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MARCH 20, 2018



*SHOKOCAST – THE ONLY  
INCENTIVISED CONVERGENT  
DIGITAL SOCIAL MUSIC PLATFORM  
THAT IS TRUE TO SMART  
EMPOWERMENT OF THE ARTIST*

WHITEPAPER V9.8

**WHITEPAPER**

PRESENTED BY: SHOKOCAST PTY LTD

**“TIMID”** an abbreviation that means TIMID [Technology Innovations that are based on Multiple Interdependent Disruptions to the music industry

- *Transformation is a process or profound and radical change that orients an organisation in a new direction, taking it to an entirely different level of effectiveness*
- *Innovation is deliberate application of information, imagination and initiative in deriving greater or different values by which new ideas are converted into useful products, and*
- *Disruption is a disturbance or problems, which interrupt an event, activity or process,*

# DISCLAIMER

The information contained in this whitepaper (Whitepaper) which has been developed in collaboration with our entire team of professional advisors., the website (Website), and the Terms and conditions for the Initial Coin Offering (Terms), (together, the Materials) relates to:

1. The establishment by Shokocast Private Limited (shokoCAST) of a platform called **shokoCAST**, (Platform), that will bring about the rebirth of sound and the evolution of music and will be built using TIMID [Technology Innovations that are based on Multiple Interdependent Disruptions to the music industry] on a hybrid quadruple layered blockchain called **SHOkolah**. The platform will enable the creation of music by artists and beatmakers and DJs, collaboration, sharing; publishing; distribution; and consumption of music; **suPERFORMER** [live video, 360 video and augmented reality streaming, live concerts and events, ticketing, etc.]; curated music playlists or dRadio [digital music streaming]. It will also have a transactional wallet called **shokollet** together with a secure and anonymous messenger called **SHUSH!**.
2. The financing of the development of the Platform by the distribution (the Distribution) by shokoCAST of cryptographic SHOKOins tokens (SHOKOins) [SHK], and
3. The use of SHOKOins in the Platform.

SHOKOins will be listed on some of the leading exchange platforms, a list ever expanding, and are based on ERC20 standards and represent utility tokens that provide rights and rewards on the platform and blockchain community in general.

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As of the date of publication of this whitepaper, shokoCAST ERC20 Tokens have no known or intended future use other than the anticipated use in this whitepaper.

No promises of future performance or value are or will be made with respect to shokoCAST ERC20 Tokens, including no promise of inherent value, no promise of continuing payments, and no guarantee that the shokoCAST ERC20 Tokens will hold any particular value and any projections stated are made based on assumptions of the future environment. Unless prospective participants fully understand and accept the nature of shokoCAST business and the potential risks associated with the acquisition, storing and transfer of ShokoCAST Tokens, they should not participate in the ERC20 Token Sale. shokoCAST ERC20 Tokens are not being structured or sold as securities and hold no rights and confer no interests in the equity of shokoCAST and are sold with an intended future functionality on the shokoCAST application and all proceeds received during the Token Sale (referred to as an Initial Coin Offering in the whitepaper) may be spent freely by shokoCAST on the development of its business and the

underlying technological infrastructure and for the benefit of the platform and shokoCAST community.

This whitepaper does not constitute a prospectus or disclosure document and is not an offer to sell, nor the solicitation of any offer to buy any investment or financial instrument in any jurisdiction. No regulatory authority has examined or approved any of the information set out in this whitepaper. No such action has or will be taken under the laws, regulatory requirements or rules of any jurisdiction. The publication, distribution or dissemination of this whitepaper does not imply that applicable laws or regulatory requirements have been complied with.

Participation in shokoCAST ERC20 Token Sale carries substantial risk and may involve special risks that could lead to a loss of all or a substantial portion of your contribution and vis-a-versa. Further information about the risks of participating in the Token Sale are set out in the Token Sale T&Cs. Please ensure that you have read, understood and are prepared to accept the risks of participating in the Token Sale before sending a contribution to us.

The Token Sale and/or SHOKOin Tokens could be impacted by regulatory action, including potential restrictions on the ownership, use, or possession of such tokens. Regulators or other competent authorities may demand that we revise the mechanics of the Token Sale and/or the functionality of SHOKOin Tokens in order to comply with regulatory requirements or other governmental or business obligations. Nevertheless, we believe we are taking commercially reasonable steps to ensure that the Token Sale mechanics and issue of SHOKOin Tokens do not violate applicable laws and regulations.

## **CAUTION REGARDING FORWARD-LOOKING STATEMENTS**

This whitepaper contains forward-looking statements or information (collectively “forward-looking statements”) that relate to our current expectations of future events. In some cases, these forward-looking statements can be identified by words or phrases such as “may”, “will”,

“expect”, “anticipate”, “aim”, “estimate”, “intend”, “plan”, “seek”, “believe”, “potential”, “continue”, “is/are likely to” or the negative of these terms, or other similar expressions intended to identify forward-looking statements. We have based these forward-looking statements on current projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, financial needs, or the results of the Token Sale.

In addition to statements relating to the matters set out here, this green paper contains forward-looking statements related to shokoCAST proposed operating model. The model speaks to our objectives only, and is not a forecast, projection or prediction of future results of operations.

Forward-looking statements are based on certain assumptions and analysis made by shokoCAST in light of its experience and perception of historical trends, current conditions and expected future developments and other factors it believes are appropriate, and are subject to risks and uncertainties.

Although the forward-looking statements contained in this whitepaper are based upon what we believe are reasonable assumptions, there are risks, uncertainties, assumptions, and other factors which could cause shokoCAST actual results, performances, achievements and/or experiences to differ materially from the expectations expressed, implied, or perceived in forward-looking statements.

Given such risks, prospective participants in the Token Sale should not place undue reliance on these forward-looking statements.

**You are specifically directed to the Terms set out on the Website (<https://www.shokocast.io>) which set out, amongst other things, criteria for eligibility to participate in the Distribution, including certain confirmations, representations and warranties given to shokoCAST, and certain risk factors. If you are unable to agree to the Terms, including such confirmations,**

**representations and warranties, you should not participate in the Distribution and should leave the Website.**

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# INTRODUCTION

shokoCAST is set to embark on a new project which addresses these industry challenges. This whitepaper sets out the solution across these key areas:

- shokoCAST + shokollet + SHOkolah + suPERFORMER + SHUSH! Become the solution necessary to evolve the music value chain and is a game-shifter, which is set to revolutionize how content is interacted with, shared and consumed.
- SHOKOin: A digital token called SHOKOin, designed to provide equality and remove market impediments whilst creating a unified industry that supports a seamless and transparent user experience (maker, mover or manager) within the platform.
- Marketplace: the platform provides a marketplace opportunity in which users can procure support services including digital services including digital marketing, event management, photography, professional mastering, and recording studio time..
- SINGLE-DB-APP++ is shokoCAST's solution to addressing large mobile application size and the complexity related to the required level of functionality, cryptography and alignment with a blockchain in mobile applications.
- REWARDS – Tokens will be given as reward and incentive to active citizenry on the platform.

# SHOKOCAST CONTEXT

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Vashona Project

<https://vashona.com/en/dictionary/sna/shoko>

Blockchain Powered Financial Inclusion

<http://pubdocs.worldbank.org/en/710961476811913780/Session-5C-Pani-Baruri-Blockchain-Financial-Inclusion-Pani.pdf>

Martin Fowler, The LMAX Architecture

<http://martinfowler.com/articles/lmax.html>

Introducing Intel Optane Technology – Bringing 3D XPoint Memory to Storage and Memory Products

<https://newsroom.intel.com/press-kits/introducing-intel-optane-technology-bringing-3d-xpoint-memory-to-storage-and-memory-products/>

GSMA Mobile Economy Sub Saharan Africa 2017 ;

Cash Crisis Has Econet, Netone And Telecel Swimming In (Mobile) Money

<https://www.techzim.co.zw/2017/12/cash-crisis-boosts-telcos-mobile-money-revenue/>

Tapscott Dan & Alex Tapscott, 2016, Blockchain Revolution. How the Technology Behind Bitcoin Is Changing Money, Business, and the World. New York: Portfolio. (2016: 253-277)

Silver, Jeremy, 2016, Blockchain or the Chaingang? Challenges, opportunities and hype: the music industry and blockchain technologies, CREATE Working Paper 2016/05. *Silver (2016: 11-12)*

Mey, Stefan, 2016a, "Gut vereinbart. Smart Contracts und Blockchain", iX – Magazin für professionelle Informationstechnik, Nr. 6: 50-53.

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## SHOKOCAST

*'shoko'* pronounced [shawr – kawr] is a Shona word that means any notice, word, or communication, written or verbal, sent from one person to another.

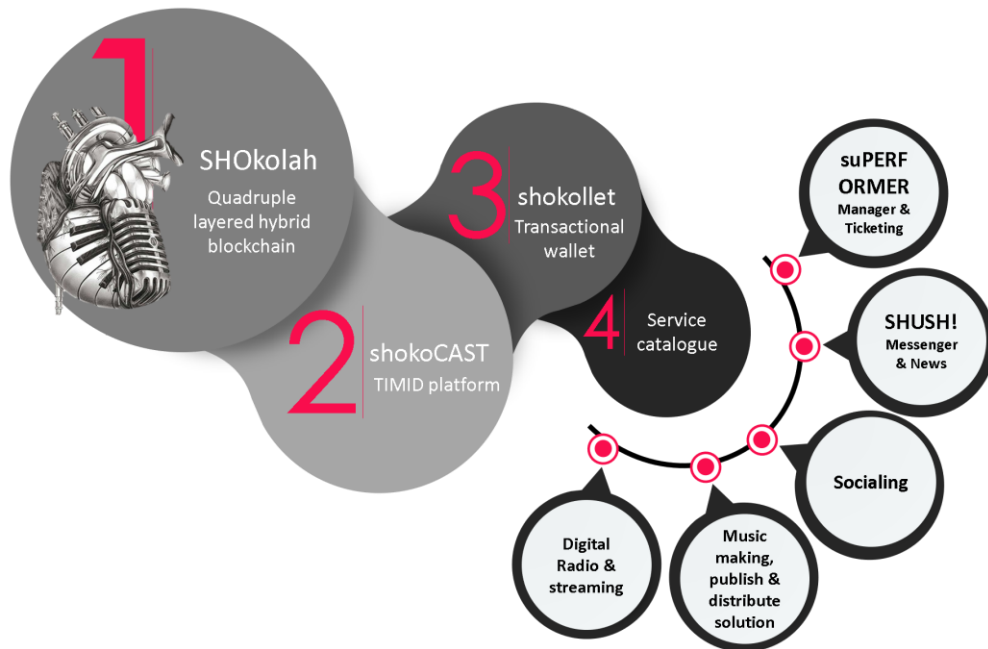
*'shokoins'* pronounced [shawr – coins]

### **Context: Redefining the Music Industry**

shokoCAST is a catalyst that brings about the required change to the music industry, through advanced cryptographic technology, shokoCAST

The shokoCAST hybrid quadruple layered ecosystem is a platform built on blockchain technology using **TIMID** [Technology Innovations that are based on Multiple Interdependent Digital Disruptions to the music industry]. Its easy to make the assumption that everyone across the world has access to a computer, audio workstations to make music, mastering services, publishing administration and that everyone should be able to distribute their music seamlessly – but the majority of the work lacks even that basic an opportunity and given talents remain untapped, worse first world problems like transparency and frequency of payment. This is a single value add scenario showing the capabilities in the platform.

shokoCAST is at the heart of the music industry, per the below overview



### KEY CAPABILITIES IN SHOKOCAST INCLUDE:

1. **Simplified and transparent value chain** that enables music makers to own all elements of the value chain, redefining the purpose of intermediaries (if at all relevant) whilst converging services to close the gap between the artist and the fan. **Automated and transparent contracts** and agreements, and payment processes, through smart contracts. This coupled with blockchain's transactional immutability implies worldwide sales verification by artists, labels, agencies and societies is a no-brainer.
2. An **incentive driven model** (IDM pool) in which all work done to promote the ecosystem and music in general will earn tokens that could be substantial. A good incentive especially for those artists looking for capital to fund their careers (see band equity below). User gets rewards for even
  - maintaining of music metadata to create a viable dataset,
  - music value chain participation by creating, publishing and distributing music,

- voting, curating, multisharing, voting, supporting, chatting and all other efforts to engage and communicate music i.e. Socialing, and
- validations through the different consensus models used on the blockchain.

This especially gives a feeling of euphoria for emerging musicians and especially for those in emerging and underdeveloped countries. shokoCAST business model ensures that the incentive model is self-sustaining.

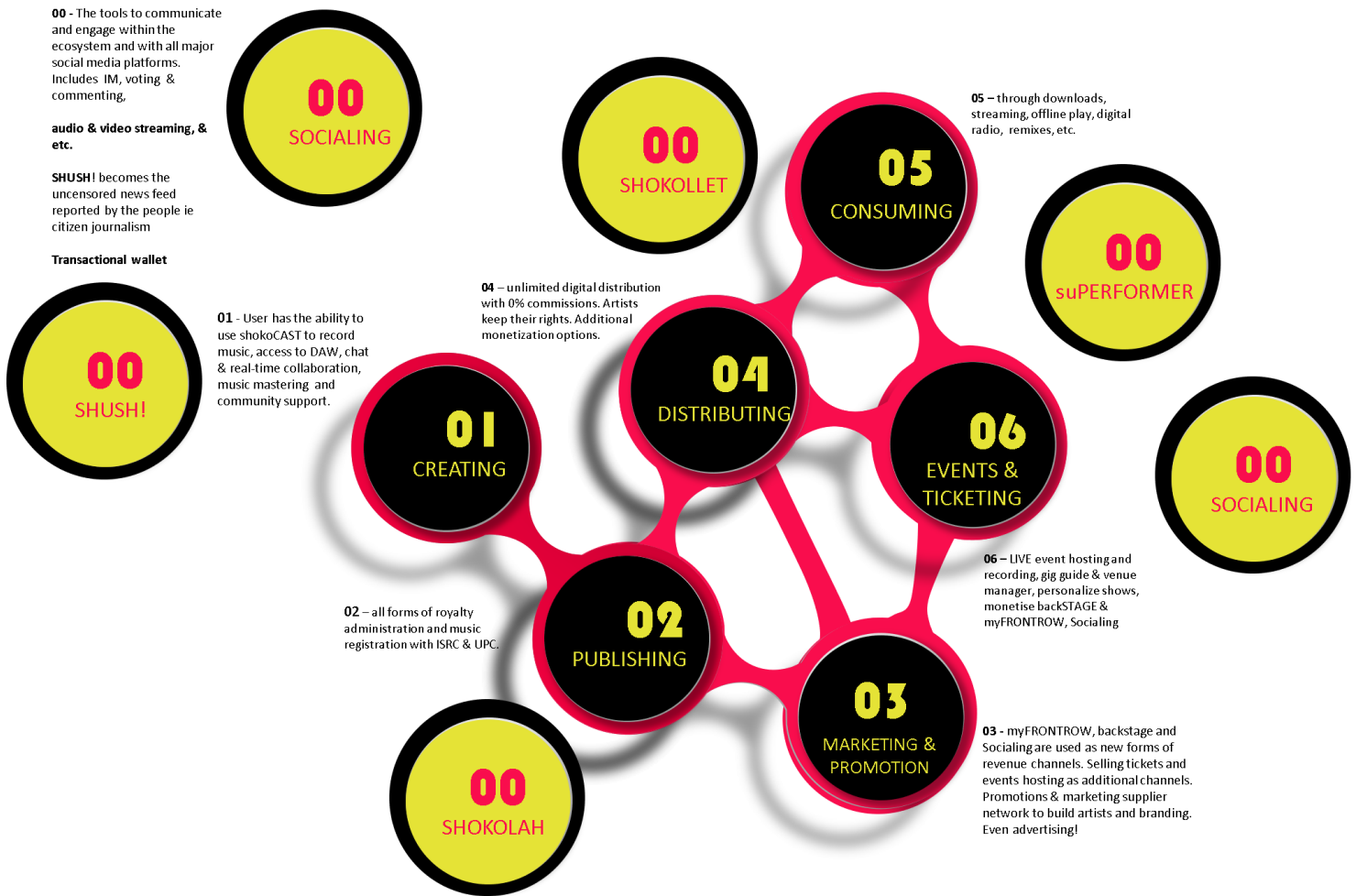
3. A secure centralised filing system that is core to decentralised storage using cryptographic hashing, persistent availability with or without internet connectivity, zero duplication, time stamping, indefinite metadata storing and caching capabilities and processes that will enable faster transmission. This brings to a reality a 'single' viable decentralised database and filing system from which worldwide sales emanate. Digital service providers then build their business models on top of this, for example sales for chart topper track XYZ on all digital music stores (e.g. iTunes) whether through smart contracts or fiat payment protocols initiate a process on approval that gives access to a single music file that gets downloaded and payments processed to underlying parties (yes I agree, a process that screams 'SMART CONTRACT'). This very well is the solution that brings about an end to piracy, unclaimed royalties and fees, delayed payments, introduces profitability back into streaming companies (such as Pandora, SoundCloud and Spotify as the intention is not to monopolise but TIMID music [remember Lord of the Rings?!]). The solution architecture has proven the concept. Furthermore, the decentralised dataset has the added benefit of simplifying blockchain protocols and consensus mechanisms.
4. Shokollet - a fee-less (almost free) fully transacting account or wallet becomes a necessity, real-time royalty and sales payments a reality, as the use of smart contracts implies that millions of milli-cent transactions are processed every second into these accounts. In a traditional banking context, it becomes counterproductive as the transactional accounts vest fees, don't accrue any worthwhile value and may instead cost you more.

