



UNBLOCKING THE CHAIN:

BLOCKCHAIN IN TV &

FILM PRODUCTION, FINANCE AND DISTRIBUTION

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Guy Bisson is executive director of Ampere Analysis, a new breed of analyst firm founded January 2015 by an experienced team of sector-leading entertainment industry analysts. Ampere specialises in research and insight on the global TV and content markets, delivering insight through five online services:

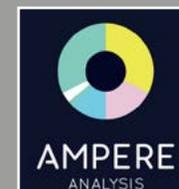
Ampere Commissioning: Analysis of TV commissioning trends, using Ampere's powerful analytical tools to provide insight on what's getting made and commissioned across linear and on-demand platforms globally.

Ampere Analytics: A deep-dive analysis of the content market and content licensing at a title level, Ampere Analytics' Content Track provides key metrics about the world's leading VOD and SVoD services across international markets.

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Ampere Channels: Analysis of the global TV channel market providing insight into carriage deals, affiliate revenue, reach & platform relationships.





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Erica graduated from the University of Edinburgh with an MA in Economics and has a wealth of experience working in business, marketing and sales strategy. Erica has been in the blockchain space for a number of years specializing in researching trends and identifying new investment opportunities across the blockchain and emerging tech industries. Erica is currently working on several blockchain platforms and projects—focused on micropayments, digital rights management, donation tracking and especially focused on proving and providing sustainability within supply chain.

She also works with blockchain and emerging tech start-ups on business strategy and mainstream growth, as well as helping companies with blockchain adoption. Erica is the founder of the Crypto Curry Club—a highly sought-after series of fun networking lunches and educational events for leaders in blockchain, crypto and emerging technology (www.cryptocurryclub.com)—and a co-founder with Alan Wilson of SWcircle, a boutique consulting firm focused on emerging technologies. She is regularly featured in the press commenting on cryptocurrency and blockchain trends and speaks internationally about blockchain use-cases and adoption of emerging technologies.

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Alan works with a number of corporations and blockchain companies in the finance, micro payments and media sectors on their technology and business strategies and how best to bring disruptive and new technologies to market. He is also a judge for the International Blockchain Awards and a co-founder with Erica Stanford of SWcircle, a boutique consulting firm focused on emerging technologies.



1 – What is Blockchain?

BLOCKCHAIN: MEDIA PANACEA?

You've heard the hype: blockchain technology is set to revolutionize every aspect of film and TV production, from raising finance, to the management of rights, to the delivery of content to the end consumer. But what is blockchain? How does it work? And is it really the panacea that so many claim?

This report aims to explain all of that and examine three key TV production and distribution value chains to see where blockchain could be used to streamline processes, boost efficiency and reduce costs. We'll also look at a few real-world examples of blockchain usage within these very value chains and hear from some of the pioneer founders of blockchain systems already operating in the TV and film production and distribution sector.

Like many technology-driven sectors, blockchain is guilty of using its own language, with a bewildering array of phrases and acronyms. So let's start by explaining a bit about blockchain itself and some of the key terms that are needed to understand blockchain's wider implications and uses.

WHAT IS BLOCKCHAIN?

Blockchain is software that carries out transactions and database functions based on a set of mathematical rules. The key functional

aspect of blockchain that makes it different from most software today is that it is able to verify and complete those transactions algorithmically, without human intervention, within an entirely secure environment while maintaining an indelible record of every transaction.

Blockchain can send or store information or data or act as a means of exchanging value (digital money). Blockchain transactions can be of any size, even fractions of cents, and in a modern blockchain system can be carried out at minimal cost without the need for a middleman to process them. As well as recording a permanent record of the transactions carried out, a blockchain can auto-verify that business rules and transactions have been completed and so can trigger the release and flow of money based on complex contractual clauses...again, all without the need for banks, payment processing groups, lawyers or other intermediaries.

It is important to note that blockchain and cryptocurrencies are not the same thing. Cryptocurrencies are digital assets that are managed or stored by a blockchain system, but this is only one of the applications for blockchain and there are many examples of blockchain systems that do not manage or store any tokens or cryptocurrencies.

BLOCKS AND CHAINS

The name blockchain comes from the way that the software actually works and is also the reason for the security and traceability benefits we've talked about. Each data point is stored as a time-stamped 'block'...the key to the security and traceability is that each additional data point (for example a transaction where party A sells something to party B), is recorded as an additional block of information that is mathematically linked to its predecessor (that's the 'chain'). Each block is identified within the system by a Unique Universal Identifier (UUID), which is formed of the time stamp and other information.

All changes and further transactions are recorded in additional linked blocks which are mathematically related to each other (think of this as a mathematical DNA that is passed on from one block to another creating a permanent link). Once a block is created, it cannot be altered or changed without destabilizing and destroying the whole chain, meaning information cannot be removed once it is in the blockchain. Effectively you are appending information in an infinitely long chain of recorded transactions (creating a virtual 'ledger'...like a digital version of an accountant's double-entry ledger book). Even if information is entered incorrectly, it cannot be changed but can be re-entered

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and that correct information will be added onto the chain, superseding the incorrect, but leaving the old information visible.

The processing of the transactions is carried out by many computers in a peer-to-peer network. Blockchain systems work by harnessing the processing power of these computers across the network and so blockchains are said to be 'decentralized' systems.

The network structure of blockchain systems means the blockchain is said to be 'distributed' (across many computers and servers). This is where a commonly used descriptive name for blockchain comes from: remember, we're talking about a sequential record of transactions (or ledger) executed by computer code that is spread across numerous computers distributed across a network, hence blockchain is often referred to as a 'Distributed Ledger' technology.

CRYPTOCURRENCY, WALLETS AND MINING

There are a number of other phrases that we need to understand before getting deeper into the functionality of blockchain. Most people will have heard the term 'cryptocurrency' (most likely in relation to 'Bitcoin'). You may also be aware that Bitcoins and a number of other Cryptocurrencies need to be 'mined'. But what do these terms mean?

