

Gron Digital Blockchain Gaming & Betting Platform White Paper

"The first generation of the digital revolution brought us the Internet of information. The second generation — powered by blockchain technology — is bringing us the Internet of value: a new platform to reshape the world of business and transform the old order of human affairs for the better." – Don Tapscott

1. Abstract

Global Gaming and Betting has been around for hundreds of years and will be around for many more owing to the attractiveness of the industry - the glitz, glamour and excitement of it all!

Despite this, there are fundamental issues which need to be confronted and which have limited growth of the sector. By utilising blockchain technology in unique and sophisticated ways, the Gron Digital platform aims to provide pioneering capabilities that will attract new players and improve the experience for existing ones, thereby growing the market for gaming services. We believe that this new functionality will facilitate substantial disruption within the online betting community, to such an extent that the Gron Digital platform will become the preferred business partner to operators and suppliers the world over. We will achieve this by building relationships and sharing competitive advantages to all users of this innovative new marketplace.

As is the case with many gaming ICO's, this conceptual whitepaper captures the prospect of improving integrity and fairness within gaming by providing assurances to all role players that transactions on the Blockchain Platform are transparent, reliable, and autonomous. However, this is only the beginning, as the distributed ledger also creates unique opportunities to broaden the scope of the offering with the accumulation of valuable business intelligence. This information will be compiled with the help of sophisticated data mining tools and AI (Artificial Intelligence) and will enhance product offerings by improving understanding of the customer base and targeting their needs in a precise manner.

The paper will establish how Gron Digital will create a technology platform which will solve historical relationship blockages by revealing detailed evidence of the nature and behaviour of the gaming community. This will enable new levels of trust and interconnected understanding among users and service providers and will enhance broad based participation.

2. Introduction

The size of the regulated global online Gaming and Betting market was \$45.86 billion in 2016. Forecasts indicate an increase of up to \$56.05 billion by 2018. There is no solid data regarding the size of the illegal market however it is estimated at around \$200 - \$400 billion annually, four to ten times larger. The relative size of the 'illegitimate' and unlicensed betting activity perpetuates the negative connotations as governments attempt to regulate and tax the industry. However, help is at hand and there is a general consensus that the decentralised nature and immutability of transactions through blockchain technology will revolutionise the industry by forcing rogue and

underground online casinos to legitimise their operations. The industry is ripe for a rehabilitation as human rights and consumer protection controls become more feasible with the advent of new methods of doing business.

It is acknowledged that Gron Digital will not be the first to market with the concept of enhancing fairness and trust in the gaming sector with the use of blockchain technology. However, we believe we will be first to utilise Smart Contracts across the gaming value chain in a unique way to ensure that useful data is gathered and stored which can be unearthed to provide a better understanding of the marketplace and the drivers associated with it. A Smart Contract within the Ethereum environment is a self-executing agreement which requires no user intervention, whereby the agreed terms of the contract between the parties are directly written into lines of immutable code.

This means that transactions between parties happen automatically and under predetermined rules and regulations which cannot be circumvented. It also means that by bolting on a second layer of protocol, these transactions are recorded in real time along with metadata that records parameters associated with the parties to the transactions to create a database of the counterparties to the transactions and their actions. This database is key to understanding the value proposition that Gron Digital brings to the marketplace as it will be instrumental in the design of a comprehensive affiliate or loyalty scheme within the GRO token community. The database will also become an extremely valuable resource for operators and suppliers to understand their target markets. This will give them an edge over their competitors as it will allow them to refine their service offering based on user demographics and statistics. It will also give Gron Digital a sustainable revenue stream as the information will only be available to subscribers to the service. More about this later.

This platform will therefore not only bring the inherent benefits of trust, transparency and certainty to our sub-economy but will also improve the modes of doing business, making them more efficient and accessible to game providers.

This paper will explore the proposed platform from a number of perspectives. Firstly, it aims to identify the major problems associated with groups of stakeholders and to highlight the solutions that the Gron Digital Platform will provide. Thereafter the paper will explore the features of our system, which includes our development capabilities to design generic tools and applications for gaming platforms (Dapps), as well as the value added services that we will feed into the network. The Gron Protocol uses a utility crypto-token called GRO. GROs are used as a currency for transacting and as an incentive and reward mechanism for all contributors to the platform.

3. About Us

3.1 Existing Gaming Operations

The founders of Gron Digital are veterans of the gaming industry. The main executive team have almost 75 years in business experience between them. They range from Online Gaming (gambling), to Business Management, to Software Engineering. The group holds gambling manufacturing, as well as sports betting licenses. They have developed, tested and operated an array of Gaming and Betting products. Through their technology companies CDP Gaming and Sintez Technologies, Gron Digital has proven capabilities in functional software and product development. In addition, the group operates a sports betting platform called YesPlay.

Gron Digital is a trusted, established player in the sector with an extended track record of successful products and solutions. Please see www.cdpgaming.com, www.sintez.com and www.yesplay.bet for more information.

3.2 Team

3.2.1 Executives

Tebogo Makamo
CEO

Tebogo is a Gaming Industry veteran with 22 years of experience. His career started with Sun

International, followed by 12 years in the South African Bureau of Standards as a Gaming Lab Manager. Tebogo is vastly informed in the regulatory and compliance space of the industry. He served as Vice President for BMM Testlabs in both Africa and Europe. Later, Tebogo worked on the Mpumalanga Gambling Board and headed the compliance department in the Gauteng Gambling Board. Today, he pursues his role as CEO of CDP Gaming Technologies.

Dmitry Oberzhitsky

COO

Dmitry has over 20 years of Business Management experience, coupled with his passion for technology and innovation. He founded Sintez Technologies in 2004, an IT company with offices in South Africa and Ukraine – retaining over 200 developers. Sintez Technologies has assisted several companies, from various industries, in achieving their goal – which is to deliver quality products to their market. Over the years, Dmitry has mastered business processes and the software development pipeline.

Alex Braude

CTO

Alex is an accomplished software engineer and visionary with 32-years of technical experience. His innovative approach to system's design allowed him to execute a number of successful projects, some of which were implemented back in 1994. The projects' robust architecture and 24/7 availability allowed for them to be used to this day. In 2012, Alex shifted his focus from the Financial and Banking sector to Gambling and Betting. From 2015, he has been actively involved with the Blockchain projects.