5. **SHUSH! – the most secure and anonymous messenger** and this technology is the backbone to our news feed channel. Key benefits of our messenger and news feed over Telegram, Facebook messenger, WhatsApp and other messengers includes:
  - shokoCAST IM, communications and SHUSH! feed channel (all referred to as “SHUSH!”) stores its data on a decentralised platform.
  - Its **uncensored** and no interfering or blocking of user accounts.
  - No explicit user identification i.e. total **anonymity**.
  - End-to-end encryption where even our developers are unable to bypass protocol and read messages.
  - Does not transfer user private keys or disclose user IP address over the network.
  - Does not store message history or any other usage information on the user device giving safety from forensic analysis.
6. **A single fee per track** for either signed or unsigned artists for streaming. Download fees have scales but it's the artist's discretion as they can choose to offer fan discounts, for example. As the ecosystem is TIMID, the voting mechanisms in shokoCAST will allow this rate to remain competitive. This surely would be a first for musicians to be part of the driving force for industry and their own careers and livelihoods. The rate per stream at launch would be \$0.0200 and \$1.00 per download. A musician can earn as much as US\$20,000 from 1 million streams or playbacks.
7. **Artist/Band equity** works on the premise that musicians can seek funding from the community (platform) in exchange for a revenue split (for that specific track, tour, album, release, etc. being funded) and for a period of time, here defined as artist equity. Such funds would be drawn from the Incentive Model and best executed through our blockchain protocols and is data analytics driven using an algorithm that calculates an artist's total engagement thereby creating an intrinsic value per artist or track, and is made of many variables and system learning protocols. Artist equity projects are voted upon by through the voting mechanisms.

The artist would then be entitled to contribute a percentage of sales for a period to the rewards pool for the benefit of future artists and the ecosystem in general, e.g. maximum of 30% compared to the 70% existing labels are said to be milking off artists. Artist distribution would be coordinated through the platform and they will still continue to own full rights to their creative works. Yes, full rights to their creative works!

Naturally this would lead to super-distribution by the shokoCAST community as fans/users would be motivated to sell and expand the ecosystem membership as it has the consequence of increasing the value of the artist's music (artist equity) and that of the SHOKOin token for the benefit of the ecosystem and music in general i.e. TIMID! Imagine a talented musician, *from even Mordor*, now can have access to funding and the much-needed manna!

8. **Super distribution** activities would be incentivised through the Incentive Model.
9. **Offline listening** is a premium feature of the platform. Each time a listener streams a song its free. However, when a listener marks that song for offline listening, SHOKOin milli-percentage is transferred from the listener's wallet to the rewards pool.
10. A **marketplace** made-up of local businesses for artists to procure bolt-on services through the platform eg artwork. This also serves as geo-located advertising for local businesses. This forms part of our application stack with transactions recorded on the chain including order bookings, payments and service requests and advertising.
11. **User-driven advertising** is an additional revenue stream consideration in the future state of shokoCAST especially with the successful execution of Vision 2024 and the mass adoption of the platform. A revenue stream for both artists and fans. The approach is simple, allow users to control the type of adverts they enjoy and split the profits with them.....simple! Similarly, an artist for example can associate himself with a brand and assist in increasing its exposure through Socialing and be rewarded for their efforts.....simple again!



Additional services offered to artists as part of the community free benefits include:

12. The artist or platform users have free or unlimited access:

- Freedom to choose the partners/digital service providers they want!
- Choose your own release date.
- Guaranteed airplay on dRadio and free Feature / Playlist requests.
- Free ISRC & UPC per release / track.
- Collection of Neighbouring Rights royalties.
- YouTube Content ID / Soundcloud Monetization.

13 Music sales made directly on the platform are discounted by a percentage, dependent on the artist or fans activity on the platform (citizenry). This provides an opportunity for higher traffic and purchases as the music would be cheaper than on other distribution

channels. The discount comes from the percentage revenue due to shokoCAST and as a rewards mechanism.

- 14 Free access to SHUSH!, an instant messages facility that makes social media engagements secure and encrypted. The SHUSH! News feed provides uncensored reports and chats while allowing for Socialing. This has major social benefits across the world e.g. citizen journalism in countries with dictatorships & the pillaging of public resources can now be reported anonymously and report is immutable.
- 15 Free access to real-time collaboration tools, Collabos, which will aid in music creation, streaming and innovations.
- 16 Access to curated stations in dRadio.
- 17 A wallet for storing and transacting with SHOKOins, Bitcoins, Ether and a host of other cryptocurrencies. This allows the user to gain access to other blockchain related services and products.
- 18 Bolt-on services are either provided free or through the manager-network of suppliers. For example, artwork, album covers, etc.

*The shokoCAST strategic intent is for the use of this platform as an opportunity to create a new way of working, redefining the present and creating a future (a music industry) that sets aside the fallacy and incongruency of the past. A future any artist would be proud to be apart of.*

shokoCAST presents an opportunity to redefine the music industry and as there was a turning point for music cassettes, this is a turning point and an opportunity to TIMID music.

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## CONTEXTUALISING THE ABSTRACT

This whitepaper has already discussed the main problems that plague the industry and the platform provides a TIMID solution that will provide a solid foundation upon which the industry may be able to hardfork, one supported by all players in the industry t. This is because industry

fallacy and incongruency of the past is overcome collaboratively and shokoCAST envisions a platform that:

1. Takes the artist on a journey through their career from recording music (a beat, vocal or mix), through publishing, distribution and promotion, to even live performances and interviews whilst building them up along the way. All the tools and support are in a single place which would be an opportunity for all musicians, even those from underprivileged or emerging countries, e.g. across Africa in general, to enter the music industry. A **fundamental blockchain principle** that reinforces our intent. Allows for quick payment of artists and simplifies complex protocols e.g. every time a DJ mix is played, the smart contracts attached to the DJ mix pays the artists almost instantly.
2. Is a hybrid quadruple layered blockchain that is adept enough to overcome the constraints and challenges in the music industry today.
3. Has a private blockchain that seeks to protect what is still deemed sensitive, including financial, data and allowing safer access for data auditability. For example, a record label might be uncomfortable to make public their artist financial splits as it would relate to their contracts in fear that it would undermine their business model and expose them to competitors. Music is an underlying product to which some organizations invest billions of US\$ that would require permissioned access to products and information to protect their enterprise or corporate interests whilst still promoting decentralisation.
4. Includes a technology suite that would allow us to overcome the industry problems and TIMID music. This would include innovations such as digital audio workstations, real-time collaboration and messaging to name a few, even on mobile platforms, using our **SINGLE-DB-APP++**, with the sole intention of expanding the blockchain vision of mass 'technology' inclusion by giving access to places where all people have is a mobile phone.
5. Supports mass 'financial' inclusion with the shokollet wallet. Features include multi-coin & multi-asset, Superb Security - Your private keys never leave your device. Strong wallet encryption and cryptography guarantee that your funds will remain safe under your

ultimate control. Enhanced Privacy & Anonymity - No KYC bureaucracy to access your funds, no IP association, no identity linking, no transactions tracking. Our servers anonymize your requests by hiding your IP address from prying eyes. Exchange Inside - convert between altcoins instantly from within the app, through our strategic partners. One-time Backup - Hierarchical Deterministic Wallet enables you to keep everything accessible and secure with just one super-passphrase which you only have to back-up once and for all.

*“World Bank estimates over US\$380bn in revenue generated by banks in emerging markets from the unbanked population<sup>2</sup>. Furthermore, blockchain will assist people across Africa who lack bank accounts or simply cannot afford the cost of maintaining one. It is our intention to compete even with Mobile Money & Telecom Wallet providers by providing cheaper, faster and more secure cash-based transfer operations. This is supported by the fact that the mobile device penetration is at 50% even in low-income countries ie over 500m in Africa alone”.*

6. That uses SHOKOins as tender for all platform transactions that includes purchases of downloads for example. SHOKOins are given as a reward for platform interactions that include posting, commenting, sharing, purchasing, voting & curating, etc., coins also earned for super-distribution by fans where they are encouraged to sell or promote the music they have just purchased to other fans.
7. Will actively grow the user base across 54 African countries and are confident of our roadmap projections and the ability of the blockchain to manage per second processing. Grassroots entry points into such countries will also provide an opportunity for other start-ups to bolt-onto either shokoCAST or SHOKOins and introduce products and services that will further support blockchain protocols across emergent countries.
8. Increases user adoption for digital marketing (including advertising and promotions) and events management (concerts, night clubs, gig guide, live streaming, ticket sales etc.) services ie industries that fall with its convergence spectrum.
9. Incorporates advertising that is driven by the user + AI to give a custom and relevance experience.

10. **Is blockchain** and creates a permanent, public, transparent ledger system for compiling data on sales, storing rights data by authenticating copyright registration, and tracking digital use and payments to content creators. Uses smart contracts for cross value chain management thus enabling emerging markets and people across Africa in general to enter the global economy, protecting their privacy and allowing people to monetize their own musical works. Even more important is the blockchain contribution to the solving of social inequality by changing the way wealth is distributed and stored.

shokoCAST provides a long-term solution that will revolutionaries the industry to become the foundation on which other solutions and start-ups operate.

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## FUND RAISING

**Unit Price** - The SHOKOin token value at initial issuance would be \$0.0200. We project that the price will rise from \$0.0200 to just over \$11.250 by 2024\* (shokoCAST estimates can be provided on request // disclaimer applicable).

**Token Market Cap** i.e. Total Fixed Supply – 3,981,753,500 tokens are available of which 50% will be available for the ICO. The ICO is required in order to fund development, implement our business and operations model, marketing strategy to allow mass adoption of the solution, as input into the Incentive Model.

**Inflation** = 4% to 2019.

The challenge at any ICO is the valuation of a cryptoasset and especially where many variables are still unknown: We use the Buterin definition to solve for the token price by solving for

$$C = TH/M$$

Where: **M** = total money supply (or total number of coins), **C** = price of the currency (or 1/P, with P being price level), **T** = transaction volume (the economic value of transactions per time), **H** = 1/V (the time that a user holds a coin before using it to make a transaction).

The velocity of the coin is inversely proportional to the value of the token i.e the longer people hold the token for, the higher the price of each token. The velocity of SHK should ideally remain in moderate range of between 2 and 9 to remain comparable with M1 and M2 money.

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## **FUNDING: SHK TOKEN CONVERTIBLE**

The sale of transferable ERC20 tokens called SHOKOins (SHK) on the Ethereum public blockchain, and is linked to the amount of music and related services that the network will be able to provide.

The sale of shokoCAST Convertible Equity Notes (SCEN) through a crowdfunding campaign. This would allow investors to convert to tokens at a later date if they so desire and in order to benefit from greater yields.

The benefits of our model are threefold:

1. It gives investors with different interests (USD denominated cashflows vs token appreciation) the option to remain exposed to one or the other at will. Investors who are more interested in a contractual security than a cryptographic bearer asset will become more exposed to the cashflow through dividends over time, especially as other investors redeem shares for tokens.
2. The model evens out the risks associated with either option and provides better investor security.
3. It reduces the marketing and ICO launch related costs and compliance expenses and allows shokoCAST to focus on delivering a TIMID solution that will benefit the music industry. Instead we have automated the SCEN standardised forms so that we can get back to coding quickly!

## **EQUITY CONVERTIBLE**

The sale of shokoCAST Convertible Equity Notes (SCEN) through this crowdfunding campaign.

SCEN will allow investors to convert to tokens at a later date if they so desire and in order to benefit from greater yields.

SCEN enables a holder to exchange their equity for an equal proportion of SHK tokens. For example, if an investor owns 10% of the equity of shokoCAST, and shokoCAST has the remaining 40% of all outstanding SHK, the investor can exchange (i.e. give up) their 10% equity and receive 10% of the 50% company owned SHK (5% of all outstanding tokens).

- Exchange ratio - 1 SCEN : 1 SHK with a cap of 5x the SCEN purchase value.
- Window Opening - SCEN holders can initiate an exchange within the first 5 years.
- Limitation - no exchanges until after the platform launch in Q2 2019.
- Eligibility - this is for investors only and not founders or employees of shokoCAST.
- You are familiar with our shokoCAST Terms of Sale, Token Sale Memorandum and Privacy Policy.

## **TOKEN SALE**

SHK are ERC20 tokens purchased with ETH which will be useable when the platform launches later in 2018.

You are familiar with our shokoCAST Terms of Sale, Token Sale Memorandum and Privacy Policy.

1 SHK costs \$0.02 or 0.00004456 ETH and there will be a cap on supply for 4,000,000,000 SHK tokens or \$80,000,000.

However only 2,000,000,000 SHK are on sale.

The minimum threshold for this ICO is \$1,000,000 and if we raise less than this we will return the ETH to all participants, by executing an off-chain script not included in smart contract code, and will fulfill the project through other funding strategies.

There is no purchase maximum. However there is a purchase minimum of \$100.

This ICO is an opportunity for everyone to participate and shokoCAST offering various payment

## PRE-INITIAL COIN OFFERING

Pre-ICO will be held from April 07 to May 02, 2018.

At pre-ICO prices - 1 ETH = 29,000SHK & 1 BTC = 513,000SHK which is a 30% discount on unit price which becomes a guaranteed profit. Only 796,350,700SHK or 20% will be made available for the pre-ICO.

Accepted cryptocurrencies include: ETH, BTC, BCH, DASH, DOGE, LTC, ETC, LSK, and a total list of 70 cyptos. Accurate SHK token price for other cryptos is dynamically calculated based on the actual ETH price on the date of your purchase.

Our target for the preliminary ICO is 20,000 ETH and have set a limit at 27,000 ETH. On April 07, 2018 we will publish the ETH address of the intellectual contract Pre-ICO on our website [www.shokocast.io](http://www.shokocast.io) and send out personal electronic invitations to all investors who subscribe to the pre-ICO list on our site. Pre-ICO will be based on the "first come, first served" principle and therefore ask that you register soonest. SHK tokens will be made available to Purchasers a few days after the close of the ICO.

