

WhitePaperV1.3

# Mobile Radio

## WhitePaper

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# 1. Current situation of traditional media industry

## Development trend of media industry

In a narrow sense, traditional media is the traditional way of mass communication, that is, the media that regularly releases information to the public or provides education and entertainment platform through a certain mechanical device, mainly including newspapers and magazines, outdoor, communication, radio, television and the network other than we media.

Traditional media mainly include sound, image, TV, radio and so on, which has the limitation of time and space. However, multimedia integrates sound, picture and animation into one. What's more, it solves the limitation of time and space to a certain extent. But multimedia can not replace traditional media.

## **Analysis of the bottleneck of traditional media industry**

(1) In this paper. The development of network media depends on traditional media

Network media itself has its own shortcomings, which are mainly limited by broadband and lack of information sources, which can be supplemented from traditional media. On the one hand, TV media have cable TV networks in all directions. They have the realistic possibility of building a broadband high-speed transmission network. This is the basis of the rise of a new round of Internet revolution. It will greatly improve the network transmission speed, and combine the advantages of network and television, creating conditions for the network to enter thousands of households. On the other hand, traditional media is rich in information resources, which can provide fresh content and materials for network media. Traditional media has scattered information collection network, experienced information collection and processing personnel, rich and colorful information database, which have important value in the "content-based" network media competition. With the help of information resources of traditional media, network media can expand information collection channels and continuously obtain the most valuable information "living water" in various fields in the world. In addition, traditional media also has abundant brand resources. Some famous news organizations have already established good communication images in the hearts of the audience. If the network media and these organizations are united, they can make use of these famous brand effect can improve its authority and credibility, restrain the falsity and invalidity of network information, prevent the invasion of information rubbish and attract the patronage of netizens.

(2) In this paper. Under the promotion of network media, traditional media constantly improve themselves and move towards perfection

Faced with the challenge of many advantages of network media, traditional media seems to be lack of confidence. Therefore, it is urgent for traditional media to adjust mechanism and self-improvement. Network media brings challenges to traditional media, but also provides unprecedented opportunities for the development of traditional media. Traditional media actively use network advantages to improve themselves. For example, we should reform the news mechanism, vigorously develop multimedia news, develop online on-demand news, online image news, and even experiment with online audio-visual news, so as to connect with the future information superhighway. Many multimedia have joined hands with network media to obtain an unprecedented new form of network version or electronic version. At present, network media and traditional media can promote and complement each other. Rupert Murdoch, a media giant, delivered a speech to radio groups in Singapore, saying that newspapers, television and films will be able to withstand the challenges from the Internet media. "The proliferation of new media doesn't just sound the death knell of old media. It turns out that's not the case. All these industries are doing well," he said."

## **The current situation of media industry in Australia**

Nine Entertainment (ASX: NEC) and Fairfax (ASX: FXJ), two major media giants in Australia, agreed to carry out a "historical merger" in the form of cash and equity to jointly build a company worth a \$4.2 billion, which will certainly reshape the territory of the Australian media industry. Diversified business development

Although Australia is vast and sparsely populated, its media industry is extremely developed. The famous former News Corporation (divided into 21st Century Fox company and new news group) was born in Australia.

In Australia, the main media platforms are as follows:

ABC: the national public broadcaster in Australia. It is funded by the government to provide radio, television and Internet services to Australia and the world. Radio Australia is its international broadcasting and network service department.

Seven Network: headquartered in Melbourne, the TV network covers the second largest population at present. In 2007, the channel share of seven network ranked first, followed by No. 9 television network and No. 10 television network.

Ninetwork belongs to the "nine entertainment" group. It has the right to broadcast sports events such as the Olympic Games. It also takes the lead in news programs, including the broadcasting rights of Australian Open and Cricket World Cup.

Network Ten: TV10 is one of the five free television broadcasting networks in Australia. It has TV stations operated by TV networks in Sydney, Melbourne, Brisbane, Adelaide and Perth, and covers all parts of the country through satellite channels. Acquired by CBS in 2017.

Special broadcasting service (SBS), also known as special broadcasting service, is one of the public broadcasting companies in Australia. It mainly broadcasts programs for ethnic minorities in Australia, with half of English programs and half of minority language programs. Among them, there are Mandarin and Cantonese channels.

Fairfax group, for example, owns newspapers and radio stations with great influence in Australia, such as the Sydney Morning Herald, the Australian Financial Review and the century news, and radio stations such as magic 882 and 3aw693, as well as domain, one of the most famous real estate information platforms in Australia. In New Zealand, two major life information media, stuff and herald, are also used.

## **The problem solving direction of modern media**

At present, a new round of information technology development and growth, such as blockchain, big data, Internet of things, Cloud ComputingIt's quite mature. 5g, in particular, is an absolute innovation for traditional media or traditional Internet. Their advantages can solve the bottleneck existing in all walks of life. On the one hand, they can tolerate, promote and develop together. On the one hand, with regard to the impact of the global epidemic, Internet media has become the most extensive, profound and direct information disseminator that will have the most extensive, profound and direct impact on human culture, economy and life in the 21st century. How to transform the existing media into "multimedia, multi-channel, and diversified" is what mobile radio wants to do.