3.2.2 Advisors

André Wilsenach

André is the Executive Director of International Centre for Gaming Regulation at the University of Nevada, Las Vegas. He worked for the University of Pretoria, Africa Institute of South Africa, Development Bank of Southern Africa, Ernst & Young and the South African Government prior to a longstanding career in gaming. He was appointed to a Commission, aimed at advising the Government on legalisation of gaming in South Africa. He fulfilled his role as CEO of one of the South African provincial gaming boards, whilst serving on the National Gambling Board of South Africa. Later, he was appointed CEO of ZMS. André was then appointed Executive Director of the Alderney Gambling Control Commission. He was the keynote speaker at the first international eGambling Summit held in the United Kingdom in 2006. He gave testimony to the Financial Services Committee of the US House of Representatives concerning the Internet Gambling Regulations Enforcement Act. André was a significant speaker at the American Gaming Association's 2008 Global Gaming Summit in Las Vegas, and in 2012 gave testimony to the UK Culture, Media and Sport Select Committee regarding their new regulatory framework. André is a former President of the International Association of Gaming Regulators and is an active member of the International Masters of Gaming Law and the International Association of Gaming Advisors.

Walter Staffetius CA(SA)

Walter is a seasoned South African Chartered Accountant with more than two decades experience in executive financial management, investment banking, and advisory services. He completed articles at Ernst and Young in Johannesburg in 1994. Since then he has held many senior positions in the private and public sectors. Notably he was a founding director and CFO at Rand Merchant Bank in Mauritius and Chief Executive Officer of Metalmin Metals and Minerals, a global commodity trading business. Walter has originated, appraised and implemented over fifty project and structured finance transactions in a variety of instruments, sectors and across the African continent with an aggregate asset quantum in excess of US\$ 1 billion. He also has considerable experience in private equity, managing an equity portfolio valued at over ZAR 5 billion as well as representing the

Development Bank of Southern Africa on a number of Advisory Boards. Walter is an expert in deal structuring, capital raising and financial modelling. He has an extensive history in development finance including early stage feasibility funding and bankability assessments, assurance and compliance. He enjoys contributing to an inter-disciplinary and dynamic team in which evolution and growth are emphasized.

Lucien Wijsman

Lucien has been active as an operator and advisor to land-based and online Casino for over 30 years. During this period, he has advised Operators in many countries in Europe, Russia, Latin America, the African Continent and Asia on how to maximize the revenues of the Slots Floor and/or the online Casino. Lucien has also advised many of the leading Suppliers of Electronic Gaming Devices and providers of Gaming Technologies and Games in other Channels, on areas of Game Concepts tailored to different categories of Players. Lucien is probably best known as the founder of The Slot Academy, now called the Totally Gaming. Academy, through which hundreds of Slot Managers and Representatives of Supplying Companies of every continent have been familiarized with the Marketing Strategies and TQM Principles behind running successful Slot Floors and Mathematical Concepts of Games. A speaker for the likes of the University of Reno, Nevada and the Sigmund Freud University, Vienna and a public speaker at many exhibitions at events, Lucien Wijsman is known as an expert in the field of operating Games of Chance both in the brick and mortar and online environments.

Igor Samardziski

As the founder and CEO of Nexus Gaming Intelligence, Igor is a veteran of the gaming industry and has held positions with some of the largest providers of gaming products today. In 2013, he was the recipient of the iGaming Representative of the Year award. A specialist in gaming systems, start-up, operation and efficiency of Online Gaming and E-commerce business models, by expanding product verticals in new and existing businesses. His experience incorporates AMLO, Bonus Abuse, Advantage Play and Affiliate partnerships from both in-depth function perspective as well as management of resource and KPI's with focus on Customer Service & Operations resource management. His key specialty has been the development of "multi-product" Gaming Platform SaaS solutions for Regulated Markets and individual market requirement; gambling solutions focusing on both online and land-based environments. Igor founded Big Data BI analytic software (and logic models) with key focus on CRM, Churn Management and Customer Reactivation, Macro/Micro Segmentation models and in-depth player management. Igor is a seasoned panelist and speaker, and is regularly seen at EiG, ICE, Slot Summit and GiGSE conferences and seminars. Igor also runs the comprehensive, hands-on Online Master classes organized by Totally Gaming Academy.

Alpheus Matsebula

Alpheus is a business and technology leader. He has earned recognition for his contributions to regulatory compliance, gaming software development, and management of start-up operations. He played a major role in the development of server-based technical standards. Alpheus excelled in his role as Technical Compliance Manager, where he established South African operations for BMM Test Labs. As a Compliance Product Manager for Bally technologies, he worked with the sales team and clients to develop products for their gaming needs ensuring regulatory requirements at the same time. He has designed and implemented an Internet gambling testing strategy for BMM in various international jurisdictions. Alpheus has managed product compliance of a casino system for Sun International and Peermont groups. Alpheus is currently pursuing his career on the Gauteng Gambling Board. He continues to approach problems from an analytical perspective: as he collaborates with others to design and implement strategies that create revenue for business partners in several sectors.

Rossouw Lubbe

Rossouw is a founding member of the South African gaming law and compliance consultancy, AG

Consulting. Having qualified with a B.A (Hons) in public administration, Rossouw commenced his professional career with the Provincial Administration of the Western Cape Government. He rose rapidly to the position of Chief Director, and in 1997 resigned this position to take up the post of Chief Executive Officer of the Western Cape Gambling & Racing Board, a position that he held for 10 years. As Chief Executive Officer, Rossouw spearheaded the development of the Western Cape Gambling and Racing Board from its inception, into an organisation which was widely respected as being among the best-managed public entities in the country. Under his leadership, application processes for the full allocation of the Province's five casinos were successfully conducted without legal challenges, together with a plethora of other industry sectors and functions which had not hitherto been licensed or regulated, either in the Western Cape or in South Africa as a whole. He also served as a member of the National Gambling Board of South Africa, and, subsequent to his resignation from the Board in 2007, served as a Director on Boards of various licensed gaming companies, before establishing AG Consulting, in partnership with Alicia Gibson, in 2008.

