

A BRIEF REPORT ON THE DEVELOPMENT OF BLOCK CHAIN COMPANIES IN YANGTZE DELTA

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Final Edition

2018.06.30

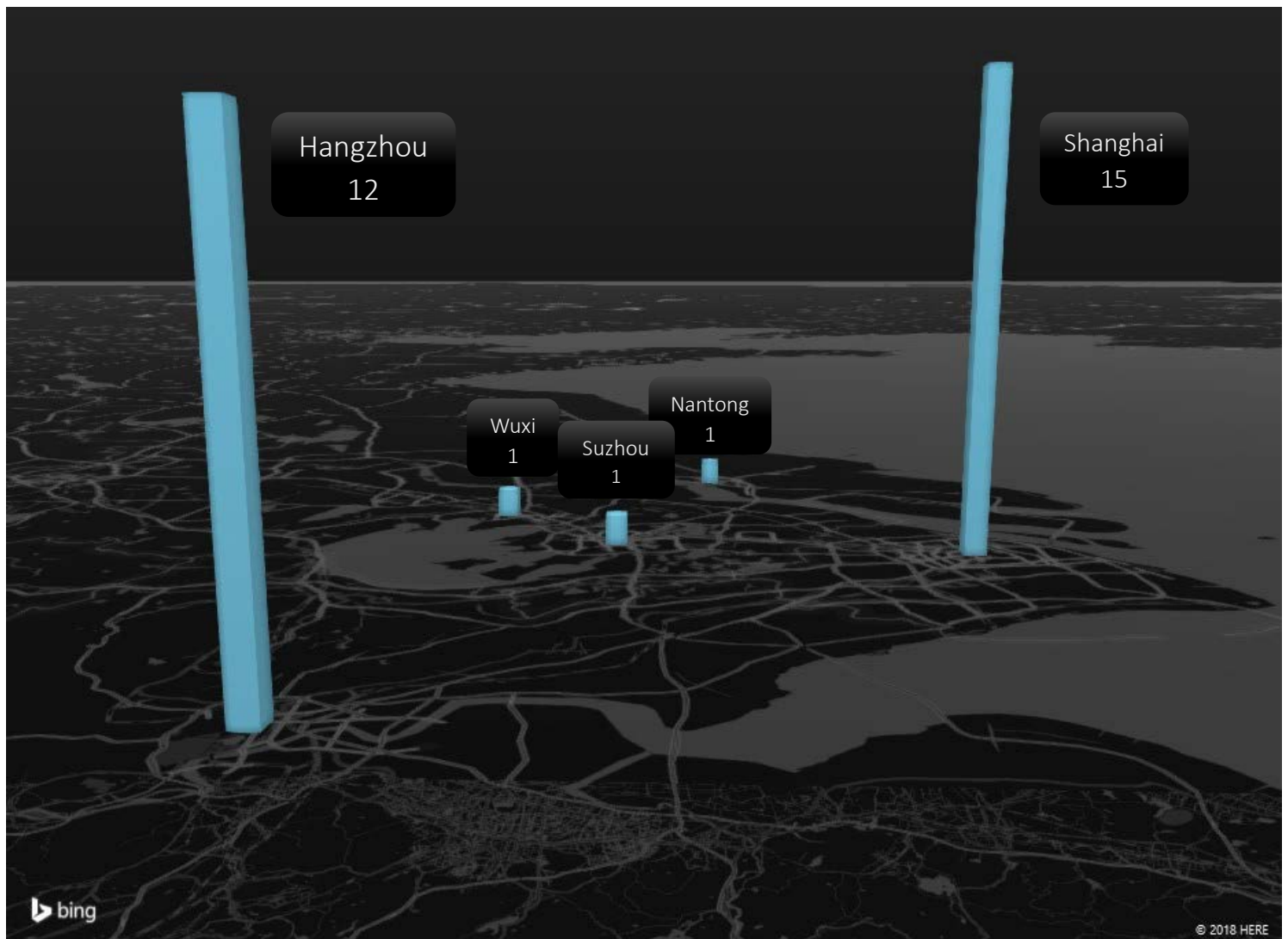
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General Introduction

As the block chain technology exhibits broad market prospects and great potential for application, China, with its ambition to seize the technical highland for coming decades, now puts great importance on the development of its own block chain industry. And the Yangtze Delta, as the bridgehead of China's innovation and its most vibrant urban agglomeration, could be an epitome of the development of China's block chain industry. Therefore, this report mainly focus on this particular area and chose 30 companies in this area to study. This report evaluated these companies from numerous angles and then ranked them with suitable and relatively objective model. Moreover, in the third section of this report, 5 companies were chosen as research objects and meticulous research on them was conducted. Together, these contents provide a comprehensive assessment from both the macroscopic and the microscopic view.