## **The impact of the rise of blockchain technology on media industry**

The first newspaper appeared in newspapers and the first advertisement appeared on TV, which represented the emergence of the media industry in the real sense. From the first printing media as the ultimate source of news and information, to now the Internet as the main medium of communication has become the mainstream, although the Internet media has replaced the old-fashioned role of broadcasting to transmit information. But in essence, the original offline has moved to online.

At present, the search engines on the market are: Google, Baidu, social network: Facebook and twitter release news faster than traditional media. In addition, these new media sites are not only fast, but also global, reaching every corner of our universe.

Blockchain technology can solve some difficulties faced by traditional media and online media

A good example is Facebook, which, according to statista, is the largest social network, receiving more than 2.4 billion active users a month. The Internet has also snatched a lot of advertising revenue from traditional media.

The biggest obstacle to any media player, whether traditional or online, is to recognize the best strategy for monetizing content, at a time when most other channels like Google are free.



A recent report pointed out that blockchain technology can solve the obstacles faced by traditional media and online media. Andrea Dutra, andranik tumanian and Isabel Wilp, co authors of the report "blockchain is changing the way media and entertainment companies compete," say that blockchains are introducing innovative business models that monetize content.

At the heart of the blockchain is a permanent data ledger that is shared among the participants of the blockchain. Because blockchain technology is decentralized, immutable and traceable, there are many compelling use cases in the media industry.

The report found that most start-ups are adopting blockchain in innovative ways, including micro payment, creating smart contracts and smart real estate.

#### **payment**

Cryptocurrency does not require any agent to process transactions. Therefore, they are very suitable for micro payment, enabling users to conduct small amount digital cash transactions at a lower cost. That's why more and more blockchain startups are using cryptocurrency to reward content creators such as music producers and article authors.

#### **Smart contract**

One of the most successful innovations in the blockchain is the smart contract developed by Ethereum. Experts believe that smart contracts are another way to monetize content. Smart contracts enable parties to negotiate reliably without any third party intervention.

Once the pre negotiated terms are determined, the smart contract will automatically execute the transaction.

### **Time stamp**

In a time when intellectual property is anthropomorphic and piracy is growing, blockchain can help confirm content ownership. Timestamps are part of smart property.

With this innovation, we can see who holds specific data at any time. Generally, timestamps are a valuable device for photographers.

With the widespread adoption of blockchain, traditional media channels, as well as blockchain start-ups, are accelerating the monetization of content. There they are creating new business models.

With the friction generated by these models, they may have a subversive impact and completely change the media landscape. At the same time, the above-mentioned blockchain can also be used to maintain traditional media channels.

## 2. Summary of mobile radio

### **Mobile radio ecological industry chain**

Mobile Radio ecological industrial chain, based on the underlying technology of blockchain, combines with new generation information technologies such as big data, artificial intelligence and 5g, aims to create a decentralized platform to coordinate the relationship between content creators, advertisers and users, so that users can get fair and fair returns while creating value. At the same time, it uses smart contract technology to reconstruct and apply global new payment systemThe application includes shopping mall platform, live broadcast reward and promotion of consumption.

### **Ecological advantages of mobile radio**

#### **1. quality experience**

Distributed data storage, data aggregation of the whole network, and simultaneous technological innovation, especially DAPP technology is mature;

#### **2. Large user base**

With a strong foundation of market promotion, with the development of the platform, the number of users gradually increases, and the value of platform token will be greatly improved;

#### **3. Powerful data support**

Through the strategic data service section, we can provide customized services for users, and improve users' income with full ecological coverage.

## 3. Mobile radio technologies

### CDN

At present, there are a large number of servers on the Internet. Only a few of these servers are basically saturated, and most of them are still in unsaturated state. Moreover, even the servers with high resource utilization ratio have different loads at different times of the day. For example, game servers are busy at night and idle during the day, while some web servers are on the contrary. In addition, there are a large number of idle servers and bandwidth resources that have not been sold out in the IDC room, so these idle computing and bandwidth resources can not produce any value, but also a large number of personal computers and smart phones. In most cases, the resources are idle, and the reactivation of idle devices can obtain a large number of valuable resources.

#### Design concept:

MR provides users with a new customized entertainment content aggregation and service platform, as well as the most perfect surrounding ecology in the industry through deep integration of content. All functions are complete, and its full name is content delivery network, that is, content distribution network. It is a virtual network composed of nodes and servers distributed in different areas on the basis of Internet. The basic idea is to avoid the bottlenecks and links that may affect the speed and stability of data transmission on the Internet, so as to make the content transmission faster and more stable. In a simple and popular way, CDN can copy the content of remote server to the nearby node server, so that users can obtain the required content nearby, solve the congestion of Internet network, and improve the response speed of users to visit the website.

The history of the Internet shows that a high availability and high concurrency network is almost impossible to be a disordered and centreless

network. In fact, the mainstream Internet applications are inseparable from the support of CDN.

The applications naturally carried by MR ecology have high requirements for high availability and high concurrency of the network. Therefore, we introduce CDN into idle equipment and MR. After the integration of CDN, MR and idle equipment, MR will inevitably form polycentricity. Therefore, we construct MR based on polycentricity. In view of the multicentricity of MR, super node mechanism and integrity proof mechanism are combined to propose MR consensus. In the traditional dpos consensus mechanism, super nodes are generated by equity voting. Its core idea is that the owner of blockchain network equity is bound to be the biggest maintainer of network interests, so it should also obtain the maximum network interests. In MR, CDN is the biggest maintainer of the network, which must become the super node of the network and share the benefits of network growth. Therefore, in MR, CDN provider is a natural super node. Every time a super node signs a MR block, it will get a certain amount of MR reward. The reward amount decreases with the increase of CDN nodes in the whole network to avoid MR inflation.

