curacoin

White Paper

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2. Introduction

Thank you for taking the time to read the Curacoin (CRC) Whitepaper. This paper is the result of collaboration between doctors, allied health professionals, blockchain specialists, academics and business advisors.

Curacoin uses blockchain technology to create a user-focused consultancy system through which users can be diagnosed and have treatments administered.

Curacoin enables users to give healthcare professionals access to their health data and records interactions with this data in an auditable, transparent and secure way on Curacoin's distributed ledger.

Moreover, Curacoin is a platform for others to build applications on; to complement and improve the user experience. Users will be able to leverage their medical data to power a plethora of applications and services.

Curacoin White Paper 1.0 will outline the vision of Curacoin the current issues in healthcare, as well as give a brief summary of the blockchain technology used and how Curacoin is utilizing it to address specific issues to make healthcare better for users.

Curacoin will enable users to give conditional access to different healthcare agents such as doctors, hospitals, laboratories, pharmacists and insurers to interact as they see fit.

Each interaction with their medical data is auditable, transparent and secure, and will be recorded as a transaction on Curacoin's distributed ledger. We protect patients' privacy in the process and at all times. Curacoin is built on the permission-based Hyperledger Fabric architecture which allows varying access levels; users control who can view their records, how much they see and for what length of time.

By empowering users, we can build the future of healthcare together. Curacoin will be a platform for other digital health applications to develop on; users will be able to sign for these applications and services which are powered by their health data and secured by smart contracts.

Curacoin aims to improve the Healthcare universe by making use of Curacoin to carry out individual or collective research in the different fields of Healthcare services.

With the marketplace, Curacoin will enable users entirely at their will, to negotiate commercial terms with third parties for alternative uses or applications of their health data as for instance would be the case with sharing this with researchers. It is intended that Curacoin and others will contribute many more applications to the platform - helping bring value to all stakeholders.

Curacoin's platform will be powered by **"Curacoin"**. We are issuing 5 billion tokens, which will be distributed at a rate of 1 token to $0.45 USD in ETH and/or BTC. These will be offered in a crowd selling process commonly known as an "ICO" or "Initial Coin Offering."

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TOTAL SUPPLY OF TOKENS — 100,000,000 (100 MILLION) TOKENS