A cryptocurrency is simply a secure digital

currency that is used within a blockchain to pay for transactions and actual assets or things. These are digital coins and as such are digital representations and stores of value, just like a real coin in your pocket. Also like real coins, cryptocurrency is stored in a digital (or 'crypto') wallet.

Bitcoin is only one example of a cryptocurrency, there are many different cryptocurrencies used in different blockchains or for different processes within a single blockchain system. Computers (nodes) on the peer-to-peer network that help to process the transactions carried out within the blockchain are rewarded with a set number of digital coins for a given task (like creating a new block). These computers are therefore said to be 'mining' the cryptocurrency. It's important to understand that you can use the functions of a blockchain system without being a miner and you don't necessarily need to own cryptocurrency.

Cryptocurrencies can be exchanged for real money so that money can enter or exit a blockchain system in pounds, dollars, euros or any other 'real' currency. The digital currency is simply exchanged for real money by a traditional payment processing company (like a bank or Visa).

An Initial Coin Offering (ICO) and Initial Exchange Offering (IEO) are two ways of of-

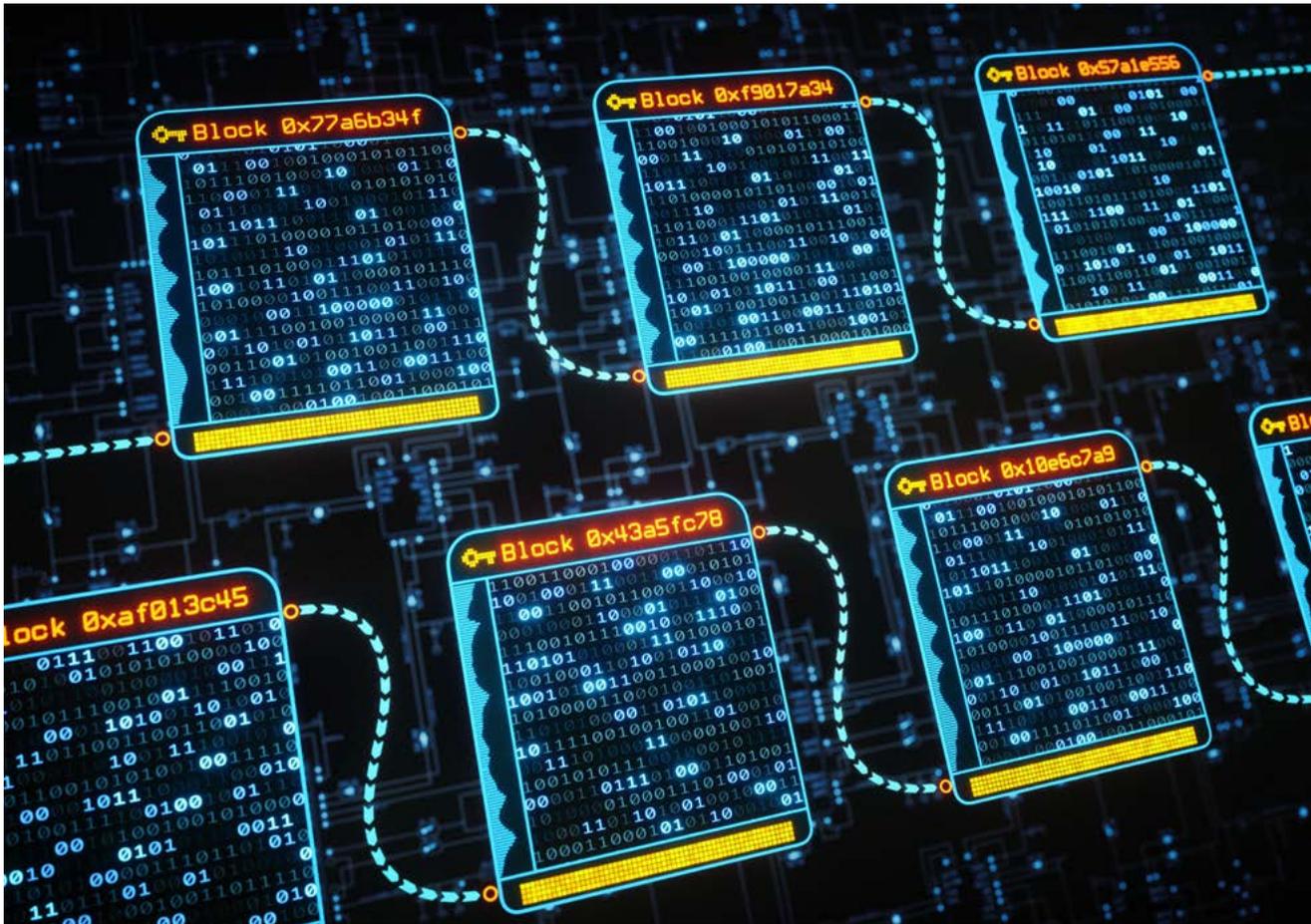
fering tokens for sale and raising funds within a blockchain system. These are not always needed to launch a new digital currency, and not all blockchain systems need a cryptocurrency to work. An IEO differs from an ICO in that a third-party exchange issues and manages the token sale.

One final point, you've doubtless also heard about the massive increase in value of Bitcoin and the huge fluctuations in its value. This relates to the fact that Bitcoin was a very early cryptocurrency that requires huge processing power to mine. Cryptocurrencies today can be stable and linked to a real assets (such as commodities or currencies) making them far more suitable for real-world business processes than the Bitcoin bubble might otherwise imply.

TOKENS AND 'TOKENIZATION'

Tokens are different from coins, although serve some of the same functions. Tokens are ways of storing value just like a coin, and can be used to place value on assets, talent or content but are, in some cases, also able to encapsulate and execute contracts and business rules. This is applicable in situations where a creator or company may want to raise money by tokenizing a project. Investors buy tokens based on certain pay back (for example, x% of profits). The token then

1 – What is Blockchain?



allows the creator to both raise finance and execute the payback to investors, all auto-

ated within the blockchain system and executed by the token. In this respect, tokens

are like smart money that not only hold and represent value, but also manage and execute payback and distribution of that money.