Geographic Distribution

According to our survey, these companies distribute in these cities with varying quantities.



Here is the list¹:

| | |
|-----------------|---|
| Hangzhou | Canaan |
| | Ant Small and Micro Financial Services Group |
| | HyperChain |
| | Yunphant Network |
| | 8btc/bytom |
| | GX Chain |
| | Crypt Ape |
| | Tong Dun |
| | Hangzhou Fuzamei Tech Co.,Ltd. |
| | Bao Quan Network |
| | Alibaba |
| Nantong | ChainNova |
| Shanghai | Wan Xiang Blockchain |
| | BitSE |
| | Onchain |
| | HPB |
| | Dian Rong |
| | Shanghai Fei Xun Communication Co.,Ltd. |
| | Bravo Whale |
| | Suning Finance |
| | Yuan Ben |
| | Gingkoo Financial Information Co., Ltd. |
| | Ju Zheng Finance |
| | Bu Meng Technology |
| | Shanghai Shell Coin Internet Technology Company |
| | Tower Chain |
| | NEO |
| | RaderWin |
| Suzhou | Jiangsu Tong Fu Dun Information Technology Co.,Ltd. |
| Wuxi | Jing Tum |

¹ Location information gathered from Bureaus of Business Administration, therefore it may differ from the HQ/Main Office locations of some companies

From the graph and chart above, it's clear to conclude that Hangzhou and Shanghai are the major basecamps of these companies, which takes up about 90% in total of all target companies. However, it's not strange for the following reasons²:

1. Both cities have a long history of commercial development even long than the current regime's history. Therefore, the unique cultural and commercial atmosphere of these two cities will always attract entrepreneurs.
2. Both cities have profound foundation of IT industry. Hangzhou is the basecamp of many IT flagships like the Alibaba Group or the Netease, Shanghai, similar to Hangzhou, has plenty of IT flagships like Lufax or Dianpin. The already mature industry in these cities provides companies with substantial financial and human resource support.
3. Both cities have appealing policies and relatively positive market regulations. Shanghai municipal government offers tax reduction and financial support for entrepreneurship, Hangzhou, on the other hand, offers favorable social welfare conditions for STEM employees and research fund for high-tech companies (Which included blockchain companies).
4. Both cities are endowed with strong academic research ability by top-level universities. Zhejiang University, which established the first blockchain lab among Chinese universities, located in Hangzhou while Shanghai has universities like Fudan University and Shanghai Jiao Tong University. The existence of such universities allows companies to get the most cutting-edge research information and recruit themselves with elites of industry.

General Hierarchy

In coordinate with the common sense of industry³, this report divide companies into 5 different layers based on their focus. Here are the 5 layers:

Hardware Development

-Focus on developing exclusive chips and supporting servers.

Underlying Protocol Development

-Aiming at the development of blockchain infrastructures like the public chain or IDE⁴

Application Development

-Put blockchain into real life and bond it with various industries.

² Based on objective facts and subjective evaluations

³ It's widely recognized to be 6 layers, however, since there's no major **Capital Investors** based in Yangtze Delta, this report simplified it for the purpose of convenience

⁴ Integrated Development Environment

Digital Currency Issuance

-Issues tokens like Bitcoin or Ethereum and endows them with the function of currency.

