DLT-enabled Platforms: Distribution and Management of Media Content

OverTheBlock – IPR Management Chapter

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Key issues in the Digital Media Industry

**Single point of failure**
- Due to centralization.

**Low profit for creators**
- Too many intermediaries;
- Monopolistic pricing models.

**Lack of transparency**
- Centralization of power causes opaque and complex management of copyrights and licensing contracts.

**Piracy and infringement**
- Right owners cannot effectively manage their works on the internet.

**Limited consumption of pay-per-use content**
- Access from other country/territory can be prohibited by the license;
- Limitations of DRM technologies (e.g., different countries or file format).

**Copyright ownership**
- Absence of a global and verified register for IP. Records are stored in diverse systems across the media value chain.

*Source: Blockchain Council*
## Potential blockchain-based solutions

### Decentralized digital content ecosystem
- Redundant and resilient architecture: no single point of failure;
- Power and ownership return to creators: enhanced redistribution of value.

### New pricing options
- Micropayments and micrometering: new options for creators to earn by selling piece of content or single content payments.

### Monetization of content
- Blockchain facilitates customer relationship;
- Content creators can establish direct relationship with customers: no third parties are needed to perform transactions.

### Distribution of royalty payments
- Near real time and exact allocation and distribution of royalty payments, based on smart contract.

### From DRM to Smart Contract
- Transparent and “self-execute” rights management thanks to underlying smart contract;
- DRM technologies not necessary: no limitations for pay-per-use content.

### Attribution
- Blockchain increases the visibility and availability of the information regarding copyright ownership: open and secure register for IP.

### Copyright management
- Blockchain enables content owners to directly manage their works: more visibility on the usage of works.

Source: Consensys.net
MediaVerse market observatory

Unit of analysis
DLT-enabled platforms for the distribution and management of media content

Research questions
• What is the maturity level?
• In which ways does blockchain contribute to the generation of value?
• What is the differential value proposition with respect to incumbents?

Methodological underpinnings
• Case study research
• Review of platform white papers
• Analysis of grey literature (e.g., industry reports, trend reports)
• Access to company databases (e.g., CB Insights, Crunchbase, CoinMarketCap)
Market Overview
Blockchain market overview

• Blockchain is a type of Distributed Ledger Technology (DLT) providing enhanced security to the real time digital economic transactions.

• The global blockchain technology market size, in 2020, was valued at $3.67 Bn (Grand View Research).

• According to the Grand View Research the global blockchain technology market is expected to expand at a compound annual growth rate (CAGR) of 82.4% from 2021 to 2028.

• The global media and entertainment industry has been substantially transformed by digital technologies, especially in the areas of content production and distribution.

• The blockchain technology is the most prominent technological disruptor in this context.
Blockchain in the Media Industry

According to Business Wire, the blockchain in media, advertising, and entertainment industry was valued at $166.6M in 2020.

The chart on the left-hand side of the slide shows the European blockchain market break down by industry, highlighting the Media & Entertainment industry.

The blockchain market in the Media and Entertainment industry is expected to reach $4.4Bn by 2026 at a CAGR of 71.4% during the forecast period 2021-2026 (Source: Business Wire).

Blockchain is a disruptive technology that is enabling the development of new business models, especially in the Media Industry.
Digital Media Value Chain

Content production
- Media creation
- Metadata creation

Media preparation
- Transcoding
- Packaging
- DRM license software
- CMS (Inventory, rights)

Content distribution
- Content delivery network
- DTH network
- Traffic analytics

Monetization
- Payment systems
- Royalties
- Advertising
- Billing

Consumption
- Content visualization rights
- Operations

Source: OverTheBlock.io
Methodology
Case Studies methodology

The complex nature of the Blockchain requires an approach to exploratory case studies, due to the absence of established and consolidated theories on the subject.

Each unit of analysis examined through the case study methodology is a company whose main activity is focused on the creation of a new typology of Media Platform that uses blockchain technology and falls within one of the three categories of players taken into consideration:

- **Content distribution**: platforms that allow distribution of digital contents protecting the IP of their creators.
- **Content communities**: platform sharing media content with features to realize a network between users.
- **IP Management**: blockchain platforms for registration of creative works that aim to protect their intellectual property and control use in the network.