## Proof of completeness

MR and idle devices are leaf nodes of CDN, which contribute CPU, GPU, storage and bandwidth resources to the network, and get corresponding MR rewards or penalties. Therefore, MR and idle equipment need to prove to MR that they provide corresponding resources. We use integrity proof technology to achieve this goal.

In this project, we use the data integrity proof method based on skip table. We define the stagnation element as existing in  $S_{(i-1)}$  but not exist with  $S_{The}$  high tower element is, that is, existing in  $S_{(i-1)}$  also exists in  $S_{In}$  addition,  $elem(V)$  is defined as the element existing in node  $V$ , and  $down(V)$  is  $s_{The}$  node under node  $V$  in  $(i-1)$ ;  $right(V)$  is  $s_{The}$  verification procedure of the node on the right side of node  $V$  in  $I$  is set

As follows:

The label value  $f(V)$  is calculated as follows:

Define  $w = right(V)$ ,  $u = down(V)$ , when  $right(V) = null$ , define  $f(V) = 0$

Then:

When  $u = \text{null}$ , that is,  $V$  is on so

- a) When  $w$  is a high tower node,  $f(V) = H(\text{elem}(V), \text{elem}(W))$ ;
- b) When  $w$  is stationary,  $f(V) = H(\text{elem}(V), f(W))$ .

When  $u$  is not equal to null:

- a) When  $w$  is a high tower node,  $f(V) = f(U)$ ;
- b) When  $w$  is a dead node,  $f(V) = H(f(U), f(W))$ .

## Smart contract

The smart contract based on blockchain includes transaction processing and saving mechanism, as well as a complete state mechanism, which is used to accept and process various smart contracts. Moreover, the transaction saving and state processing are completed on the blockchain. Transactions mainly contain data to be sent; events are the description of the data. After the transaction and event information is passed into the smart contract, the resource status in the contract resource collection will be updated, Then trigger the smart contract to judge the state mechanism. If the triggering conditions of one or several actions in the automatic state mechanism are satisfied, The state mechanism selects the contract action automatically according to the preset information. The construction and implementation of smart contract based on blockchain can be divided into the following steps:

1. Multiple users participate in the formulation of a smart contract;
2. Contracts are spread through P2P networks and stored in blockchain;
3. The smart contract built by blockchain is executed automatically;

MR is cloud computing built on MR. MR is smoothly accepting the mainstream applications of cloud services, including cloud storage and cloud mining, and will further expand to the fields of games, entertainment, copyright, live broadcast, media and so on.

## MR cloud storage

MR cloud computing is a pay as you go model, which provides available, convenient and on-demand network access, and enters the configurable

computing resource sharing pool (resources include: network, server, storage, application software, services, etc.), these resources can be quickly provided with little management work or little interaction with service providers.

MR is intelligent enough to be able to predict your needs in real time according to your location, time, preferences and other information and data. In this new mode, information search will be born for you to help you think. No matter what device you use, no matter what kind of on-demand service you need, you will get a consistent and consistent ultimate experience.

MR cloud service of blockchain technology is used to solve the information security, data reliability and easy deletion and modification of traditional cloud, and super nodes are used to ensure the concurrency number, truly solve the security of data providers, and greatly reduce the cost of users.

Different from the existing cloud storage schemes, MR is a decentralized shared storage platform, in which nodes rent storage space with each other. Because the storage space in each node is idle space, the marginal cost can be considered as close to zero. Therefore, the cost of MR shared storage is much lower than that of cloud storage.

The lease of storage is based on the smart contract on MR. By forming a smart contract, the storage provider (the storage node) agrees to store customer data and periodically proves that they can continue to provide storage services until the contract expires. Storage providers can be rewarded by submitting proof of integrity, but failure of proof will be punished accordingly. MR ensures the fairness and accuracy of the smart contract. Customers don't need to verify the contract. They just need to upload data, and the rest is left to MR.

POI is the proof of integrity, which is used to prove that the storage provider completely stores the data agreed in the smart contract. POI is mainly based on hash tree to form authentication tree and submit it to verification node. We divide the data submitted by customers into small data blocks and calculate the hash value of data blocks respectively. Then the adjacent two hashes are combined into a string, and the hash of the string is calculated. Each two hashes are combined to get a sub hash. If the hash value is calculated upward, it will eventually form an upside down tree. At this position of the tree root, there will be a root hash in this generation. The hash tree corresponding to the user data is stored in the smart contract.

## **Reward and punishment**

The smart contract between the customer and the storage provider is maintained by the CDN node. The work of CDN node to maintain smart contract includes:

Obtain the POI regularly submitted by MR terminal to judge the validity of POI. If the POI is valid, it will not be processed. If the POI fails, it will be started

The counter judges the failure times of POI;

Once the POI failure exceeds the threshold, the CDN node looks for a new MR terminal to backup the storage content and create a new smart contract;

After the end of the smart contract, MR reward is given to the effective POI and MR penalty is given to the invalid POI.

