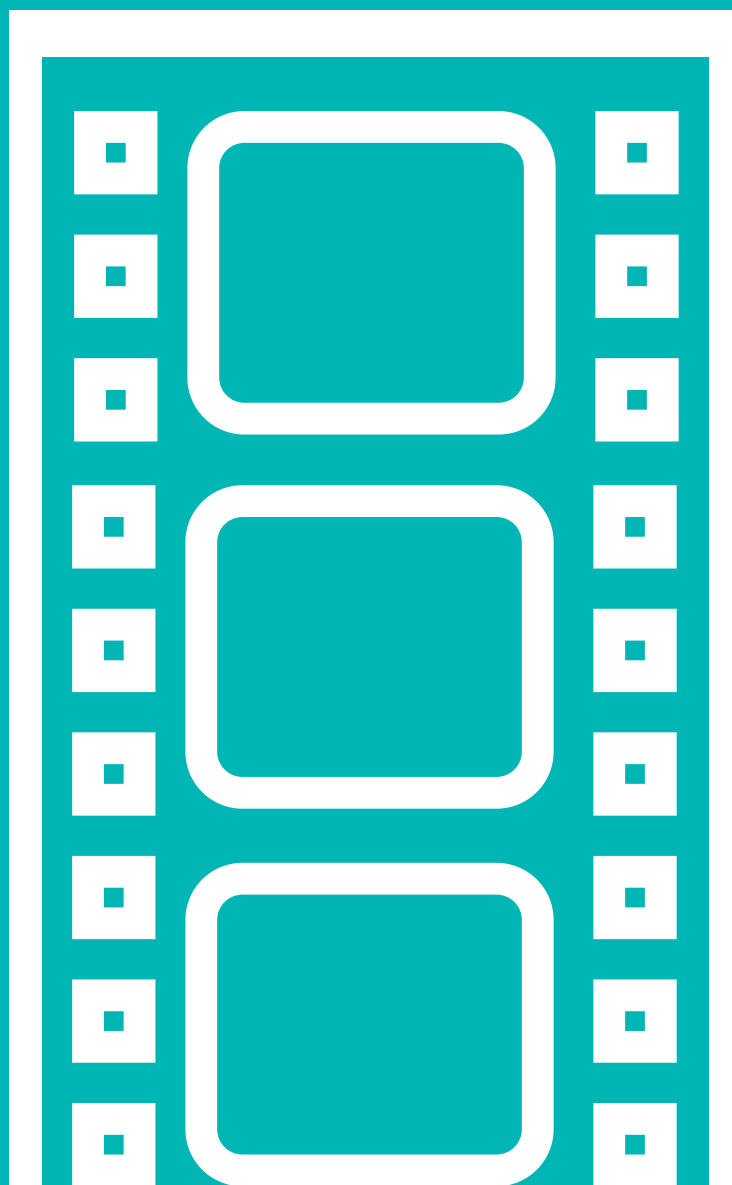


StreamSpace White Paper

Blockchain Powered Streaming Video on Demand



StreamSpace, LLC
December 18, 2017

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Disclaimer:

This white paper describes our current vision for the StreamSpace platform. While we intend to attempt to realize this vision, please recognize that it is dependent on quite a number of factors and subject to quite a number of risks. It is entirely possible that the StreamSpace platform will never be implemented or adopted, or that only a portion of our vision will be realized. We do not guarantee, represent or warrant any of the statements in this white paper, because they are based on our current beliefs, expectations and assumptions, about which there can be no assurance due to various anticipated and unanticipated events that may occur.

Please know that we plan to work hard in seeking to achieve the vision laid out in this white paper, but that you cannot rely on any of it coming true. Blockchain, cryptocurrencies and other aspects of our technology and these markets are in their infancy and will be subject to many challenges, competition and a changing environment. We will try to update our community as things grow and change, but undertake no obligation to do so.

Introduction

We are truly in a golden age for films. IMDb, an Amazon company, currently lists more than 373K feature films, 477K shorts, and 167K documentaries in its database, going back to the dawn of film in the late 1800s. The number of feature films released per year in the IMDb grew from 84 titles in 1910 to 2,530 films in 1921, then declined through the Great Depression and World War II to a low of 1,053 films introduced in 1945. From 1945 to 2002, the number of films produced climbed steadily to 4,032 films but accelerated in the past 15 years to a high of 12,871 films produced in 2017 YTD (source accessed September 8, 2017).

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Our goal is to become the world's leading destination for innovative film content, with a deep catalog that will enable personalized viewing experiences and that will be rewarding for our two core customers, independent filmmakers and film aficionados.
.....

Furthermore, there is an even larger number of independent films that go unrecognized by IMDb or other film databases because of limited distribution / awareness or unwillingness to provide the meta-content that the database requires. Festival Genius, software for independent film festivals, has tracked over 6.4M people watching almost 70K films. The total number of films created each year could be as high as 50,000, according to Chris Hyams, founder of B-Side Entertainment and the creator of Festival Genius.

Much of this growth may be explained by the internationalization of the film industry, with Bollywood (India) and Nollywood (Nigeria) becoming significant film production centers in the past decade, but the most important underlying factor in this growth is the pace of technological development of lower cost cameras and production and editing equipment, enabling thousands of artists to create films for a fraction of the cost in the 20th century.

Unfortunately, even highly motivated independent film-viewers have no way to discover most of these film productions, except through the promotion activities of the major studios that control multichannel distribution, from theaters to broadcast / cable television to DVD and digital distribution.

Without distribution support from a major studio, filmmakers are left with nontraditional channels such as film festivals, in which filmmakers compete to win one of 100 or so film slots and where a small number might catch the eye of a second-tier distributor; Alphabet's YouTube; the "indie film" genre sections of Netflix and Amazon; or smaller Streaming Video on Demand (SVOD) portals where most content never sees more than a handful of views. Even with distribution support, most filmmakers see negative financial returns for their efforts.