Alicia Gibson

Alicia is a founding member of AG Consulting, a South African gaming law and compliance consultancy, which was established in 2007 to provide a full suite of custom-made consultancy services to governments, regulatory agencies and private gaming industry stakeholders. She holds the degrees of B.A (Hons) and LL. B from the University of Cape Town and is a former District Court Prosecutor and State Advocate of many years' standing. She was also the first woman to have been appointed to the district court criminal bench as an additional magistrate in Cape Town in 1990. She is an admitted Advocate of the High Court of South Africa. Alicia was the Manager: Legal Services of the Western Cape Gambling & Racing Board since its inception in 1997, when provision was made for the licensing and regulation of gambling (other than betting on horseracing) for the first time. She held this position for ten years, and during this period played a key role in steering the focused and effective development of gaming legislation, both in the Western Cape Province and in South Africa as a whole. During this period, she also served as Secretary to the International Association of Gaming Regulators ("IAGR"), until her resignation from the Board in 2007. Immediately prior to this, Alicia served as the Acting Chief Executive Officer of the Western Cape Gambling and Racing Board, before resigning to form AG Consulting.

4. Players - Problem Statement and Solutions

There are many factors that affect the Gaming and Betting industry negatively. At the forefront, it is the issue of trust. Without trust people are hesitant to transact. Trust affects all aspects of the industry from fair games to reputable operators, to the systems that hold customer's deposits and manage their winnings. Current mechanisms are based on a model of human intervention and control, which is ineffective in preventing fraud and dishonesty.

Primarily, the Gron Digital mission is undoubtedly to address the concerns of players and improve their experience online. We firmly believe that a sizeable pool of untapped potential players exist that are hesitant to enter the market for fear of being fleeced. There is a trust deficit created which has arisen from the proliferation of illegal and unsavoury industry operators. This undesirable reputation has been difficult to shed because it is not only perceived – it is the reality. In truth, the World Wide Web of gambling is littered with dangers and pitfalls for the unwary traveller. Many players have lost large sums of money unwittingly and with no recourse to law enforcement.

Clearly, this negative sentiment is hampering the growth of the industry. It is widely recognised that the online betting industry is an ideal candidate to benefit from blockchain technology due to the dispersed nature of the market. This scattered propagation of internet-based gaming is easier to manage with a similarly widespread P2P (peer to peer) operating environment.

Consequently, we believe that this broad category of disruption will be pervasive throughout the online betting environment and there will not be sufficient capacity amongst blockchain gaming platforms to cater for the migration of existing service providers to the technology. This leads us to believe that more than one blockchain platform will be successful and there will be more than enough business to go around. Blockchain gaming platforms will enter a boom market with significant windfalls to be generated in the medium term. By providing solutions to player concerns, all industry stakeholders will benefit in turn. This growth in players will surely lead to a concomitant proliferation of betting service providers and developers.

We refer to this suite of industry technological interventions addressing legitimacy issues as the Generic Player Solutions Package (GPSP). Many of the Gron Digital competitors will be offering a GPSP in one form or another, and gambling on the blockchain will become bespoke in cleaning up the industry. The potential for widespread improvement in the sector through GPSPs is evident in the success of recent gaming ICOs and in time more will be brought to market.

Importantly though and in addition to the above, Gron Digital will also offer a Specific Player Solutions Package (SPSP). This is a set of solutions and improvements that is unique to our product offering. It is what differentiates us from our competitors and can be broadly defined as

‘the creation of an artificially intelligent database generated by in-house developed smart contracts on an encrypted layer above the blockchain from the dispersed audit trail of gaming transactions that will be utilised to improve online gaming service offerings across the Gron Digital marketplace’.

The paper will expand on GPSP and SPSP functionality below.

4.1 Generic Players Solutions Package (GPSP)

4.1.1 Deposits and Withdrawals

When players join a game for the first time they are required to make a deposit into their gaming account. The depositor often uses their credit card details to make these deposits which exposes them to credit card fraud. The deposit is controlled by a third party and often takes time to reflect or sometimes fails to reflect at all.

How does the player know their money is safe? If the operator absconds or ceases trading, there is the possibility of a total irrecoverable loss of funds. Withdrawals are another issue which players are confronted with. These are often administered manually and are only allowed above a certain minimum threshold and can incur substantial fees. Turnover clauses for bonuses and promotions, Gaming and Betting Tax, as well as reliance on third party systems for transacting on these networks, all present areas where trust and efficiency are essential for commercial relationships to flourish. Payment Solution Providers (PSP's) charge the operators exorbitant transaction costs of up to 6% resulting in excessive chargebacks.

So far, the crypto-solution to these difficulties is usually one of two alternatives. Some blockchain gaming platforms simply refer to the transparency of the distributed ledger as proof of transactions. While this does create a valid audit trail, it does not improve the credit worthiness of the operator or reverse past theft. Other crypto-platforms propose a system in which players transact directly from their token wallet. This alleviates the need for deposits and withdrawals to the operator but this betting wallet will invariably be off the blockchain (due to processing speed and gas constraints) and therefore simply shifts the risk of loss from the operator to the blockchain platform.

Gron Digital has developed a more advanced solution, based on a cold-storage supported credit line or escrow facility that will be discussed in the Specific Player Solutions Package below.

4.1.2 Fair Games (No Cheating)

Are online games truly random and products impartial? Will all players be treated equally, ethically and professionally?

From a development and software providers perspective, Gaming and Betting products have not evolved significantly in the last decade. Besides the considerable cost of product development, companies must ensure that Gaming Laboratories certify that their games conform to fair gaming practice before they enter the market. The laboratories work within a strict framework that may hinder the creativity of game developers. Additionally, the code and logic of these systems involve the intellectual property of the developer or system providers, which is often a close guarded secret. Game logic is programmed into the software, machine or a table (physical or online) and is the intellectual property of the gaming manufacturer. Players are therefore still obliged to trust the developers, their games and systems, alongside the Gaming Laboratory.

Two important areas of verification when it comes to online gaming are as follows:

4.1.2.1 Random Number Generation (RNG)

The fairness of any game is dependent on a Random Number Generator (RNG). A simple example of an RNG at work is a lottery. Lottery participants are forced to trust that the software code or physical device generating the winning numbers is truly random. Without such a system there will be an element of predictability and possible manipulation when players submit their winning numbers.

However, all RNG's are not made equally and randomness is seldom absolute. Most commonly, pseudo RNG's utilise computer processors to generate the random numbers but to unequivocally ensure that no player can guess the outcome of the next slot or reel stop, physical or real RNG's use lasers to create binary code that is interpreted in a haphazard manner.