This ability of tokens to encapsulate and execute logic in real-time allows for greater control over the flow and use of money within a blockchain ecosystem than is possible with today's traditional IT systems. The tokens themselves can be programmed to understand things like who owns them, where geographically they are located and on which goods or services they can be spent. The use of tokens allows full transparency over who owns what and allows rules to be set on spending. The rules can cover any topic from ensuring that only the most cost-effective services are used through to allowing services from a designated company or within a geographical boundary.

PERMISSIONED, PERMISSION-LESS, PUBLIC, PRIVATE AND CONSORTIUM BLOCKCHAINS

There are just a few more important phrases to run through before we can get into the nitty gritty of blockchain in TV production and distribution: 'Public', 'Private' and 'Consortium' blockchains. This one is pretty straightforward, but these three different types impact the ultimate functionality of the blockchain as well. So, simply, a public blockchain is

1 – What is Blockchain?

a blockchain that anyone can join. That means that any computer can contribute its processing power to the chain in return for rewards in the form of digital currency or tokens. It is in public blockchains that computers participating are rewarded with some sort of digital coin.

A private blockchain, then, is a blockchain owned by a single organization. That organization owns and pays for all the computers needed to operate the chain and process the transactions. Clearly, it's up to the private company who joins or uses its private blockchain. A private blockchain can be built on the backbone of a public blockchain and removes the need for the exchange of currency to pay the processing computers participating in the chain.

In between, is a consortium blockchain, as the name suggests is where a group of companies or organisations co-operate in the blockchain processing but the chain is not open to anyone to join. Again, the potential exists to remove the need for a digital reward currency for processing.

This brings us to two related phrases: 'Permissioned' and 'Permission-less'. You've probably guessed already, but a Permissioned blockchain is one you need permission to join (so that would apply to a private and consortium blockchains). A Permission-less

blockchain is one you don't need permission to join (so that would apply to a public blockchain).

TRANSACTION VERIFICATION AND SMART CONTRACTS

Because blockchain works on a peer-to-peer basis with the chain distributed over multiple nodes or servers, multiple copies of the entire chain are stored in multiple places, making the system intrinsically stable and self-verifying, because if one copy is changed without authorization, multiple other copies exist to determine that a copy has been compromised. The distributed nature of the system is also used in data and transaction verification, because multiple copies of the chain all verify that a transaction has occurred, meaning verification can be carried out by the software itself without need for human intervention.

The ability to make verifications and affirmations without any human intervention is central to blockchain's potential use in business value chains. A blockchain system works by asking all of the nodes on the network to come to a 'consensus' or agreement that a transaction is valid or invalid. This process uses a technique called a 'Consensus algorithm' and it is this mathematical process that allows the blockchain to make decisions

without human intervention very quickly and very accurately. The most common consensus algorithms are 'Proof of Work' and 'Proof of Stake' but there are many others, and this is an on-going area of research by corporations like IBM and Microsoft as well at a number of universities.

'Smart contracts' are applications that work within the blockchain system to impose business rules on a transaction, If you think about it, pretty much any transaction or business process can be broken down into a series of rules. For example: Company A must pay Company B 30% of a rights fee that becomes due on first showing of TV show X. These business rules are laid down within the blockchain as smart contracts. Simply, a smart contract is an application programmed to check and carry out a rule-based business process.

These smart contracts are auto verified because the computers processing these rules and transactions within the blockchain will all carry out the transaction together and if enough of the computers contributing to the processing find that the transaction rule has been met, they will verify and record it as completed and execute the payment rule. For this reason, transactions and payments that traditionally have required a middleman to process can be carried out entirely in the chain. This could be the execution of payments without

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the need for a bank, or the execution of complex legal clauses within a contract without the need for a lawyer. This fundamental ability is where many of the potential cost savings of a blockchain system come from.

