sufficient.

Compared to potential changes by disruptive processes there are multiple requirements that do not fit the scheme of migration management or change management. As described above, there is a predominant uncertainty in disruptive processes that includes their starting point – it can't be exactly determined. The most important issue relates to trends and impacts from surrounding (eco-)systems which can be either a stimulus for the disruptive process, or, vice versa, they may have been induced by the innovation themselves. As with change management, external impacts should be targeted. But rather than reacting to the impact, it is more relevant to analyse, shape and steer external trends.

Transition management may serve as a matching framework. As a research topic, it is rather new (Schneidewind & Scheck 2012)[14]. Transition management targets the demand for management approaches that fit accelerated innovation cycles.

Frequent changes in technology that are initiated by innovation lead to and promote disruption. The fact that external impact is heavily involved shows the demand for a new concept in management. As requested above, transition management goes beyond managing a transformation of workflows. More than reacting, its main objective is to actively shape external trends and impact.

3.3 Transition management

In order to prove that transition management can represent a suitable framework to shape a disruptive process in music industry, this chapter analyses the summary by Schneidewind and Scheck (Schneidewind & Scheck 2012). Starting with the definition of the term "transition", the model is matched against the music industry.

[14] Schneidewind and Scheck are describing the deployment of transition research referring to recent changes in power economy.

Definition

Based on research works from the Netherlands (Schneidewind & Scheck 2012: 45), the authors define transitions as a "radical [and] structural change of a social system". This change is the "consequence of co-evolutionary economical as well as cultural, technological, ecological and institutional trends on various levels" (Schneidewind & Scheck 2012: 47–8).

Impact of co-evolutionary trends in music industry

Like any other industry, music business is part of the social system. Despite the fact that the work by Schneidewind and Scheck refers to the power industry and the radical changes it is going through, the term "transition" can also be transferred to disruptive processes in music industry. Trends that lead to, or have an impact on disruptive processes in music industry are of various types:

- Economical: If blockchain helps to increase revenue by improved licensing processes then, as a consequence, there is a positive economical trend. This is a positive trend within the music industry. However, other internal changes like that in user behaviour caused by Napster and others led to a more external trend of devaluation of intellectual property which in return promoted non-licensed usage, equalling not remunerated usage.
- Cultural: With the 21st century, users became more and more producers on their own. For the music industry, it meant the launch of do-it-yourself (DIY) artists. Recent articles described SoundCloud as a ground for new genres (Caramanica 2017). In a reciprocal effect (co-evolution), the change of roles was fostered by economical changes like crowdfunding and by low prices for music and video production gear.
- Technological: Every change in recording and distribution technology has been radical in music industry. Although, most technologies unfurled their most disruptive

potential when its cost fell below the threshold that private users could afford – which connects financial and technological trends.

- Ecological: The availability of resources to manufacture physical media was of marginal relevance only. With the dominance of servers, power consumption and the disposal of hardware though, an external trend with impact for the music industry may gain more traction.
- Institutional: The evolution of PROs and their representational power was and still is a potential source of institutional trends. Creative Commons is another example which launched a new perspective on intellectual property. More precisely, it is not the introduction of Creative Commons licences that spawned an institutional trend. It is the impact of the existence of Creative Commons that led to the consideration by jurisdiction. In the USA and the European Community, this turned into a legal demand for PROs to adopt to other licences by allowing their members to register works under these licences.

Levels hosting trends

The description of transition research goes more into detail (Schneidewind & Scheck 2012: 48–9). The definition refers to "various levels" on which the evolutionary processes take place:

- the socio-technical niche,
- the socio-technical regime, and
- the socio-technical landscape.

In music industry, the *socio-technical niche* hosts start-ups and incubators of innovations: The format of MP3 compression was introduced by Fraunhofer Institute. Blockchain, on the other hand, is an innovation sourced from another market and developed by multiple start-ups like

Ujo, Ethereum, BigchainDB and more. Again, this proves the point that the source of impact has to be searched for externally as well. The starting point and even most innovators and incubators are not necessarily a part of the music industry. Some of today's dominating media corporations catapulted themselves into the music and entertainment industry although they were launched in other markets, e.g. Apple, Google, and Amazon.

The *socio-technical regime* in music industry finds PROs, major labels, major publishers, various associations representing the industry or parts thereof[15], and the legislative body. A system of rules builds up to a framework of the market defining the power of these stakeholders. Transition research differentiates between *normative*, *regulative*, and *cognitive* rules. Normative rules are defined by major players like associations and corporations. These are based on regulations by the legislative body. PROs are regulated by law themselves for example, and they define normative rules in licensing. Cognitive rules result from the perspective of groups of stakeholders and participants in the music industry. The different perception of "sharing" content escalated after the market entry of Napster (in 1998) grew from a trend that got more and more threatening with the evolution of technology. The cognitive concept of intellectual property from the creators' perspective differed extremely compared to that of users. One consequence was hard legal action in some cases of copyright infringement – a deployment of normative rules supported by the regulatory level.