## PRE-ICO FUNDS PURPOSE

70% - for the product development team:

- For on-ramping of resources, including key technical team members, and locking down the detailed product requirements documentation and roadmap.
- Operationalise prototype and finalise developments & testing
- Operational expenses including infrastructure and support.
- Listing on cryptocurrency exchanges (markets).
- Advisory and outsourced testing capabilities for stress testing, etc.

- Engagement with industry players for integration opportunities and requirements.

**25%** - for PR and marketing:

- International marketing campaigns.
- Advertising on crypto resources
- Promo-partnership whilst focusing on Asia, Europe, Africa, and the Americas.
- Conferences and media partnerships.
- Motivating digital and social promotions and across major social networks
- A Bounty Campaign;
- Social networks advertising campaigns;
- Ads campaigns and commercials (online and offline);
- Attending the conferences;
- Initial assessments for new users' wallets;

**5%** - for advisers and consultants employed to guarantee the integrity of the process.

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## THE EVENT – INITIAL COIN OFFERING (ICO)

ICO will be held on the website [www.shokocast.io](http://www.shokocast.io) and starting from **May 03 to June 05, 2018**.

The sale of tokens will last a period and for a total sale to an amount of 73,570ETH and at which point the ICO will close and is irrespective of the days still remaining. It is imperative you purchase your tokens soonest.

The below table shows the discounts offered based on the discount token batches. Below is a table showing the growth of SHK value, depending on the total number of ETH collected during the ICO.

	Amount of ETH invested / Funds raised	Number of Tokens for 1 ETH	Discount %
	Private Sale		40%
Stage 0	0 – 27,000ETH	PRE-ICO	30%
Stage 1	27,001 – 47,000ETH	1 ETH = 26,900SHK	20%
Stage 2	47,001 – 73,570ETH	1 ETH = 24,600SHK	10%
Total	73,570ETH		

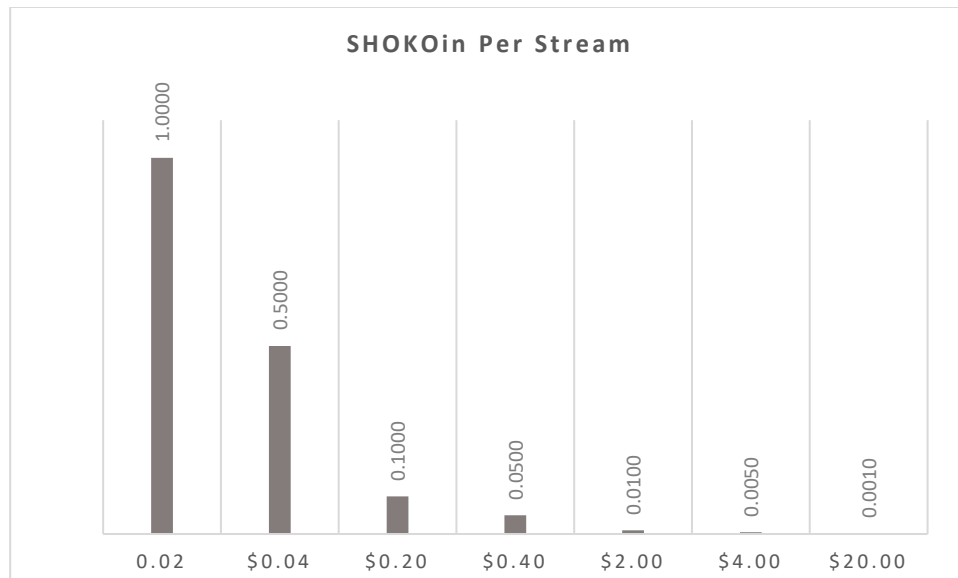
## KEY LEDGER METRICS

### Receipts

1. Revenue incurred through sales of music and music related items to a percentage of gross sales.
2. Artist Equity revenue generated to a percentage of equity/revenue.
3. myFRONTROW and backSTAGE revenues to a percentage of gross sales.
4. Commissions earned from our supplier referral network.
5. Smart advertising revenue as a percentage.
6. External transactional fees.
7. Ticket sales revenue as a percentage of sales.
8. Live hosting of key events revenue as a percentage of sales.
9. BAAS fees as a percentage of revenue.
10. Etc..

## Payments

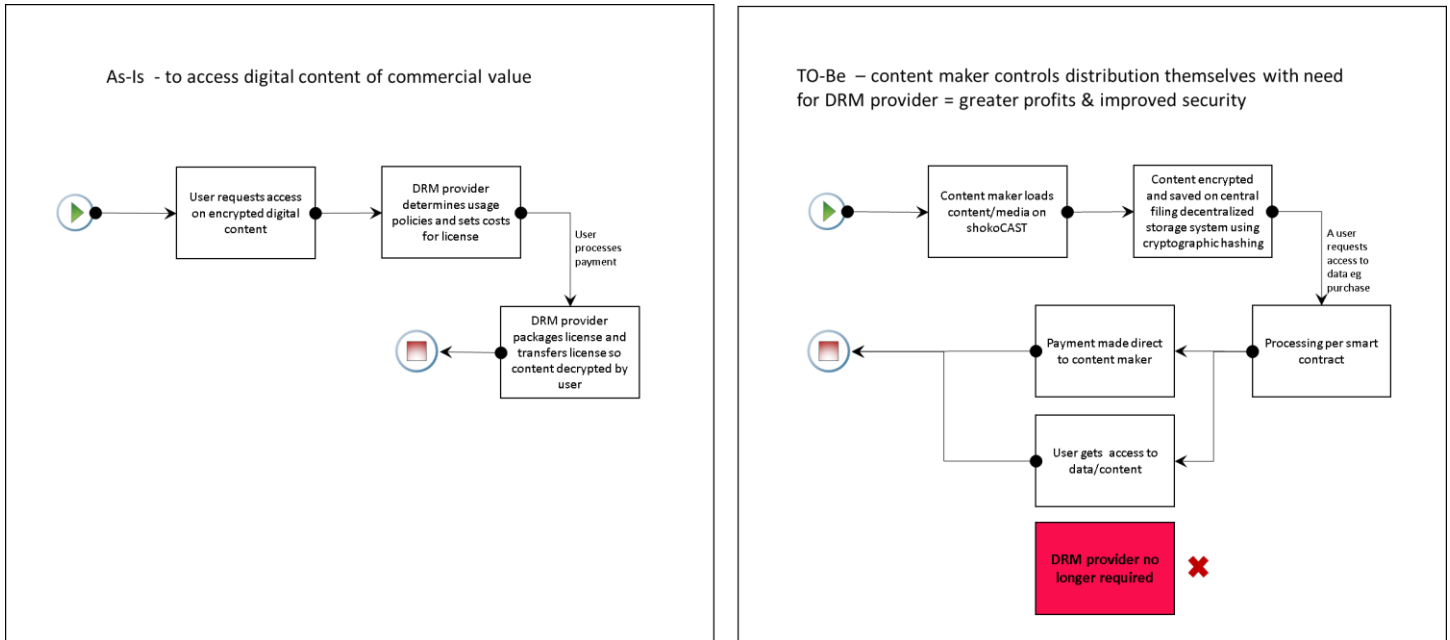
1. The platform will pay 1 SHK token per playback or stream. However, this is not intended to be without fluctuation which is expected due to volatile market conditions and said variances. The shokoCAST smart contract would therefore be expected to allow fractional SHK per playback so as to maintain the agreed/approved fiat rate.



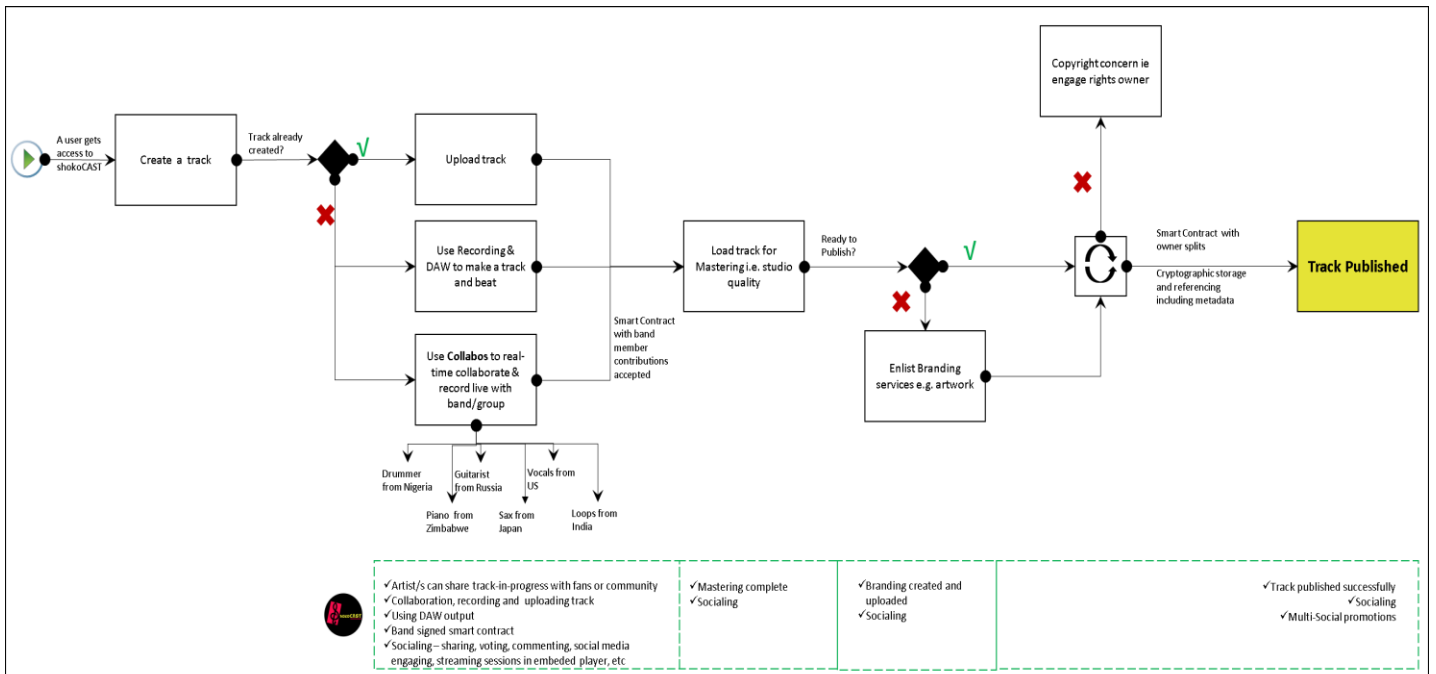
This goes to reason that when the SHK value is \$0.02 then a musician will receive 1SHK token and 0.01SHK when the token value is \$2.00.

# USE CASES

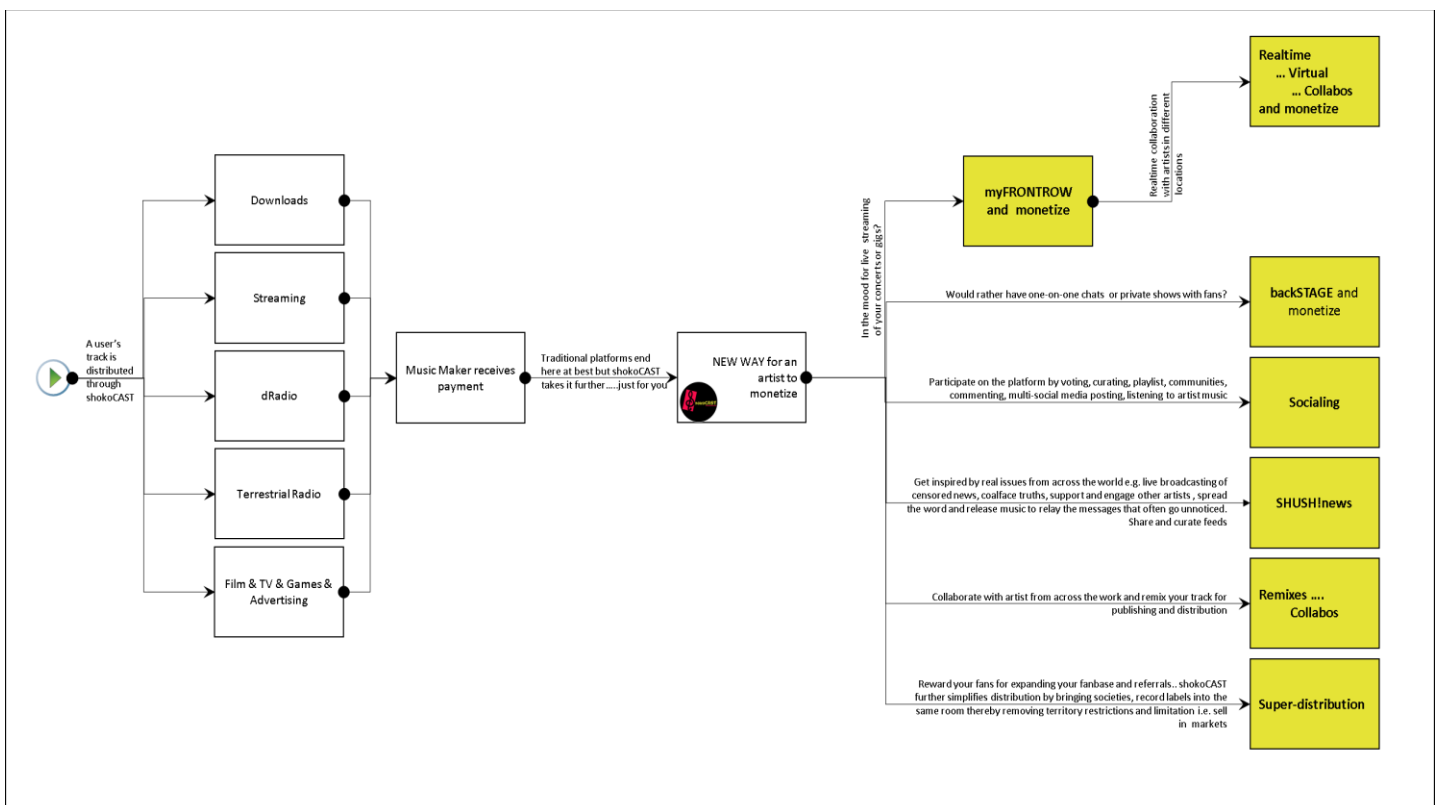
## Use Case 1 – the issue of Digital Rights Management providers and/or technology



## Use Case 2– Creating music i.e. a few alternatives



### Use Case 3 – Consumption and new ways an artist can monetize.



The shokoCAST use-case catalogue, which forms part of the detailed Product Requirements Document has all use-cases, is available and provided on request.

# TECHNOLOGY

Polkadot Lightpaper: <https://polkadot.network/Polkadot-lightpaper.pdf>

ISO/IEC 17788. <https://www.iso.org/standard/60544.html>

Cloud Standards Customer Council 2017, Cloud Customer Architecture for API Management. <http://www.cloud-council.org/deliverables/cloud-customer-architecture-for-api-management.htm>

Brock, Arthur: The Two Main Fallacies of Distributed Computing and Blockchain  
<http://www.comp.nus.edu.sg/~prateeks/papers/Bitcoin-scaling.pdf>

Vitalik Buterin. Ethereum: A next-generation smart contract and decentralized application platform.  
<https://github.com/ethereum/wiki/wiki/White-Paper>, 2013.

Nxt community. Whitepaper: Nxt. <http://wiki.nxtcrypto.org/wiki/Whitepaper:Nxt>, 2013.

Satoshi Nakamoto. Bitcoin: A peer-to-peer electronic cash system. <https://bitcoin.org/bitcoin.pdf>, 2008.

Daniel Larimer. Bitshares. <http://docs.bitshares.org/bitshares/history.html>, 2013.

Gavin Wood. Ethereum: a secure decentralised generalised transaction ledger. <http://gavwood.com/paper.pdf>, 2014

Jae Kwon. Tendermint: Consensus without mining. <http://tendermint.com/docs/tendermint.pdf>, 2014.