Compounding these challenges to the rapidly growing independent film community is the problem of piracy. Piracy is especially rampant in China, where over 90% of content viewing results in no income paid to the copyright owners. The result is that the major distributors pursue business policies that reward "safe" investments in blockbusters and projects that feature well-known lead actors or directors; in 2011, the top 16% of films released in China were responsible for over 70% of box-office revenue, because only blockbusters justify significant promotion. Furthermore, piracy of DVDs and digital versions of films cause the Chinese film industry to be overwhelmingly oriented to box-office receipts rather than hard media or pay-per-view revenue. As a consequence, independent filmmakers see very few opportunities to generate income from their artistic efforts.

StreamSpace aims to introduce a novel distribution platform and an ecosystem community that will give consumers an opportunity to enjoy quality film content unavailable from conventional distribution channels, with a secure monetization engine that places more than 90% of payments directly into the hands of the filmmakers. Furthermore, StreamSpace intends to launch a novel financing service that will help filmmakers raise the funds they need to create and produce film projects.

Our goal is to become the world's leading destination for innovative film content, with a deep catalog that will enable personalized viewing experiences and that will be rewarding for our two core customers, independent filmmakers and indie film aficionados.

Challenge

80%

.....
...as many as 80% of the films
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.....

The movie industry, like other subsets of the entertainment industry, is dominated by a handful of distribution leaders that retain the lion's share of profits generated in the industry. There is a strong Pareto effect: most of the industry's annual revenues and profits derive from a small number of blockbuster films, with large budgets for promotion, frequently 100-200% of the total cost to create the film. By the time the studios tally up the global revenues and expenses, the small-budget filmmaker typically sees no profit or only a very small return on his investment of time, talent, and money. Furthermore, as many as 80% of the films produced each year are never seen by an audience.

For filmmakers, this means that unless you are a "bankable" producer/director, you are at the mercy of a handful of large, powerful studios who have little incentive to deliver a return for your time and creative efforts. For most viewers, it means that you can only watch the handful of films that the studios want to support with broad distribution through theaters, network broadcast, and physical and digital distribution.

All of the performing arts industries - music, theater, and film - have undergone strong shifts over the past 100 years as recording / production technologies and distribution technologies have evolved. The internet has nearly destroyed the traditional recording music industry, with US sales of recorded music declining 80% as a share of national GDP compared to 1999. The film industry has not seen this dramatic erosion of value, but there have been three significant structural changes:

1. As Paul DiMaggio noted in a 2014 article, “difficult conditions often root out more vulnerable mid-sized firms and lead the incumbent firms to concentrate on large projects and neglect niche markets.” The number of films available for view in the US actually increased by 50% over the first decade of the 21st century as the number of independent films in theaters doubled. However, the share of seats sold and total industry revenue outside the top 10 distributors has declined at the same time that most of the major studios have chosen to concentrate on a limited number of blockbuster films as compared to larger numbers of small projects (Lionsgate is the lone exception among top US film studios).
2. Digital recording and distribution have changed the economics of making and distributing films. The creative aspects of filmmaking remain a complex art form, but lower cost cameras and editing tools have enabled tens or hundreds of thousands of people to call themselves filmmakers, and the production values of amateur or independent films have increased dramatically in the past ten years. Digital distribution has made it possible to offer the same blockbuster movie in multiple formats to thousands of screens worldwide on an opening day. In 2016, US SVOD services (not including Amazon Prime) surpassed DVD sales, which peaked in 2004. While the DVD format is not likely to disappear soon (like music CDs, they represent high margin income for the major distributors), most independent films skip this phase and go directly from festival and art theater release to SVOD.
3. Netflix and Amazon have evolved from being content aggregators and digital distribution channels to becoming integrated content developers/owners in their own right. Netflix has a budget of up to \$5 billion per year for new content, placing it easily in the top 10 studios in the US, , and the company raised its content budget forecast for 2018 to \$8 billion, supporting 80 new films and 30 new anime series.

What this means is an erosion of choice for consumers as they mostly see the major blockbuster releases promoted heavily by the studios and an erosion of income for independent filmmakers who do not have access to “bankable” stars and multichannel distribution relationships.

Solution

StreamSpace intends to launch an innovative platform and community that will link creative, independent filmmakers with audiences that seek out quality, edgier film experiences.

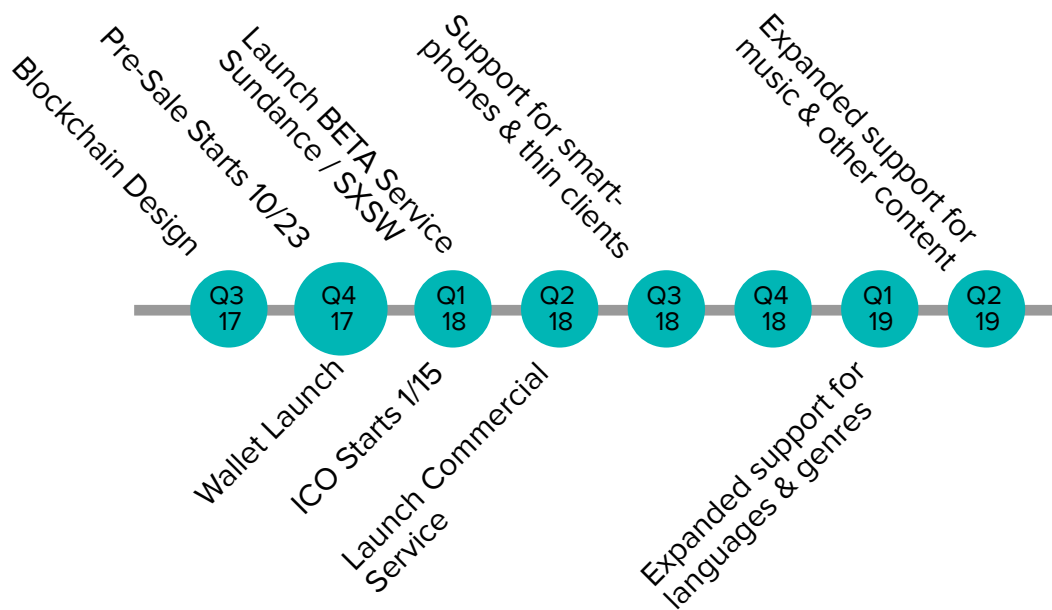
There are nine key components to the StreamSpace platform:

- **Secure storage method** of the video content, based in part on Protocol Labs' IPFS. StreamSpace holds a provisional patent on its method for secure storage.
- **Blockchain transaction ledger** for enhanced transparency and security.
- **Front-end decoder and embedded HTML5 player** optimized for video streaming, initially on PCs, followed by the most popular consumer video consumption clients: Apple iPhone, Android smartphones, and SVOD portals connected to HDTVs (including Google Chromecast, Roku, Microsoft Xbox, Apple TV, Amazon Fire, etc.).
- **Content recommendation engine** that helps consumers discover new content that fits their tastes, based on viewing habits and reviews / ratings. Our goal is to lift the restrictions which currently inhibit discoverability by consumers.
- **Secure digital wallet** so consumers and filmmakers can manage their accounts and stored assets with confidence. A unique digital wallet format will allow the account value to be held in StreamShare tokens (SSH) and will support transferring to fiat or other digital currencies. A second digital wallet will be created to reward the individuals who support the network by offering storage capacity for content. This second token system will be called StreamSpace Coins (SPC), which will be convertible to SSH.

- **Private token exchange** that monitors the market value of SPC and SSH tokens, enables the financial transactions between consumers and filmmakers, and converts between fiat currency and StreamShares or between StreamSpace Coins and StreamShares, and then back to fiat currency whenever the filmmaker elects to “cash out” transactions.
- **Community-focused front end** for filmmakers to upload their products to StreamSpace’s environment, set prices, and analyze statistics about the popularity or reviews of their content.
- **Social media channels** that link filmmakers to each other and to their audiences. A key element of StreamSpace’s strategy is to give filmmakers the ability to circumvent the studio-driven promotion system and control their own marketing. Social media channels represent the most economical and innovative way for filmmakers to connect with their potential audiences around the world.
- **Initial Coin Offering / Token crowdfunding campaigns** for new film projects on behalf of filmmakers that are interested in this uncommon technique for raising the funds necessary for a small or mid-budget film project. StreamSpace anticipates that many independent filmmakers will be interested in working with us to raise between \$100,000 and \$1 million to finance new projects.

Roadmap

The StreamSpace solution in its first iteration will feature basic functionality of the first eight technical components noted above. The ninth element of the solution, ICO / Token crowdfund campaign support, will be offered on an as-needed basis, based on the level of interest from filmmaker customers along with availability of StreamSpace technical support resources. Subsequent iterations of the StreamSpace solution may continue to expand and refine the functionality for both filmmakers and for consumer film aficionados.



Some potential enhanced features include:

For Filmmakers

- Online forms to help complete and submit IMDb metadata, so filmmakers can stay in the StreamSpace environment as they upload and launch their film projects into the market.
- Linked social media channels and promotion tools to attract audiences and build the filmmakers' reputations and popularity.
- Networking opportunities across the filmmaker communities, including opportunities to share tools and techniques, learn about new technologies and build audiences.
- Support for additional video content classes, including animation / anime, live stream content, music videos, trailers and other short form content associated with films, immersive content such as virtual reality or interactive content, etc.

For Film Viewers

- Increased viewing options including more supported screen sizes or SVOD thin client options as well as potential offline viewing options.
- Opportunities to engage with the filmmakers through reviews / ratings, "behind the scenes" extras, or forum / chat room engagements.
- Improved algorithms for superior recommendations.
- Expansion of the genre choices to include films, shorts, anime, music videos, or other video content from a wider variety of countries, including China, India, Korea, and Japan.
- Potential new film formats, including virtual / augmented reality or immersive content and interactive film experiences as mentioned above.

Technology

Digital Wallet & Smart Contracts

One of the great design advantages of Ethereum is the Ethereum Virtual Machine (EVM) that can execute smart contracts submitted to run on the Ethereum chain. These contracts are self-enforcing and cannot be manipulated or censored, which allows programmers to automate many processes that traditionally require an oversight board. This yields advantages in terms of content security and transparency of the transactions along with the transaction history. Examples of applications include e-commerce, real estate transactions, legal contracts, and financial trading. The smart contract acts as an escrow system, whereby the payment is not released until the “product” has been delivered and acknowledged. A digital wallet holds the funds in the form of a specific number or fraction of StreamShares tokens, represented by the token symbol SSH, assigned to a unique account identifier with a private and public key.

As an example, a film enthusiast logs into his account, adds US\$5.00 in value to his digital wallet (either by electronic funds transfer directly or through a service like PayPal, an online credit / debit card transfer authorization, or by exchange of a fraction of a bitcoin or other cryptocurrency through an exchange), and then clicks to watch a film. That last click initiates an immediate token transfer from his digital wallet to a smart contract, in which a small portion of the fee is sent to StreamSpace and the balance is transferred to the copyright licensee or owner for the film. In a basic example, one filmmaker would own 100% rights to the viewed film, and all revenues other than payment fees and StreamSpace’s hosting fee would transfer to the filmmaker’s wallet.

The copyright owner for a film may be a single individual, but more commonly may be a group of individuals with differing percentages of ownership rights. StreamSpace will track the payment transfers from each viewer to the respective copyright holders according to whatever terms are appropriate for each film project; there may be tax consequences for payments, which would represent business revenue or income to the copyright holders.

Each of the copyright owners has the ability to accept revenue payments in some fraction of StreamShares (SSH) and fiat currency. StreamSpace will use a private exchange and convert SSH tokens into fiat currency at any time for the wallet holders, with the exchange rate determined by an average of current day exchange rates across all public exchanges that accept SSH tokens. In order to encourage copyright owners and other investors who hold SSH tokens to retain them, StreamShares wallet holders will accumulate a 2% maximum interest rate compounded daily on tokens that are at least 8 hours old, based on a secure Proof of Stake Time (PoST) protocol.

In addition, StreamSpace will charge a minimal exchange fee for all transactions from SSH into fiat currencies.

Binary-Chain Blockchain Protocol

As discussed by Vericoin's Douglas Pike, creator of the Binary-Chain system, current cryptocurrencies face a challenge in attempting to be both a rapid currency for enabling transactions and a secure store of value.