Social Promotion
3%

Bonus Program
2%

Advisors
5%

100 MILLION
CURACOIN (CRC) TOKEN

Team
and
Partners
40%

Public
Sale
50%

2.2 Bonus Program

Round 4
10% Bonus

Round 3
15% Bonus

Round 2
20% Bonus

Round 1
25% Bonus

Presale
30% Bonus
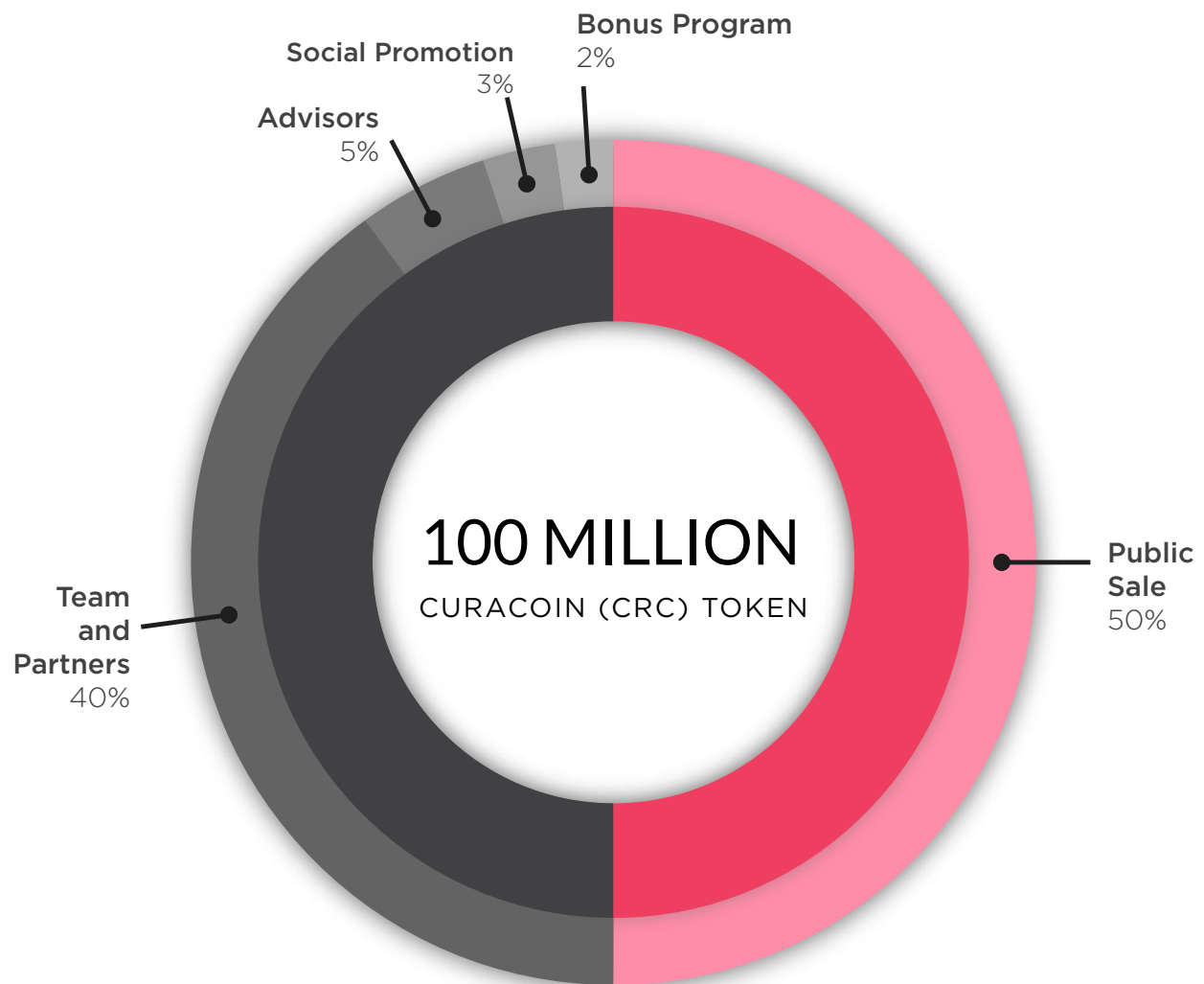
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PROGRAM
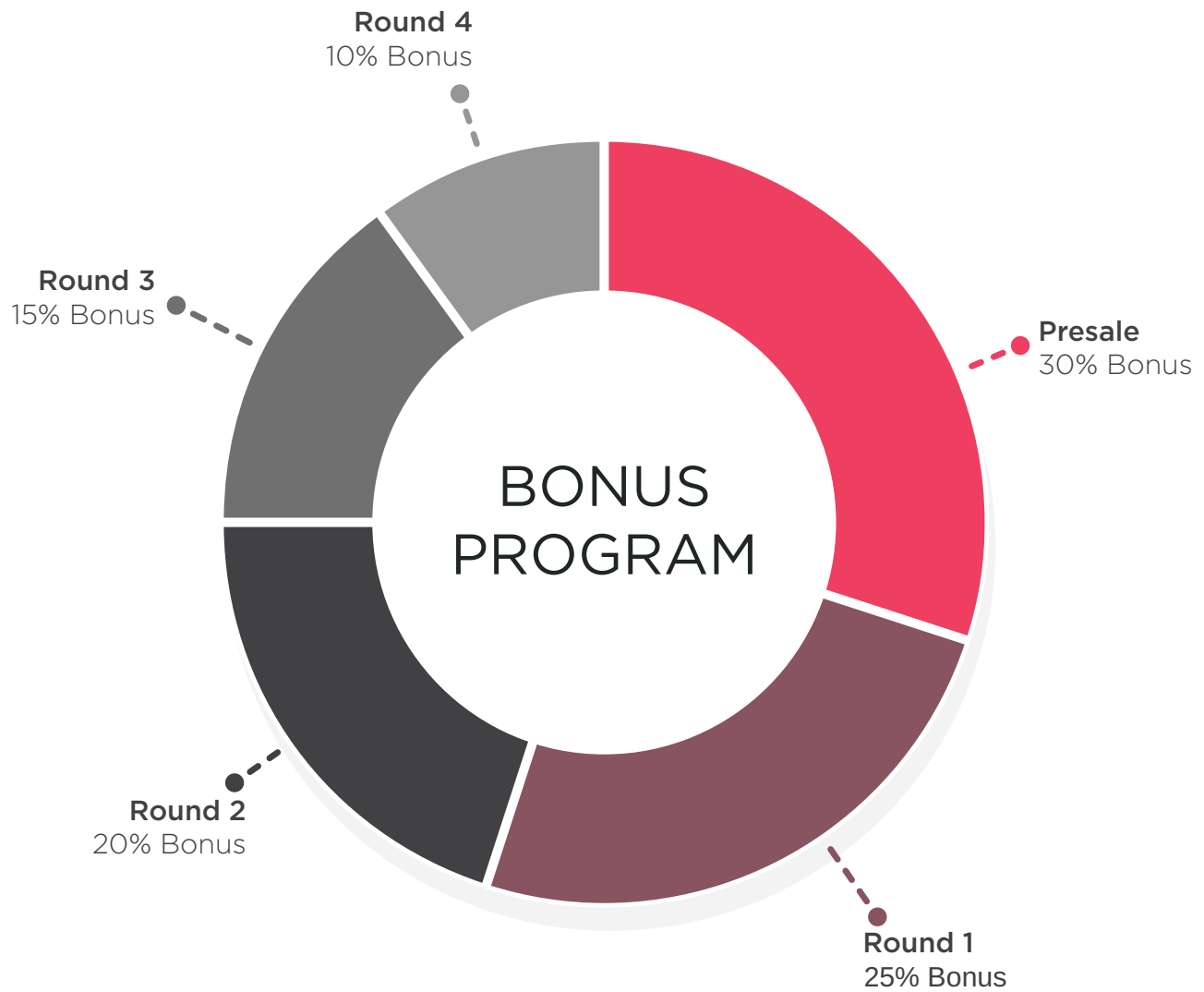
3. Problem Definition