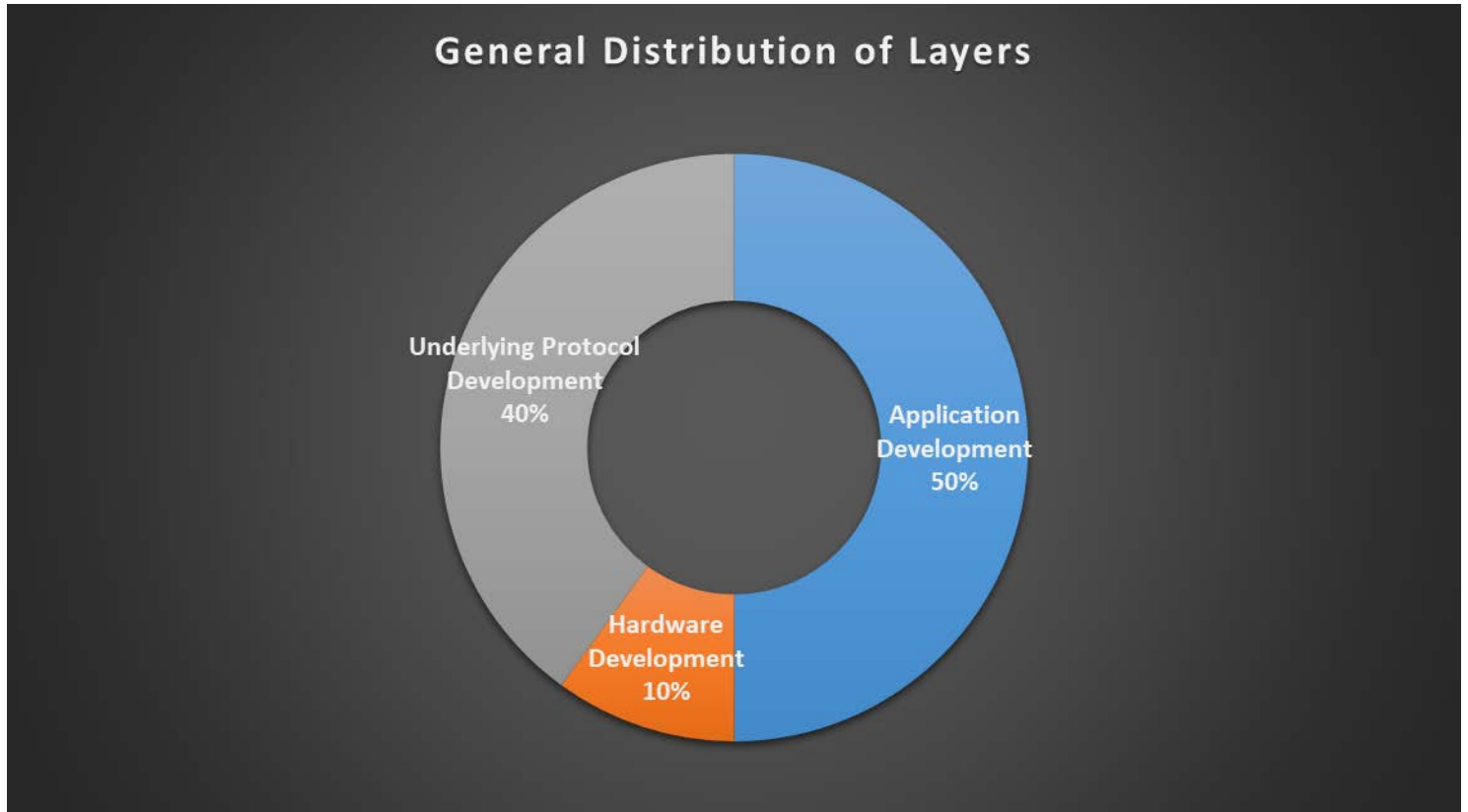
Digital Currency Exchange

-A market to trade your digital properties alike stock market.

And here is the distribution list of 30 target companies:

| | |
|---------------------------------|---|
| Application Development | BitSE |
| | Ant Small and Micro Financial Services Group |
| | Jiangsu Tong Fu Dun Information Technology Co.,Ltd. |
| | Dian Rong |
| | GX Chain |
| | Jing Tum |
| | Bravo Whale |
| | Suning Finance |
| | Tong Dun |
| | Yuan Ben |
| | ChainNova |
| | Ju Zheng Finance |
| | Bao Quan Network |
| | RaderWin |
| Hardware Development | Canaan |
| | HPB |
| | Shanghai Fei Xun Communication Co.,Ltd. |
| Underlying Protocol Development | Wan Xiang Blockchain |
| | HyperChain |
| | Yunphant Network |
| | Onchain |
| | 8btc/bytom |
| | Crypt Ape |
| | Gingkoo Financial Information Co., Ltd. |
| | Hangzhou Fuzamei Tech Co., Ltd. |
| | Bu Meng Technology |
| | Shanghai Shell Coin Internet Technology Company |
| | Tower Chain |
| | Alibaba |

In the following part there's a chart visualizing the distribution of target companies in the 5 layers.