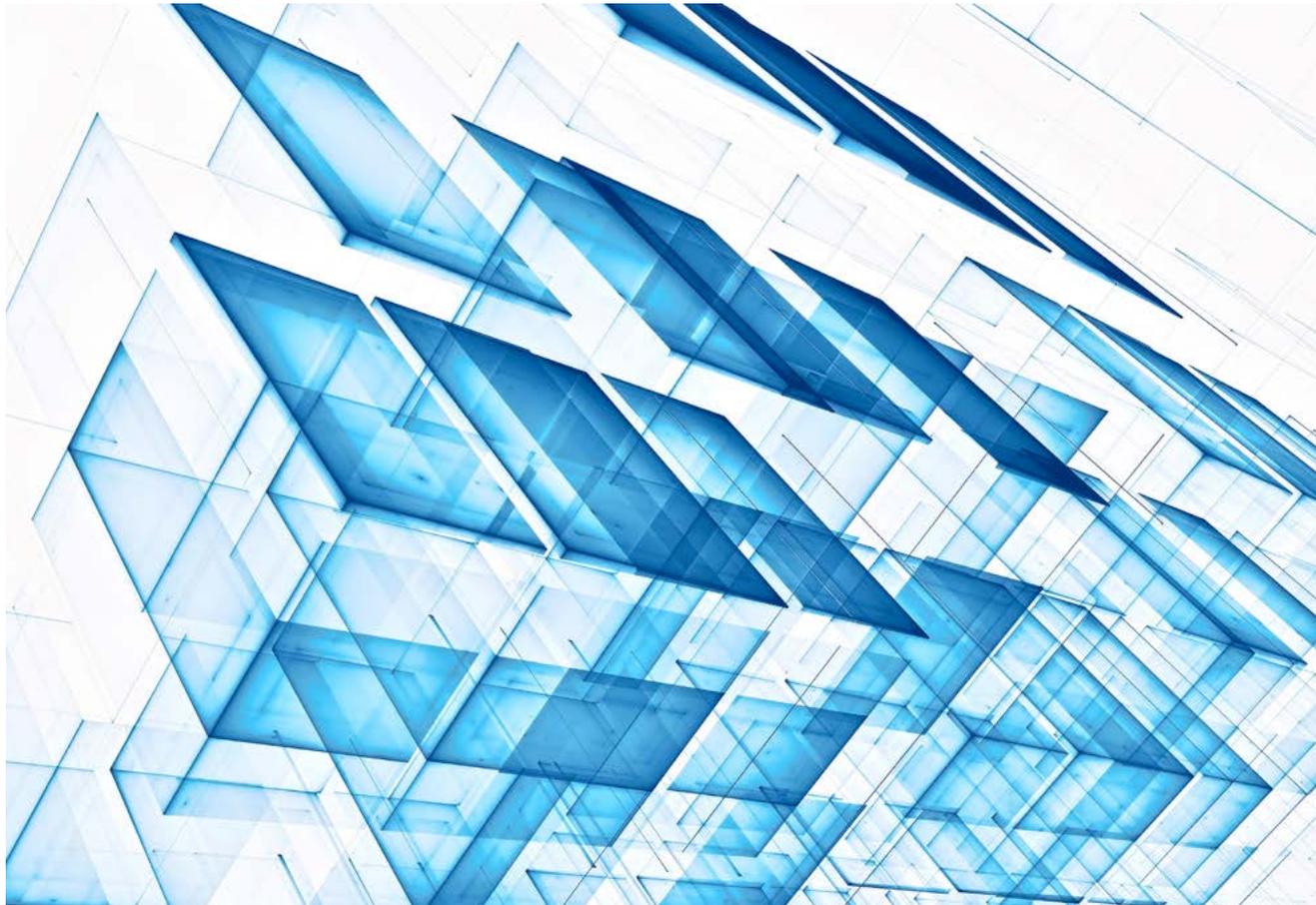
TRANSPARENCY AND RECORD-KEEPING

One of the key aspects of blockchain and its distributed ledger, in combination with the data and transaction verification inherent in the system, is the transparency that this can

bring to transactions and payment trails. Within a traditional database system, opening up the database to all interested parties can create a major security risk as one or more of those parties might intentionally or accidentally modify or delete the data. This creates a business risk. This risk is virtually non-existent within a blockchain system because unauthorized changes to transaction records will not meet the consensus verification criteria and will therefore be rejected. This freedom and ability for transparency is key when we think about use of blockchain in media value chains. Just think of all the areas in which lack of transparency is creating bottlenecks today. Distribution audits, for example, would not be necessary. All parties involved in a revenue share or due deferred income would have full visibility of money paid and income due. Indeed, most of the value chains we will examine below rely in part or in whole on trust regarding the money generated and paid out at key points in that chain

SO HOW MIGHT BLOCKCHAIN BENEFIT TV PRODUCTION AND DISTRIBUTION?

If we accept that blockchain, at its simplest, is a software tool for imposing business rules on a transaction and carrying out and validating that rule and transaction automatically, then it is clear that pretty much every



1 – What is Blockchain?

aspect of TV content creation, finance and distribution could benefit from the use of a blockchain system. Before diving into an examination of media value chains and the role for blockchain, let's recap some of the benefits of blockchain technology:

- Very high levels of security.
- Instant, verifiable transactions anywhere in the world carried out without the need for a middleman.
- Easy micro (or macro) payment with minimal or no transaction costs or exchange rate issues.
- Permanent, time stamped secure and indelible records of all transactions.
- Real-time reporting of consumption data and money flows.
- Storage and instant execution of business rules and contract terms without the intervention of a third party.
- Management and execution of money flows from one party to another party or to multiple parties.

BLOCKCHAIN IN TV VALUE CHAINS IN PRACTICE

Developing an industry or process-specific blockchain starts with an assessment of business processes and a review of what rules and transactions are common within the business. It's fair to say that, today, pretty much every

producer, studio, rights holder, and distributor uses a different means of recording and tracking their transactions. There are few, if

any, industry standard softwares within the TV business. But think about the means on which deals are struck, finance is raised, rights are

IN TERMS OF BUSINESS IMPLEMENTATION, WE'RE AT BLOCKCHAIN V1.0

If you work in media, you've probably been hearing blockchain hype for several years already. You may be sick of hearing blockchain mentioned in relation to everything and anything. You may even have written it off through sheer blockchain fatigue. But it's important to understand that the implementation of blockchain systems in the industry are right at the beginning of development. While blockchain and cryptocurrencies have been around now for a good few years, the actual practical application of blockchain in business processes is very much in its infancy. While more than experimental, the companies we spoke to in writing this report that are actually developing media blockchain systems are just a few years old. Most of the technology they have built is in, or just barely out of, beta testing. The industry really is embarking on blockchain v1.0.



1 – What is Blockchain?

traded and deficit deals agreed and, while the cuts and shares may all differ, standard processes start to emerge clearly.

Further, many of the processes involve multiple parties with slight variations on business rules/shares and payment triggers. That makes them ideal for a system that can carry out those processes instantly, on its own, in a fully secure and verified manner, with complete transparency and perfect, permanent record keeping. It also means that money flows that were previously subject to intermittent payments can be made in real time and are effectively self-audited.

WHO BUILDS THE CHAIN?

New blockchains can be built on top of existing blockchain systems or built from scratch. There are a number of public blockchains already set up onto which blockchain developers can build additional chains and functionality. Examples of these public chains include Ethereum, Stellar and Hyperledger. These have been developed by co-operatives of coders and are operated by foundations: Ethereum Foundation, Stellar Foundation, and, in the case of Hyperledger, the Linux Foundation. Even though these blockchains are public, private blockchains can be built on top of them using their core code and functionality.

A blockchain can be built to handle a single process within a value chain, or aim to facilitate the entire process and transaction chain. It can aim to facilitate the processes already carried out by the parties involved in production and distribution, or look to cut them all out of the equation and allow creators to engage with and monetise directly with the end consumer.

How a blockchain is built and implemented, which party in the chain would build and run it and how it is monetized is subject to need. Blockchains built for TV production and distribution could be private or public. We'll run through both scenarios as we start to examine the different value chains and also look at some actual real world implementations with case studies of blockchain systems already operating within the production and distribution value chain.