The implementation of our project will be fully based on a decentralized network.

Most people simply do not remember the past illnesses and do not conduct a medical history of the diseases. Most often they forget what medicine was taken, what treatment was prescribed. As a result, there is a constant search for new specialists because medicine is no longer medicine but a business that is built on other people's diseases.

But the most terrible thing is that a person understands all these and constantly endures and postpones to a later medical testing or visits to the doctor because of the distrust or because of a lack of the result.

Curacoin will put an end to all these mess with the help of blockchain technology.
Our project will be completely transparent and decentralized. You finally will be able to understand that you have found the very doctor you can trust and that gives you a real result. Your entire story will be completely protected.

Now you will have a decentralized storage of your medical data and tests, as well as access to the best specialists from around the globe.

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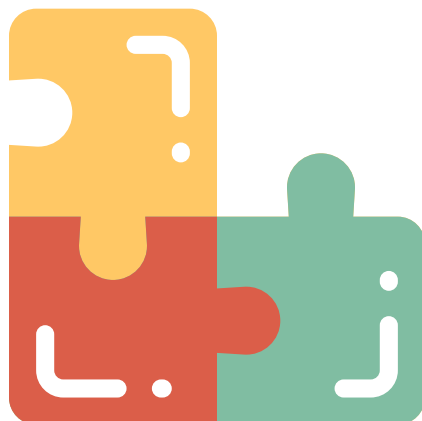
4. Solution

The solution is our smart contract.

You no longer need to think about where to turn. You don't have to worry about money you spend on the phone calls from one point of the world to another.

Moreover, you will not have to pay extra money to translate the prescriptions from a foreign language. On our platform, it will be possible to make a voice translation from the patient's language to the doctor's language and conversely.

You can also write if it is more convenient for you. Since the telemedicine is already included in insurance, you just need to use our service, where you choose the necessary specialist.