Presented by the chart and list above, this report discovered that none of the 30 companies operates digital currency related business. And very few of them focus on the development of hardware. The following are possible reasons⁵:

1. Chinese government announced crypto currencies such as Bitcoin and Ethereum to be illegal and forbidden any related trade. Under such circumstance, companies involving digital currency business are eliminated or escaped oversea and other companies will not step into this business in order to avoid legal risks.
2. Hardware development is always very costly with stern technology barrier. Therefore, this market automatically formed an oligopoly market. Only a few leaderships with sophisticated arsenal of technology could survive and gain dominance of the market. Such market structure makes it impossible for new comers to stand firm.
3. Hardware development consumes a lot and returns slow comparing to other companies of the same scale. Therefore, it's more risky for investors to support start-ups in this industry than invest on oligopolies. This feature of hardware industry determines that most companies in this field will die out for financial crisis.

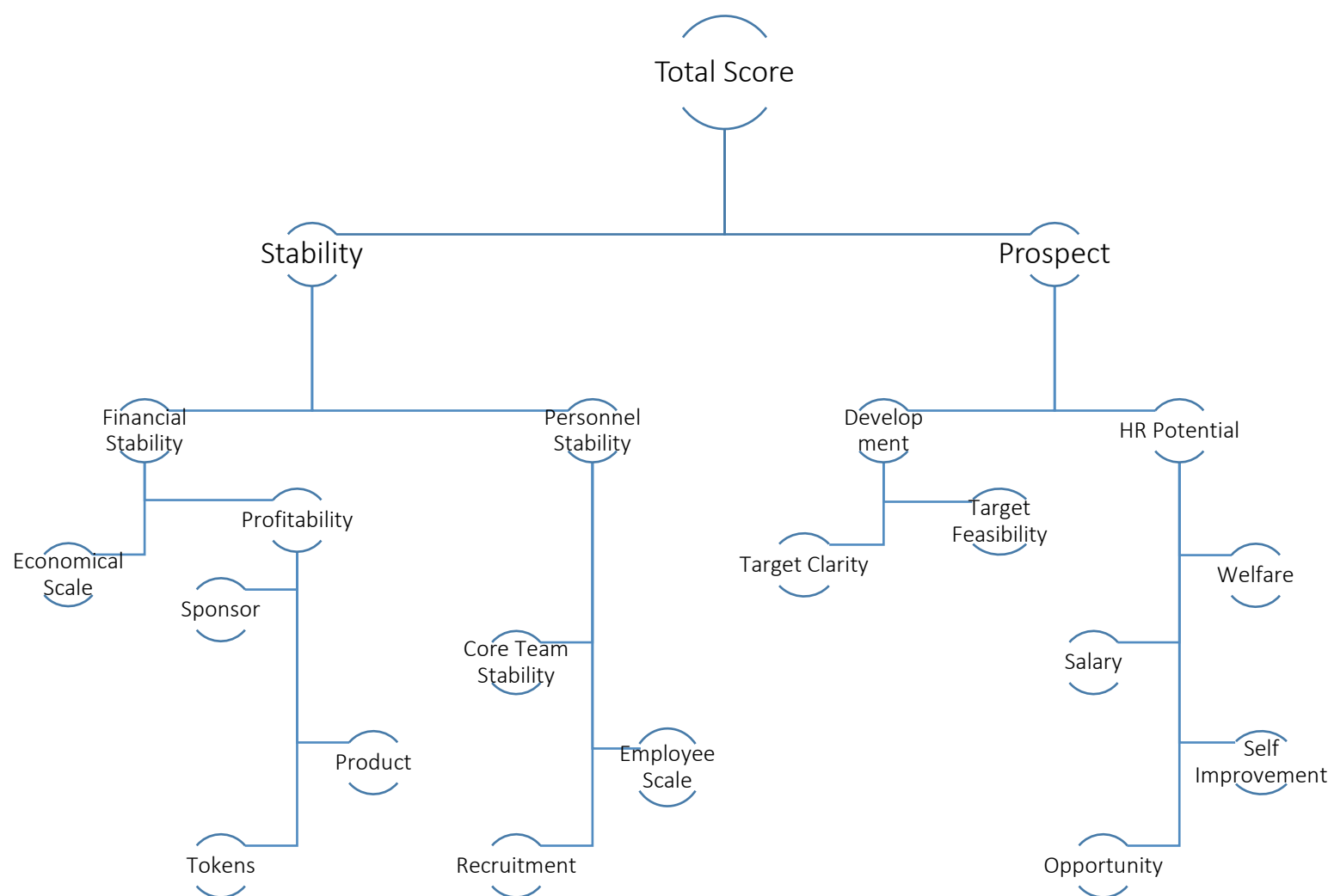
⁵ Based on objective facts and subjective evaluations

Ranking

In this section, the report will evaluate all target companies with a uniform model and then rank them. Moreover, this report will show rankings from other agencies so that they may be integrated into consideration.