Satoshi Nakamoto. Bitcoin: A peer-to-peer electronic cash system. <https://bitcoin.org/bitcoin.pdf>, 2008.

Andrew Miller, Yu Xia, Kyle Croman, Elaine Shi, and Dawn Song. The honey badger of bft protocols. Technical report, Cryptology ePrint Archive 2016/199, 2016.

Youcai Qian. Randao. <https://github.com/randao/randao>, 2015

[Vitalik Buterin. Ethereum 2.0 mauve paper. 2016.

Vitalik Buterin. Serenity poc2. 2016

## DESIGN PRINCIPLES

1. To build a best-suited platform with member contributions of time (effort) and/or money and the fair compensation thereof.
2. To utilize a blockchain that will connect a public blockchain with a private blockchain in a fully permissioned environment.<sup>3</sup> so that the fundamental blockchain principles are achieved, including
  - a. Verification by consensus on the integrity and balance of the blockchain represented by the longest chain in the network, being the highest resource investment.
  - b. Incentive Mechanisms.
  - c. Flexibility and interoperability as flexible platforms can be used for many purposes and are more profitable whilst inspiring innovation.
  - d. Immutability, irreversibility and data integrity as data is cryptographically secure.
  - e. Scalability by increasing the number of transactions per second that need to be validated to prevent a backlog.
  - f. Security in terms of the security of transaction data, user anonymity and the security of the blockchain itself.
3. To build a platform that has a high throughput, low latency, high endurance and quality of service:
  - a. Keep everything in memory,
  - b. Keep the core business logic in a few threads,
  - c. Divide validation into state-dependent and state-independent checks, and
  - d. Use an object oriented data model.

shokoCAST architecture implementation strives for scalability and concurrency that ensures that there isn't a single point of failure, and includes pluggable components that support multichannel or multichain communication, multiple sub-ledgers, and multiple stakeholders for transaction visibility based on privacy considerations and built on TIMID™. The total blockchain

operations are segregated into 3 layers and each layer has a specific purpose and role: blockchain layer, data store layer and the application layer.

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## SHOKOCAST ARCHITECTURE CAPABILITY

### PUBLIC NETWORK

The Public Network contains the Internet, peer cloud systems, and edge services. Edge services allow data to flow safely from the Internet into the shokoCAST platform in the cloud and into the blockchain and include DNSS through bridges into existing internet architectures and DNS resolutions across the network; CDN for availability and usability with minimum latency; firewalls and load balancers to maximize throughput, minimize response time, increase capacity, and increase application without a single point of failure.

### CLOUD NETWORK

Applications include shokoCAST that is based on TIMID™ and utilises a quadruple-layer hybrid blockchain called SHOkolah. shokoCAST is a platform with immense capabilities and owing to TIMID, SINGLE-DB-APP++ solutions in particular, we able to not only provide extensive mobile functionality and usability across large apps but also the benefits of a quadruple-layer blockchain and the use of decentralised systems and distributed processing. All anyone now needs is a mobile device, which is a fact that is beneficial in emerging economies. Our API management capabilities publish catalogues, update APIs in a wide variety of deployment environments and will be the means of achieving some of our objectives eg viable dataset for music.

The music value chain is a multi-echelon, highly disjointed and geographically spread, further complicated by different governmental policies and cultures that makes it almost impossible to streamline. However, its solution lies in transparency and authenticity.

The SHOkolah blockchain supports essential capabilities for the solution with the following core capabilities: consensus, ledger, membership services for permissioned blockchain, transactions,

event distribution, communication protocols, cryptographic services and algorithms through hash functions and digital signatures etc, smart contracts, and secure runtime environment.

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## **THE SHOKOCAST QUADRUPLER LAYERED HYBRID BLOCKCHAIN**

shokoCAST uses a quadruple layered hybrid blockchain ie SHOkolah, inspired by the evolution of Polkadot, Hydrachain, Sharding, IPFS, Ethereum, TrueBit, Ripple, Corda, Hyperledger, BTC-Relay and Plasma on and off-chain capabilities and hereby referred to 'the spawn', and it's important to appreciate the components that make up this system so as to understand its architecture and consensus protocols.

In short, SHOkolah quad-core chain has consensus between chains that ensures that data remains in sync and updated are coordinated including the recognition and use of hashes. Each chain will gather and process transactions and the quad-chain doesn't have to use a single form of consensus mechanisms. IT is a scalable heterogeneous multi-chain that provides the relay-chain upon which a large number of validatable, globally-coherent dynamic data-structures may be hosted side-by-side. Key features include:

- 1 Pooled security;
- 2 Trust-free inter-chain transactability.

The heterogeneous nature of this architecture enables many highly divergent types of consensus systems interoperating in a trustless, fully decentralised /federation", allowing open and closed networks to have trust-free access to each other. This structure promotes anonymity, scalability, governance, interoperability and also the transactional processing capabilities.

Scalability being key as current real-world blockchain networks are practically limited to around 30 transactions per second. This limitation mainly originates from the fact that the current synchronous consensus mechanisms require wide timing margins of safety on the expected processing time, which is exacerbated by the desire to support slower implementations due to the underlying consensus architecture: the state transition mechanism has its logic

fundamentally tied into the consensus\canonicalization" mechanism. This applies equally to both proof-of-work (PoW) systems such as Bitcoin and Ethereum and proof of stake (PoS) systems such as NXT and Bitshares: all ultimately suffer from the same handicap. It is a simple strategy that helped make blockchains a success.

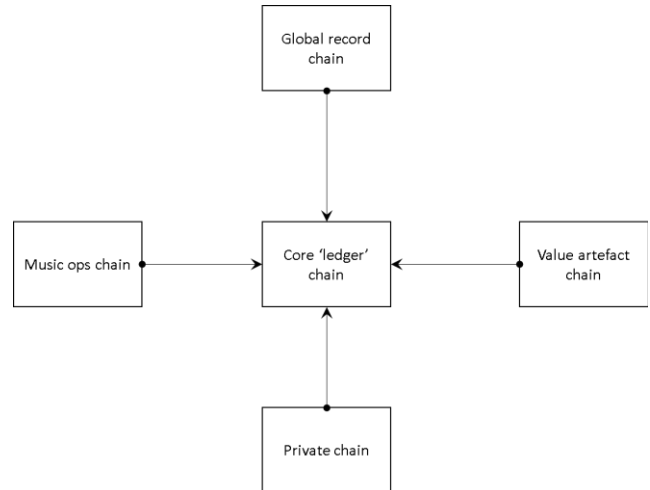
The SHOkolah to scalable decentralised compute platform is to decouple the consensus architecture from the state-transition mechanism. SHOkolah is designed to be a fully extensible and scalable blockchain development built to be a largely future-proof harness able to assimilate new blockchain technology as it becomes available without over-complicated decentralised coordination or hard forks.

It is the ideal blockchain as its smart contract abstraction enables design decisions to be made in the transactional-processing layer and allowing multiple types of applications to exist in the same instance of our blockchain. We use parallel transaction execution; using an advanced combination of relays and schedulers to manage the transactions then isolate the execution of transactions from one another while maintaining contextual changes. Its events broadcasting and Ethereum interoperability for smart contract are additional capabilities that support the shokoCAST blockchain that also allows different types of consensus on the same blockchain especially because of the nature of the validations. A sort of interchain centrality that at any one point can be easily validated. Our core protocols show that minimum mining is required and therefore no need for specialised processors and full nodes can be operated on low-end computers and mobile phones, a key innovation considering that our business model seeks to also target emergent economies. Also the transactional load or scalability limits do not exist on this blockchain and all non-core chain validations seek to provide a mechanism of simplifying core chain consensus and by definition enable infinite computations capabilities which is required to power a global solution of this magnitude.

It must be noted that the quadruple layered blockchain is bespoke to the convergent solution:

Hybrid Blockchain connects public blockchain with a private blockchain in a fully permissioned environment. The public network that all constituents are a part of and the private/permissioned network that restricts participation. However, the private network maintains its private state in its respective network, a record (hash) of transactions and smart contracts is stored on the public state of the blockchain.

Therefore, the specifics of a transaction, for example, record deal between parties in private network are not accessible to public network but the record of individual transactions is stored as hashes on the public state that is shared by all in such a way that even in the private network there is an



immutable record or transactions. A quadruple layered chain that speaks to the architecture of the solution with key elements that include {1} 'music ops' production chain + stealth messaging + news feed which caters for rights in-transit protection; {2} 'global record' of music value related chain that builds on new business related data whilst constantly updating legacy data; {3} a 'value artefact' chain to record all music artefacts, e.g. actual music track .wav file; and, {4} a ledger at its core. The selective adaptive relationship of chains to core implies that not all transactions are recorded on the core chain.

Having already engaged with record labels and collection societies in over 20 countries as part of our proof of concept, it is comforting to receive such good buying and support including access to their systems for integration. Because the platform when active will seek to simplify the business operations of many a company, it is highly supported: some of the data would therefore include ownership information, ISRC/ISWC/ISNI, publishing, rights, performer, licensing, lyrics, images, contacts, etc... It is noted that there may be gaps in legacy data and because the platform will interface into other systems, it presents an opportunity to update data on the blockchain by having a large input pool.

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## SHOKOLAH PROTOCOL

*“shokolah” pronounced ‘shaw’ ‘caller’*

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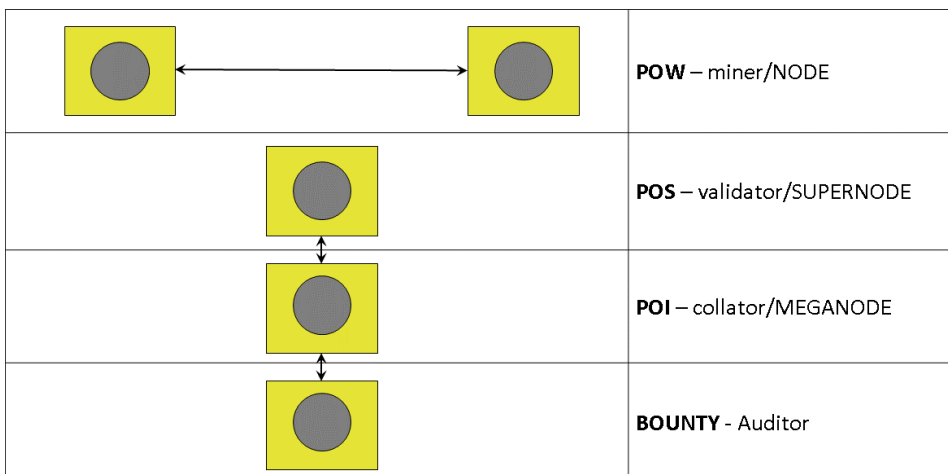
### GOVERNANCE

Governance is based on existing stable political systems and having a bicameral aspect similar to the Yellow Paper Council. As the ultimate authority, the underlying stakable token holders would have “referendum” control. To reflect the users' need for development but the developers' need for legitimacy, governance will be by two two groups from a user committee [made up of bonded validators] and a technical committee [made up of major share or interest developers and ecosystem players]. The body of token holders would maintain the ultimate legitimacy and form a supermajority to augment, reparameterise, replace or dissolve this structure.

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### CONSENSUS MECHANISM

There are four basic roles in the upkeep of SHOkolah: collator, fisherman, nominator and validator.



**MINER.** A miner is the highest charge and helps seal new blocks on the network whose role is contingent upon a sufficiently high bond being deposited. A miner must run a relay-chain client implementation with high availability and bandwidth. At each block the node must be ready to accept the role of ratifying a new block on a nominated chain. This process involves receiving, validating and republishing candidate blocks. The nomination is deterministic but virtually unpredictable much in advance. Since the miner cannot reasonably be expected to maintain a fully-synchronised database of all chains, it is expected that the miner will nominate the task of devising a suggested new chain block to a third-party, known as a collator. Once all new blocks have been properly ratified by their appointed miner subgroups, miners must then ratify the relay-chain block itself. This involves updating the state of the transaction queues (essentially moving data from a chain's output queue to another chain's input queue), processing the transactions of the ratified relay-chain transaction set and ratifying the final block, including the final chain changes.

A miner not fulfilling their duty to find consensus under the rules of our chosen consensus algorithm is punished. For initial, unintentional failures, this is through withholding the miner's reward. Repeated failures result in the reduction of their security bond. Provably malicious actions such as double-signing or conspiring to provide an invalid block result in the loss of the entire bond (which is given to the informant and the honest actors ie a bounty).

**VALIDATOR.** A validator is a stake-holding party who contributes to the security bond of a collator. They have no additional role except to place risk capital and as such to signal that they trust a particular miner (or set thereof) to act responsibly in their maintenance of the network. They receive a pro-rata increase or reduction in their deposit according to the bond's growth to which they contribute.

**COLLATORS.** Collators are parties who assist validators in producing valid multichain blocks. They maintain a "full-node" for a particular chain; meaning that they retain all necessary information to be able to author new blocks and execute transactions. Under normal circumstances, they will collate and execute transactions to create an unsealed block, and

provide it, together with a zero-knowledge proof, to one or more miners presently responsible for proposing a multichain block.

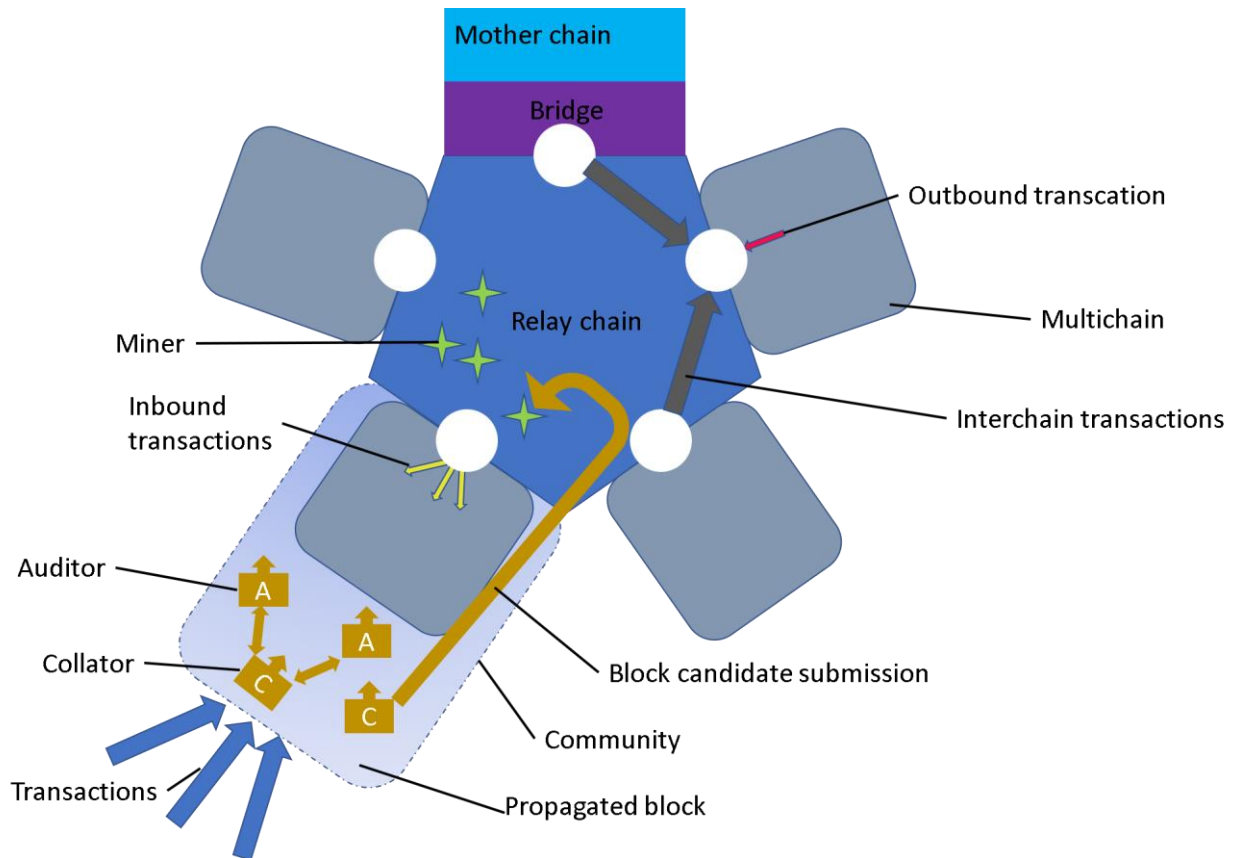
Collators to work very closely with miners. And seek to build collator pools who vie to collect the most transaction fees. Similarly, decentralised validator pools would allow multiple bonded participants to coordinate and share the duty of a miner. This ability to pool ensures open participation leading to a more decentralised system.