The case design is oriented towards heterogeneity of the case studies to map a very faceted context and a holistic approach is adopted so there is a single unit of analysis for each case.
Case Studies methodology (cont’d)

The process of analysis is made up of 3 steps:

1. **Identification of a long-list of cases for the analysis**
2. **Selection of a short-list of cases through objective criteria**
3. **Analysis of the case studies with a predefined template**
Long-list – 30 case studies
### 30 DLT-enabled platforms

Distribution and management of media content

<table>
<thead>
<tr>
<th>Content Distribution</th>
<th>Content Communities</th>
<th>IP Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ujo Music</td>
<td>Audius</td>
<td>Authpaper</td>
</tr>
<tr>
<td>Musicoin</td>
<td>Flixxo</td>
<td>Bernstein</td>
</tr>
<tr>
<td>OurBeat</td>
<td>Theta.tv</td>
<td>Creativity safe</td>
</tr>
<tr>
<td>Breaker</td>
<td>Dlive</td>
<td>Superrare</td>
</tr>
<tr>
<td>Aurovine</td>
<td>Dtube</td>
<td>Ara network</td>
</tr>
<tr>
<td>Peertracks</td>
<td>Cos.tv</td>
<td>LBRY</td>
</tr>
<tr>
<td>TvTwo</td>
<td>3Speack</td>
<td>Mintbase</td>
</tr>
<tr>
<td>Vuulr</td>
<td>Bittube</td>
<td>InfiniVerse</td>
</tr>
<tr>
<td>You42</td>
<td></td>
<td>OpenSea</td>
</tr>
<tr>
<td>PictionNetwork</td>
<td></td>
<td>Verisart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KnownOrigin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Custos</td>
</tr>
</tbody>
</table>

Tot: 10  

Tot: 8  

Tot: 12
Long-list platforms offering

- IP Registration: Tot: 12
  - Digital IP protection, 5
  - Digital assets marketplace, 2

- Content distribution: Tot: 8
  - Content delivery platform, 3
  - AR digital world and marketplace, 1
  - Certification registration service, 1
  - Music streaming, 5
  - Streaming platform, 3
  - TV and Film rights market, 1
  - Digital content market, 1

- Content communities: Tot: 10
  - Video sharing, 4
  - Esporting streaming platform, 2
  - Music sharing, 1
  - Video on demand, 1

Totals:
- Content distribution: 8
- Content communities: 8
- IP Registration: 12
Long list projects – growth over time

The figure shows the aggregated evolution over time of the three macro-categories.

All the categories experienced an increasing pattern during the period 2012-2020.

The period 2016-2018 is characterized by the most significant number of new projects across categories.
Most of the platforms use the Ethereum Blockchain protocol, given the wide degree of freedom in the management and creation of the operating logic that the Ethereum protocol offers.

The Bitcoin blockchain is the second most used blockchain architecture with 4 projects.

The remaining projects under analysis are based on a vast variety (i.e., 13) of blockchain infrastructures.
Tech infrastructure

Long-list

All the blockchain infrastructures involved are *permissionless* (only Dtube chain is *permissioned*, even if *public*).

As far as consensus mechanism is concerned, 6 out of 14 blockchain platforms are based on *PoW protocols*, while 7 case studies implement *PoS* or *DPoS* mechanisms. Only Contentos uses a self-adaptive Byzantine Fault Tolerance consensus protocol.
Short-listed platforms
The 10 short-listed platforms

Content distribution:
- Mjo MUSIC
- musicoin
- PEERTRACKS
- vuulr

IP Management:
- INFINVERSE
- Mintbase
- LBRY
- OpenSea

Content communities:
- COS.TV
- AUDIUS
The short-list selection is based on 3 objective criteria:

1. **Heterogeneity criterion**: it is selected at least one project per macro-category (i.e., content distribution, content communities and IP management).

2. **Similarity criterion**: only projects close to the MediaVerse project are selected.

3. **Success criterion**: the short-list only contains successful projects, identified with respect to the number of users and/or the numbers of registered content.
In the following, each short-listed case study is described by means of a **Use case Card**, that presents a summary of the relevant information of the platform, both technical and business-related.

A **guide** to the reading of the token card is here reported on the right.

<table>
<thead>
<tr>
<th>Year in which the underlying company was founded.</th>
<th>Number of users / Number of content recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Founded in</strong></td>
<td><strong>Users / Records</strong></td>
</tr>
<tr>
<td>Market capitalization of the token associated to the platform. <strong>Source:</strong> CoinMarketCap.com</td>
<td><strong>Tokens involved in the platform.</strong></td>
</tr>
<tr>
<td><strong>Market Cap</strong></td>
<td><strong>Tokens</strong></td>
</tr>
<tr>
<td>Brief description of the platform.</td>
<td>Main service offered by the platform.</td>
</tr>
<tr>
<td><strong>Blockchain infrastructure on which the platform runs.</strong></td>
<td><strong>Main service</strong></td>
</tr>
<tr>
<td><strong>Underlying blockchain</strong></td>
<td><strong>Development status</strong> (e.g., Beta, Permanent Beta).</td>
</tr>
<tr>
<td>Consensus protocol adopted by the blockchain to validate new blocks.</td>
<td><strong>Development status</strong></td>
</tr>
<tr>
<td><strong>Consensus protocol</strong></td>
<td><strong>Service category (CD, CC, IP)</strong>.*</td>
</tr>
</tbody>
</table>