Ranking Criteria

In order to rank these companies from a more objective perspective, this report utilizes a mathematical multiple-factor analyzing model to generate scores for each company based on pre-set rules. The general structure of the scoring model goes as following:



And the score is generated through following formulas⁶:

$$T_S = S_S + \alpha_1 P_S = (S_F + S_P) + \alpha_1 (P_D + P_H)$$

$$= \{[(\sqrt[8]{\alpha_2 S_E} \cdot \omega_m) + (\omega_s + \omega_p + \omega_t)] + [\sqrt[4]{S_P} + \omega_r + \log_e(\omega_e + \omega_d)]\}$$

$$+ \alpha_1 [t_c \cdot \omega_f + \alpha_3 (\omega_z \cdot \ln \alpha_4 + \alpha_5 \omega_w + \alpha_6 \omega_o + \log_{\alpha_7} \omega_i)]$$

| Variables | Annotations |
|------------|------------------------|
| T_S | Total Score |
| S_S | Stability-Score |
| S_P | Stability-Personnel |
| S_F | Stability-Financial |
| S_E | Scale-Economic |
| S_P | Scale-Personnel |
| P_S | Prospect-Score |
| P_H | Prospect-HR Potential |
| P_D | Prospect-Development |
| t_c | Target-Clarity |
| α_n | Correction Coefficient |
| ω_x | Conditional Value |

In this model, the **total score** is composed by 2 factors-**stability** and **prospect**. **Stability** assesses the current performance and its viability while **prospect** predicts the future status of the company. And these scores are further composed by more variables. In order to put data that differs from each other massively (For example, a company's economical volume is on the scale of billion RMBs while its quantity of employees may be less than hundreds.) This model introduces a sort of **correction coefficients** and some uncommon operators (Those square roots and logs, for instance.). These measures are auto-generated ⁷by computer algorithms to guarantee that the score is restricted in a reasonable range without losing the credibility. Moreover, a **judgement system** is utilized to give credits for certain items. For example, ω_m , a **conditional value** in the formula, is used to amplify the result of **economical scale** based on whether the company listed or not. To complete this operation, the computer will first go through the database to find relative information. And, if the computer determines that this company is listed, it will automatically turn the value to 1.5⁸. This certain computing rule is set by the report for the consideration that companies listed will have stronger risk resistance.

⁶ More detailed computing operations are omitted due to their complexity

⁷By the request of algorithm protection agreement , the actual values and calculating steps of these coefficients are unable to reveal

⁸ Pre-set by this report

Ranking Results

Note: Although the report utilizes quantitative methods as objective as possible, the partial lack of data and the manual setting of weight factors result in a considerable degree of subjectivity still of the ranking presented.

Here is the ranking result:

| Ranking | Name | Stability | Prospect | TOTAL |
|---------|---|-----------|----------|----------|
| 1 | Alibaba | 14.86946 | 6.90000 | 21.76946 |
| 2 | Ant Small and Micro Financial Services Group | 11.99635 | 8.70000 | 20.69635 |
| 3 | Canaan | 8.11277 | 10.50000 | 18.61277 |
| 4 | HyperChain | 6.35610 | 8.70000 | 15.05610 |
| 5 | BitSE | 4.28605 | 9.00000 | 13.28605 |
| 6 | Gingkoo Financial Information Co., Ltd. | 5.63389 | 6.90000 | 12.53389 |
| 7 | Wan Xiang Blockchain | 5.54114 | 6.30000 | 11.84114 |
| 8 | Jiangsu Tongfudun Information Technology Co.,Ltd. | 7.01249 | 3.96000 | 10.97249 |
| 9 | Onchain | 4.05000 | 6.90000 | 10.95000 |
| 10 | Bu Meng Technology | 7.02659 | 3.06000 | 10.08659 |
| 11 | Tong Dun | 6.41365 | 2.10000 | 8.51365 |
| 12 | 8btc/bytom | 5.25074 | 2.10000 | 7.35074 |
| 13 | Yunphant Network | 1.13921 | 5.40000 | 6.53921 |
| 14 | Crypt Ape | 1.77284 | 4.50000 | 6.27284 |
| 15 | Yuan Ben | 3.79989 | 1.92000 | 5.71989 |
| 16 | RaderWin | 2.29671 | 3.00000 | 5.29671 |
| 17 | Bao Quan Network | 1.44544 | 3.42000 | 4.86544 |
| 18 | JingTum | 1.79351 | 3.00000 | 4.79351 |
| 19 | HPB | 3.09769 | 1.50000 | 4.59769 |
| 20 | Tower Chain | 4.49411 | -0.12000 | 4.37411 |
| 21 | Suning Finance | 4.62283 | -0.96000 | 3.66283 |
| 22 | Dian Rong | 4.42158 | -1.02000 | 3.40158 |
| 23 | JuZheng Finance | 1.90049 | 1.02000 | 2.92049 |
| 24 | Shanghai Feixun Communication Co.,Ltd. | 2.57059 | 0.12000 | 2.69059 |
| 25 | ChainNova | 2.69105 | -1.68000 | 1.01105 |
| 26 | Shanghai Shell Coin Internet Technology Company | -2.00704 | 2.10000 | 0.09296 |
| 27 | GX Chain | -0.70011 | 0.72000 | 0.01989 |
| 28 | Hangzhou Fuzamei Tech Co., Ltd. | -0.34926 | 0.30000 | -0.04926 |
| 29 | Bravo Whale | -0.27270 | -1.08000 | -1.35270 |