4.1.2.2 Pari-mutuel Betting (Pool Betting)

The issue of Pari-mutuel betting differs from fixed-odds betting in that the final pay-out is only determined once the pool is closed, whereas in fixed-odds betting, the pay-out is agreed on once the bet is placed. Essentially, this may diminish trust among players as the pay-out is calculated by a third party based on a pool sharing arrangement amongst all the winning bets. The pari-mutuel betting system therefore requires an element of honest intervention after the fact, which raises concerns of possible fixing and a lack of transparency.

The fundamental problem in the world of Gaming and Betting is rooted deeper than the question of randomness. The concern is that the game's logic and Return To Player (RTP) percentages are interfered with to the benefit of the house.

This is perhaps the biggest benefit that blockchain offers to the online gaming industry. Most blockchain gaming whitepapers will refer to the transparency of the distributed ledger and the fact that individual bets can be vetted and checked for fairness. However, it is not always clear how this will be achieved since the chain will not record odds and results and it also requires a global view of online casinos and gaming platforms over time. While it is theoretically possible for players to verify that RNG, RTP and pari-mutuel bets are conducted fairly, without the processing power of the network of computers on the blockchain, it is difficult to envision how this will be practically achieved.

This is where Gron Digital's technology and ongoing telemetric capabilities will be instrumental in analysing vast amounts of data to produce trends and statistics via a broad-based incentive programme and the use of Smart Contracts and AI (Artificial Intelligence).

4.2 Specific Players Solutions Package (SPSP)

4.2.1 Operator Verification

The need to ensure that games are fair and deposits safe, is also related to the requirement of ensuring that service providers are legitimate, licensed and approved by a regulator somewhere in the world. In a similar fashion, operators need to ensure that players are legitimate too. It is therefore a two-way street and we refer to this as bi-directional counterparty risk mitigation. To our knowledge, Gron Digital is the first and only gaming platform that will perform identity checks via the blockchain on all stakeholders to verify their bona fides. We will partner with secure blockchain identity platforms such as Civic.com to satisfy KYC, FICA and AML requirements and ensure that online casinos operate within the law. This will reduce the burden of proof as compliance will only happen once but will be monitored on an ongoing basis. The fact that an operator is legitimate today does not mean that he will be tomorrow.

Players will have the peace of mind and certainty that the operators within the Gron Digital community are licensed, compliant with all gaming regulations in the jurisdiction of registration and continue to operate within the codes of conduct and ethics as required by the gaming community. Any operators that do not adhere to these requirements will be subject to intervention procedures including remedy timeframes and reporting frameworks. (See Operator Solutions Packages below for more information about Player Verification).

In addition to identity confirmations, Gron Digital will, through its platform operator tools and market intelligence, reduce barriers to entry for new operators to diversify the market and reduce monopolistic tendencies. A monopoly is characterized by the absence of competition, an oligopoly by cartels and reduced competition. This means that powerful industry leaders can initiate high costs for consumers, inferior products, and often corrupt behaviour, which leads individuals to develop a degree of distrust.

The effect is that these gaming conglomerates gain greater control within the Gaming and Betting sphere by impeding new entrants into the industry and by discriminating and inhibiting experimentation or new product development. Furthermore, financial barriers, which include the cost of entry for new operators and the costs associated with compliance, are more accessible by monopolistic giants. By joining the Gron Digital community, new entrants and smaller online platforms will be protected from these cartels and will enjoy lower initial investment requirements, faster start-up times and ongoing compliance support.

4.2.2 Credit Line/ Escrow

As discussed in the Withdrawals and Deposits section above, players want the peace of mind to know that their initial investment and subsequent winnings are safe in the custody of the operator. This risk will be addressed, in varying degrees, by most blockchain gaming platforms. However, players would also like to ensure that the processes involved with funding their gaming does not inhibit or slow down their playing and they would like their liquidity to be transferrable across websites, games and operators.

For this reason, Gron Digital is developing a 'player escrow or credit line capability' via Smart Contracts whereby each player will operate a centralised pre-authorised cold storage backed wallet that operates within a set of individual player preferences. This will allow the player to enjoy any game within the Gron Digital community immediately in real time with a predetermined small float balance that is more manageable and thus less risky than their crypto-wallet. In addition, transfer of winnings will be instant and guaranteed as a result of the seamless interface between the operator's platform and Gron Digital. This handy float will automatically roll once funds are depleted based on the global settings specified in advance by the player (chips transfer limit). This will alleviate unnecessary delays while simultaneously ensuring that players do not overextend themselves across multiple games by keeping abreast of their consolidated expenditure patterns. The account will also be encrypted and imbued with the latest security conventions giving the owner peace of mind that their funds are safe and secure.

In summary, the Gron Digital Bank Roll will result in:

1. Additional security;
2. Shorter transaction turnaround times (11- 15 seconds);
3. No chargebacks;
4. Low transaction costs;
5. Instant reflection of winnings and withdrawals;
6. Compatibility across gaming platforms;
7. Cryptographically verified code.

An added advantage arises with the centralised funds repository in that it enables the scrutiny of universal spending trends and player behaviour patterns, linked to their identity, which triggers the awarding of incentives and results in useful business intelligence.

4.2.3 Loyalty Programme and Incentives

The gaming industry is highly competitive and notoriously fickle. Almost every operator offers players a gamut of affiliate incentives and bonuses to attract new players and retain existing ones. These marketing strategies are often effective for a limited time on an individual basis but the collective Gron Digital marketplace and the database that will be amassed on players across games and operators, affords the platform the opportunity for powerful customer retention campaigns across game offerings, devices and content providers.

This will be done in the form of a consolidated, community wide, Gron Digital branded, Loyalty and Affiliate Programme to recognise and endorse beneficial player behaviour over an extended period of time. The status of players will improve as they play and they will be promoted in relative rank thereby earning additional GRO tokens as their cumulative expenditure increases within the community. This will ensure that all operators within the GRO marketplace will benefit from the efforts of their peers and improve the recognition and popularity of the collective.

The obvious benefits of a generous loyalty and recognition programme is evident in resorts and casinos such as in Las Vegas where players are treated to aspirational service and accommodation upgrades and exclusive entertainment invitations depending on their importance to the casino owners. We foresee that the Gron Digital Loyalty and Affiliate Programme will become an enormously powerful tool for client attraction and absorption and, over time, will incorporate a number of strategic industry partners that will provide benefits and preferential treatment to promote their own services within the community. This is expected to result in a lucrative revenue stream for the business. Inevitably, by attracting players the loyalty program will also attract operators and suppliers to the exclusive market.