**AUDITOR.** Auditors are not directly related to the block-authoring process but rather motivated by a large once-off reward. Auditors get their reward through a timely proof that at least one bonded party acted illegally and such actions can include signing two blocks each with the same ratified parent or, in the case of multichains, helping ratify an invalid block. To prevent over-rewarding or the compromise and illicit use of a session's secret key, the base reward for providing a single miner's illegally signed message is minimal. This reward increases asymptotically as more corroborating illegal signatures from other miners are provided implying a genuine attack. The asymptote is set at 66% following our base security assertion that at least two-thirds of the miners act benevolently.

Auditors differ in so much as they must post a small bond. This bond prevents sybil attacks from wasting miners time and compute resources.

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## DESIGN OVERVIEW



**CONSENSUS.** On the relay-chain, SHOkolah achieves low-level consensus over a set of mutually agreed valid blocks through a modern asynchronous Byzantine fault tolerant (BFT) algorithm. The algorithm is inspired by the Tendermint and HoneyBadgerBFT.

**Proving the Stake.** The network will have some means of measuring how much stake any particular account has through tokens. Miners would be elected through a Nominated Proof-of-Stake (NPOS) scheme. Incentivisation is through a pro-rata allocation of funds coming from a token base expansion. While monetary base expansion typically leads to inflation, since all token owners would have a fair opportunity at participation, no tokenholder would need to suffer a reduction in value of their holdings over time provided they were happy to take a role in the consensus mechanism. A particular proportion of tokens would be targeted for the staking process; the effective token base expansion would be adjusted through a market-based mechanism to reach this target. Miners are bonded heavily by their stakes; exiting miners bonds remain in place long after the miners duties cease (even 4 months). This long bond-liquidation

period allows future misbehaviour to be punished up until the periodic check pointing of the chain.

Misbehaviour results in punishment, such as reduction of reward or, in cases which intentionally compromise the network's integrity, the miner losing some or all of its stake to other miners, auditors or the stakeholders as a whole (through burning).

Multichains and Collators. Each multichain gets similar security affordances to the relay-chain: the multichain headers are sealed within the relay-chain block ensuring no reorganisation, or “double-spending”, is possible following confirmation. This is a similar security guarantee to that offered by Bitcoin's side-chains and merge-mining. SHOkolah also provides strong guarantees that the multichains' state transitions are valid. This happens through the set of miners being cryptographically randomly segmented into subsets; one subset per multichain, the subsets potentially differing per block. This setup generally implies that multichain block times will be at least as long as that of the relay-chain and based on a commit-reveal framework similar to the RanDAO or use data combined from previous blocks of each multichain under a cryptographically secure hash.

Such subsets of miners are required to provide a multichain block candidate which is guaranteed valid (on pain of bond confiscation). Validity revolves around two important points; Firstly that it is intrinsically valid -that all state transitions were executed faithfully and that all external data referenced (i.e. transactions) is valid for inclusion.

Secondly, that any data which is extrinsic to its candidate, such as those external transactions, has sufficiently high availability so that participants are able to download it and execute the block manually. Miners may provide only a “null” block containing no external “transactions” data, but may run the risk of getting a reduced reward if they do. They work alongside a multichain gossip protocol with collators – individuals who collate transactions into blocks and provide a non-interactive, zero-knowledge proof that the block constitutes a valid child of its parent (and taking any transaction fees for their trouble). It is left to multichain protocols to specify their own means of spam-prevention: there is a fundamental notion of “compute-

resource metering" or "transaction fee" imposed by the relay-chain as extracted from the Incentive model fund.

SHOkolah relay-chain itself exists as an Ethereum-like accounts and state chain, an EVM derivative.

**INTERCHAIN COMMUNICATION.** The critical final ingredient of SHOkolah is interchain communication. Since multichains can have some sort of information channel between them, SHOkolah is therefore a scalable multi-chain: transactions executing in a multichain are (according to the logic of that chain) able to effect the dispatch of a transaction into a second multichain or, potentially, the relay-chain. Like external transactions on production blockchains, they are fully asynchronou. To ensure minimal implementation complexity, minimal risk and minimal straight-jacketing of future multichain architectures, these interchain transactions are effectively indistinguishable from standard externally signed transactions. The transaction has an origin segment, providing the ability to identify a multichain, and an address which may be of arbitrary size. Interchain transactions are resolved using a simple queuing mechanism based around a Merkle tree to ensure fidelity. It is the task of the relay-chain maintainers to move transactions on the output queue of one multichain into the input queue of the destination multichain. The passed transactions get referenced on the relay-chain, however are not relay-chain transactions themselves. To prevent a multichain from spamming another multichain with transactions, for a transaction to be sent, it is required that the destination's input queue be not too large at the time of the end of the previous block. If the input queue is too large after block processing, then it is considered "saturated" and no transactions may be routed to it within subsequent blocks until reduced back below the limit. These queues are administered on the relay-chain allowing multichain to determine each other's saturation status; this way a failed attempt to post a transaction to a stalled destination may be reported synchronously.

SHOkolah to Ethereum. Through the choice of a BFT consensus mechanism with miners formed from a set of stakeholders determined through an approval voting mechanism, we are able to get a secure consensus with an infrequently changing and modest number of validators.

In a system with a total of 144 validators, a block time of 4 seconds and a 900-block finality (allowing for malicious behaviour such as double-votes to be reported, punished and repaired), the validity of a block can reasonably be considered proven through as little as 97 signatures (twothirds of 144 plus one) and a following 60-minute verification period where no challenges are deposited.

Ethereum is able to host a “break-in contract” which can maintain the 144 signatories and be controlled by them. Since elliptic curve digital signature (ECDSA) recovery takes only 3,000 gas under the EVM, and since we would likely only want the validation to happen on a super-majority of miners (rather than full unanimity), the base cost of Ethereum confirming that an instruction was properly validated as coming from the SHOkolah network would be no more than 300,000 gas - a mere 6% of the total block gas limit at 5.5M. Increasing the number of miners (as would be necessary for dealing with dozens of chains) inevitably increases this cost, however it is broadly expected for Ethereum's transaction bandwidth to grow over time as the technology matures and infrastructure improves. Together with the fact that not all miners need to be involved (e.g. only the highest staked miners may be called upon for such a task) the limits of this mechanism extend reasonably well.

Assuming a daily rotation of such miners (which is fairly conservative- weekly or even monthly may be acceptable), then the cost to the network of maintaining this Ethereum-forwarding bridge would be around 540,000 gas per day or, at present gas prices, \$45 per year. A basic transaction forwarded alone over the bridge would cost around \$0.11. By buffering and bundling transactions together, the break-in authorisation costs can easily be shared, reducing the cost per transaction substantially; if 20 transactions were required before forwarding, then the cost for forwarding a basic transaction would fall to around \$0.01.

One interesting, and cheaper, alternative to this multisignature contract model would be to use threshold signatures in order to achieve the multi-lateral ownership semantics. While threshold signature schemes for ECDSA are computationally expensive, those for other schemes such as Schnorr signatures are very reasonable. If such a means were able to be utilised, the gas costs

for forwarding a SHOkolah transaction into the Ethereum network would be dramatically reduced to a near zero overhead over and above the basic costs for validating the signature and executing the underlying transaction. In this model, SHOkolah miner nodes would have to do little other than sign messages.

Ethereum to SHOkolah. Getting transactions to be forwarded from Ethereum to SHOkolah uses the simple notion of logs. When an Ethereum contract wishes to dispatch a transaction to a particular multichain of SHOkolah, it need simply call into a special “break-out contract”.

The break-out contract would take any payment that may be required and issue a logging instruction so that its existence may be proven through a Merkle proof and an assertion that the corresponding block's header is valid and canonical. Of the latter two conditions, validity is perhaps the most straightforward to prove. In principle, the only requirement is for each SHOkolah node needing the proof (i.e. appointed miner nodes) to be running a fully synchronised instance of a standard Ethereum node. A more lightweight method would be to use a simple proof that the header was evaluated correctly through supplying only the part of Ethereum's state tree needed to properly execute the transactions in the block and check that the logs (contained in the block receipt) are valid. Such “SPV-like” proofs may yet require a substantial amount of information; conveniently, they would typically not be needed at all: a bond system inside SHOkolah would allow bonded third-parties to submit headers at the risk of losing their bond should some other third-party provide a proof that the header is invalid. On a non-finalising PoW network like Ethereum, the canonicity is impossible to proof conclusively. To address this, applications that attempt to rely on any kind of chain-dependent cause-effect wait for a number of “confirmations”, or until the dependent transaction is at some particular depth within the chain. On Ethereum, this depth varies from 1 block for the least valuable transactions with no known network issues to 1200 blocks as was the case during the initial Frontier release for exchanges.

On the stable “Homestead” network, this figure sits at 120 blocks for most exchanges, and we would likely take a similar parameter. So we can imagine our SHOkolah -side Ethereum interface

to have some simple functions: to be able to accept a new header from the Ethereum network and validate the PoW, to be able to accept some proof that a particular log was emitted by the Ethereum-side breakout contract for a header of sufficient depth (and forward the corresponding message within SHOkolah) and finally to be able to accept proofs that a previously accepted but not-yet-enacted header contains an invalid receipt root.

To actually get the Ethereum header data itself (and any SPV proofs or validity/canonicity refutations) into the SHOkolah network, an incentivisation for forwarding data is needed. This could be as simple as a payment (funded from fees collected on the Ethereum side) paid to anyone able to forward a useful block whose header is valid. Miners would be called upon to retain information relating to the last few thousand blocks in order to be able to manage forks, either through some protocol intrinsic means or through a contract maintained on the relay chain.

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### ONE SUCH ALGORITHM

There are consensus algorithms that seek to compensate for Byzantine errors as they relate to distributed systems and the majority suffer from high latency induced by the requirement that all nodes, or a large number of nodes, within the network communicate synchronously.

SHOkolah, based on the proof of proposition<sup>1</sup>, which is a very low latency consensus algorithm that circumvents many traditional requirements in its approach, using unique identifiers to achieve the following:

1. The consensus requires more than 3 identifiers in the blockchain ( $l > 3t$ ).
2. The byzantine faults/factor reduces to zero and becomes unsolvable for nodes more than 7 [ $n > 7$ ] or [ $l > (n+3t)/2$ ]. This allows seamless consensus and blockchain efficiencies.
3. The blockchain is able to implement a restricted kind of anonymity in which there are no identifiers and still be able to validate and requires even fewer nodes. This would be an exceptional contribution to the solution especially for SHUSH! in which censorship and gagging are socio-political concerns for developing countries.

4. Consensus is divided into two consecutive super-rounds. Each super-round has three rounds (called a phase). Each phase consists of a selection round, a deciding round and a running round.
5. The SHOkolah protocol provides unmatched validation times and the ability to provide a structure that enables transaction-processing capabilities that are instantaneous and almost free irrespective of scale. Especially so in emerging markets that form part of our target market. SHOkolah protocols will therefore support tokens presenting cryptocurrency, fiat currency, commodity and any other value unit like mobile minutes, etc. – a competitive enablement in all markets and is worth considering, even by using Ripple or other protocols as an output of a build or buy decision.
6. Randomised scheduling is incorporated to support the protocol by defining a probability distribution on executions.

The SHOkolah blockchain is a quadruple-layer blockchain that consists of at least 4 identifiers, hashes and ability to cryptographically self-certifying the data for the benefit of **rights-in-transit protection** (where an artist has shared a music track-in-production and someone else decides to then fork this work and commercialise it at the expense of the artist. The self-certification and chain time stamp are immutable). Sharing of self-certified data amongst peers/friends/communities creates a web of trust.

Many Byzantine algorithms assume that all the processes of a distributed system have either distinct identifiers or, more rarely, that the processes are anonymous and have no identifiers. These are two extremes of the same general model: namely,  $n$  processes use different authenticated identifiers, where  $1 \leq i \leq n$ . what is therefore important, is to calculate the number of identifiers that are actually needed to reach agreement in a distributed system with  $t$  Byzantine processes.

We have proved that  $3t + 1$  identifiers is necessary and sufficient for agreement in the synchronous case but the number of identifiers must be greater than  $(n + 3t)/2$  in the partially synchronous case.

The protocol also assumes a distributed system in which distinct identifiers are assigned to  $n$  processes, where  $1 \leq l \leq n$ . Several processes may be assigned the same identifier, in which case we call the processes **homonyms**. The identifiers are authenticated: if a process  $p$  receives a message from a process  $q$  with identifier  $i$ ,  $p$  knows that the message was not sent by a process with identifier  $i' \neq i$ , but  $p$  does not know whether the message was sent by  $q$  or another process  $q'$  having the same identifier  $i$ . A process cannot direct a message it sends to a particular process, but can direct the message to all processes that have a particular identifier.

This model generalizes the classical scheme where processes have distinct identifiers (i.e.,  $l = n$ ), and the less classical scheme where processes are anonymous (i.e.,  $l = 1$ ). This protocol allows us not to assume that all processes will always have unique (unforgeable) identifiers and allows us to design protocols that still work if two processes are assigned the same identifier. This protocol is also useful if security is breached and a malicious process can forge the identifier of a correct process, for example by obtaining the correct process's private key. Secondly, in many cases, users of a system may wish to preserve their privacy by remaining anonymous.

The protocol therefore answer the question, "how many distinct identifiers are needed to reach agreement in a system of  $n$  processes, up to  $t$  of which can be Byzantine whilst considering systems where  $n > 3t$ : this assumption is known to be a requirement for solving Byzantine agreement, even when  $l = n$  and/or has homonyms. This protocol is applied inter and intra-blockchain.