After you got the result, you pay for the medical service on our platform with the help of tokens through your personal wallet.

Curacoin will unite everything into one huge, powerful, global resource: doctors, hospitals, laboratories, insurance companies. Each Curacoin transaction will be recorded on a blockchain, which will make the system transparent, safe and environmentally clean in the world of telemedicine.

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5. Advantages of Curacoin

5.1 Advantages for Users

- **Consultation of doctors from around the world 24 hours a day, 7 days a week** (as we make a decentralized network, we connect the entire telemedicine industry to our ecosystem. You can choose from more than 10 million specialists already registered on working resources of telehealth);

- **In our ecosystem, safe storage of medical records**;

- **Prescriptions and referrals to hospitals** (our medical agents) **without leaving their homes, our system is completely autonomous and safe**;

- **The fair price for the service** (as in our system, we bypass the state authorities and health authorities, we do not need to pay salaries to doctors, bear the costs of renting and maintaining hospital facilities, transportation **costs and medical insurance**). **We are a decentralized autonomous organization**, the medical services will be handled by tokens;

- **Management of pregnancy, observation of newborns, mentally ill, and also for people with chronic diseases**.

5.2 Advantages for Doctors

- **100% guarantee of the reward with our tokens for the reception of the services** (exchange of tokens for services from the patient to the doctor);

- **The opportunity to share skills and experience with colleagues around the world** (this is very important in this area, so that our doctors do not put experiments on people, and based only on their professional experience);

- **Transparent, safe and complete medical history of the client**.

5.3 Advantages for Businesses

In our ecosystem, it will be possible to plug medical agents, which is also very important and will allow us to increase the number of our users at times. These will be pharmacies, hospitals, diagnostic centers, insurance companies, hospices, boarding houses. Just imagine how our ecosystem will change and expand the telemedicine market and medicine in general.

Researchers would have the ability to reach a global audience of patients through Curacoin's health data marketplace. This would increase the potential sample size used in research and improve the accuracy of the results.

Costs would be reduced by simply pulling the relevant information from a participant's health record, with their consent, instead of the burdensome process of forming research groups and going through health providers for access to health data.

6. Market Overview

According to statistics, the telemedicine market in 2014 was estimated at $10.97 billion. At the same time, the growth rate of the market in 2014 was 32%.

If the current trend continues, by 2020, the telemedicine market will reach $58.8 billion. During this period, the average annual growth rate of CAGR = 31%. The largest investment transactions on the market in telemedicine in 2014.

Analysis of the largest investment transactions in the field of medical technology allows us to draw the following conclusions: The amount of investment in medical projects has increased significantly compared to 2013. In 2014, the investment was amounted to 6.5 billion dollars. Growth in comparison with 2013 was 125%.

Large and well-known companies consider this sphere attractive and promising, incl. Google Ventures, Tencent.

Healthcare costs are on the rise around the globe as societies struggle to deal with aging populations and rising chronic disease burden. Current models of care delivery, particularly in places like the U.S and U.K, are unsustainable. One trend combating increased costs has been the rise in digital health services. The value of the global digital health market was valued at $80 billion U.S dollars in 2015 and is expected to increase to over $200 billion by 2020 with a CAGR of 21%.

Digital health solutions such as Telemedicine will be critical for driving efficiency and reducing costs.

The scope of Telemedicine covers referrals, second opinions, education, follow-up care, monitoring, diagnostics and treatments across numerous specialities.

Examples include Telecardiology, Teleradiology, Telepathology, Telepsychiatry, Teledermatology and others. Clearly there is a large market, and benefits include:

- Improved quality of care
- More time for doctor-patient interactions
- Improved access to consultation
- Reduced costs

The market is currently dominated by North America and Europe though highest growth is expected in India, China, and Japan in the next few years.

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There are several challenges to full implementation:

Unfortunately, most modern Telehealth systems are not integrated with the core financial and clinical systems used by healthcare organizations. Data remains within the Telehealth application and requires manual entry later into health records.