The powerful information gathered by these initiatives will be market leading but it is important that it does not lead to unintended consequences in a notoriously competitive industry. Therefore, while players' identities will be known and verified and they will maintain an individual presence on the Gron Digital platform, privacy will be protected, ownership of the information will not pass and it will not be held centrally, instead it will be cryptographically distributed across the blockchain. In addition, details of individual players will not be shared with operators and bookmakers without the express permission of the player, to avoid poaching of customers and identity fraud. Operators and suppliers will be rewarded for bringing new players into the community and will be given access to broad statistics, trends and data that can be utilised to improve their offering on a global basis.

In summary, player problems have existed for a long time and have worsened as the industry becomes more vulnerable to hackers and internet fraudsters. Traditional industry technologies have lacked the ability to solve the abovementioned problems, particularly the issue of trust and cost. Thus, parties in the industry rely on authoritative bodies and regulation to instil the trust, while costs incurred remain high for all parties. In order to overcome these concerns, Gron Digital offers a platform which caters for generic solutions to bring together all role players, who can harmoniously co-exist and share the revenues.

But in addition, we will provide a basket of new and ground-breaking specific player solutions to enhance the player experience and grow the universe of regular players. This will offer an innovative eco-system that is transparent and trustworthy, but also profitable and market leading.

5. Operator Solutions

Operators can be individuals or existing companies, providing games and betting products within the ambit of the law and within a particular jurisdiction, who intend to move to the Blockchain or become a start-up by initiating an operation on the Blockchain.

Existing operators who are looking to move to the Blockchain for the inherent benefits will still have regulations to comply with. As mentioned in the Player section above, our Smart Contracts and identity verification partners will accommodate various compliance criteria such as:

- License verification;
- Tax compliance;
- KYC and dispute resolution;
- Credit worthiness.

Gron Digital will provide a set of pre-built modules for operators that will cover all aspects of Gaming and Betting operations. Using our tools and framework, developers and companies will be able to assemble a selection of bolt-on components and build their own custom applications. Additionally, Gron Digital will encompass a provision for external development of modules by the community. Operators will be able to use our tools to assemble modules that will suit their needs. This will allow them to operate effectively on the Platform and open up the industry to fair competition, fostering higher standards and greater variety for the players.

5.1 Player Verification

In much the same way that there are unscrupulous operators, there are also dishonest players. These users, sometimes bots, take advantage of individual bonus schemes and rewards by creating fake profiles, duplicating profiles or stealing identities. In addition, hackers and cyber-thieves use player profiles to gain access to the platform in order to steal user information, credit card information and wallet details. As a result of this, operators frequently have to set up and staff separate departments to tackle abusive players. 'Sure bet' situations are the biggest problem that bookmakers are faced with in the modern sports betting online environment.

To address this without divulging the identity of individual players, Gron Digital will provide legitimate operators with confirmation that each profile represents a real person, in an unauthorised location, that is not underaged or otherwise precluded from playing. In addition, we will certify that the player is not a 'politically exposed person' or a 'person of interest' according to UN standards and is not suspected of money laundering or other fraudulent activity as defined by KYC and FICA standards.

This information will be invaluable to operators to minimise scams, reduce operating costs, and demonstrate that they are functioning ethically and responsibly within the ambit of the law.

5.2 Player Analytics

By being an active member of the Gron Digital token community and a subscriber to the service, operators will qualify for regular access to the results of statistical analysis generated from the gaming database. This information will be comprehensive and include segmental reporting of the profiles of players, their demographics (such as age and gender), user and betting patterns and behaviour, game preferences, average wallet sizes and much more. Notwithstanding this, individual operators will not be privy to confidential and commercially sensitive information related to their competitors and other operators in the market.

Accurate market intelligence and constant feedback able to establish trends over time as well as reactions to marketing campaigns, rewards and product offerings will stand the operators in good stead to compete effectively against non Gron Digital competitors and to tailor make and refine their product offerings to suit their client base, thereby maximising sales activity and profitability within the bounds of transparent RTP parameters. Operators will be able to use this information to streamline their advertising budgets, focus their efforts and avoid expensive or unsuccessful marketing campaigns.

This will be done in much the same way as Relationship Marketing Hubs such as Optimove, which are able to strategically understand their customers' needs and wants through predictive models, interact with these customers by creating emotionally intelligent communications across channels in real time thereby improving customer metrics to maximise conversions, customer spend and churn.

As the historical information grows and research techniques become more sophisticated, it is envisaged that Gron Digital will be in a position to perfect player profiling with a view to creating comparisons and commonalities in much the same way as Facebook Lookalike Audiences. This will afford operators innovative techniques for reaching new audiences who are more likely to be interested in their particular product offering.

5.3 Liability Insurance

The odds within a betting platform or game are carefully managed to produce a predictable return to player and sustainable house edge over the longer term. Operators are required to create and report on their Player's Liability Account which is effectively their surplus funds. The balance on this account is utilised by the operator to cover any pay-outs and winnings that arise. Online casinos, lotteries and sports betting platforms that have not been operating for a long time have not yet built up sufficient reserves in their Liability Account to cater for extraordinary eventualities. For instance, if a large jackpot, lottery pay-out or high stakes sports result were to happen, there is the possibility that the operator does not have sufficient funds to cover it and will be forced out of business.

To address this problem Gron Digital will provide new operators with pooled pay-out insurance which will be denominated in GRO but also credit enhanced. The pool will either be backed by fiat currency, underwritten by an AAA rated insurance company/cell captive or supported by creditworthy bankrollers. This insurance will attract a minimal premium from operators since the quantum of the bond will be actuarially calculated after taking into account collective operator liquid assets, the hedging effect of opposite and reversing positions and diversification.

At present, many fledgling operators are unable to afford this kind of risk cover in their individual capacity and therefore the mitigation that this service will bring will simultaneously reduce the cost of doing business as well as lower the barriers to entry into the gaming market thereby bolstering organic growth within the sector. In addition, the insurance will prevent player losses as a result of winnings pay-outs not being honoured.

5.4 Loyalty Programme and Incentives

It is important that all role players receive some economic incentive for their participation on our platform. To enable this, all transactions are based on our utility token called GRO. All bets are placed in GRO, all winnings are paid out in GRO as well as any kind of development, bonus, incentive and fee rewards are paid in GRO. Broad-based participation is crucial to the success of any economy. Several participants have been identified by the Gron Digital team in the creation of our eco-system. In the post MVP (Minimum Viable Product) stages we may find the need to include additional roles.