## **MR cloud storage highlights**

MR cloud storage abandons the non centralized thinking of storj and SIA, and introduces CDN to form a multi centralized structure, providing the user experience equivalent to centralized cloud storage. In order to adapt to the multi center architecture, MR cloud storage proposed a MR consensus that integrates dpos super node mechanism and integrity proof mechanism. By activating idle equipment and optimizing the distributed architecture, MR cloud storage is far lower than the cost of centralized cloud storage, providing equivalent user experience and strong market competitiveness.



## Erasure coding

Due to the unreliability of idle equipment, equipment disconnection occurs from time to time. In order to avoid the normal acquisition of user data due to equipment disconnection, redundant storage of stored data is necessary. However, if the data is only processed by multi backup, according to the Xiangnong theorem, the storage efficiency is too low, so the erasure code technology is introduced. When the erasure code technology is applied to cloud storage, the user file is first divided into  $x + 1$  data segments with the same size and multiple of  $K$  (the insufficient data is supplemented with 0), and then each data segment is encoded with erasure code. When storing the data block  $D_i$  and check block  $D_j$  after coding, they are stored in different file segments according to the subscript, such as the number of files. According to the data block  $d_0$  of segment 0 is stored in fragment 0,  $D_1$  is stored in fragment 1, data block  $d_0$  of segment 1 is stored in fragment 0,  $D_1$  is stored in partition 1, and so on.

Each file fragment obtained by the fragmentation mechanism is composed of data blocks and check blocks of different parts of the file. The file information in the fragmentation is decentralized, that is, a single file partition will not leak the user data information, which ensures that even if the third party including the storage node provider obtains the partition stored on a single node illegally, it can not obtain the user file content, The privacy of data in cloud storage is guaranteed reliably. At the same time, according to the properties of Vandermonde matrix, the system can completely recover the user's original files as long as  $K$  pieces can be used normally. This means that user data will not be lost even if some partitions are maliciously deleted or when one or more storage nodes in the system fail. This feature improves the fault tolerance and redundancy of cloud storage system, and provides guarantee for the reliability and integrity of data. In addition, when using RS erasure code to restore user files, at least  $k$  download nodes need to be connected. The fewer download nodes are connected, the faster the download speed and the shorter the download delay. The advantage of this algorithm is that when the network packet loss or error occurs, the download node does not need to use the retransmission mechanism, only needs to re select other nodes to complete the download task.

## 4. MR helps the live broadcasting industry develop vigorously

In addition, it has the advantages of attracting users with high-quality blockchain, that is, using blockchain to attract users with a series of advantages, such as fairness, fairness, and so on. The community mode of everyone's participation makes the live broadcast platform more cohesive and can produce more economic benefits. MR super miner enables live broadcasting, so that the live broadcast platform can share the following advantages:

First of all, in the traditional live broadcast, only half of the money that users pay out of their own pocket to reward the anchor can reach the anchor's hand at most, and the other part is divided by the platform. This undoubtedly makes the hearts of countless users discount, which is obviously unreasonable. MR super mining machine blockchain live broadcast is through point-to-point transactions, and users can directly give rewards to the anchor without passing through a center. In the live broadcast, the revenue from users' reward or question is all owned by the host.

Secondly, MR super miner blockchain live broadcast innovates the consumption mode of traditional live broadcast. Users can get rewards by watching the live broadcast, rewarding the anchor and participating in discussions. This means that users are "consuming" and "making money" at the same time. They can make money by watching and participating in discussions without money, win returns, and buy services and products in the ecosystem.

Thirdly, in the traditional live broadcast platform, there are many cases of identity fraud or fraud as the anchor, which brings about the economic loss of users and the reputation loss of the platform. The distributed ledger technology of MR super mining machine blockchain makes the above problems well solved. Blockchain can control information, avoid duplication, encrypt user information, and make personal privacy more secure.

MR super mining machine enables live broadcasting, which has many advantages, such as enhanced network tamper resistance, no downtime due to the server unable to carry the overload traffic; free speech, the opinions and opinions expressed will not be deleted; the community ecology of the live broadcast platform is more balanced and stable, not only content contributors can make profits, but users can also get benefit returns and put an end to it. The platform analyzes the unhealthy state of accurate advertising by analyzing user behavior; user information is encrypted and confidential, and personal privacy is more secure; content creators can get corresponding value returns, and the reward and punishment mechanism helps the platform constrain user behavior. MR super miner relies on blockchain technology, abandons the pain points of traditional live broadcasting industry, and reshapes the new business form of online Red economy!

At present, the arrival of the mobile Internet era has spawned many emerging industries, and the short video derived from the mobile Internet seems to have become the representative of this era. Take the fast hand as an example. At present, there are more than 200 million active users in the Kwai Kwai, and more than fifteen million original short videos are generated every day, and 20 billion video stocks are available.

Because many short video platforms still follow the operation mode of the previous content platform, there is a sharp gap between content producers and users, which leads to the phenomenon that only a few people's voices can be heard by most people. The platform has the right to speak, the wealth is concentrated in the platform, and it is difficult for the content creators to realize the income through the content. However, the Matthew effect is obvious in the short video. It is difficult for the new high-quality content creators to emerge suddenly, and the high-quality content is difficult to be found, which stifles the motivation of the content creators. These problems become the problems to be solved in the future development of short video.