Digitization promises much potential, but adding an additional silo without incorporating the information does not add value. In order to succeed, systems, devices, and data need to be seamlessly integrated. Privacy and security law issues must consider the management of data in non-traditional formats (for example, audio and/or video) and the sharing of data responsibilities encountered.

To minimize the privacy/security risk of Telehealth encounters, providers require reliable methods for verifying and authenticating the identities of the patient and practitioners. Blockchain solutions are a great tool to overcome these issues.

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7. Mobile Applications

The mobile applications for smartphones in the field of health is the fastest growing segment of the telemedicine market. There are four main categories of mobile applications: general health and fitness (fitness and nutrition), medical information (directories, information, diagnosis, and education), remote consultation and monitoring, health management (patient electronic cards, logical and payment support).

Virtual treatment is becoming more popular, attracting the convenience and economy of not only patients and doctors, but also of the large investors.

By volume of the market, the industry already occupies the third place among the most attractive investment projects in the world, and all this is due to 70 percent of calls of people with chronic diseases.

According to analysts' forecasts, in the U.S the telemedicine market will grow by 67% per year. Already in 2018, the number of online patients will be more than

7 million people. For comparison: in 2012 there were 344 thousand. Our survey showed that

83% of funds are going to invest in the development of telemedicine this year, and only 1% answered negatively.

Telemedicine has become one of the key modern megatrends, to which the attention of the most respected funds is riveted. The market of medical services is steadily growing and requires constant technological development, which means that its financing is potentially beneficial for investors."

According to Bloomberg, only in the U.S venture investments in digital health care over the past five years have grown from almost zero to $2 billion. According to the report of the analytical company, in 2016 the amount of world investment in the industry increased by 27%, which put telemedicine in the third place among the most attractive investment projects, after the production of gadgets and investments in analytical technologies. As experts note, thanks to distance medicine in the U.S, the number of patient transportations has already declined from 2.2 million to 1.4 million. The largest telemedicine market ranks first in the U.S, then China and Japan.

8. Technology

8.1. How to Start Working With Curacoin

The user enters to the site Curacoin.io and registers the account. During registration of a new account, the system creates a user profile and a wallet based on the existing ecosystem and Curacoin crypto currency.

Once the user has access to his personal account, he will be able to synchronize his medical data and also refill the wallet with the required amount of Curacoin. To do this, he will need to make data from the medical cards (or attach copies of medical examinations and our system will do it automatically). You can refill your purse using one of the methods that suits you, for example, for purchasing Curacoin, you can use your credit card. If the user has another crypto currency, the system will instantly exchange available funds from the user for Curacoin using existing exchanges.

8.2 How it Works; The Process of Interaction Between Doctors and Patients

The patient will need to enter our Curacoin service, select a suitable doctor and press a button. After that, he will receive a notification for the consultation (video call), which he will have to confirm. The token will automatically be taken from the patient's balance, according to the cost indicated by the doctor at one time (appointment for treatment, prescription for medicine, entering medical data into the decentralized cloud storage, everything is already included in the cost of the consultation). As soon as the patient presses the button to confirm, the tokens will automatically be credited to the doctor's wallet.

8.3 Conducting the Transaction

When the patient chooses the doctor he needs, his data is generated, and then a digital signature is created for verification. The data is sent to encrypted cloud storage, where each patient will have a personal record number that will be registered on our blockchain. There will also be records of information on the state of health, receptions, and prescriptions for medicines. Through our application, you will be able to track all medical records that will be made by your doctor

Smart encryption is a private access code that will be placed in our blockchain chip for the convenience of the patient. When the course of treatment is over or you want the doctor not to see the history of your further examination with another specialist, you will be able to apply the smart encryption. This can be enabled on our service. With this function, the doctor with whom the smart contract was performed will have access only to his course of treatment.

8.4 Ethereum And Smart Contracts

We are developing our own technology for implementing a smart contract. Smart contract allows you to implement complex chains of interaction between the client and the doctor.

We want to create a multi-level system. Transparency and efficiency of blockchain is used 100% if it is created on a block system. For this we are considering the possibility of creating a special designer. It will allow you to set the basic conditions for the implementation of the contract.