To resolve this challenge, StreamSpace uses two separate coin systems with different staking or mining rewards, one for each of the two key processes performed across the blockchain. The most visible process involves processing transactions associated with purchasing or renting the content: downloading the video stream and processing the payment transfer associated with each viewing experience. The second, less visible process, involves maintaining the distributed storage of the video stream content, with rewards based on the amount of allocated storage, the length of time supported, and the popularity of the content.

Like Vericoin / Verium, StreamSpace secures and accelerates transactions by leveraging two complementary protocol technologies, Proof of Stake Time (PoST) for the SSH tokens and Proof of Work Time fragment (PoWTf) for the SPC tokens, into a cutting edge blockchain ecosystem.

Distributed Storage Network

StreamSpace holds a provisional patent on its distributed storage network, and has a utility patent pending.

On the StreamSpace network, a "Curator" is someone who offers storage capacity for file fragments. The StreamSpace network and distributed file system will be built upon thousands of Curator nodes that store and distribute file fragments. The file and

distribution system is modeled after systems such as BitTorrent, Storj, and Protocol Labs' InterPlanetary File System (IPFS). All are peer-to-peer distributed storage systems which leverage a computing device's extra hard disk space to store and share file fragments. StreamSpace nodes hold StreamSpace objects in local storage on their devices. StreamSpace nodes connect to each other and share StreamSpace objects with each other across the network. These objects represent video files, cryptographic information, and other data. Nodes are identified by a Node ID which is a cryptographic hash of a public key. This is modeled after IPFS and utilizes similar algorithms. StreamSpace nodes communicate regularly with hundreds and even thousands of other nodes on the network. The StreamSpace network stack is modeled after the IPFS network stacks to ensure performance and security of the streaming system. StreamSpace nodes also utilize a routing system that is similar to IPFS to enable nodes to find other peers' network addresses and other peers' specific objects. Therefore, StreamSpace is utilizing Distributed Sloppy Hash Tables based on S/Kademlia and Coral in the same way that IPFS implements them to keep track of this information.

In StreamSpace, data is distributed by exchanging fragments of data with peers throughout the network using a BitTorrent inspired protocol for distributing and sharing files. The fragment sharing protocol is superior to BitTorrent in that it is not limited to the fragments in one torrent. It acts as a persistent marketplace where specific nodes can acquire the fragments they need regardless of what file those fragments are part of. This creates a digital market in which nodes trade file fragments with each other. The distributed hash tables (DHTs) used by IPFS protocols enable StreamSpace to create a massive peer-to-peer system for storing and distributing fragments of data rapidly and efficiently.

To add another layer of performance, StreamSpace will utilize Directed Acyclic Graphs (Merkle DAGs) in a similar way that Git utilizes them to create graphs where links between objects are cryptographic hashes of the targets embedded in the sources. These Merkle DAGs provide StreamSpace with three core benefits:

- Content Addressing
- Tamper Resistance
- Deduplication

The principal difference between IPFS and the StreamSpace file storage system involves the ability to delete files from the distributed, peer-to-peer network. This enhancement enables the StreamSpace network to scale without having excess junk

files clog up available storage space and provides filmmaker / copyright owners with more control and security of their property. One feature where this enhancement will be of vital importance is live streaming of video content, where the content is not intended to have any permanence.

As mentioned above, StreamSpace selected Proof of Stake Time (PoST) as the reward algorithm for StreamShares (SSH), the transactional token used for payment and access rights on the StreamSpace platform. PoST allows a poorer member with a smaller stake to have more strength if they are active and challenge a richer stakeholder who is less active in supporting the service. Granting more rewards to a committed underdog is akin to giving a weak team in American professional football the right to go first in the draft pick; proper choices will elevate a weak team against a dominant team that rests on its laurels and fails to keep developing new talent. This system still rewards large stakeholders, and an active major stakeholder can achieve dominance over time.

StreamSpace also created a modified Proof of Work (PoW) algorithm called Proof of Work Time fragment (PoWTf) as the reward algorithm for StreamSpace Coins (SPC), the incentive token that enables our distributed cloud storage network. We needed an algorithm that would encourage “Curators” to allocate a liberal amount of storage to the StreamSpace cloud network and leave it active for as long as possible. Similar to the PoWT algorithm used for Verium to accelerate the Vericoin transaction network, the StreamSpace PoWTf algorithm

“is a novel approach to forming a consensus by introducing a variable blocktime that scales with mining power, where the blockchain speeds up with power increases. This better scales the blockchain, increases transaction speed with power and allows for auto-adjusting more profitable mining.”

Curator nodes cannot perform work without holding fragments. Fragments are only valid for work if they have been verified by their hash on the network. Fragments must be held by the Curator node for a minimum period of time (T) before they are eligible for work.

One fragment will be pegged to the value (V) of some quantity of SPC. For purposes of discussion, we'll use $1f = 0.00000001$ SPC (one fragment is valued at one-hundred-millionth of 1 SPC). Fragment weight (W) will be calculated by the age of the fragment since it was last worked and the “popularity” index (P) of the fragment as reported by the DHT on the blockchain.

Reward Rate: $I = 0.02$ (based on block time and difficulty)

Fees: $F = 0.0001 - 0.1$ SPC per transaction

Fragment Weight: $W = T * V * P$

PoWTf Reward: $R = W * I * 33 / (365 * 33 + 8) + F$

The goal of the PoWTf algorithm is to encourage more nodes holding the most popular content. One SPC coin or any fraction of one SPC coin may be converted at any time into SSH tokens, which may then be held in a digital wallet for staking or converted to fiat currency via a cryptocurrency exchange.

Quality of Streaming Video Content

StreamSpace uses Dynamic Adaptive Streaming over HTTP (DASH), which ensures high quality streams over the internet. The original video file is split up into many smaller video file segments of many bitrates and resolution. The fact that DASH content is just “a bunch of files” makes it a good choice for blockchain storage protocols such as IPFS and StreamSpace’s extensions of IPFS. An MPEG-DASH Media Presentation Description (MPD) file will be created for each video file containing the link and video metadata used for streaming.