The problems of short video seem to be unsolved, but with the introduction of national policies, blockchain has become an important breakthrough in independent innovation of core technology. People find that blockchain and short video have a high degree of fit, and the characteristics of blockchain technology seem to fundamentally solve the various problems faced by short-term video, which makes blockchain + short video + social networking a new wind.

Under the wind outlet, MR mainly creates the ecosystem on the chain by focusing on short video, enabling the strong connection between live broadcast and the real economy platform, and motivates all participants in the short video ecosystem with the double pass economic model, so as to make people's life more convenient, and help offline businesses solve the problems of customer expansion and retention. In addition, MR has opened up social secret chat, which ensures the security of people's privacy. MR perfectly combines blockchain with short video live broadcast and secret chat social networking to form a complete ecological closed loop. This move also points out the development direction of blockchain + short video + secret chat for the industry.

## 5. 5G brings breakthrough to the existing media live broadcasting industry

However, the live broadcasting technology can not bring its full potential into full play. Due to the high requirements of network bandwidth and stability, and the huge consumption of traffic, both the host and the audience mainly rely on fixed broadband to use live broadcast. Even if you use smart phones and other mobile terminals, you can't do without Wi Fi networks connected to fixed broadband.

The current 4G network, in terms of bandwidth, has reached the needs of general live video, but its reliability, capacity and price still can not meet the needs of live video. First of all, 4G network reliability is insufficient. Due to obstacles, signal handover between base stations and other factors, 4G network has weak and unstable signal problems in indoor and base station junction areas. Live broadcasting is a kind of continuous and real-time transmission, and the signal is unstable. On the one hand, it makes users unable to use live broadcasting through 4G in some areas, and on the other hand, it affects the effect of users using live broadcasting in mobile. Secondly, 4G network capacity is insufficient. The current user capacity and traffic capacity of 4G network is difficult to meet the needs of people using live broadcast in shopping malls, sports venues, concerts and other scenes. Thirdly, the current 4G network price is difficult to adapt to the demand of live broadcast. Video live broadcasting is a typical large traffic application, and the traffic consumption per minute is more than 100m. Under the current 4G traffic charging mode with no speed limit, most users can not afford the high traffic cost brought by live broadcast. The unlimited traffic package will limit the rate, and users can't normally use the live broadcast in the speed limit state.

The dependence on fixed Internet and Wi Fi has severely restricted the live broadcasting industry from the aspects of hosts and users. From the perspective of the host, there are two limitations to the current network

conditions. First, live broadcast activities are limited to the more monotonous indoor scenes such as families and companies. The anchor can not get out of the indoor environment, so the live broadcast content mainly focuses on entertainment and life talents suitable for indoor environment, and the content homogenization of each mobile live broadcast platform is serious. Second, the live time of the anchor is limited. If you can't get rid of the dependence on fixed Internet and Wi-Fi, then the anchor can only live in the indoor environment. Once you go out, or you can't use Wi-Fi for other reasons, it's difficult to live. This limits the time of the anchor to a certain extent. From the audience's point of view, the current network conditions limit their viewing scenes. Most of the behavior of watching live broadcasting takes place in the home environment relying on fixed broadband. In scenarios where Wi-Fi is not available, most users will not watch live. The main effect of this situation is to limit the duration of live viewing.

In the future, 80% of personal consumer network traffic and more than 70% of industry application traffic will be video data. The development of 5G, blockchain, UHD and other emerging technologies will bring revolutionary changes to the production and transmission links of audio-visual content, and the network information security will also be improved. Therefore, mobile 5G media + application lab has been committed to the research of video solutions under the integration of 5G and blockchain. This time, through the development of 5G + VR blockchain panoramic dynamic jump technology, the VR video panorama is successfully linked with the trading platform, and the original 5G + VR blockchain panoramic video technology is upgraded to the application dimension. With the popularity of live broadcasting and goods, this technology will open up a new market with the support of China Mobile 5G network.

After several years of high-speed development, online video broadcast based on network live platform has become an important branch of Internet communication. The main body of the industry has launched a variety of measures, trying to push the industry back into the fast lane, but the effect is not good. The live broadcasting industry seems to have encountered a "ceiling". As a major progress of Internet basic technology, 5G will have a significant impact on many branches of the Internet industry.

### **5g will break the network constraints faced by live broadcasting**

5g network is designed for the shortage of 4G network and new Internet application in the future, with a series of excellent performance. The radio communication bureau of the International Telecommunication Union (ITU) defines three typical service scenarios of 5g: enhanced mobile broadband (embB), large-scale machine class communication (mmtc) and ultra reliable low delay communication (ulllc). The original intention of this design determines that 5g network has the characteristics of high-speed, large capacity, super reliability and low delay, among which the first three characteristics have a significant role in promoting live broadcasting. In terms of speed, the transmission rate of 5g network will reach 10-100 times that of 4G. The user experience rate can reach 100m-1gbps. The high speed of 5g mobile network can completely solve the problem of stuck in standard definition and high definition live broadcasting. In terms of capacity, the maximum traffic density of 5g is 10 TBPs / km<sup>2</sup>, 100 times of 4G; the maximum connection density is 1 million / km<sup>2</sup>, which is 10 times of 4G. Such a high capacity can ensure that users can use live service smoothly in crowded areas such as sports venues, concerts, shopping malls and transportation hubs. In terms of reliability, 5g adopts a series of new technologies, which greatly improves the reliability of the network. The anti-interference ability of the network has been greatly improved. It can be used in indoor, outdoor and high-speed mobile vehicles. It also solves the interference of electromagnetic wave and obstacles on network signal, and the mutual interference of signals between close users.