Ethereum is a digital platform where thousands of powerful computers around the world work in harmony to host the Ethereum network. Ethereum's blockchain represents all accounts and transactions made by its users. Every time you send an Ether, the currency of Ethereum, to another user, those computers act as accountants by verifying the validity of the transaction. Once the verification is approved by those "accountants" the money is then transferred to the other user, making transfers secure, transparent and conflict-free.

Smart Contracts are code held and executed on the Ethereum blockchain. Anything that can be programmed normally can be programmed within the Ethereum network.

Processes that normally require a professional or notary can be automated and validated by smart contracts in a wholly transparent and secure way. For example, the average physician spends 3.8 hours weekly on billing and insurance related activity. Imagine the cost savings if these processes were conducted on smart contracts and validated by the Ethereum network.

NOTE:
Cryptographic tokens of which the speech is going, these tokens are on the working Blockchain that supports software Curacoin. They are ERC•20, which are available on the blockchain Ethereum. We will exchange Curacoin for Ethereum and Bitcoin during crowdsale.

8.5 Functions of the Token

Curacoin release their tokens to create the world's first open, transparent, safe and environmentally friendly system in the world of telemedicine. Everything will be fully developed on the blockchain chains:

• A currency to pay for the services of a

doctor;
• Purchase a decentralized cloud storage of medical data;
• Payments for Medical Agents;

8.6 Monetization of the Product and the Economy of the Curacoin Token

Profit is achieved through commission fees for transactions in Curacoin tokens. Fees are net profit. The reward will be in Curacoin tokens using smart-contract.

8.7 The Result

Curacoin will turn over and change the Telemedicine market. We will open all the possibilities and potential of blockchain technology and apply it to real business.
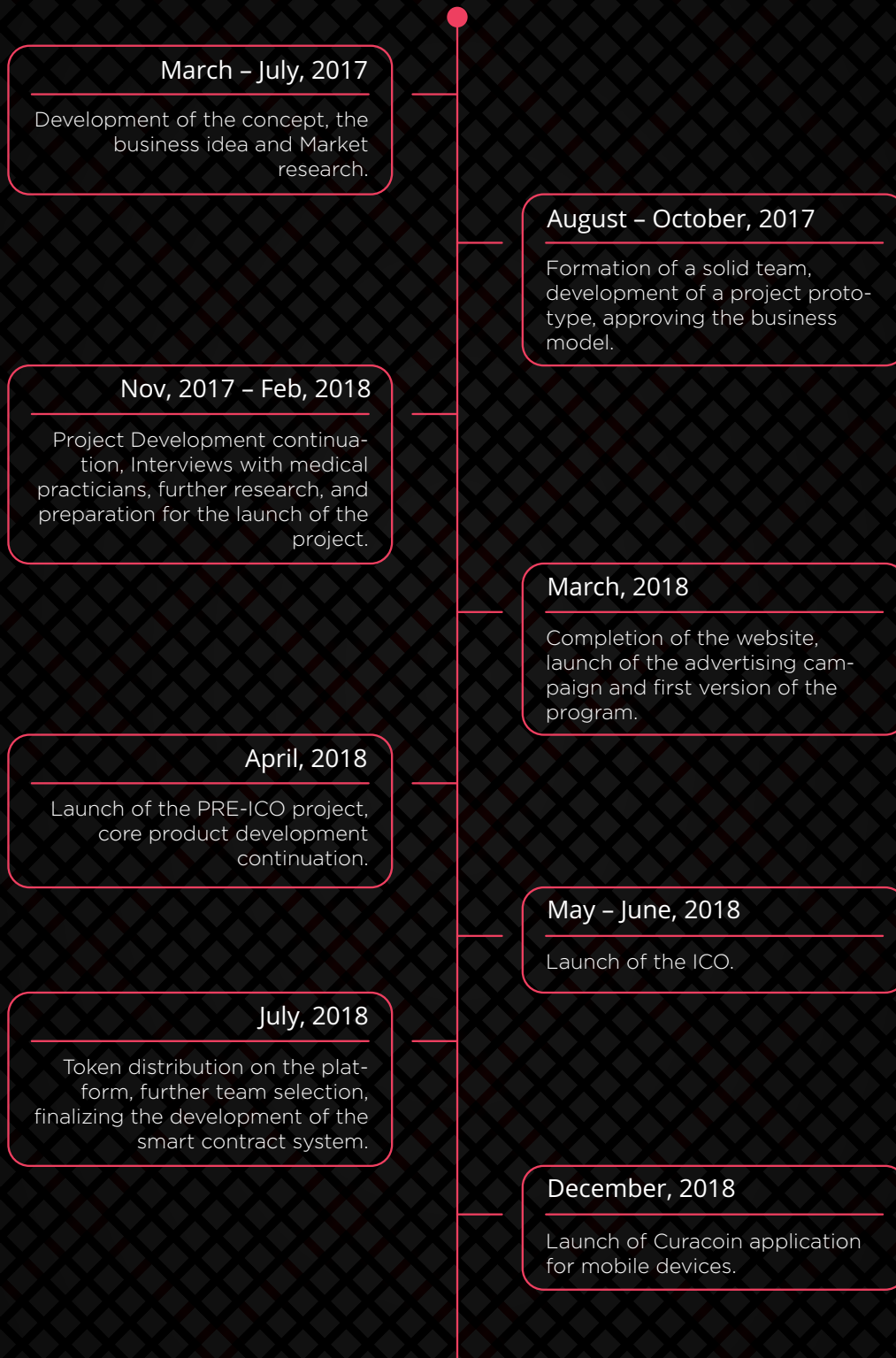
The doctor's service will be exchanged for tokens and this will greatly affect the final price. There will be no costs for payment mechanisms and their subsequent fees, which, depending on the country, are up to 28% of the price. For our tokens, customers will be able to exchange for the services of a doctor, store medical cards in our cloud storage, order insurance from our medical agents, medication, and pay for themselves a sanatorium, all thanks to the blocky blockade.