THINKING ABOUT THE TV PRODUCTION AND DISTRIBUTION VALUE CHAIN

We're going to look at three interconnected business chains within TV production and distribution and look at how blockchain could be used to streamline these chains and reduce cost, as well as who might be in a position to create the blockchains and how the money and business models for operating the blockchain might work. In the real world,

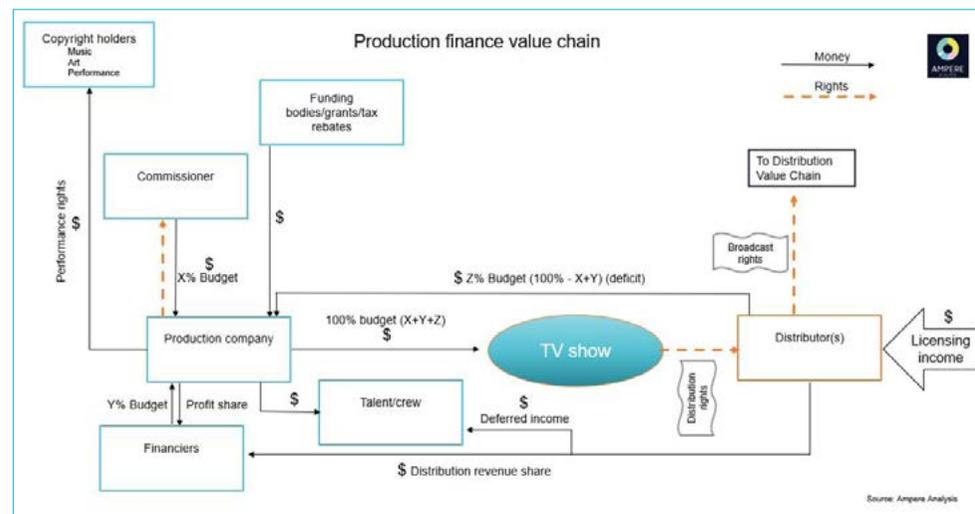
all three of the value chains we are going to look at operate sequentially within the production and distribution business, taking us from content creation through to delivery of that content to an end consumer.

It doesn't take a huge leap to see that, in theory, a blockchain system could be built to carry out the entire chain. While in practice this would be hugely complicated, it's an important concept because it shows how a large vertically integrated studio business could potentially build its own blockchain system to carry out all of its internal business processes, ultimately including direct-to-consumer delivery of the content it creates. Given the strong moves towards direct to consumer delivery disrupting the way consumers engage with content and content creators it's timely that a technology like blockchain is emerging as a system that could streamline the back-end business processes involved in that shift.

2 – Media value chains and case studies: Production finance

Value chain 1: Blockchain in production finance and collection

The first chain to look at is the production finance value chain. This inevitably encompasses some aspects of distribution as distributors are an essential part of production deficit financing. Below is a simplified TV production value chain:



To start, let's just take the first part of this chain focused on the producer. In raising finance to get a TV show made, a producer will engage in a financial relationship with many parties, likely to include:

- Funding bodies and grant holders
- Local authorities and national tax incentive bodies
- Film and TV Commissions
- Guilds, trade bodies and unions
- A primary commissioning party
- Financiers and investors

- The talent itself
- Copyright holders

The flow of money between these parties may be one-way or two-way, but all aspects of the relationship between these parties are based on rules and shares. If you think about it, the entire chain actually works on one simple transaction concept—a waterfall of money made back down the chain to the parties involved. Fundamentally, then, we are talking about a very complex value chain that can be encapsulated in one concept...albeit with infinite variation in shares and the additional complexity of geographic and window variations on those shares as well as the triggers that make the chain function. There are some additional considerations in the flow of money down the chain:

- Funding bodies and grants may be issued or triggered based on investment in a specific geographic location, the use of a certain proportion of budget allocated to local talent or other share-based criteria.
- Local authorities may issue tax rebates based on similar regional investment criteria.
- Film and TV commissions may issue grants based on locality or talent diversity.
- A primary commissioning party will generally pay a set portion of the budget in return for limited rights (usually geographic and window based.)
- Financiers and investors will provide initial capital but expect reimbursement based on a share of revenue or profit upstream from distribution and rights deals.
- The talent will obviously expect to be paid, but may also help to finance the production by accepting deferred income based on upstream profit.

2 – Media value chains and case studies: Production finance

- Copyright holders are due money for music and other performance rights, with payments potentially further complicated by number of performances or concepts like original transmission/retransmission.
- The final, key consideration is that revenue/profit from a piece of content will usually be generated over many years requiring on-going monitoring of monies due.

Today, these processes are usually opaque with limited reporting and transparency between the stakeholders. Payment and reporting of shares is often long-winded and delayed with the numerous parties unsure that the share they receive is really the share they are entitled to. Reporting of monies due is irregular and usually no more frequent than quarterly at best. That's the business problem, and that's where blockchain's potential comes in. Using blockchain and smart contracts, a system can be built that automatically shares out profits as soon as payment is received, keeps a record of every transaction and reports in real time back to invested parties. Because all of this can be done automatically without the need to constantly reconnect with every party involved, a system can be built that collects and shares revenues for the entire lifecycle of a piece of content. Let's take a look at our first case study.

THE BLOCKCHAIN RIGHTS COLLECTION PARTNER—FILMCHAIN

Irina Albita, Co-founder, Big Couch

Big Couch was founded in 2014 by Irina Albita and Maria Tanjala initially as a means of raising finance for movie projects using blockchain technology through its Crewfund platform. Crewfund has already been used to raise money for eight different film projects. Big Couch's latest project is Filmchain, which uses blockchain to create an automatic financial system for the collection, payment settlements, reporting and rights management for the media industry. The platform allows filmmakers to collect, allocate and analyse revenues for film, TV and digital content in a transparent and efficient manner. The service was launched in February 2018 and is backed by Innovate UK and developed in collaboration with Imperial College London. Filmchain is designed to act as the collection partner for rights holders, generally the producer. It is a rights payment collection and distribution system. Because it is managing the flow of money directly back to the rights holder, it also interacts with investors at one end, and distributors and sales agents at the other. Money comes in from distributors and sales agents (sometimes with a hive off back to the sales agent) and then flows back to the producer and onto the investors and other financiers and beneficiaries.