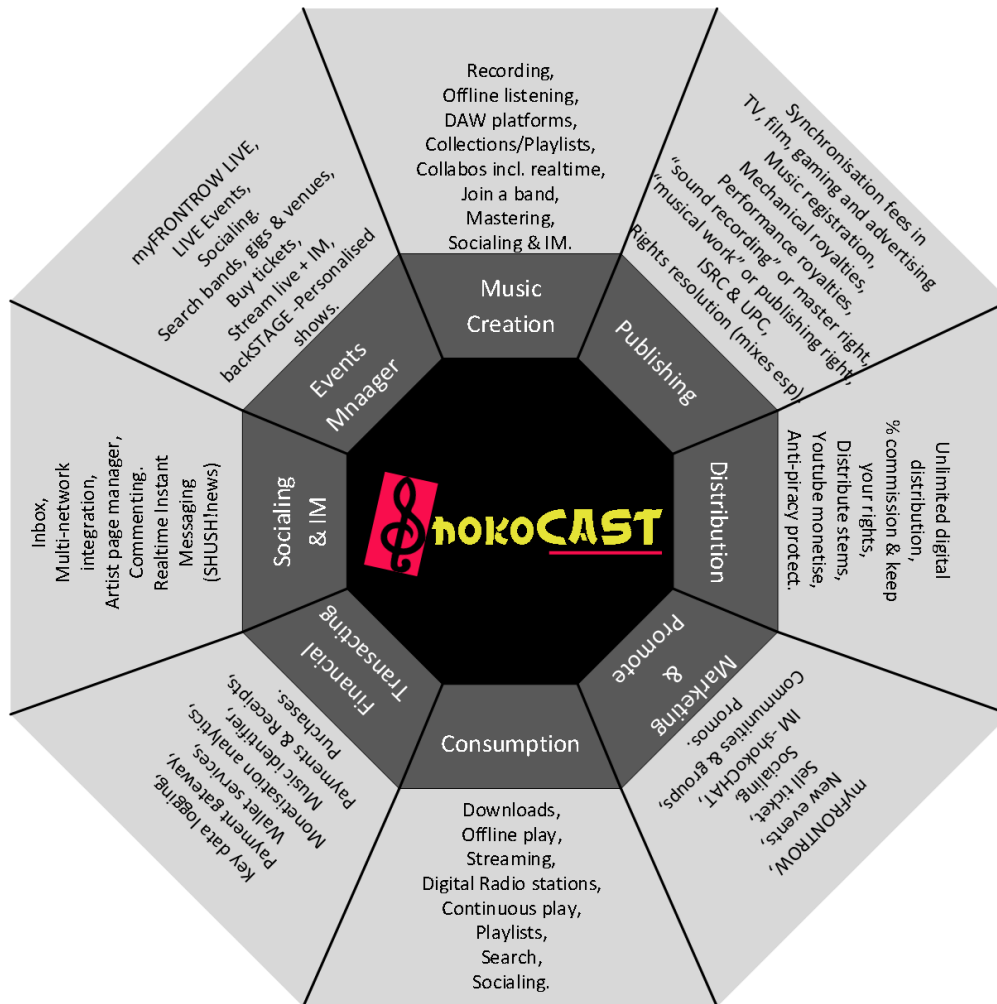
	Synchronous	Partially synchronous
<b>Innumerate processes</b>	$l > 3t$ (if and only if)	$l > (n+3t)/2$ (if and only if)

<b>Numerate processes, i.e., can count the number of processes that send identical messages in a round</b>	$l > 3t$  ( $l > t$ for restricted Byzantine processes)	$l > (n+3t)/2$  ( $l > t$ for restricted Byzantine processes)
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A detailed SHOkolah protocol whitepaper will be provided and is still be published on all relevant portals as the project progresses.

# BUSINESS MODEL

The shokoCAST Business Model i.e. our rationale as to how we create, deliver and capture value



The platform has the following users:

1. Music Makers, being Copyright owners, and the platform recognizes the following:

- a. Artist - mainly a person who weaves words into melodies and create lyrics that accompany music and includes Songwriters and Lyricists,
  - b. Beat-makers - A beat maker is a person who takes a number of samples (one-shot sound e.g. a single instrument note, drums, etc.), loops, or instrument emulations in keyboards, sound modules, synthesizer, and software instruments and uses them to make sequences. A beat-maker strings together a number of these sequences (short phrases or pattern) into a complete instrumental; and
  - c. DJs and remixers - skilled manipulators that select songs and work them into smooth, exciting sets by creating a seamless and thrilling flow by making sure transitions between songs sound fantastic, which involves cleverly manipulating intros and outros and artistically matching tempos, keys, and audio levels.
  - d. The platform allows the music makers the ability to collaborate in real-time.
2. Music Movers deals with the means of distribution. In the context of shokoCAST, this will be construed as including fans, digital distributors, music makers, our digital radio (iNyayaRADIO), other streaming platforms, everything digital etc., and lastly
  3. Music Manager speaks to our service providers to the platform and can include record labels, advertising companies, photography, etc.

In essence, our business model converges the music industry together with digital marketing, telecommunications, financial services, ICT, and blockchain technology to provide an innovative solution. This disruptive technological innovation will not only solve longstanding industry related problems but also provide an opportunity to increase awareness and penetration of blockchain technology and its benefits to people across the world and over 1.2 billion people in Africa in general, create additional revenue streams for artists and also formulate a global database for musical artefacts.

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## KEY FUNCTIONAL COMPONENTS:

A high-level feature list is included as Appendix A. A detailed functional specification is available and provided on request.

The platform takes you to the heart and soul of music:

### SHOKOLLET

Shokollet pronounced 'cho – co- late choc(o)lat '

Allows instant transaction confirmation without a centralized authority. Tamper-proof instant transactions and a secondary peer-to-peer (P2P) network. Rewards and revenue would be paid to shokollet.

SHK is an ERC20 token which means that users will be able to send and receive them on all ERC20 compliant wallets. The protocol will be easily integrated to exchanges, Ethereum ATMs and other solutions currently on the market, so anyone will be able to transfer SHK with whichever wallet or software they want.

### SHOKOCAST

shokoCAST is at the centre of the solution and offer a means to managing the entire music industry.

- From creating music, which includes recording, using DAW on-platform, collaborating, using smart contracts, mastering, and Socialing.
- Publishing and promotion of music.
- Distribution to over 150 digital distributors worldwide.
- Events manager to book, sell tickets on-App and promote gigs, live events and concerts and many other revenue streams. A great feature for musicians, music venues, event organizers and events and booking agencies.

- Socialing is the act of breaking the barrier between social media and social interaction with a focus of building a social economy where users are rewarded for sharing and providing their input. shokoCAST uses an abuse filtering system, whilst rewarding users for their contributions e.g. number of votes received and comments contributed. The goal is to build a community that embraces the shokoCAST intent that seeks to support users and the music industry in general. For example, rewards are given to users for sharing music and engaging fans and for commenting, voting and even purchasing music from the platform. With real-time instant messaging, creating a social media feed, etc.

## **SHUSH!**

The best choice for a secure and anonymous messenger! Our technology is forked from ADAMANT and there is no means of intentional leakage of information to any third parties, e.g. Facebook. Nor would a service provider cipher address book or phone information onto their servers. Furthermore, you have messenger service providers, like Telegram, block user accounts in response to government or third party requests. Additionally SHUSH! benefits from blockchain and is anonymous in its message execution processes as its practically impossible to associate a message history to a specific person.

SHUSH! benefits include the fact that:

- All messages are directly stored in the blockchain;
- There is no access to the user's address book;
- There is no access to the user's location information;
- No user identifications — a complete anonymity of use;
- All messages are fully encrypted on the sender's device and then decrypted on the recipient side. No one (including the developers) has access to your messages;
- the platform will never transfer a users' Private Key or mnemonic phrase over the network;

- The message history is never stored on a device and is directly loaded from the blockchain;
- Unlike with P2P-messengers it is impossible to obtain the user's IP-address;
- SHUSH! Accounts cannot be closed, blocked or limited by anyone, including the developers.
- An inability to backdate message changes;
- Certified authenticity for message sender and its recipient, MITM-attack protection;
- Access to user's message history from any device;
- Reliable and blockchain-powered message delivery with encryption.

## SHOKOLAH

shokoCAST uses a quadruple layered hybrid blockchain ie SHOkolah, inspired by the evolution of Hydrachain, Sharding, IPFS, Ethereum, TrueBit, Ripple, Corda, Hyperledger, BTC-Relay and Plasma on and off-chain capabilities, and it's important to appreciate the components that make up this system so as to understand its architecture and consensus protocols. It is the ideal blockchain as its smart contract abstraction enables design decisions to be made in the transactional-processing layer and allowing multiple types of applications to exist in the same instance of our blockchain. We use parallel transaction execution; using an advanced combination of relays and schedulers to manage the accessed by a transaction then isolates the execution of transactions from one another while maintaining contextual changes. Its events broadcasting and Ethereum interoperability for smart contract are additional capabilities that support the shokoCAST blockchain that also allows different types of consensus on the same blockchain,

It is clear that a step-change is required to disrupt, innovate and transform (*TIMID*) the music industry in order for empowerment to return to the music maker.

# INDUSTRY ENVIRONMENT & TARGET MARKETS

<sup>1</sup> Ericsson 2016 Global Mobility

<sup>1</sup> The GSMA Mobile Economy Africa 2016 Report

When it comes to the record's industry response to the digital transition challenge, there is much criticism indicating a failure to respond as quickly and effectively as it might have been done and one of the many reasons that record labels found it difficult to adapt to digital standards is related to the digitalizing process on their business as it took large-scale investments in technology architecture and the implementation of entirely different ways of doing business to be organizationally prepared to support the new digital music economy.

Piracy may have an adverse impact on recorded music sales, but it probably has an active role in the music industry considering that revenues yielded from live performances and ancillary products (such as ringtones, T-shirts, and caps.), increase with the diffusion of an artist's music. Incorporating these sales in their business model could allow record companies to compensate for the loss in CDs revenues or even to benefit from piracy. The digital era also changed the way record companies interacted with consumers. They started to interact online, and businesses learnt more about consumer needs.

One of the last changes in the music industry is related to streaming music services, which a consumer can listen to any music they want to buy paying a monthly subscription or have an account sponsored by ads. Consumers moved from an ownership model to an access model with a growth in streaming services revenue in 2014 which is continuing to grow at a healthy double-digit rate.

Now artists often establish themselves with international footprints through social tools and other online platforms before they get to the point of signing a record deal. Labels now have to be more cautious about how they invest their money and want to see that artists can build their own fan bases and demonstrate it through YouTube Views, Facebook Likes and Twitter Followers, etc., as social metrics provide strong supporting evidence to validate a band with good music, image, and presence.

Thus, for all digital era artists, social metrics are much more important because they are tools that can generate revenue opportunities. Therefore, the digital era created a new tier of artists who are big enough to sell out mid-sized venues but are unlikely to become mainstream artists. These artists can build strong online fan communities and dedicated live following. They can manage to sell tens of thousands of albums without appearing in the charts.

What it is important to highlight is the fact that artists who have contracts with record labels (signed artists) and artists who do not have it (unsigned artists) experience different aspects in the digital era.

Unsigned artist - A large record label will not sign a contract with a band or artists that are not mainstream enough, even if they are very talented. Before the digital revolution, there were two alternatives for musicians: one was to seek a deal with an independent label, and the other was to modify their music to sound more marketable. The digital age triggered a time when music has become so accessible that anyone with a computer can potentially become an overnight phenomenon. shokoCAST advances that further to include mobility. The proliferating range of digital platforms for marketing, promotion, and distribution of music offers endless possibilities for established and aspiring artists to access an audience to a level that would have been inconceivable before. Some artists see the arrival of the internet as an opportunity to leverage their career but first, an artist needs to build a fan base.

Many unsigned artists are still aiming for signing a record deal, but for that to happen, they have to be able to wait patiently sometimes without earning a cent. To be noticed by a record label, emerging artists must develop a sophisticated range of social media, marketing, and business skills to ensure they can survive financially and to build a demonstrably solid following while improving as an artist. However, surviving long before getting signed by a record label is not the only challenge artists' face. More artists are getting dropped by labels earlier than in previous decades, for instance, their contract is terminated if a single is not a radio hit. A growing number of artists have managed to find ways to pursue their careers without a record deal. It is common nowadays for indie artists to use record labels services such as distribution, in which

artists partner up with the label to only distribute their music by using their solid infrastructure. The artist retains the copyrights, and they have more choice and more autonomy.

## **SUPPLY CHAIN IN THE DIGITAL ERA**

The traditional product of a record label is a package of pre-recorded music captured on a compact disc (CD). After recording, editing, creating master tapes and producing the CDs, it comes the packaging, promotion and distribution of the product. Despite the change of physical product itself, the distribution channels and the division of labour within the industry have remained relatively the same: artists create music, record labels promote and distribute it, and finally the fans consume it.

The combination of the internet and peer-to-peer (P2P) software programmes for exchanging music via the Internet changed the dynamics of the supply chain and replaced CDs with a digital product that is distributed via the Internet. The chain of physical distribution has become less and less crucial. The big players in the music industry are likely to lessen even further as other players find it easier to enter the market.

Taking into consideration that each intermediary between the artist and the consumer adds costs and takes profit, the final product will have a higher price. Therefore, even further convergence is inevitable as shokoCAST is intent on bringing the artist directly to the fan and removing the intermediaries; a concept supported and implemented through our hybrid blockchain ecosystem.

## **NEW CHALLENGES IN THE DIGITAL ERA: TRANSPARENCY**

Risk - Recorded music is a global commodity that comes with intellectual property rights that can differ slightly from nation to nation, and the task of attributing the earned money from sale and performance of recorded music has always been a complicated logistic. Billions of small

transactions a year make the tracking complicated. The modern music business involves millions of daily micro-transactions that generates revenue from songs and albums. It is not rare to see stakeholders are earning fractions on the dollar spread across thousands or millions of transactions.

It appears instead of being transparent the industry has applied less transparent processes, technology and frameworks that have evolved in an era of music-as-a-product into a transformed, music-as-a-service landscape. Taking this into account,

The following recommendations were considered when developing the shokoCAST platform:

1. Every music maker deserves:
  - a. To be compensated for the use of his/her works.
  - b. To know exactly where and when his/her work is used or performed.
  - c. Up-to-date reporting on the use of his/her works (30 days for digital).
  - d. To be recognised for his/her works via identification of digital performances or users.
  - e. To know the entire payment stream for his/her royalties (e.g. how much is the cut of each part).
  - f. The right to set a price for his/her works based on fair-market value.
2. A 'fair music' certification of transparency for digital services and labels.
3. Decentralised rights database.
4. Find ways to manage and track online payments through the value chain directly from fans to music makers.

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## PROFILES OF TARGET MARKETS

The global music industry potential need no explanation as it has been explained ad nauseam. So has the algebra that equal the unsatisfactory payments music makers receive. Instead we will seek to reinforce our vision that shokoCAST will lead to mass adoption and is the answer to

emerging markets and countries, whilst taking a look at Africa's potential. Also, the use of SHOKOin tokens, the black gold of the blockchain, as a tool to create alternative revenue streams for musicians and which is now an imperative.

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## **GENERAL BACKGROUND & MARKET POTENTIAL - AFRICA**

Mobile has emerged as the platform of choice for creating, distributing and consuming innovative digital solutions and services in Africa. Several factors are driving this trend, including the expansion of advanced mobile networks, the growing adoption of smart devices, the convenience of accessing real-time, feature-rich content and services on the go, and the underdevelopment of alternative technologies, notably fixed-line connectivity, in the region. Although global content providers such as Facebook and Google have launched localised services to tap into the increasingly tech-savvy consumer base, there is growing interest from consumers in home-grown solutions that directly appeal to local interests and cultures, and that address unique social and economic challenges faced by consumers in the region to which shokoCAST seeks to exploit.

shokoCAST will be using the expansion of advanced mobile infrastructure in the region and the growing adoption of smart devices to deliver its mobile-based solutions that directly appeal to local interests and cultures. Furthermore, as some mobile operators in the region are opening up their APIs to third-party developers it creates a significant opportunity for shokoCAST DIT music to exploit..

shokoCAST will prioritise the advanced markets including Nigeria, Egypt, South Africa, Ethiopia, Algeria, Kenya, Tanzania, Zimbabwe, DRC, Cameroon and Uganda.

In 2015, mobile technologies and services generated 6.7% of GDP in Africa, a contribution that amounted to around \$150 billion of economic value. In the period to 2020 we expect this to increase to more than \$210 billion (7.6% of GDP) as countries benefit from the improvements in productivity and efficiency brought about by increased take-up of mobile services.

## **SIZES, SEGMENTS & TRENDS**

The African continent has a unique subscription penetration (percent of population) of 46%, but this figure is expected to reach 54% (1.3bn) by 2020 (with over 720m smartphones) and 70% by 2022 and also making Sub-Saharan Africa, the region with highest growth rate in mobile subscriptions globally. <sup>1</sup>

The region's three dominant markets – Egypt, Nigeria and South Africa – together accounted for around a third of the region's total subscriber base. It is also worth noting that by 2022 more than 85% of the subscriptions are expected to be registered on WCDMA/HSPA, LTE and 5G networks. There currently are 72 live LTE networks in 32 countries across Africa, half of which have launched in the last two years. 3G and 4G networks currently cover 50% and 16% of the population across the region respectively whilst technical literacy rates in Africa (particularly in Sub-Saharan Africa) are among the lowest in the world, hindering use of mobile services.