Crowdfunding Service for New Films

There have been a few examples of token sales expressly designed to support the funding for new film or video projects; further information about some of these projects is provided in the Competition Section. In its early conversations with independent filmmakers, one of the most critical needs expressed was to raise funds to make their film, and a lack of funds is the greatest impediment to a filmmaker’s success.

StreamSpace will leverage its experience in conducting its own ICO plus the contacts made across the film and blockchain industries to identify a pool of potential investors

who might be interested in supporting novel film or other video projects. We intend to dedicate resources to underwrite token sales to support a small number of marketable projects. One potential method might involve sponsoring a filmmaker with a custom crowdfunding website, in which potential viewers and other investors would offer fiat or tokens in return for a percentage of the revenue stream from the StreamSpace or other SVOD portal. Another, somewhat more complex financial arrangement might involve a smart contract in which the investor funds would be repaid from SVOD revenues up to a certain level, such as 120% of funds raised over a 1 year period, with a 20% or similar royalty rate paid for all revenues beyond the target threshold. A filmmaker might reserve a certain fraction of the tokens allocated to the project, thereby retaining more of the financial return, but this could have an adverse impact on the marketability of the film project.

Content Player and DRM

The film enthusiast may prefer to watch on a large fixed viewing screen, such as a 4K+ UHD TV, a standard 720i or 1080p HDTV, a laptop or desktop, with a wide range of screen resolutions, or even a mobile phone or tablet, today commonly with FHD 1920 x 1080 or QHD 2560 x 1440 resolution. StreamSpace will provide a downloadable app with its custom player or run its player inside any of the common internet browsers, but with an initial focus on PCs running mainstream browsers, followed by smartphones and SVOD clients connected to HDTVs.

For the initial release, we will deploy a browser-based player optimized for Microsoft Windows and Apple OS. We will develop and deploy mobile apps that will run on both Android and iOS, and we will target several of the major internet TV SVOD client systems, including Google Chromecast, Roku, Microsoft Xbox, Apple TV, Amazon Fire TV, etc. to allow consumers to add the StreamSpace channel into the viewer home screen.

The player includes identity language and format preference with buttons to access and control the user account information, as well as play / pause / rewind / fast forward buttons for the viewer to control the experience.

Initially, StreamSpace intends to use Google Widevine, an industrial-grade DRM solution, to support encryption and decryption of video content. The content is encrypted and distributed to the curators. A license will be created for each file and saved to the Widevine license server. On the user end, the license info is fetched from the license server, and the decryption happens on the trusted layer of the system. Decrypted data is directly sent to the user's video and audio device. Hence there is no chance

for anyone other than the end user to decrypt or view the decrypted content data. Each end user will agree to the StreamSpace Service Terms and Conditions, which prohibit unlawful copying or redistribution of the content.

Recommendation Engine

.....
...the recommendation engine is a
core differentiator from conventional
SVOD services.
.....

StreamSpace believes that the recommendation engine is a core differentiator from conventional SVOD services. Today, it is nearly impossible for an independent film viewer to find an attractive, highly rated film without specifying the exact name in a search window.

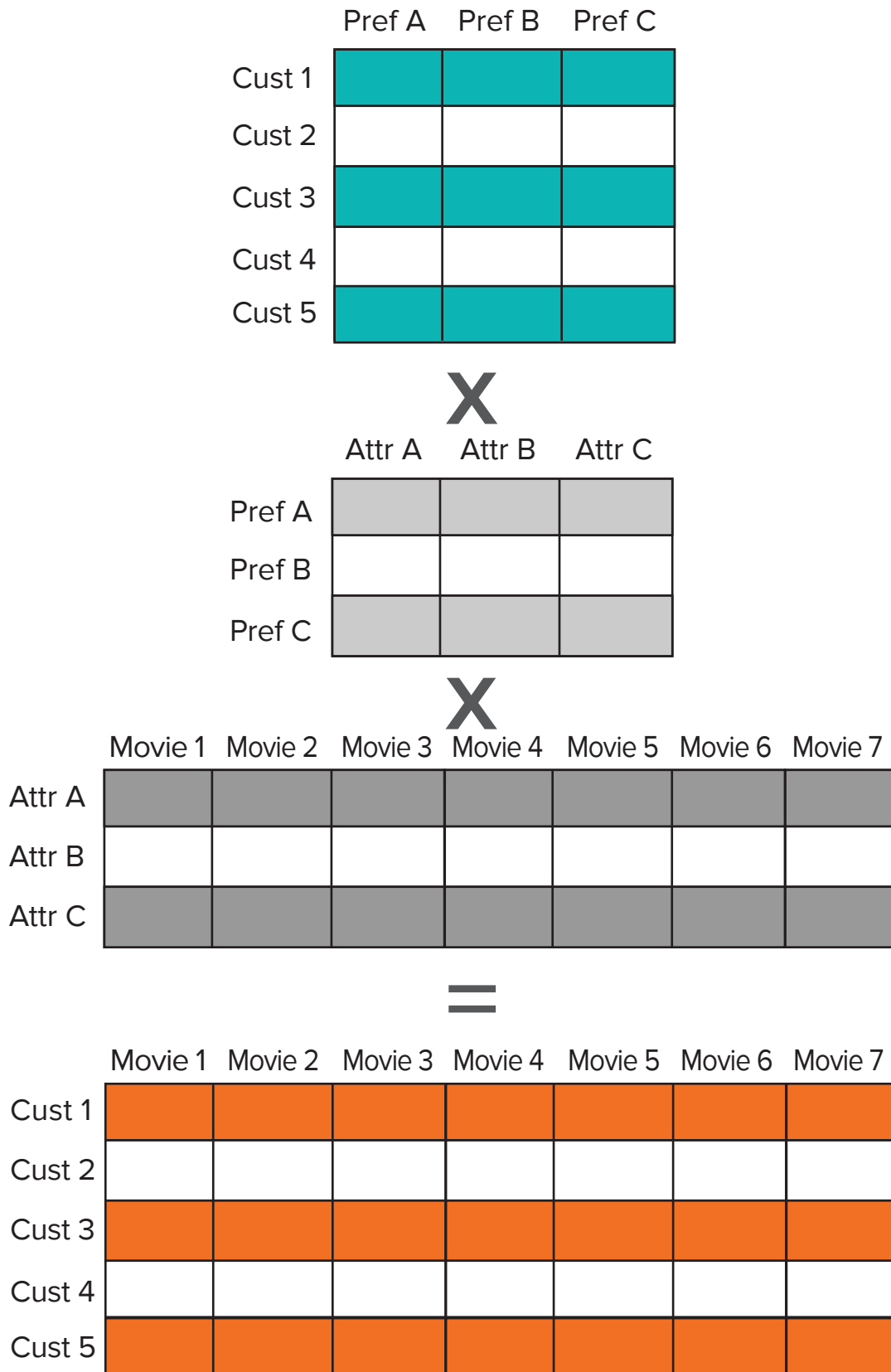
The core of the viewing experience starts with a recommendation or search engine: how the film viewer selects a new title and chooses to launch a stream of the content to the personal viewing screen. The StreamSpace recommendation engine is based on three core elements that are coded as eigenvector matrices:

1. Customer preference matrix. Consumers will group into clusters based on their preferences for different types of movies; someone that loves Japanese anime may feel very differently about American Western action movies or sci-fi thrillers. The cluster map will be the principal driver for the recommendation engine, since people with similar tastes are likely to feel the same way about a given set of films. An individual will not necessarily be defined by a single cluster; rather, that individual will be scored by his similarity to the preferences of different clusters.

2. Customer preference cluster – movie attribute cluster matrix. This matrix shows the scores assigned to the intersection of cluster preferences of like users and cluster attributes of like movies.

3. Movie attribute matrix. Movies will be scored according to key attribute clusters, so that similar movies will be recommended to people that rate one type of movie higher than others. The movie cluster map will be defined based in part on IMDB-style characteristics and in part on reviews and ratings. Since movies tend to have a short shelf-life of popular appeal, weight will be added for “new” and “trending” content.

The three eigenvector matrices will be multiplied together to give exact recommendations for any individual customer:



Initially, customers will be asked to rate several movies in order to make preliminary recommendations. Over time, the recommendation engine will consider observations about download and viewing history, including whether the customer watched part or all of a film, along with his comments and ratings and participation on filmmaker social media pages.

Frequent viewers will be rewarded with more accurate recommendations toward their viewing preferences, and they may also receive extra incentives in terms of bonus film viewing opportunities, extra content (such as “behind the scenes” footage or other opportunities to engage with favorite filmmakers. StreamSpace also plans to offer bonuses for larger or more frequent deposits into the user’s online wallet to encourage more use of the StreamSpace SVOD network.

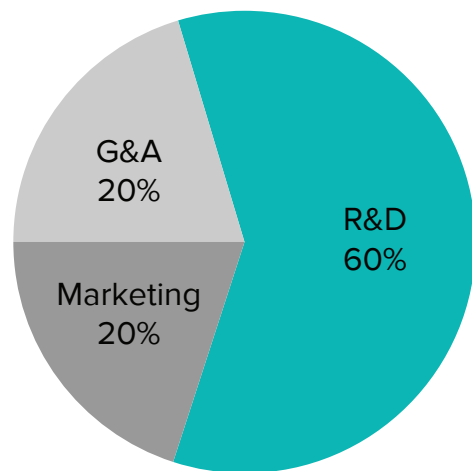
By optimizing the recommendation engine around peer reviews and personal viewing history, StreamSpace believes that we can provide a more compelling end user experience, which will only improve further with the network effect.

Planned Level and Use of Funds

Planned Level and Use of Funds

The maximum distribution will be the sale of 40% of the total number of issued tokens, or 400 million SSH out of 1 billion total tokens. StreamSpace is aware of the potential securities laws associated with this type of fundraising mechanism, and is making every effort with our legal counsel to comply.

The remaining tokens are reserved for running the film marketplace and the expenses associated with building the content library. We expect that we will have to “buy” some of the content necessary to build an audience, offering guarantees to film makers. StreamSpace will scale the rate of hiring and other expenses commensurate with the amount of funds that are raised. The expected expense profile will be as follows:



R&D

As mentioned above, there are several elements of the StreamSpace platform that need to be developed to a state of commercial readiness for our expected non-technical filmmaker and film viewer target customer bases, including the following:

- Distributed blockchain storage and distribution network sufficient to scale up to several thousand potential film files.
- Consumer front end optimized for the key consumer screens, especially smartphones and SVOD thin clients connected to HDTVs.
- Content recommendation engine.
- Digital wallet and centralized account register holding SSH and fiat currency escrows for Owners and Consumers. Consumer accounts will just show fiat currency balances, while Owner accounts will show both StreamShare and fiat currency balances.
- Internal token exchange with links to the major public exchanges where SSH tokens can be purchased or sold.

- Content Owner front end for uploading the digital film content into the StreamSpace storage network, along with metadata that will support the StreamSpace recommendation engine requirements and also satisfy the metadata requirements for IMDb or other film databases. The content owner will also be able to inspect business performance trends including film popularity, viewer statistics, abandonment rates, ratings and reviews, and community engagement levels.

Marketing

The StreamSpace business is driven by some of the best marketing experts in the industry. StreamSpace will continue to pursue its current lean, cost-efficient marketing efforts to grow the communities of filmmaker Owners and enthusiast Consumers.

As mentioned above, the StreamSpace community for filmmakers and indie film enthusiasts will include a set of social media channels that will help to promote the films in the StreamSpace ecosystem. These social media channels can be used to promote special viewings, festivals and other events that involve the filmmakers and key actors or other persons involved in the films, additional content, such as trailers and behind-the-scenes videos, as well as non-film revenue opportunities such as merchandise sales. The social media channels are also opportunities for film enthusiasts to post reviews and rating scores for the films and engage in dialogue with the filmmakers and/or other Owners.

An additional service envisioned by StreamSpace is a blockchain token ICO funding mechanism for new film projects, similar to the recent ICO for BRAID. StreamSpace will work with its filmmaker community on projects where this form of crowdfunding mechanism would mutually benefit both StreamSpace and the filmmaker. As with other similar funding programs, the token investors would achieve potential returns on their investment through royalty payments based on a percentage of the profits for the project after all costs. StreamSpace would retain a portion of the raised funds and act as a co-investor on all new token sale projects.