In addition to technical factors, the changes of 5g network traffic charges will also have an important impact on the live broadcast industry. While the bandwidth of 5g network is greatly improved, the unit traffic cost will also be greatly reduced, thus creating conditions for reducing the traffic price. To sum up, the excellent performance of 5g will break the limitation of current network conditions for live broadcast, and the decline of its traffic price provides a realistic possibility for live broadcast users to use 5g network. To be sure, 5g will make live broadcasting free from the shackles of fixed network and Wi Fi.

## 5g brings changes to live broadcasting industry

### (1) Live content will be diversified

1. The live broadcast will go out of the indoor environment. After 5g is put into commercial use, due to its high-speed, large capacity, ultra reliable technical characteristics and the sharp drop in tariff, it will provide sufficient conditions for the anchor to carry out long-term live broadcast in various scenes, such as courtyard, street, park, shopping mall, sports venue, concert, tourist attraction, transportation vehicle and so on. At that time, a large number of anchors will go out of their homes and offices to have a broader creative space, and the live broadcast content will also be greatly enriched. The pan entertainment live broadcast platform will develop from the current show live broadcast to a wide range of vertical subdivision fields, and new content forms will emerge in large numbers.

2. Live broadcast of large-scale activities will become a highlight. 5g network has the advantages of high speed, super stability and large capacity, which will make the live video broadcast of large-scale activities easy. At present, the technology of TV live broadcast relying on special satellite or ground microwave communication system is very complicated and the cost is extremely high. In contrast, the online live broadcast based on 5g network is simple and convenient, and the cost is very small. Due to the unique content value and huge attraction of concerts and sports competitions, after 5g is put into commercial use, there will be a large number of anchors involved in the live broadcast of such activities. In addition to the form of single anchor live broadcast, multi anchor cooperation mode may become the norm. Compared with today's live TV, this mode can easily deploy more seats, its content will be more rich, and the audience will have more choices. Due to the limitation of channel resources and the cost of live broadcasting, the proportion of live broadcasting is very small in the field of television. In the online live broadcast, a live room is equivalent to a channel of TV, with abundant resources and low cost, so more large-scale activities will be live broadcast online. The combination of the charm of large-scale activities and the technical advantages of live broadcasting under 5g conditions will



make the live broadcast of large-scale activities a bright spot in the field of live broadcasting in the future.

3. The live broadcast of E-sports will break out further. E-sports live broadcasting has become an important subdivision field of live broadcasting. 5g high-speed rate and high reliability will bring a good game experience for E-sports live broadcast, which will further break out in the mobile terminal.

4. Cross domain live broadcasting will become a major trend. 5g provides technical and realistic possibilities for live broadcasting in various scenarios, which will promote the deep integration of live broadcasting with sports, education, news, e-commerce, medical and other fields, and form a new ecological mode of live broadcasting. At that time, the establishment of relevant cross domain integration channels within the live broadcast platform, and the integration and development of live broadcast platform and related types of platforms will probably become the trend.

## **(2) The audience experience will be improved in all aspects**

5g will promote the quality of live sound painting significantly. 5g high-speed rate can be competent for 4K, even 8K Ultra HD video live needs. After 5g commercial use, the picture definition of live video will be improved rapidly. On the basis of meeting the basic requirement of fluency, the audio-visual experience of users will be further improved. VR (virtual reality) live broadcasting is expected to become a reality. The application of VR in live broadcast will make the audience get the feeling of face-to-face with the anchor and the close contact with the host and his environment. This will significantly improve the live user experience. 5g will accelerate the popularization of VR, making the use of VR more convenient and cheaper. Once VR is combined with live broadcast, live users will get a new sensory enjoyment and interactive experience.

**(3) The form of interaction will be further expanded**

Interactivity is a major feature of Internet media. In the current live broadcast, the interaction is mainly manifested in the relatively simple form of comments, barrage and reward between the host and the audience. 5g will deepen and expand the interactive function of live broadcast. The powerful cloud computing capability spawned by 5g network will support "face-to-face" two-way video interaction and improve audience participation. At present, the application of hardware equipment such as visual cloud service and mobile live broadcast machine has realized two-way video interaction to a certain extent, but the premise is to use commercial integrated communication network (Butel), which limits video interaction to the field of commercial video communication, and can not meet the video needs of ordinary users. 5g as a pervasive network will make two-way video interaction get rid of the dependence on Butel and become a service that ordinary users can enjoy. At that time, the audience and anchor, audience and audience will be able to easily achieve all-round interaction including video.

**(4) User behavior will change significantly**

Under 5g conditions, the live audience, like the anchor, has been liberated in space. Their viewing space is no longer limited to the home environment. In terms of technology and cost, they can watch live broadcast in the vast majority of space in their lives, including standard definition, high definition, ultra high definition, and even 3D, VR, etc. The audience can also continuously and fluently watch the above types of live broadcasting in the process of moving from one space to another. In this way, the audience's behavior of watching the live broadcast extends from the single scene of family to many scenes such as travel and shopping. The breakthrough in space is bound to lead to the extension of the audience's use time. With the breakthrough expansion of the audience's use of live service space scene, its use time is bound to be greatly extended. The expansion of the scene can provide a broader social basis for live broadcast, and meet the needs of user interaction and interaction. Since users can use the live service anytime and anywhere, a user will get a more timely response after sending out social

information. This is bound to make the social behavior in the live broadcast more frequent, thus increasing the user activity and user stickiness of the live application.