By incentivising the players, operators will benefit from the Gron Digital Loyalty and Affiliate Programme to attract and retain users with the marketplace. Operators will be able to dovetail their own incentives to compliment the global Loyalty and Affiliate Programme and will be in a position to forge specific alliances with

other operators or create white label operations with relative certainty that an existing customer base is available to support any new initiatives or expansion activities.

5.5 Distributed Application (Dapp) Developers

Development, in a broad sense, includes Gron Digital or any third-party contributor who develops a functional game or service available to our platform. This could be anything from a unique casino game to a pool betting management service. It could also include outsourced development of custom applications for operators who prefer professionals to build their systems for them.

Gron Digital developers will be available to the operating community to assist in interfacing Dapps with the platform and with suppliers, linking data, providing customisation and facilitating innovation.

6. Supplier Solutions

Suppliers comprise game manufacturers or developers that build the technology and systems underlying gaming products. Typically, they do not operate the products themselves but supply their functional software and data services to recognised gaming brands and white label operators in exchange for a share of the revenue. Front end platforms, which are customised for different user groups and regions, enter into contracts with suppliers to provide gaming functionality, odds, results and other services often via online servers or cloud solutions. CDP Gaming, in the Gron Digital stable, is an example of a gaming developer and supplier.

6.1 Operator Analytics

Suppliers and developers that are affiliated to the Gron Digital community and utilise GRO tokens to transact within marketplace, will also benefit from the market information generated by the platform in exchange for a subscription fee. By being privy to the usage trends and statistics of individual games across operators they will be able to gauge how well their products are received in the market, which products are trending and therefore which areas of R&D are likely to be the most successful.

6.2 Business Automation

The Gron Digital platform will facilitate the interface between suppliers and the operators that use their service in a seamless manner. Server or cloud-based transactions will be facilitated on the Gron Digital platform via the second layer network to create the seamless and efficient sharing of information. Given the revenue sharing arrangement, it is important to suppliers that operators report on their operations in an honest, accurate and timeous manner.

7. Other Role Player Solutions

The industry relies on several services in order to operate efficiently, these include the providers of:

- Fixtures and Events;
- Odds;
- Results
- Statistics;
- RNG;
- Line-makers.

7.1 Scouts & Resulters

Scouts are reward seekers. These are individuals who attend live events and provide the latest information in real time to the network. There can be many Scouts at one event, who all report results into the network. This is a critical part of the platform, they need to be from a reliable source, highly accurate, verifiable and received quickly.

Gron Digital will provide a mobile application with the functionality needed to perform these tasks. This Scouts App will feed individual results into the blockchain along with the Scouts Proof of Stake commitment. As soon as the information is verified by real time consensus on the chain, it will be distributed throughout the Gron Digital network to be accessed by all relevant operators and suppliers. Scouts and Resulters will then be rewarded through the GRO Loyalty Programme and will receive tokens that can be used within the marketplace or liquidated through a crypto exchange.

7.2 Affiliates and Referrers

Driving quality traffic to a Gaming and Betting website is key for a successful online operation. Well-structured affiliate programs can assist operators in achieving their sales goals. Common industry practice involves once off introduction fees, Gron Digital aims to deviate from this conventional system, by compensating Referrers within the Loyalty and Affiliate Programme. By linking this to the gaming database we will ensure continuity throughout the Life-Time-Value of the Players referred.

7.3 Bankroll and Risk Backers

Bankroll and Risk Backers can be individuals or entities acting bilaterally, or different parties combining resources into one Smart Contract. Their typical role is to provide the initial bounty used to subsidise games by coupling their utility tokens to a contract for a reward. They can back jackpot prizes or bonus offers on a big sporting event, lotteries and various other high stakes games. They are willing to expose themselves to high risk for a reward.

Because the Gron Digital marketplace allows for collaboration and pooling between various role players, it will be possible for backers to provide risk mitigation for a group of operators simultaneously, to bankroll the Gron Digital Liability Insurance pool, or cover high risk eventualities in innovative and flexible ways.

7.4 Regulators

The aim of a regulated Gaming and Betting industry is to ensure that all the role players involved in any gambling activities are brought within the boarder of the regulatory legal framework. Effective regulations ensure that the industry upholds national and internationally recognised standards of compliance within the economic sector.

Essentially, the purpose of legislation is to protect the role players and ensure operations are fair. The manifestation of such an industry as an online forum, as well as the increase of people's reliance on technology presents real concerns as cyber-crimes escalate. The regulatory legal framework has become increasingly stagnant as it struggles to keep up with the continuous advancement of technology. This leaves players vulnerable, damaging the reputation of the industry as a whole.

Regulatory bodies will benefit for participating in the Gron Digital platform. Existing regulated businesses may look to move to the Blockchain for the security and synergy it provides in relation to:

- Tax collection efforts accounts for the majority of their revenue and where most fraudulent activity can occur. Tax can be coded into our Smart Contract and paid directly to them without the need for manual intervention, costly audits and oversight procedures;
- All significant transactions will be recorded in the unchangeable online ledger offering guaranteed auditability and transparency;
- Digital signatures added to Smart Contracts by regulators can verify operators and their licenses for added assurance and security for players and regulators alike; and
- Smart Contracts can also have built-in dispute resolution terms, which reduce the need for regulatory intervention in conflict situations.

8. Technology

Gaming systems generate enormous volumes of transactions at high speed. In physical casinos, games are

autonomous, some are mechanical and others are physical. One of the challenges of online gaming platforms is to cater for these transactions in real time and across dispersed networks. As a result of hard coded limits on computations per block, the Ethereum Blockchain currently supports roughly 15 transactions per second, which is insufficient. As usership on the platform grows it is expected that capacity will constrain speeds even further. This, along with the energy requirements and therefore gas costs associated with transacting in the distributed ledger, makes it impossible for gaming transactions to be accommodated on the chain. There are numerous initiatives to improve scalability and processing authorisations on the Blockchain such as moving away from Proof of Work to Proof of Stake, Sharding and Multi-layer Noding such as Bitcoin's Lightning network.