Thus, we are building a completely autonomous, decentralized, environmentally friendly system.

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9. Roadmap

March – July, 2017

Development of the concept, the business idea and Market research.

August – October, 2017

Formation of a solid team, development of a project prototype, approving the business model.

Nov, 2017 – Feb, 2018

Project Development continuation, Interviews with medical practicians, further research, and preparation for the launch of the project.

March, 2018

Completion of the website, launch of the advertising campaign and first version of the program.

April, 2018

Launch of the PRE-ICO project, core product development continuation.

May – June, 2018

Launch of the ICO.

July, 2018

Token distribution on the platform, further team selection, finalizing the development of the smart contract system.

December, 2018

Launch of Curacoin application for mobile devices.

10. Conclusion

We sincerely believe that Curacoin is necessary for the telemedicine market. This faith is so great that we will work on our project of independence from the fees and interest of investors.

Curacoin is not a marketing product, so we do not exclude that the deep idea of our product will not be understood by the broad community.

A wide range of medical agents and our allies will ensure our product continued growth and development.

We believe that the crypto-currency market, now in the trend and became the driver of economic development. This is why we create Curacoin to address the following:

Cost savings: Decreased need for repeat diagnostics, decreased administrative costs for record retrieval/ transportation, decreased risk of errors associated with inaccurate or unobtainable medical records.

Increased revenue: Access to global patients when completing chargeable telemedicine consultations complete with simultaneous up-to-date healthcare records.

Nonprofit organizations with the required compliance documents and experience in handling sensitive, will have the opportunity to partner with Curacoin.

Organizations will be incentives to act a secure nodes for holding encrypted health data.

The key incentives for node onboarding include:

Financial incentivization: Curacoin tokens will be used to support the maintenance of the node as well as incentivize the hospital, university and/or non-profit organization to continue acting as a node.

Public relations opportunity: To be a node for Curacoin and part of an international community of healthcare providers. An opportunity to be a leader in the future of healthcare and become involved in blockchain technology.

Research Institutes/Pharma

Curacoin is currently in discussion with several large pharmaceutical and health research organisations, who have expressed interest. The organisations will have the ability to request data from any Curacoin user.