Mobile data traffic continues to grow, driven both by increased smartphone subscriptions and a continued increase in average data volume per subscription, fuelled primarily by more viewing of audio visual content. In Q3 2016, data traffic grew around 10% quarter-on-quarter and 50% year-on-year. Other drivers are wider network coverage, continued reduction in prices of both devices and services and a growing population with 57% of the current population under 15 years old. Data traffic is forecast to grow by around 55% annually between 2016 and 2022, that is a 13 times growth.

# SHOKOIN™ TOKEN

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## SHOKOCAST SHOKOIN™

The shokoCAST platform sits on a quadruple-layer blockchain ecosystem that is supercharged by programmable multi-tier smart contracts to enable great returns and value for your token and access to products and services.

The SHOKOin token, the black gold of blockchain, creates liquidity within the shokoCAST platform and provides seamless transactions within the ecosystem i.e. immediate, transparent payments whilst giving alternative revenue streams to artists.

Our strategic intention is to use this platform as an opportunity to create a new way of working, redefining the present and creating a future, a music industry, which sets aside the fallacy and incongruency of the past. A future any artist would be proud to be apart of! It also ignites decentralised and centralised providers and encourages them to develop products and services that will marry onto our quadruple-layer blockchain so as to capitalise on our user-base. A competitive analysis of the top 50 worldwide music streaming social platforms shows that there is not a single platform that can compare with the shokoCAST feature list and capabilities and especially when geared for both developed and under-developed economies.

Our vision 2024 is aiming to have 50 million users, over 65 million track catalogue and a host at least 10 million musicians on our platform. This being a conservative estimate for an aggressive approach!

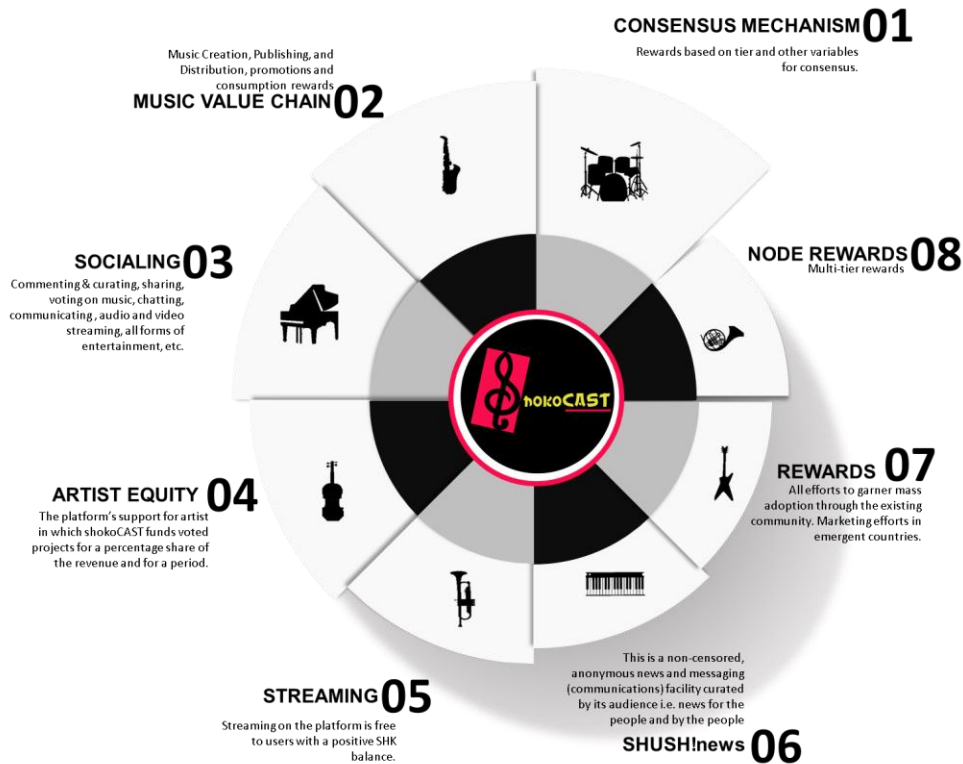
Many of the platforms that have tried to implement anything close to the shokoCAST model have done so by cutting out record labels & industry players, ignoring legislation and offering short-term incentives to a limited or closed user base. By ignoring legislation and even the broader market dynamics, one is surely concocting recipes for disaster! Remembering Icarus...

One must look further than just the streaming and the mp3 industries as that type of innovation has lapsed. Instead TIMID™ wiz introducing disruption, innovation and transformation in music can be found in the consolidation of its entire value chain whilst converging the music with broader industries including telecoms, digital marketing, events management, financial services, banking, social media, broadcasting, etc... SHOKOlah blockchain binds these converged industries together with immutable fundamentals including decentralisation, a single digital signature or currency, simplified filing or storage, consensus and cryptography and wraps it to include anonymous messaging and communications for areas that censor and restrict the freedom of its people! Giving power back to the people!

The SHOKOin token uses include:

- Being a means for stability and defence. For every transaction processed on the blockchain, 0.000001 SHK is destroyed/burnt (see rewards and consensus).
- As fuel for the entire platform and a permit, that unlocks system functionalities. A positive SHK balance is required in order to protect against abuse, e.g. from a malicious attacker, by creating a large amount of fake accounts (spam) or fake transactions in order to destabilise the integrity of the blockchain through what is known as DDOS (denial-of service). The reserve amount is set at 100 SHK, (or about US\$2 at the time of writing).
- As a source, that powers the network at a speed of 1 – 5 second block time. Where it would be argued that interest would be earned from maintaining a positive balance it then goes on to reason that said interest accrued is the fuel that drives the network i.e. a positive balance is required to access services.
- Is convenient and easy-to-use for direct token transfers right from the chat screen, for example. Full transacting capabilities;
- Access to great discounts when paying with SHK;
- Maintain the internal transaction system. The future state includes having SHK as one of the tokens on our crypto-debit card.

## SHK INCENTIVE MODEL



Incentive model is there to compensate users for their contribution in growing the platform. This includes miners and validators for providing computational work & their expertise; musicians, record labels for publishing their creative work; developers for innovating the platform; third-party developers for increasing the value of the platform by creating value-added goods and services; and ultimately users and fans or movers for consuming and sharing content and every other contributor to such a wonderful platform – must all be recognised and incentivised.

SHOKOin is an ERC-20 tokens with the benefit that it's a publicly available, promoting tokenisation, and are compatible with any other currencies or wallets that uses the same standards. SHOKOin is the token for the shokoCAST and gives you access to services. It is also a voting system.

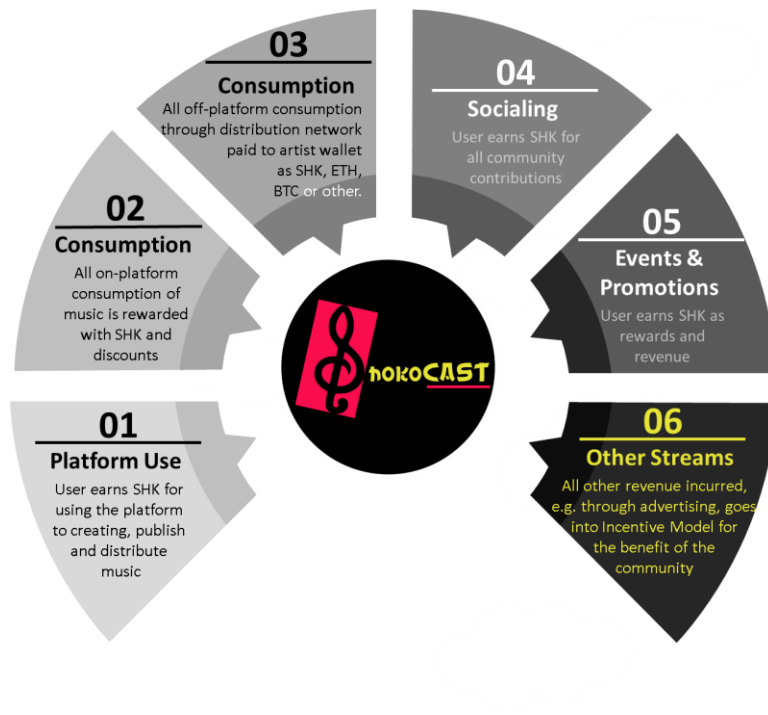
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## SHOKOIN HOW IT OPERATES

SHK is your access pass to the platform and SHOkolah blockchain and you need to have 100SHK. shokoCAST operates on a 1 SHK = 1 vote and recognises the monetary and effort contributions of each user. Remember that a great contribution to the platform means your success and industry recognition as shokoCAST is a worldwide access point i.e. entry point into the global music industry. Our quadruple layered blockchain gives the platform advantages over many and that allows us to build in numerous algorithms that govern equitable use of the platform to prevent abuse, discourage attacks and encourage hard work and recognition i.e. *the shoko way*.

Our three-tier consensus mechanism is based on the user vested-interest or stake in the blockchain. So your reward incentive percentage is linked to the amount of SHK you poses plus additional factors eg moving average strategies. Our Proof of Proposition incorporates 3 x consensus tiers \* 3 x users. This is necessary to ensure a seamless operation because the blockchain is quadruple layered and therefore requires a combination of algorithms that are supported by varying consensus protocols linked to defined incentive scales tied to hashrate (s) / block reward / circulation / inflation and other factors.

Users, SHK owners, have great rewards and incentives and we have listed some of these below:

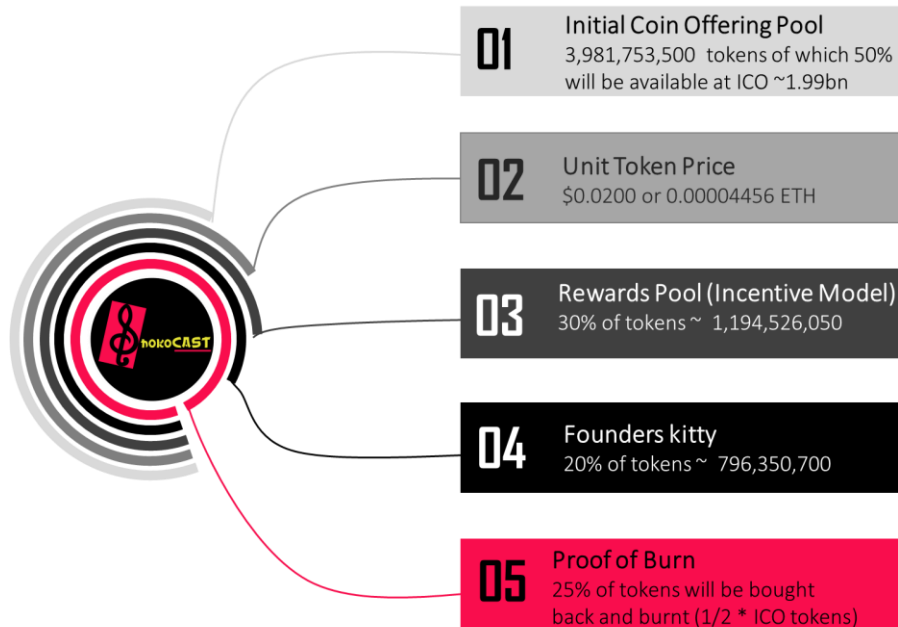


## UNIT PRICE FOR SHOKOIN UTILITY TOKEN – INITIAL COIN OFFERING

Unit Price - The SHOKOin token value at initial issuance would be \$0.0200. We project that the price will rise from \$0.0200 to just over \$11.250 by 2024\* (shokoCAST estimates can be provided on request // disclaimer applicable).

Token Market Cap i.e. Total Fixed Supply – 3,981,753,500 tokens are available of which 50% will be available for the ICO. The ICO is required in order to fund development, implement our business and operations model, marketing strategy to allow mass adoption of the solution, as input into the Incentive Model.

Inflation = 4% to 2019.



The challenge at any ICO is the valuation of a cryptoasset and especially where many variables are still unknown:

We use the Buterin definition to solve for the token price by solving for  $C = TH/M$

Where:  $M$  = total money supply (or total number of coins),  $C$  = price of the currency (or  $1/P$ , with  $P$  being price level),  $T$  = transaction volume (the economic value of transactions per time),  $H = 1/V$  (the time that a user holds a coin before using it to make a transaction).

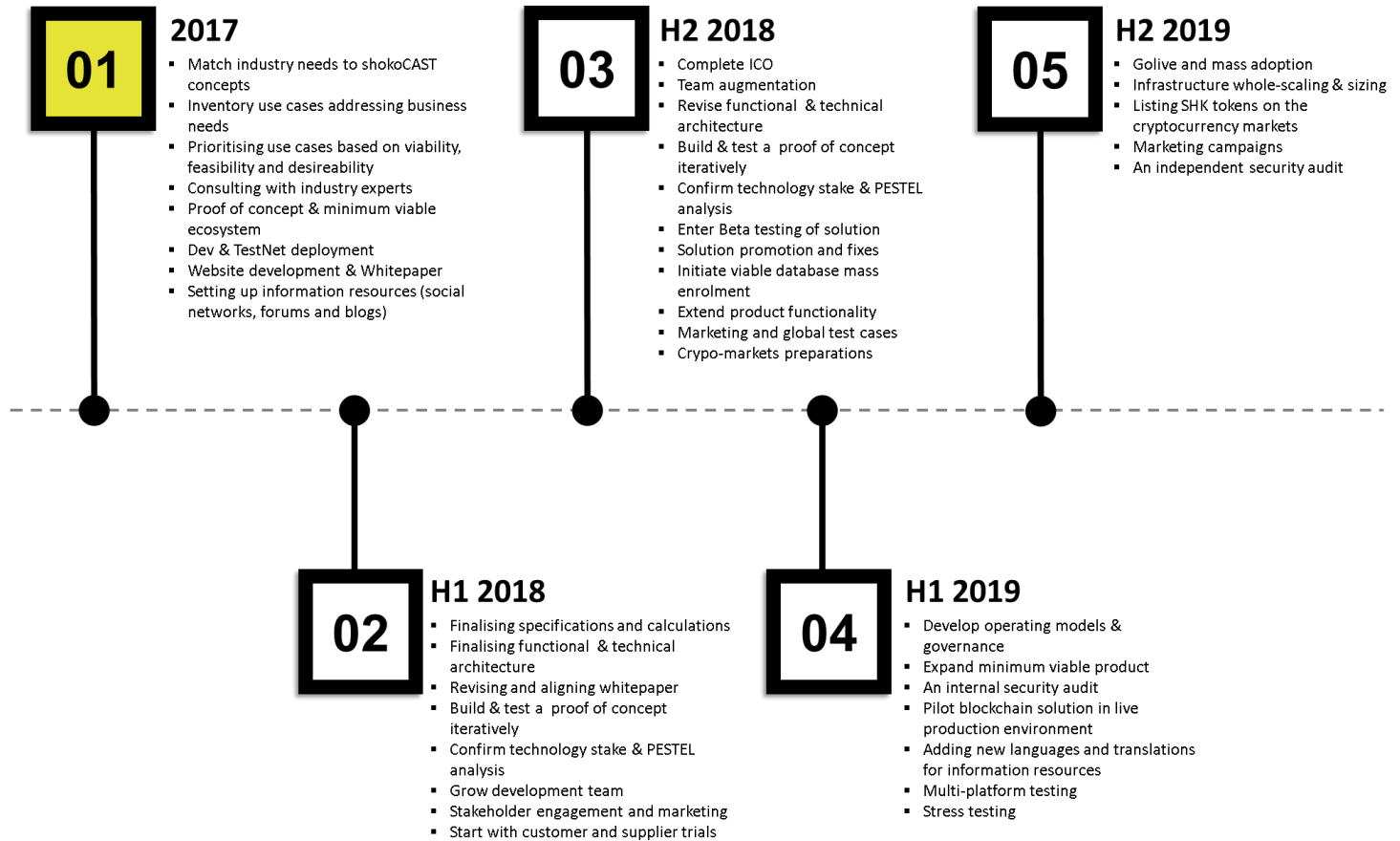
The velocity of the coin is inversely proportional to the value of the token i.e the longer people hold the token for, the higher the price of each token. The velocity of SHK should ideally remain in moderate range of between 2 and 9 to remain comparable with M1 and M2 money.