5g will break the current network conditions of live broadcast, and provide the network foundation for the all-round improvement of live broadcast. Diversified and higher quality content, stronger social attributes, and breakthrough expansion of audience use scenarios will attract more viewers for live broadcasting, and lead to a substantial increase in audience usage time. The extension of audience number and using time will stimulate the enthusiasm of the anchor. At that time, more anchors will be put into the live broadcast. With the support of rich live broadcast scenes, the competition between more hosts will inevitably lead to the improvement of the quantity, type and quality of live broadcast content. This will further increase the number and duration of the audience. The live broadcasting industry will enter a virtuous circle and make a new breakthrough.

In recent years, 5g, the fifth generation mobile communication system, has become a hot topic in the communication industry and academia. There are two main driving forces for the development of 5g. On the one hand, 4G, the fourth generation mobile communication system represented by the long-term evolution technology, has been fully commercial, and the discussion on the next generation technology has been put on the agenda; on the other hand, the demand for mobile data is exploding, and the existing mobile communication system is difficult to meet the future demand, so it is urgent to develop a new generation 5g system.

5g's development also comes from the growing demand for mobile data. With the development of mobile Internet, more and more devices are connected to the mobile network, and new services and applications emerge in endlessly. The global mobile broadband users are expected to reach 9 billion in 2018. By 2020, it is estimated that the capacity of mobile communication network needs to be increased by 1000 times on the current network capacity. The surge of mobile data traffic will bring severe challenges to the network. First of all, if according to the current development of mobile communication network, the capacity is difficult to support the growth of 1000 times of traffic, and the network energy consumption and bit cost are unbearable; secondly, the traffic growth will

inevitably bring about further demand for spectrum, while the mobile communication spectrum is scarce, and the available spectrum is distributed in large span and fragmentation, which makes it difficult to realize the efficient use of spectrum. In addition, to improve the network capacity, it is necessary to improve the network capacity. It is necessary to make intelligent and efficient use of network resources, such as intelligent optimization for business and user's personality, but the ability in this respect is insufficient; finally, the future network is bound to be a heterogeneous mobile network with multiple networks coexisting. In order to improve the network capacity, it is necessary to solve the problems of efficient management of various networks, simplification of interoperability and enhancement of user experience. In order to solve the above challenges and meet the growing demand of mobile traffic, it is urgent to develop a new generation of 5g mobile communication network.

The live broadcasting industry has become a black horse in the current network media with a strong momentum, occupying a leading position in traffic for a long time. Excellent content creators have become the rare resources that various platforms have seized. With the passage of time, more and more strict supervision, coupled with the aggravation of industry monopoly, the live broadcast business playing the "beauty brand" has limited expansion capacity on the one hand; on the other hand, the platform and anchor are prone to disputes due to the sharing ratio, and the frequent job hopping of online celebrities will naturally affect the stability of platform traffic. Game live broadcast has more abundant business scenes besides reward, but there are also a series of problems such as aesthetic fatigue and low user retention.

## 6. Application scenarios and development planning

MR distributed node realizes shared storage. Through the establishment of multiple internal and external data centers, cloud space and storage are used for unified data management. Supplier advertising supplement, harvest better marketing effect. MR smart center establishes a game traffic distribution platform based on blockchain technology through the characteristics of unforgeability and decentralization of blockchain technology. Game players can clearly understand user behavior (including registration, activation, consumption) after access. Due to the authenticity of the data, it is easier to attract advertisers who want to obtain real users to buy business.

The most typical application scenarios of MR are live e-commerce shopping, offline physical store consumption, cross chain application, cross-border payment, asset digitization, equity voting, equity exchange, etc.

In the future, MR can also be applied in more fields, including financial payment, telecommunications, e-commerce, express logistics, advertising and marketing, social networking, instant messaging, mobile games, video, Internet of things, Internet of vehicles, etc., and even provide a one-stop solution for distributed transactions in microservice architecture.

In the face of industry competition, unicorn has no better way to break through. Only by constantly innovating and trying can we find a new take-off track.

In the future, MR will continue to explore and practice in-depth, constantly consolidate the ecological construction goal of "consensus, co construction, sharing and win-win", adhere to the concept of independent innovation and science and technology for the good, and work with peers to achieve a better digital intelligence era.

Theoretically, media business model can be innovated, but innovation faces many difficulties. Blockchain technology can create a self-sufficient system, make the media get rid of the dependence on advertisers, directly obtain income from users, strengthen direct contact with users, promote users to directly participate in the news production and dissemination process, help we media break the dependence on channels, and protect the intellectual property rights of media.

## 7. Token distribution mechanism

MR's Token mobile radio coin, referred to as MR, has a total of 70000000 pieces. The specific distribution is as follows:

Please exchange smart contract for early bird purchase

1ETH: 2500MR

Up to 20000000 MR Token

50-100eth, reward 5% MR Token

100-200eth, reward 10% MR Token

200-500eth, reward 15% MR Token

500eth +, reward 20% MR Token

20000000 MR early bird exchange mode

Recharge the ETH with the required amount to the official address, and the smart contract system will automatically release the corresponding proportion of MR to the subscription address. On a first come, first served basis. After the exchange, the extra eth will be returned automatically.