G&A

StreamSpace runs a very lean organization, with minimal administrative overhead. All employees are currently located in downtown Austin, which combines a highly attractive work environment with much lower operating costs than commonly found in other major urban locations with a significant blockchain development talent pool. Being in the blockchain ecosystem and adhering to high industry standards, the firm recognizes operational costs associated with accounting, administrative overhead, legal, facilities, and other functions of a successful, well-run enterprise.

Competition

StreamSpace has identified several competitors that offer blockchain-based propositions for secure streaming video content distribution.

DECENT, decent.ch, is a blockchain-based digital content publishing and sharing platform. The unified platform empowers content creators and consumers by offering a censor-free, independent publishing platform with micropayment-based content monetization, voting and reputation systems. DECENT had a successful ICO in November 2016, raising \$4.1 million. On June 30, 2017, DECENT announced the launch of their global media distribution platform, and on August 3, 2017, **ATMChain**, atmchain.io, an open platform ecosystem that focuses on China's media advertising industry, announced a partnership with DECENT, allowing DCT tokens to be used as payment for its own ICO, which started August 8. On September 12, 2017, ATMChain announced refunds would be made to Chinese investors in order to comply with recent China regulatory policy, and they also announced expanded services in Europe including a partnership with RTI in Russia to support services for the mass media advertising, health, and transportation industries.

Ethereum Movie Venture, emovieventure.com, is a blockchain-based film production studio and distribution entity based in Burgistein, Switzerland. The venture concluded a successful presale and ICO token offering aimed toward early investors, and a third-round presale of token-tickets is underway through the end of 2017. The first film, called "The Pitts Circus," is a documentary about a family circus troupe in Australia, and is expected to be released in late 2017 to festivals and then generally to cinemas in early 2018, followed by online streaming services later in the year. The token is valid for viewing the movie and will yield financial returns based on future gross revenues over the next 20 years.

FLiK, www.theflik.io, is an end-to-end entertainment ecosystem that allows for creative projects to be funded, filmed, distributed, and paid for all within the FLiK framework. The FLiK ecosystem includes a funding platform to support filmmakers and other content creators and a mobile app to distribute video content to users, an artist-oriented distribution platform which returns 90-98% of net revenues to the artists. Future implementations will target Apple TV, Google Play, and Roku among other SVOD thin clients. Filmmakers will be able to access rental and purchase trend rates, gross earnings, and other statistics. FLiK's ICO runs from August 20 to September 20, 2017.

Flixxo, www.flixxo.com, based in Buenos Aires, Argentina, and incorporated in Gibraltar, offers a decentralized alternative to YouTube and the likes that aim to offer more power and revenue to creators. Content creators upload their videos to the peer-to-peer network and determine how many tokens, or Flixx, users need to pay to watch it. The smart contract linked to Flixxo's blockchain technology allows the creator to decide how the Flixx that they earn will be shared with partners and users who seed the video. The Flixxo ICO runs until November 23, 2017.

Freedom Streaming, freedomstreaming.io, proposes to develop a censorship-resistant and anonymous live streaming platform. Where other sites impose restrictions and rules on content, Freedom Streaming will be free from restrictions, allowing you produce the content you want and broadcast it to the world. The Pre-ICO is set to begin on November 15.

Hubii Network, hubii.network, is a blockchain-based decentralized content marketplace that facilitates transactions between creators, distributors and consumers by leveraging the power of smart contracts. Kickstarting this marketplace is Hubii's existing distribution network reaching out to over 50 million people with 560 publishers and syndication partners around the globe. The company is based in Bergen, Norway with subsidiaries in USA and Singapore.

JBOX, www.jboxcoin.org, is a cryptocurrency video streaming platform where registered members earn tokens by watching videos and uploading videos. The proposition is geared toward short 20 second video advertisements. The player will start as a web app running on Android and iOS.

LBRY, lbry.io, is the first decentralized, open source, fully encrypted content distribution service built with blockchain technology. LBRY provides a one-step streaming and downloading experience to the content-consuming patron through their application. For publishers, LBRY is the least expensive content distribution platform available – and increases the likelihood that they will get paid for their content. LBRY has issued credits rather than conducting an ICO; their funding comes from the venture and tech communities. On July 4, 2017, LBRY announced the launch of its beta service and relationship with two indie production houses, Oscilloscope Laboratories and Emergent Order.

MakeltViral or MIV, miv.life, is a mobile video sharing platform that uses ranking as the basis for their application. After a content creator uploads their video to the platform, that video is then ranked by the number of tokens users donate to it.

SingularDTV, www.singulardtv.com, is an Ethereum-based production and distribution platform, creating broadcast quality original film and television content initially focused on nonfiction and the science fiction genre. SingularDTV aims to disintermediate traditional media’s monopolistic business models by applying the principles of decentralization with its smart contract rights management platform. The project was founded by Joseph Lubin, once the COO of Ethereum Switzerland GmbH and founder of ConsenSys, a blockchain software production studio in Brooklyn, NY. SingularDTV held one of the most successful Initial Coin Offerings (ICO) to date, raising \$7.5 million in October, 2016. The SingularDTV ecosystem vision consists of 11 modules, including EtherVision, a peer-to-peer distribution portal planned for late 2017.

Steem, steem.io, is a blockchain-based social media platform to support the distribution of content of many formats, including short and long form video films. Filmmakers, actors, and screenwriters are invited to join the Steem blog and compete for awards and funding. SteemFilm has been instrumental in the creation of one film, “Better Left Unsaid,” with story and screenplay by Brian Rhodes. Steemfilm’s goals are to build an adaptable funding model for original film projects and to work with developers to integrate private screenings, film premieres, and digital distribution into a common Steem ecosystem. SteemQ addresses a market need for a decentralized video platform for user-generated content, a better version of YouTube with a new social model that creates a richer experience for content creators, curators,

and consumers. Unlike the centralized, privately-owned platforms, SteemQ is censorship-resistant. Users will not be subject to content take-downs or other means of censorship as a result of an arbitrary decision within the platform-owning corporation. Instead, users themselves can take action against spammers, content thieves, and other misbehaving agents through downvoting.