Gron Digital will therefore develop its own scaling solution by processing most transactions off the chain through a separate platform. It is not necessary for every toss of a dice or spin of a wheel to be approved and therefore much of the calculations and data transfers will happen on operator computers, supplier servers or on gaming cloud servers. However, each party and bet will be assigned key labels or metadata which will allow for the accumulation of vast amounts of data that can be classified and analysed with artificial intelligence to create a database that tracks and describes the activity within the marketplace.

9. Gron Digital Economics

9.1 GRO Currency and Revenue Streams

The Gron Digital platform will be utilized in several ways when making transactions and providing services by means of GRO as the digital currency. Perhaps one can think of the GRO as a casino chip. GRO utility tokens will enable individuals and organizations to play any game available on the Platform, to place bets with a sportsbook or play the lottery. All potential winnings will be paid out in GRO, however this is not limited to the GRO acting as a mere currency. Depending on the adopted role in the eco-system, participants will earn GRO and be rewarded for the services they provide on the Platform.

The value proposition to Gron Digital as the custodian of the GRO economy is based on fees earned for services provided and capital appreciation of the GRO marketplace. Fees will be derived from Service Level Agreements between the parties and will be charged and recognised at regular intervals, either monthly or annually. Fees can be fixed or may fluctuate in proportion to the risk taken or complexity of the task being performed.

Gron Digital will earn fees by:

- Network-wide services (results, odds, RNG etc.);
- Continuous support improvements to the protocol;
- Development of modules and tools for Dapps;
- Subscription to the AI and database;
- GRO token appreciation due to increased scarcity over time;
- Revenue sharing from games supplied by Gron Digital subsidiaries;
- Partnerships and alliances within the Loyalty and Affiliate Programme.

9.2 Token Intrinsic Value and Realisation

The appreciation of the GRO token over time is attributable to the three main functions of the token itself being:

1. Currency – GRO is a mode of exchange or legal tender within the GRO marketplace;
2. Utility – GRO tokens entitle the holder to entertainment and the possibility of winning;
3. Investment – GRO is a store of value which is expected to increase over time.

These three functions have two separate methods of realisation or value disposal for the holders of GRO via two different exit strategies.

1. As a means of trade, GRO can be used to purchase products and services within the Gron Digital marketplace. Operators will be able to pay suppliers for the use of their products. Players will be able to

- place bets in games using tokens and other stakeholders will be rewarded for their contributions to the eco-system by means of the cryptocurrency;
2. After the ICO, the GRO token will be listed on all major crypto currency exchanges. Holders of GRO tokens will be able to easily and instantaneously convert their GRO into Bitcoin or Ethereum, any other Altcoin or exchange them for fiat currency. We estimate that growth in token value can be expected immediately after the ICO and should increase significantly within 6 months in line with the Project Development Roadmap.

9.3 GRO Valuation

The funds to be raised in the coin offering represent the Founders' best estimate of the maximum capital required to develop the gaming platform and roll it out to the existing betting industry in a sustainable way. This pool of available funds has been derived from the average historical price of Ethereum to ensure that sufficient funds are available to complete the project, but that late ICO entrants are not unduly diluted assuming ETH appreciative environment.

In order to demonstrate that this Use of Funds will result in significant value accretion within a reasonable timeframe, the forecasted ICO issue price was compared to the discounted future value per circulating token of the estimated utility value of the underlying ecosystem, which is a proxy for the size of the asset base or alternatively GRO's share of the Total Addressable Market. Given assumptions made in relation to the compound annual growth of online betting, Gron Digital's penetration of this market and the saturation over time (which produces a conservative adoption profile), it can be shown that the present value of a GRO in ten years' time, will be multiples (hundreds) of the initial offer price. This is true even if the GRO is assumed to remain sovereign bound initially and only expand to capture the global market after a period in excess of 10 years. In addition, the rate used to discount the future value reflects the deep risk-adjusted nature of the current cryptocurrency market which is assumed to be considerably more than a typical technology reliant VC start-up.

The above valuation methodology reflects the fact that, in its purest form, GRO will be a utility token as it will facilitate participation in the online gambling industry. However, GRO will also generate value in the form of fees from its functionality as a technology platform as well as its ability to reward and incentivize industry stakeholders. These parallel value streams will contribute the overall future benefit of the token in the form of stored value appreciation.

Quite apart from the quantitative characteristics of value mentioned above, from a qualitative perspective, intrinsic value can be shown particularly in relation to:

- the sheer size and growth potential of the online betting industry;
- the composition of the Gron Digital team and their advisers;
- the maturity of the existing group assets; and
- the 'value add' that the distributed Ethereum blockchain will bring to the mistrusted gambling industry.

10. Competitive Analysis

The Blockchain domain has become increasingly relevant since the launch of Bitcoin and other cryptocurrencies. The growing demand for the Blockchain adoption continues and will continue as new ideas enter the market daily. The Blockchain has the potential to benefit multiple industries but is particularly evident in the clear synergy between the Blockchain and the Gambling industry.

Gron Digital has several key advantages over its competitors. The founders of Gron Digital possess the relevant expertise in the industry:

- We are a legal Licensed Manufacturer and Service Provider to the Gaming Industry;
- We have the knowledge and hands-on experience in the Gaming and Betting domain;
- We have the IT infrastructure, necessary expertise, the management and the development team required to execute a project of this nature efficiently; and

- We have the Gambling and Betting certified products used in a production environment.

Gron Digital is not in the learning phase. We exhibit real-world experience, as well as existing functional systems and infrastructure which are currently servicing customers and the gaming industry. Explore the following listed sites to see the foundation from which Gron Digital will be launched off: www.cdpgaming.com www.yesplay.bet www.sintez.com

Our accelerated development timeline means our MVP blueprint for the incorporation of our current systems with the Blockchain is already underway.

11. Initial Coin Offering (ICO)

11.1 Token Distribution

The Gron Digital Platform will be based on its GRO utility token which will be listed via our Initial Coin Offering commencing on the 15th March 2018. A maximum of 950 000 000 (Nine Hundred and Fifty million) GRO utility tokens is anticipated to be issued on demand in the Pre-ICO and ICO phases.

60% of the issued GRO, maximum 570 000 000 (Five Hundred and Seventy million tokens), will be allocated to the Gron Digital Pre-ICO and ICO phases for public participation. Pre-ICO is scheduled to run for 49 days, followed by 4 rounds of ICO with each round lasting for up to 14 days. These tokens are issued by GRO.sol contract. After all 4 rounds (or if the ICO ceiling of 570 000 000 tokens is reached) the ICO will close.