The *socio-technical landscape* describes the third level. It represents the landscape in which the social system and all trends are embedded. This includes ecological influence, political developments and other surrounding conditions. Trends and conditions within the socio-

[15] These include Bundesverband Musikindustrie e.V. (BVMI), Dachorganisation der Musikschaffenden e.V. (DOMUS), and Verband unabhängiger Musikunternehmen e.V. (VUT) in Germany; examples worldwide include the International Federation of the Phonographic Industry (IFPI), the Featured Artists Coalition (FAC), The Worldwide Independent Network (WIN), and more.

technical landscape have in common that they are hardly controllable. One approach to enable some influence at least is lobbyism by organisations, corporations, and associations.

A recent example is the vote in favour of an exit of the United Kingdom from the European Community, more commonly labelled as Brexit. Its upcoming impact still is uncertain and almost impossible to be shaped from within the music industry. The potential consequences for the British and the European music industry have been compiled by Laura Snapes (Snapes 2016) – prior to the vote. Her article underlines the significance for the music industry by a political decision.

Patterns of change

The disruptive process has to be analysed based on the reciprocal impacts of trends, rules, and perspectives across various levels within one industry and beyond. The few examples featured above show the complexity that a full analysis should come up with.

This complexity can be reduced by identifying patterns of change in transition research (Schneidewind & Scheck 2012: 50). The summary of Schneidewind and Scheck refers to *bottom-up*, *top-down*, and *hybrid* patterns. There certainly are parallels to the types of disruptive processes described by Christensen et al. (Christensen et al. 2015). For example, the bottom-up pattern can be matched with the low-end footholds disruption. A detailed analysis of the relationship between transition patterns and types of disruption has yet to be conducted.

Patterns often can't be clearly identified being of one type or the other. While Napster in 1998 certainly initiated a *bottom-up* pattern it did not "dispossess" regime entities (Senges 2017b: 43) as the pattern implies. Considering transition research to be applied in the context of accompanying the integration of blockchain in music industry, the hybrid pattern gains

attention. If the objective is to jointly find a way for a smooth transition from a blockchain-less industry into a one supported by blockchain architectures, any approaches that offer a benefit for all – or at least for most – stakeholders should be investigated in detail. Schneidewind and Scheck (Schneidewind & Scheck 2012: 50) refer to potential "symbiotic relations between regimes [e.g. PROs] and niche [e.g. innovators and start-ups]" which in an ideal world could pave the way for a joint success.

3.4 Opportunities

Migration and change management in particular are missing an option to shape the impact caused by processes from a surrounding sphere. Transition management is supposed to shape "the direction and […] pace of transformational processes" (Schneidewind & Scheck 2012: 51).

Blockchain is not just a concept for single players but one of interaction. A transaction protocol based on blockchain may result in another layer on top of the internet protocol to handle any kind of transactions – financial and contractual. Similar to the internet, it comes to full effect only when the disruptive process comes to an end, and when it reaches mainstream: It's ubiquitous and not perceptible anymore.

Licensing in music as well licensing in any other industry based on intellectual property is built on top of contracts and fees. It is a model which matches the concept of blockchain perfectly. Nevertheless, an implementation demands to be shaped across and aligned for the industry – an enormous challenge, and a huge effort. Transition management enables communities and markets to not just prepare for costs to come and actions to execute. It also allows for a perception of changes in social structures which are yet to evolve. In conjunction with agile methods and tools described above it's a promising framework. If research in

transition management in any industry turns out to succeed it can provide a useful template and guidance on how to cope with radical technological evolution.

4 Conclusion

Based on the fact that numerous industries are investing heavily in evaluating and testing blockchain, it's almost safe to say that blockchain is on its way to establish itself as a concept in tomorrow's technology – it is here to stay. It's uncertain when, or in which disguise.

The likeliness of blockchain noticeably entering the market should advise stakeholders in the music industry to prepare for how to face the new concept. It's the wrong decision to ignore blockchain. Even if blockchain fails it is an opportunity to learn about how to cope with a rising, and possibly disruptive trend.

Therefore, an approach towards blockchain in music industry should include three tiers:

- the evaluation of blockchain,
- solving the metadata chaos,
- drafting a scheme to control the integration of a new technology.

While the evaluation of blockchain investigates feasibility, and includes proof of concept studies for various cases, a joint effort in improving metadata workflows is crucial to apply blockchain or other technologies. Results from both have to be analysed iteratively to draft the integrative proceedings.

The premise for this is to build a framework based on transition research. It is necessary to start by establishing a working group or roundtable to coordinate the transition. It is the most valuable goal to lay the ground for an infrastructure mitigating obstacles and conflicts. While

competition is healthy and crucial, commercial wars and extended legal disputes are rather likely to hurt the industry. More importantly, it is the creatives who are suffering most.

Actually, this is the most outstanding feature of blockchain: It motivates stakeholders from all sides to discuss not just blockchain but much older and more serious issues like the metadata chaos. The joint approach is essential since any implementation of methods from transition management builds upon co-operative work: open infrastructures, application programming interfaces (APIs), shared access and joint maintenance of standard data. Ironically, shared thinking presumably is the most suitable way for market growth.

Beyond blockchain and music industry, connecting transition research to disruption leads to a challenging question: Is it possible to avoid the rupture that is implied? Even more, if disruption loses its threat by managing the transition, can rupture be turned into rapture over new opportunities?

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