STREAM, streamtoken.net, have created a platform with an intention to disrupt the current content creation scenario. Ben Yu, CEO, became interested in the streaming industry when he became an internet celebrity, receiving over 50 million views on Facebook videos about his life, past business successes, and success with cryptocurrency investments. He received \$0 for all those 50 million+ views, and knew that clearly something was broken in the video streaming industry. Thus, STREAM was born. STREAM raised \$5 million in pre-ICO funding led by Pantera Capital; they will announce their ICO date on November 3, 2017.

Veredictum, www.veredictum.io, is an Australian blockchain startup currently developing a decentralized, anti-piracy and distribution platform for the film and video industry. Veredictum launched its ICO on August 14, 2017.

VirtuTV, virtu.media, is a project aimed at developing a next-generation video consumption and monetization platform. Content creators get paid per view with one-time or recurring donations from fans or via advertising engagements. There are also monetization mechanisms for flagging inappropriate content and for upvoting or downvoting content. Online investigative journalists and other creators may use anonymity to protect their identities over sensitive content. The service will be launched in 2018.

White Rabbit, www.whiterabbit.one, is a digital streaming service based on a browser plug-in that recognizes the content you watch, without forcing you to subscribe to anyone site. By separating distribution from payment, White Rabbit offers one payment system, but infinite viewing experiences. White Rabbit's team is a mix of filmmakers, software entrepreneurs, and blockchain enthusiasts who understand the complications of the movie industry, yet see the opportunity blockchain offers to resolve these issues to the benefit of fans, filmmakers, and investors. Token presale begins November 27, 2017, with the token sale scheduled for 1Q2018.

DECENT and LBRY are the only competitors identified above that have a fully operational service in the market as of the original date of publication of this white paper, although most of the others have demonstrated alpha-level prototypes over the past 6-18 months.

We have also identified three ICO-funded media projects, in which custom tokens have been created to finance the production of a film (The Pitts Circus, sponsored by Ethereum Movie Venture, as described above, and BRAID, supported by WeiFund, an affiliate of ConsenSys) or a TV series (21 Million). These are examples of how a filmmaker might engage with a blockchain company to crowdsource the funds they need to produce and launch a film project at a scale beyond most Kickstarter or Indiegogo campaigns. The 21 Million project white paper calls out four potential project outcomes depending on the success level of their ICO, ranging from a 20-minute sizzle reel to a 5-6 episode series delivered and ready for broadcast.

Financial Risk

Potential investors/donors must read and agree to the Token Terms of Sale. This document states that the token may only be used for enabling the transaction associated with viewing digital content through the StreamSpace film storage and distribution network, and the token itself has no intrinsic value and may not be redeemed except by a filmmaker / content owner in payment for viewership of his product through the StreamSpace network. As with all token sales, no equity rights are transferred to the investors. While SSH tokens may be traded through one or more cryptocurrency exchanges, there is no guarantee of value, and the SSH token may be delisted at any time that it does not meet the listing requirements of the exchange.

The cryptocurrency token market is immature, and there are numerous risks that threaten the entire category, including but not limited to regulatory risk, the potential collapse of Ethereum as a cryptocurrency, loss of the password key that enables access to a digital wallet, and the potential for bad actors to attack and steal either the digital stream content or the contents of the digital wallets that belong to the members of the StreamSpace community, both filmmaker / owners and film watchers who may have prepaid to be able to watch video streams.

Market Risk

The market for independent film distribution is extremely risky. There are many content distribution networks currently available to filmmakers, including both traditional studio-controlled systems and internet-based systems, and there is no guarantee that filmmakers will find the StreamSpace distribution network to be the most desirable for enough of them that we can attract the level of viewership necessary to succeed as a platform or for investors/donors to achieve a return.

StreamSpace is not the first firm to identify film as an attractive market segment for blockchain technology; the Competitor section highlights several firms who have already raised funds through ICO token launches. In addition, StreamSpace believes that many if not all of the main internet-based video distribution leaders, including Google, Amazon, Hulu, and Netflix, have active investigations into blockchain distribution for video streaming content. We do not know when or if they will migrate to incorporate blockchain elements into their offering platforms, nor the economic models they will use to capitalize on their networks.

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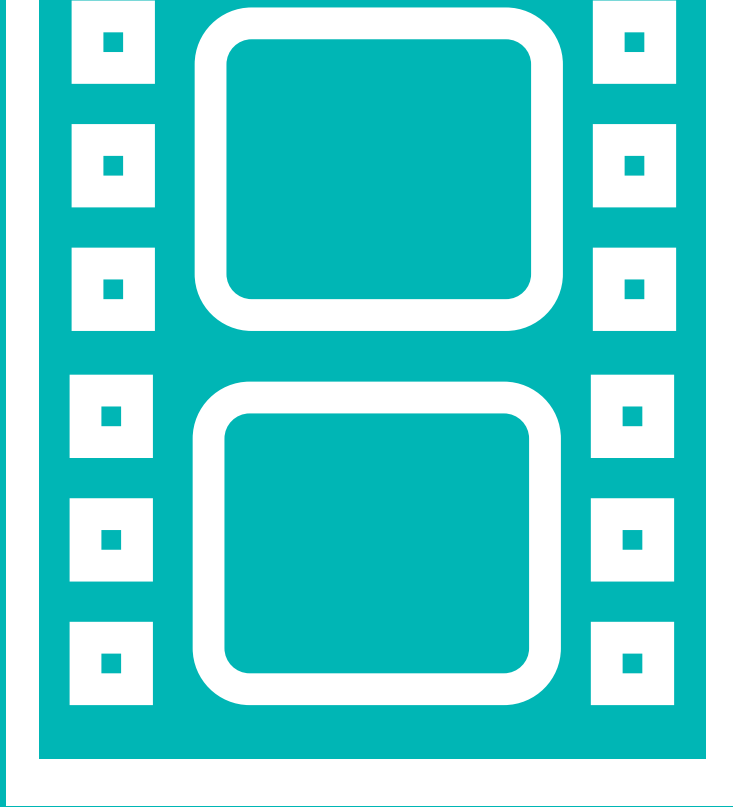
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