2 – Media value chains and case studies: Production finance

Big Couch, the company behind Filmchain has already created a private blockchain (based on Ethereum) to deal with this very segment of the production finance value chain. At its simplest, all that is required is a fulfilment account into which upstream money is paid (from distribution partners, for example) and then a set of business rules that divvy that money up and share it out to the parties due a share.

By using blockchain technology, all parties due money are paid as soon as upstream money enters the account. Further, any party involved can see a record of the transactions instantly and in real time (no waiting for quarterly or half-yearly reports).

Filmchain is built on Ethereum but is a private blockchain. This means that the whole system can operate without the need for a cryptocurrency and works by using real money in and out. There is no need for users to own or trade Ether...the cryptocurrency used within the public Ethereum blockchain.

Filmchain co-founder Irina Albita, explains that moving away from cryptocurrency was important, given the stage of development and industry familiarity with blockchain technology. "The moment you go out with a product, be it a VOD platform or a financing tool, and say you need to create a wallet, a cyptowallet and you need to start buying some ether or bitcoin...at that point you've

lost your audience," she says.

This is a very different way of working to the other two implementations we will case study which use the public Ethereum network, rather than a private blockchain built upon it. Albita explains: "In order to get the film industry to adopt emerging technologies, whether AI, VR or blockchain...we need an intermediary step that is familiar to them so they can operate with a level of security that means if something goes wrong with the technology, there is still a lever to redress that issue". The only way you can do that, says Albita, "is to give some authority within the private network to some signatories in the film or some administrators in the network."

The system executes shares of revenue or profit as soon as money enters a holding account. Albita explains: "when a distributor sends money into a collection account, they send money in Fiat [any government-backed currency such as the dollar or euro] as they have done for years". Upon receipt of a payment instruction from a sales agent or the producer or rights holder, business rules to share out the payment kick in.

Filmchain's private blockchain approach means users can deal with the system in very familiar ways without any need to engage with cryptocurrency or wallets. Money is simply paid into traditional bank accounts and the system handles all of the revenue

distribution. Despite not making use of the fully distributed public blockchain, the blockchain functionality is key to the system, Albita says. That's because blockchain solves two key obligations required in rights collection: payment based on a pre-agreed split and reporting—with blockchain this can be done in real time because there is no intermediary trying to track every payment and then create a spreadsheet or PDF report...remember, all transactions are executed automatically and recorded in real time.

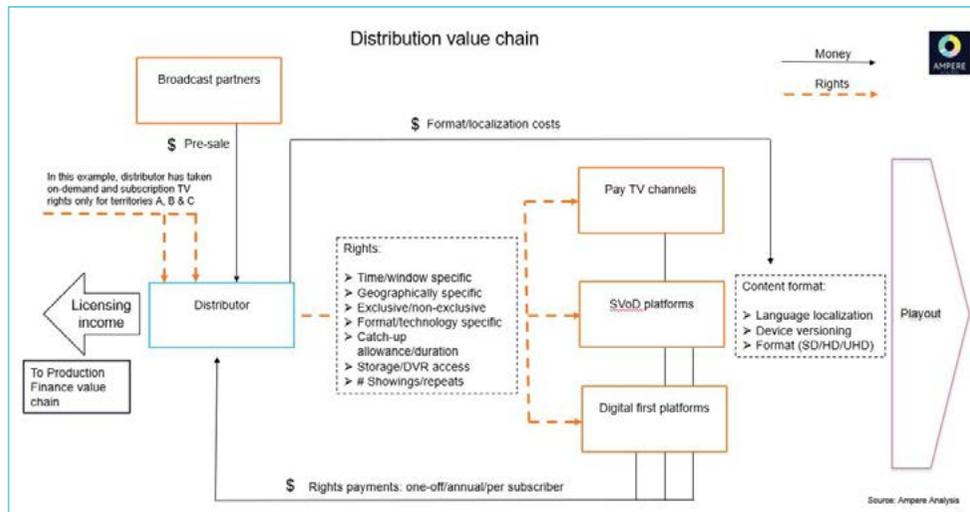
The business model is a simple one: Users need to pay a one-off fee to start using the system and then Filmchain takes a commission on each deal.

BigCouch has ambitions to extend the Filmchain system more deeply into the distribution value chain and is already working actively with distributors: "our mission as a company has always been to create an end-to-end money flow for the film and TV industry," says Albita. The idea is to start gradually integrating and support distributors with ways of better reporting and later allow exhibitors to report down to distributors. "We are working actively with several larger distributors and broadcasters to create collection services for them. It's a level up from the production collection service, but otherwise a very similar product to add a distribution collection service," says Albita.

3 – Media value chains and case studies: Distribution

Value chain 2: Blockchain in TV & film distribution

The next value chain we'll look at is content distribution. Clearly this adjoins to the value chain we've just examined but is the next phase in the lifecycle of content exploitation.



Fundamentally, the distribution value chain is just another part of the waterfall whereby content is sold by a distributor to an end user which generally takes the content into the home (through TV broadcast or some form of on-demand or transactional platform). Distributors pay for content they sell through commission and may also offer minimum guarantees, paying a lump sum upfront which is deducted from money flowing back to the rights holder up to the point of reaching the minimum. The complexities of this value chain relate primarily to the

windowing of rights and the multiple agreements put in place with end broadcasters, as well as the variety of rights associated with use of the content, including repeats, catch-up, storage and DVR, windowing and hold backs, geographic restrictions and exclusivity agreements. The complexities can be summarized as:

- Multiple, territory-specific distribution and sales relationships.
- Variable rights access and availability.
- Variable hold backs and windowing rights.
- Complex payment relationships which may involve minimum guarantees, profit shares variable treatment of localization costs and other 'payments in kind'.

As with the previous value chain, however, these are all variable rules applied to a waterfall of money based on shares to invested parties, with the complexities listed above representing business rules and variable payment triggers that can be encapsulated in smart contract terms.