Enter uniswap flow for mining

50, 000, 000MR+

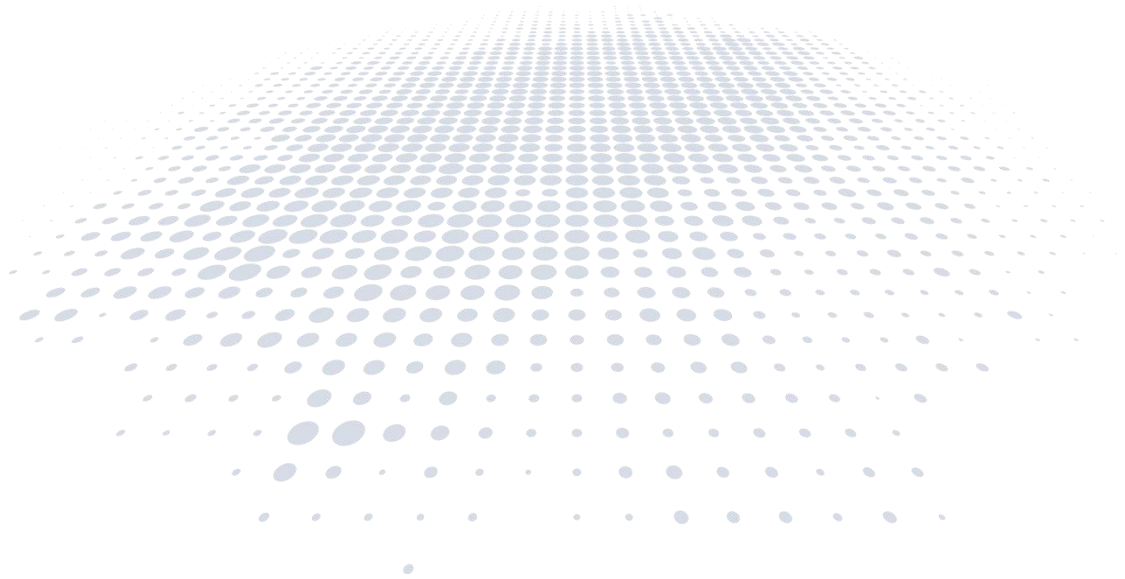
The exchange rate range is determined by the previous circulation rate

1ETH: 1850~2150MR

## 8. Team introduction



**Craig Steven Wright**





## 9. Legal affairs and risk tips

Due to the restrictions of citizens or groups with legal restrictions, digital currency MR, as a virtual commodity and use with practical purposes, is neither securities nor speculative investment tool.

MR Foundation's income from digital currency MR swap will be mainly used for technology development, marketing, community construction, financial audit, business cooperation and other purposes.

MR platform is still likely to be questioned and supervised by competent authorities in different countries around the world. To meet and comply with local laws

## 10. risk tips

This document is only for the purpose of conveying information, and does not constitute the relevant opinions or investment opinions on the future purchase and sale of original digital assets, nor any form of contract or commitment.

Once the investors participate in the private placement and sale, they will understand and accept the risks of the project, and are willing to personally bear all the corresponding results or consequences. The platform clearly states that it will not bear any direct or indirect losses caused by participating in the platform project.

The original digital asset involved in this project is an encrypted digital code used on the platform, which does not represent the equity, creditor's right, income right or control right of the platform project. At the same time, MR foundation hereby explicitly does not recognize and refuse to undertake the following responsibilities:

- (1) Any person violates the anti money laundering, anti-terrorism financing or other regulatory requirements of any country when exchanging digital currency MR;
- (2) Any person violates any representation, warranty, obligation, promise or other requirements specified in this white paper when purchasing digital currency MR, and the resulting inability to use or withdraw digital currency MR;
- (3) MR's development fails or is abandoned, as well as the resulting inability to deliver or use digital currency MR;
- (4) Errors, defects, defects or other problems of MR source code;
- (5) Digital currency MR is classified or regarded as a kind of currency, securities, commercial paper, negotiable instrument, investment product or other thing by any government, quasi government agency, competent authority or public institution, so as to be prohibited, regulated or legally restricted;
- (6) MR failure, breakdown, paralysis, roll back or hard bifurcation;

- (7) MR fails to achieve any specific function or is not suitable for any specific purpose;
- (8) The use of funds raised by digital currency MR program;
- (9) Failure to disclose timely and complete information about the development of MR public chain;
- (10) Any participant divulges, loses or destroys the private key of digital currency MR;
- (11) Breach, violation, infringement, collapse, paralysis, service termination or suspension, fraud, misoperation, misconduct, error, negligence, bankruptcy, liquidation, dissolution or closure of the third party distribution platform;
- (12) There are differences, conflicts or contradictions between the content agreed between anyone and the third party distribution platform and the content of this white paper;
- (13) Any person's trading or speculation on digital currency MR;
- (14) Listing, suspension or delisting of digital currency MR on any trading platform;
- (15) Any risk factors disclosed in this white paper, as well as damages, losses, claims, liabilities, penalties, costs or other negative effects related to, resulting from or incidental to such risk factors.