SHK incorporates the following benefits to token holders as a mechanism to reduce velocity:

1. A “profit” share mechanism in which token holders are rewarded for performing work for the network i.e. Incentive Based Model. Proof of Burn as a means of incentivising holders.
2. The tiered consensus mechanism that promotes vesting practices.

3. Gamification to encourage holding of SHK that considers the amount of reward whilst directly linking it to the amount of SHK tokens the holder possesses (and other factors).

# ROADMAP



# TEAM

## **Therry Martins** Founder / Chief Digital Innovation Officer

Therry is responsible for the overall vision, culture and delivery of shokoCAST. He guides the strategic objectives, architecture and expansion of into the market, having CIO level success in strategy, architecture and process design, IT governance, coupled with portfolio, programme and project management specialisms. He has worked for both private institutions and government organisations and has over two decades of IT management and development experience. A passion for blockchain coupled with extensive experience in C++ and a variety of technologies and practices (.NET, C#, RESTful services, microservices, SOA, SPA, TypeScript, Docker, etc), Therry is a strategic executive with CIO level success. With a strong record of success in creating robust ICT architectures and infrastructures including a proven ability to bring the benefits of ICT to solve business issues while managing the costs and risks

Therry has led and successfully delivered at least 25 full system life-cycles, 16 programmes, 14 business and reengineering projects, head of 4 programme management offices and has brought to market at least a handful of applications and solutions that are still market leaders in their respective fields.

Along with an MSc Project Management, Therry holds Prince2, MSP, MOP, MOR, MOC, P3O, ITIL, TOGAF, COBIT, C++ certified practitioner and Six Sigma credentials.

## **Lebogang Phahlane** Chief Marketing Officer

After obtaining a her engineering qualification Lebo was drawn to marketing communications, Lebo got her first job in a boutique agency and flew up the ranks in event management, digital advertising and marketing, achieving the position of Partner, and managing projects for many international clients in the southern african region. With industry related qualifications and recognition, Lebo has over a decade of experience.

#### **Paul Smith** Head of Development

Paul is a true blockchain believer and advocate that is at home in the chain and spends all his time developing and contributing to the community. Co-founded many a startup and aims to be part of the leading decentralized solutions provider and integrator in the region.

#### **Sibusiso Buthelezi** Chief Architect

Sibusiso is a software engineer with more than 13 years of experience. Throughout the time he has spent working in software development, Sibusiso has worked on a diverse collection of projects and has made use of a broad range of skills, including graphic design, software architecture, and frontend, backend and full-stack development. Some of his noteworthy projects include a ASP.NET CRM system, customer portals and other web solutions built on PHP or NodeJS and Javascript, native and hybrid mobile apps, and Perl and Python extensions for Git. Sibusiso leads in-house teams of developers, as well as remote teams based in different countries. He has hands-on experience working with many languages, technologies, and architectures. He believes that having experience with a wide range of competencies is highly important not only for leading development teams, but also when mastering new technologies and techniques and making insightful decisions while designing new products.

# APPENDIX A – FEATURE LIST

Capability	Feature
Create my content - my Tracks	<ul style="list-style-type: none"> <li>▪ my Tracks - The user has the ability to manage and customise their tracks</li> <li>▪ Add a download link</li> <li>▪ Add a buy tab and allocate price for track.</li> <li>▪ Adding record label and release date</li> <li>▪ Choosing a license for your track</li> <li>▪ Enabling downloads to your track</li> <li>▪ Displaying an embed code for user track/s</li> <li>▪ Disabling or enabling app playback for your track/s -</li> <li>▪ Enabling Quiet Mode on your track</li> <li>▪ Managing and customizing your tracks</li> <li>▪ Replacing a track's audio file</li> <li>▪ Adding or changing track artwork</li> <li>▪ Changing your track title and URL</li> <li>▪ Adding or changing a genre or tags on your tracks Individual tracks -</li> <li>▪ Adding or editing your track description</li> <li>▪ Changing your track's privacy setting</li> <li>▪ Deleting tracks</li> <li>▪ Enable or disable Offline Listening</li> </ul>
Create my Content - Record	<ul style="list-style-type: none"> <li>▪ Record using mic/voice</li> <li>▪ Record using Mix Editor</li> </ul>

<p>Create my Content - my Collections (Playlists)</p>	<ul style="list-style-type: none"> <li>▪ my Playlist</li> <li>▪ Creating an Album</li> <li>▪ Managing and customizing your playlist</li> <li>▪ Creating and adding tracks to a playlist</li> <li>▪ Rearranging tracks in a playlist</li> <li>▪ Removing tracks from a playlist</li> <li>▪ Adding or changing playlist artwork</li> <li>▪ Changing your playlist title and URL</li> <li>▪ Adding or changing the genre or tags on your playlist</li> <li>▪ Adding or editing your playlist description</li> <li>▪ Changing your playlist's privacy setting</li> <li>▪ Adding a buy tab and title to your playlist (Album, Single or Compilation)</li> <li>▪ Adding a record label and release date to your playlist</li> <li>▪ Choosing a license for your playlist</li> <li>▪ Deleting playlists</li> </ul>
<p>Create my Content - my Upload</p>	<ul style="list-style-type: none"> <li>▪ my Upload</li> <li>▪ Uploading requirements</li> <li>▪ Uploading individual or multiple tracks</li> <li>▪ Uploading playlists</li> <li>▪ Adding an image when uploading a track</li> <li>▪ Adding a title and URL when uploading a track</li> <li>▪ Adding a genre and tags when uploading a track</li> <li>▪ Adding a description when uploading a track</li> <li>▪ Changing privacy settings when uploading a track</li> <li>▪ Sharing to social networks from the Upload page</li> <li>▪ Adding a buy tab and title when uploading</li> <li>▪ Adding playlist artwork when uploading</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Adding a playlist title and URL when uploading</li> <li>▪ Adding a genre and tags when uploading a playlist</li> <li>▪ Adding a playlist description when uploading</li> <li>▪ Privacy settings when uploading a playlist</li> <li>▪ Sharing to social networks from your playlist's upload page</li> <li>▪ Enabling downloads when uploading a playlist</li> <li>▪ Enabling embeds when uploading a playlist</li> <li>▪ Enabling app playback when uploading a playlist</li> <li>▪ Enabling Quiet Mode when uploading a playlist</li> <li>▪ Enabling offline listening when uploading a playlist</li> </ul>
Create my Content - my Collabos	<ul style="list-style-type: none"> <li>▪ my Collabos</li> <li>▪ Band Projects</li> <li>▪ Create a band</li> <li>▪ Inviting band members</li> <li>▪ Your band's privacy setting</li> <li>▪ Create a band project/track</li> <li>▪ Creating a new band project using an existing user project/track</li> <li>▪ Creating a new band project by uploading a file</li> <li>▪ Creating a new band project using Mix Editor ie from scratch</li> <li>▪ Creating a new band project with Collaborative sharing</li> <li>▪ Use of shokoCHAT for Collaboration</li> <li>▪ LETS JAM! ie Creating a new band project using Realtime Collaboration</li> <li>▪ Editing band project file</li> <li>▪ Joining a band</li> </ul>
Create my Content - Mastering	<ul style="list-style-type: none"> <li>▪ Comprehensive Mastering for tracks</li> </ul>

Create my Content -	<ul style="list-style-type: none"> <li>▪ Adding an image ie picture or artwork to your profile.</li> </ul>
Create my Content -	<ul style="list-style-type: none"> <li>▪ my Video Library</li> </ul>
Promote - myFRONTROW	<ul style="list-style-type: none"> <li>▪ Live Events &amp; Promotions</li> <li>▪ myFRONTROW</li> <li>▪ myFRONTROW</li> <li>▪ Create/Add New Event</li> <li>▪ Selling Tickets</li> <li>▪ Event Sync with Facebook page</li> <li>▪ User tagging notification for event</li> <li>▪ Customising event page</li> </ul>
Promote - Communities	<ul style="list-style-type: none"> <li>▪ Communities</li> <li>▪ Creating groups</li> <li>▪ How many groups can I join?</li> <li>▪ A list of my groups</li> <li>▪ Sharing to a Group</li> </ul>
Socialing	<ul style="list-style-type: none"> <li>▪ Create your Social Media Feed</li> <li>▪ Socials Stream Inbox setup</li> <li>▪ User actions in Social page/inbox</li> <li>▪ Social share buttons</li> <li>▪ Customising Socials feed</li> <li>▪ SHUSH! //</li> <li>▪ Messaging service and comms</li> </ul>
SHUSH!	<ul style="list-style-type: none"> <li>▪ Live interactive video chat, voice and messaging</li> <li>▪ A database of unforgeable append-only feeds, optimized for efficient replication for peer to peer protocol. You can create a</li> </ul>

	<p>feed, post messages to that feed, verify a feed created by someone else, stream messages to and from feeds, and more.</p> <ul style="list-style-type: none"> <li>▪ "Unforgeable" means that only the owner of a feed can modify that feed, as enforced by digital signing.</li> <li>▪ An identity is simply a public/private key pair.</li> <li>▪ A feed is an append-only sequence of messages. Each feed is associated 1:1 with an identity. The feed is identified by its public key.</li> <li>▪ Message should contain: -A message object. This is the thing that the end user cares about. If there is no encryption, this is a {} object. If there is encryption, this is an encrypted string. -A content-hash of the previous message. This prevents somebody with the private key from changing the feed history after publishing, as a newly-created message wouldn't match the "prev-hash" of later messages which were already replicated. -The signing public key. -A signature. This prevents malicious parties from writing fake messages to a stream. -A sequence number. This prevents a malicious party from making a copy of the feed that omits or reorders messages.</li> <li>▪ Object ids - The text inside a message can refer to three types: messages, feeds, and attachments. Messages and attachments are referred to by their hashes, but a feed is referred to by its signing public key.</li> </ul>
Promote - Promos	<ul style="list-style-type: none"> <li>▪ Artist Profile ( Pro pages</li> <li>▪ Showcase or Shoutout! (Blog)</li> <li>▪ Promoted tracks</li> <li>▪ Promote a track or Collection(Album) to ALL social media</li> <li>▪ Promote an Event (listed on shokoCAST)</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Promote your Video to TOP MUSIC SITES</li> <li>▪ Release Starter Package</li> <li>▪ Promo Release Package</li> <li>▪ Pro Release Package</li> <li>▪ Album Release Campaign</li> <li>▪ Electronic Press Kit (EPK)</li> <li>▪ Advertising - Banners</li> <li>▪ Video Based Advertising</li> <li>▪ Newsletters</li> <li>▪ Radio Promotion</li> <li>▪ Campaign List</li> <li>▪ Adverts on shokoCAST</li> </ul>
	<ul style="list-style-type: none"> <li>▪</li> </ul>
Distribute - Pre-Release	<ul style="list-style-type: none"> <li>▪ TWO GUARANTEED FEATURES</li> </ul>
Distribute - Sell Music	<ul style="list-style-type: none"> <li>▪ Sell Music on shokoCAST</li> <li>▪ Sync licensing for TV, film, and games, commercials</li> <li>▪ Song registration with global collection agencies</li> <li>▪ Worldwide publishing royalty collection</li> <li>▪ Unlimited distribution - Delivery to one of the largest networks of Digital Service Providers. Freedom to choose the partners you want on VIP Pro plan</li> <li>▪ % commissions and keep your rights! (based on subscription plan)</li> <li>▪ Licensing and royalty administration</li> <li>▪ Distribution of STEMS by Native Instruments ( not sure of this?)</li> <li>▪ YouTube Content ID Monetization</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Free ISRC (International Standard Recording Code) &amp; UPC per release / trac</li> <li>▪ Anti-Piracy Protection</li> <li>▪ Monetising remixes and mixes</li> <li>▪ Music identification &amp; rights resolution technology</li> </ul>
Explore	<ul style="list-style-type: none"> <li>▪ On shokoCAST we want your listening experience to be pleasant and customizable to your needs. It is now easier than ever to find new music and audio to hear on shokoCAST with Search, Charts and recommended tracks:</li> <li>▪ Collection: Liked tracks, playlists, albums, and quick access to content through recently played</li> <li>▪ Discover: Stream, Charts, and our brand new feature, The Upload</li> <li>▪ Search: Access to the ever improving search functionality with top results</li> <li>▪ Found some great tracks that you want to save and keep on your profile.</li> </ul>
Explore - Your listening experience	<ul style="list-style-type: none"> <li>▪ Next up - Play Queue (can this be also mobile functionality?)</li> <li>▪ Downloading tracks for offline mode</li> <li>• Collection: Liked tracks, playlists, albums, and quick access to content through recently played</li> <li>• Discover: Stream, Charts, and our brand new feature, The Upload</li> <li>• Search: Access to the ever improving search functionality with top results</li> <li>▪ Continuous play</li> <li>▪ player and lineup</li> <li>▪ Repeating tracks</li> <li>▪ Shuffling tracks</li> <li>▪ Regional availability</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Listening on multiple devices</li> </ul>
Explore - Search & Explore	<ul style="list-style-type: none"> <li>▪ Freshly Ground (or Picked)</li> <li>▪ Search on shokoCAST</li> <li>▪ Chart Toppers and how it works</li> <li>▪ Follow and unfollow other users</li> <li>▪ Related tracks</li> <li>▪ Suggested Tracks</li> </ul>
Explore - Curating & Saving Tracks or Playlists	<ul style="list-style-type: none"> <li>▪ Liking tracks or playlists</li> <li>▪ Reposting tracks or playlists</li> </ul>
Live // myFRONTROW - Artist	<ul style="list-style-type: none"> <li>▪ Track your favorite artists</li> <li>▪ Recommended Artists</li> <li>▪ All Artists</li> <li>▪ RSVP</li> <li>▪ Search</li> </ul>
Live // myFRONTROW - LIVE! – Event	<ul style="list-style-type: none"> <li>▪ Live audio - Visual Streaming &amp; "old" stream catalogue</li> <li>▪ Facebook &amp; Twitter etc integration</li> <li>▪ Pay per view capable</li> <li>▪ Search for Bands &amp; Gigs &amp; Venues</li> <li>▪ Purchase your Ticket</li> <li>▪ Stream Live on your Mobile</li> <li>▪ Usability</li> <li>▪ Push-notifications</li> <li>▪ shokoCHAT (Messaging service)</li> </ul>

Live // myFRONTROW – backSTAGE	<ul style="list-style-type: none"> <li>▪ Personalised shows</li> <li>▪ Show ideas</li> </ul>
dRadio - Internet Radio	<ul style="list-style-type: none"> <li>▪ Internet Radio</li> <li>▪ Internet Radio</li> <li>▪ Guaranteed Airplay on Internet Radio</li> <li>▪ Disabling station autoplay</li> <li>▪ Stations and how they work</li> <li>▪ Create a New Station</li> <li>▪ Edit Stations</li> <li>▪ Edit Shuffle</li> <li>▪ View Bios and Lyrics</li> <li>▪ Add Variety</li> <li>▪ Deleting a station:</li> <li>▪ Changing the Audio Quality</li> <li>▪ Explicit Filter</li> <li>▪ Replays</li> <li>▪ View Lyrics</li> <li>▪ Offline Listening Mode for Premium subscribers</li> <li>▪ How to Listen Offline</li> <li>▪ Download Music Manually</li> <li>▪ Download Settings</li> <li>▪ How much storage do I need to download a station?</li> <li>▪ Share your Station</li> </ul>