3 – Media value chains and case studies: Distribution

THE BLOCKCHAIN DISTRIBUTOR—CINEZEN

Sam Klebanov, Co-founder & CEO, Cinezen

Cinezen was founded in 2017 in Sweden by Sam Klebanov and Pavel Rabetski with financing from Austrian-Israeli venture capital fund AltaIR VC. Cinezen is a VoD platform that allows users to rent and watch content as well as operate as micro-distributors, setting up their own store fronts and promoting movies and content in return for a share of revenue made from their direct sales. The system is designed to empower users and local 'influencers' to make money from distribution themselves, but rather than completely cut out the middleman, the main target of the system is traditional distribution companies and sales agents who want to push their content into new markets or exploit content in territories where they don't have existing deals. The system also allows producers to act as their own distributor and go direct to consumer.



Cinezen has built a blockchain based on the public Ethereum network in order to manage this segment of the value chain, as well as provide a means of distribution to the end user, potentially also allowing direct to consumer delivery.

Cinezen uses the Ethereum public blockchain and does trade using Ethereum's cryptocurrency, the ether. Users are encouraged to pay for content in ether and incentivized financially to do so. The system also allows payment in real money for those who don't want to set up a wallet or handle cryptocurrency, with Cinezen handling the conversions between crypto and fiat. Distributors and sales agents are treated in a similar way. Payment back to distributors is made in ether, and paid into a dedicated crypto wallet, but money can be withdrawn in a fiat currency at any point.

Consumers pay to view content on a pay-per-view model. The consumer pays the cost of the content rental as well as the Ethereum processing fee (the cost of processing transactions within the Ethereum system is called 'gas' money, paying in gas de-links the fees from fluctuations in the cryptocurrency ether, although ultimately the gas fee is paid in ether). Typically a gas fee is a few, up to tens of, cents.

The flow of money in Cinezen stops at the point of money being paid to the distributor, sales agents or rights holder. In that respect, working backwards from the consumer, Cinezen stops where

3 – Media value chains and case studies: Distribution

FilmChain starts.

Co-founder and CEO Sam Klebanov explains that a key driver for deploying blockchain in the distribution value chain was transparency. “Traditional VOD platforms are not transparent at all or are as transparent as the management wants them to be. They send reports but these reports are unverifiable relatively speaking unless you order a very expensive audit and as there are dozens of platforms, you can't audit all of them so it's virtually impossible to verify,” he says.

The other key benefit of blockchain is that distributors, sales agents and rights holders get paid immediately. In a traditional distribution relationship, payments from transactional sales are made back to the distributor intermittently in lump sums. Blockchain also “helps to automatically divide the payments between many parties, and that in turn lets us incentivise the distribution and promotion of content,” explains Klebanov. That incentivisation and the ability of blockchain to handle an infinite number of microtransactions, instantly sharing payment between all parties means the Cinezen system is a potential disruptor. And Klebanov has big ideas: “at the moment the [distribution] marketplace is monopolised by a handful of big international companies and they also monopolise your

user experience. They decide how to structure the content and what content to promote...and prioritise. We want to delegate this function to the community and explore ways of promoting and structuring the content,” he says.

Cinezen works on a fixed fee per transaction, but a nuance of the fee structure is that the maximum is capped at 30% of the transaction value. This allows content to be sold at a low price in certain emerging markets without damaging the distributor's overall margin, Klebanov says.

Cinezen is available globally, but the company is busy prioritising several initial markets to build the local content offer and develop distributor relationships. Says Klebanov: “to build a really good offer we have films from international rights holders who can give you unsold territories and local distributors who buy all the most attractive films.” That means working on the company's home market of Scandinavia as well as Russia and the Baltics. The Czech Republic and Benelux countries will be next. And Cinezen has its sights set on entering the UK market too.

4 – Media value chains and case studies: Direct-to-Consumer

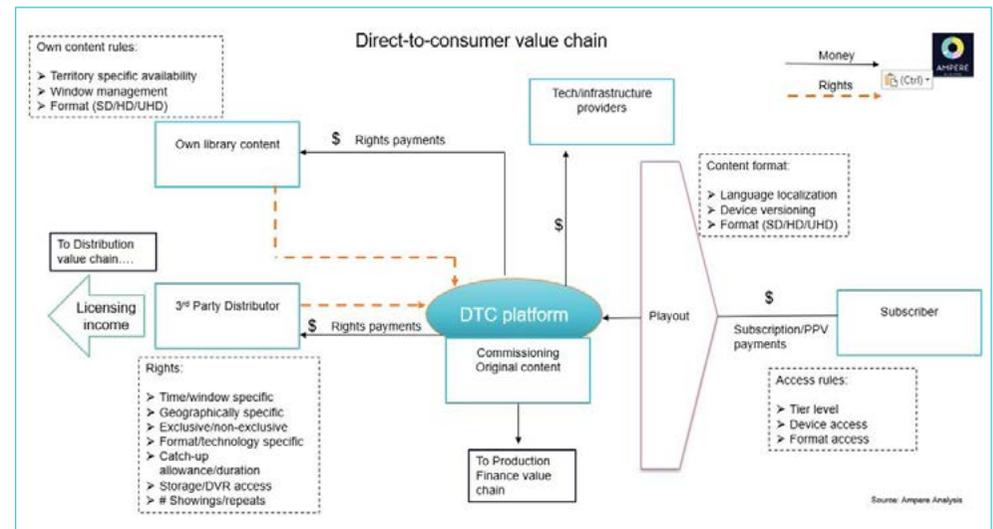
Value chain 3: Blockchain in direct-to-consumer content delivery

At one level the delivery of content direct to consumer encompasses all of the value chains we've already looked at because direct-to-consumer (DTC), in its ultimate form, cuts out middlemen altogether. But the reality is that direct to consumer platforms still generally need to license content and connect into the distribution and the production finance and creation value chains. Taking the direct-to-consumer delivery of content as the logical end of the content value chain, DTC platforms are consuming content from distributors as well as likely making use of own library content and commissioning new original content (connecting directly to the production finance and creation value chain). Money flows from the consumer (via subscription and/or transaction fees), back to the platform and on backwards to the distributors. DTC platforms are dealing with the same complexities as the distributors licensing to them, notably rights management that is:

- Time and window specific.
- Geographically limited.
- Exclusive and non-exclusive.
- Based on a variety of ancillary usage permissions around catch-up/storage and other consumption modes.