* **CD**: Content Distribution; **CC**: Content Communities; **IP**: IP Management
Ujo Music is a decentralized, open, efficient and fair music ecosystem that allows content creators to act independently, without the presence of. Thanks to the blockchain, benefits are provided to the artist such as authenticity and verified ownership of the content created, efficient and direct payment channels between user and artist as well as data security.
Musicoin is a global music platform that provides fair remuneration, distribution and visibility for independent musicians. Blockchain is used to allow musicians to take full ownership of their content and finances. Main goal is to eliminate all middlemen and bridge the gap between musicians and listeners.
Peertracks is a music streaming platform that offers artists a music ecosystem, based on SounDAC blockchain technology, providing them with 3 main functions: 1) Source of truth about who has ownership and property rights to a song; 2) Efficient, fair and direct royalty payment system to all rights holders; 3) Real-time tracking of songs being listened to that serves as a source for automatic royalty payments.
**Vuulr** is a B2B marketplace for film and digital TV contents, where it is possible to search for contents and acquire the rights of the latter in a few days instead of months, without intermediaries and with the security that the transactions are executed on the Ethereum blockchain.

<table>
<thead>
<tr>
<th>Founded in</th>
<th>Market Cap</th>
<th>Underlying blockchain</th>
<th>Consensus protocol</th>
<th>Maturity level</th>
<th>Service category</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>Ethereum</td>
<td>PoW</td>
<td>Permanent Beta</td>
<td>CD</td>
</tr>
<tr>
<td>VUULR</td>
<td>VUU</td>
<td>TV &amp; Film rights market</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Last update: 03/09/2021
**Cos.tv** is a dApp built on the public Contentos blockchain for sharing and live streaming of videos. Using Contentos technology, Cos.tv becomes a digital content community that allows creators to always retain rights to their content and produce, store and distribute this content with an open and transparent pricing system that benefits all parties.

**Contentos**
- Underlying blockchain

**saBFT**
- Consensus protocol

**Streaming platform**
- Main service

**Beta**
- Maturity level

**CC**
- Service category

**COS**
- Token

**450K +**
- Users

**$ 91M**
- Market Cap

**2018**
- Founded in
**Audius** is a music streaming platform that connects fans directly with artists, thanks in part to social networking features. Using a decentralized protocol, based on a public blockchain, Audius provides artists with a service that allows them to distribute works and get paid directly by their fans.

<table>
<thead>
<tr>
<th>Year</th>
<th>Founded in 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Cap</td>
<td>$1.2Bn</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service</th>
<th>Main service</th>
</tr>
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<tbody>
<tr>
<td>Underlying blockchain</td>
<td>Ethereum</td>
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<table>
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<tr>
<td>Maturity level</td>
<td>Service category</td>
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</table>

<table>
<thead>
<tr>
<th>Users</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1M+</td>
<td>Tokens</td>
</tr>
</tbody>
</table>
Mintbase is a decentralized virtual economy platform that provides users with a marketplace where anyone can "mine" their own digital tokens using NFTs and manage the sale, license and use of these tokens using Ethereum smart contracts. With Mintbase it is possible to exploit the concepts of digital ownership and digital scarcity introduced by the blockchain.
OpenSea is a marketplace for digital assets, including collectibles, gaming items, digital art and other digital assets supported by a blockchain such as Ethereum. OpenSea is also a decentralized marketplace. Trading on OpenSea is done through smart contracts, which means no central authority holds custody of individual items.
Infiniverse is an augmented reality “land” registry, content distribution platform and marketplace. It combines the entire world's digital space into a unique, persistent and interactive virtual world where digital content is overlaid on top of the real world in AR using a smartphone or smart glasses.
LBRY is a decentralized marketplace for digital content, using the LBRY protocol creators can upload their work to the network, determine whether to distribute it for free or set a price per view or download, and take advantage of the blockchain to protect the rights to ownership of that content.
Overview of Companies' Positioning

Content production
- Media creation
- Metadata creation

Media preparation
- Transcoding
- Packaging
- DRM license software
- CMS (Inventory, rights..)

Content distribution
- Content delivery network
- DTH network
- Traffic analytics

Monetization
- Payment systems
- Royalties
- Advertising
- Billing

Consumption
- Content visualization rights
- Operations

Blockchain impact
- New pricing options for pay-per-use content
- Monetization of content
- Distribution of royalty payments
- From DRM to Smart Contract
- Attribution
- Copyright management

Source: OverTheBlock.io
Key take-aways

• Global blockchain market size is rapidly expanding, with an expected CAGR of 82.4% from 2021 and 2028 (Grand View Research).

• The blockchain market in the Media and Entertainment industry is expected to reach $4.4Bn by 2026 (Business Wire).

• The Market Observatory practice highlighted a wide variety of blockchain-based players and service offerings in the three market segments analyzed.

• Blockchain markedly impacts three crucial stages of the media value chain (i.e., media preparation, monetization and consumption) through transparency, decentralization and redistribution of value.

• The MediaVerse project is well equipped and coherently positioned to seize the opportunities offered by the application of blockchain in the media industry.
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Consortium Partners

https://mediaverse-project.eu/

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