N.B. No unsold tokens will be issued therefore there will be no need to burn tokens at the end of the ICO. Tokens are issued as contributions are made.

The GRO token is issued on demand as contribution takes place, i.e. as 0,6 GRO is swapped for either Ethereum (ETH), Bitcoin (BTC) or Bitcoin Cash (BCH). As this takes place an additional 0.4 GRO is issued and allocated to Founders, Team Incentives, and Initial Bank Roll fund, thus a total of 1 GRO is issued. The additional 40% is issued by the GROVesting.sol contract. Founders and Team members will be locked in and will only be able to realise the value of their tokens based on a vesting schedule described below.

It is important to note that the Founders are only allocated 12% of the 1 GRO mentioned above which is in line with industry norms. In addition, half of this vests with the Founders after 12 months and the other half after 24 months. This is also standard practice, ensures their commitment to the project and eliminates the possibility of tokens flooding the market leading to price depreciation. The other components of the 0.4 GRO are issued to Team members and Bonuses (12%) and the Initial Bank Roll (16%). Token issuances to the Team reduce the need for upfront cash to remunerate these individuals thereby

improving liquidity in the early phases of the start-up. This will have a dilution effect for other GRO holders after six months when these tokens vest but this is offset by the intrinsic value of the Token, given the payroll saving upfront.

Unlike other ICO's, gaming platforms have a significant initial float requirement to provide liquidity to the system for playing games on the Blockchain. This can be thought of as the Cashier's Float in a casino where a high volume and turnover of transactions take place. Most of these Bank Roll tokens circulate within the internal marketplace or are held in storage and therefore do not affect the value of GRO tokens on the exchanges.

11.2 Soft and Hard Caps

GRO is a Capped ICO meaning it will only raise the amount of funds required to meet its objectives and no more. GRO is priced at 0.0001 ETH (or 1 ETH to 10,000 GRO) with discounts for early adopters. Based on

project estimates, GRO Digital needs to raise a minimum of USD 1.1m failing which the project will not be viable and tokens sold to date will be returned and funds reimbursed to the contributors. This represents the ICO's Soft Cap.

Gron Digital aims to raise up to USD 8,500,000 which represents the Hard Cap and would be sufficient to develop, market and operate the platform on a sustainable basis. Depending on the average value of ETH over the ICO period, this would represent in the region of 85 to 100 million GRO tokens sold to the public and an additional 56 to 66 million for Bonuses, Incentives and the Bank Roll.

11.3 Issuance Discounts and Timetable

Pre-ICO:

14,000 GRO will be sold for 1 ETH, this includes the 40% bonus allocation to participants in this round. The round will run for forty-nine days or until the ceiling is reached. The team has made significant progress in allocating these tokens to industry players, alliance partners and platform users. Revision: Now Sold Out - \$1,2 million raised

First Round:

13,000 GRO will be sold for 1 ETH, this includes the 30% bonus allocation to participants in this round. The round will run for fourteen days or until the ceiling is reached.

Second Round:

12,000 GRO will be sold for 1 ETH, this includes the 20% bonus allocation to participants in this round. The round will run for fourteen days or until the ceiling is reached.

Third Round:

11,000 GRO will be sold for 1 ETH, this includes the 10% bonus allocation to participants in this round. The round will run for fourteen days or until the ceiling is reached.

Fourth Round:

10,000 GRO will be sold for 1 ETH. This round will run for fourteen days or until the ceiling is reached.

12 Development Roadmap

12.1 2012

- Server Based Casino Games Platform was Launched in the South American land-based market. 158 Video Slots and 12 Table Games

12.2 2014

- Gambling Manufacturer's License was issued by Western Cape Gambling and Racing Board
- Sports Betting License was issued by Western Cape Gambling and Racing Board
- Betfinity Wagering Record System was certified by BMM Gaming Testlab
- The Letter of Compliance was issued by the SA Gaming Authorities
- Betting and Lotto Platform was Launched

12.3 2016

- Blockchain and Smart Contracts were identified as most suitable and logical approach in Gambling and Betting
- R&D Blockchain application in gaming
- Sports Betting and Lotto prototypes were developed

12.4 2017

- Q2 – The decision to ICO was taken. Preparation for ICO
- Q3 – Consulting with advisors and legal team

12.5 2018

Q1

- pre-ICO starts 9 January 2018
- ICO starts 15 March 2018
- Development of Gron Digital Platform

Q2

- Implementation of existing Sports Betting Application on Gron Digital Platform, where GRO is the utility token
- MVP of mobile and desktop Sports Betting Applications
- Application for Regulators to access and audit all gaming transactions. Provide mechanism for issuing and verification of Licenses
- Listing GRO on Major Exchanges
- Results Providers Integration
- Referrals and Affiliates Program

Q3

- MVP of mobile and desktop Game of Skills
- MVP of mobile and desktop Lottery Application

Q4

- Desktop Casino Application. 20+ Video Slots, 4 Video Poker, Roulette, Black Jack, Texas Hold'em, Baccarat

13 Conclusion

Gron Digital, together with other early adopters, seeks to radically change the way in which people transact and exchange value for goods and services online. We are firm believers in the power of the Blockchain and in Ethereum's protocol and moreover we are confident that our specific knowledge, experience and capacity within the gaming industry stands us in good stead to become the market leading Gaming and Betting Platform. Through innovation and foresight, we will disrupt the online betting market in a meaningful and positive way and in doing so establish a more responsible and sustainable gaming ecosystem.

Considering recent history and the mismanagement of corporations and institutions that have plagued the functioning and trust of society, we are excited to be a contributor to a more just and fair gaming ecosystem that will counteract monopolistic and centralised structures. The Blockchain is the ideal solution to address the fundamental issues of transparency and trust while at the same time improving our understanding of the players and operators that contribute to its success. The future of online Gaming and Betting has never looked so extraordinary and promising. Gron Digital hope to build a winning Gaming Platform which merges and connects various parties within this lucrative industry in order to ensure continuous growth and prosperity for all.

The value proposition, offered to the industry through our utility tokens and Protocol, will provide the industry with an all-encompassing solution to various issues faced by the operators, players developers and regulators today. Through this detailed conceptual paper, we believe that our expertise and particular attention to the needs of the industry serve as powerful tools which enable us to bring this revolutionary Platform to the Gaming and Betting world.

Thank you.

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