In addition, DTC platforms need to manage

- Management of subscription relationships.
- Tier/package levels, likely charged at different prices to the end user.
- Variable device access leading to format specifics.
- Localisation and versioning.



But, like the other two value chains, we are looking fundamentally at a money flow that starts with a consumer paying to consume a piece of content.

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THE BLOCKCHAIN DIRECT-TO-CONSUMER PLATFORM—BREAKER

Kim Jackson, Co-founder, Breaker

Headquartered in Switzerland, Breaker (originally called SingularDTV) was founded in 2016 by Zach LeBeau, Kim Jackson, and Joseph Lubin (one of the co-founders of Ethereum). It launched a beta version of its DApp platform at Breaker.io in January 2019 with the aim of allowing creators to directly monetize content by selling direct to the consumer. The platform includes a blockchain rights management system and peer-to-peer content distribution platform. Breaker also creates its own original content, including original documentary Trust Machine: The Story of Blockchain by Alex Winter, and feature film The Happy Worker, executive-produced by David Lynch. Breaker has also acquired the worldwide rights to Perfect, a dystopian sci-fi thriller from Steven Soderbergh.

Breaker works on the Ethereum public blockchain and targets independent producers and creators, but ultimately sees longer term potential in also working with major studios. One of the key tie-ins

Breaker is hoping to make is direct relationships with professional guilds like the SAG-AFTRA actors' guild, so that money can flow further down the chain from the consumer, through the content producers and creators (Breaker's current target user base) to the writers, directors and other talent involved in a project. Currently the platform operates as a non-exclusive transactional platform.

As with the other systems featured in this report, users can transact in real fiat currencies like pounds, euros or dollars if they want, but the money flow within the system uses the ether cryptocurrency.

Breaker has also developed a platform for raising finance for creative projects. Called Tokit, the financing platform allows creative projects to create a token offering and raise capital for individual projects.



Breaker is using blockchain to cut out the middleman altogether and allow creators to go direct-to-consumer. One of the key drivers for developing the Breaker DApp was to empower content creators, not just to monetise content directly with the end user, but also through access to data and control of their IP. Kim Jackson says as a film maker herself, she understands “the value of owning and

controlling your data which includes your revenue and your IP.” Blockchain’s key benefit is “peer to peer transparent value exchange,” she says. Transparency is fundamental to the Breaker ethos. Jackson explains that the lack of data flow once content is licensed to a traditional platform like iTunes or Netflix is a real problem in the industry. Breaker allows the creator to keep control of their IP, their

rights and the data flow from consumption, in real time and in perpetuity, meaning full transparent accounting of money flow back from the consumer and through the platform as well as an ability to keep track of the movie for its entire life.

Central to the system is the dashboard, where each content creator is able to track and manage their own content, accessing

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consumption data, geographic splits and money in real time.

Not surprisingly (given they count an Ethereum founder among their number), the Breaker team are all exponents of the decentralised power of public blockchains, and that's why it was important to Breaker to work on the fully public Ethereum system. Says Jackson: "We as a company aren't interested in that [private blockchains], we're interested in the public chain, we're interested in the decentralised philosophies that go along with blockchain technology and we're busy proving those models so it will be clear to content creators and consumers the benefits of blockchain."

Ultimately the opportunity is to work with major content producers and studios, managing the flow of money all the way back to the talent. But that will take time, explains Jackson. That's because we really are at the very beginning of blockchain deployment in real-world scenarios: "At this particular juncture, blockchain technology is still being tested, so it's kind of like the early days of the Internet, like with the dial-up phase, when not everybody had an e-mail address and not everybody was hooked into the world wide web and it's similar right now in blockchain; not everyone is participating, not everyone has a wallet and a wallet address," she says. So for now, Breaker is content to work with the indie sector, seeding and growing the

market and the industry acceptance of blockchain: "it's one of those sort of situations where you build and they will come," Jackson says. When major studios join the party, it could be transformative for their business, she thinks: "certainly it will be a very important way for their backend accounting and all of the efficiencies that will happen in their back room, looking at audience data and resource allocation. I think it will be a very powerful tool for [the majors]."

KEY TAKEAWAYS

In summary, as the case studies show, blockchain technology is already being used to simplify and facilitate media value chains and processes. Among the key takeaways from this report—other than what blockchain is and what it does—is that the industry is right at the beginning of blockchain deployment into real media ecosystems. That—and a lack of understanding around the utility of blockchain—is the reason why many are tempted to write-off blockchain as hype. But as a tool, blockchain's potential benefits are actually quite simple. Fundamentally, the main potential of blockchain is the streamlining of money flows, through the removal of middlemen and increased transparency and accountability in revenue reporting. That, in a nutshell, is where blockchain can be used as a tool to reduce costs in today's often inefficient

and usually opaque media value chains. Being at the early stages of real-world blockchain deployments probably also means that we are several years off from anything approaching wide-spread adoption of blockchain technology by the film and TV majors. And it has direct consequences for those looking to explore and develop new blockchain systems. Because blockchain is so new and developers in short supply, it can get expensive to develop very quickly, even when building on top of an existing platform like Ethereum.

The nascency of the technology also means there are two competing schools of thought... those who believe in the power of the fully decentralised public blockchains (where no one organisation controls the system) and those who believe—at least for now—that some form of central control is needed to encourage adoption through the use of private blockchains.

In this respect, blockchain today really is like the early days of the Internet, which moved from a fully disaggregated network towards the privately control hubs and access points that characterise the Net today. Perhaps Breaker's Kim Jackson sums it up best when she describes the leap of faith needed to get blockchain systems off the ground: "it's one of those sort of situations where you build and they will come", she said. The building, it seems, is well underway.



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