Reference Rankings

For the sake of objectivity, this report also contains information on the rankings issued by other institutions for reference.

Reference 1⁹

From the point of view of the company's landing progress, team development and the company's external cooperation, WaLian Net has analyzed more than a hundred block chain companies with big data, and updated the TOP 100 list of block chain companies according to the index ranking.

| Name | Ranking |
|---|---------|
| Canaan | 1 |
| Yunphant Network | 12 |
| JuZheng Finance | 13 |
| 8btc/bytom | 16 |
| Bao Quan Network | 19 |
| BitSE | 20 |
| HyperChain | 21 |
| GX Chain | 23 |
| Bu Meng Technology | 31 |
| Shanghai Shell Coin Internet Technology Company | 43 |
| Tower Chain | 46 |
| Crypt Ape | 48 |
| Gingkoo Financial Information Co., Ltd. | 49 |
| RaderWin | 50 |
| Hangzhou Fuzamei Tech LTD | 51 |
| Wan Xiang Blockchain | 66 |
| JingTum | 77 |

⁹Source: <http://www.walian.cn/>

This list adopts qualitative and quantitative comprehensive research methods. First of all, through a one-to-one interview with more than a dozen industry block chain enterprises and investment professionals, it consulted their evaluation criteria for the organization of the selected enterprises, and then determined the scoring model. After collecting the evaluation data to the enterprise and combining the expert recommendation and the open information, the initial screening of the enterprises (such as the confirmation of its operating headquarters in China, the establishment of time, the actual business of the block chain technology and so on). Finally, according to the established model, the financing situation, the basic qualification of the enterprise, the situation of the Qu Kuai Lian project (such as the necessity of the application of the scene, the patent of the enterprise block chain, the number of software works, the project stage, etc.), the background of the core team, the cooperation situation of the foreign Union, the 6 dimensions of mutual evaluation in the industry are 20 points. The Top 20 and the Top 50 of innovation enterprises were selected through quantitative processing.

| Name | Ranking |
|---|---------------------|
| Wan Xiang Blockchain | top20 (Leadership) |
| BitSE | top20 (Leadership) |
| Canaan | top20 (Leadership) |
| Zhejiang Ant Small and Micro Financial Services Group | top20 (Leadership) |
| HyperChain | top20 (Leadership) |
| Jiangsu Tongfudun Information Technology Co.,Ltd. | top20 (Leadership) |
| Yunphant Network | top20 (Leadership) |
| Gingkoo Financial Information Co., Ltd. | top20 (Leadership) |
| Onchain | top50 (Innovations) |
| HPB | top50 (Innovations) |
| 8btc/bytom | top50 (Innovations) |
| Dian Rong | top50 (Innovations) |
| Shanghai Feixun Communication Co.,Ltd. | top50 (Innovations) |
| GX Chain | top50 (Innovations) |
| JingTum | top50 (Innovations) |
| Crypt Ape | top50 (Innovations) |
| Bravo Whale | top50 (Innovations) |
| Suning Finance | top50 (Innovations) |
| Tong Dun | top50 (Innovations) |
| Yuan Ben | top50 (Innovations) |
| ChainNova | top50 (Innovations) |
| Hangzhou Fuzamei Tech LTD | top50 (Innovations) |

¹⁰ Source: <http://www.hurun.net/CN/Article/Details?num=4F88778266C7>

Reference 3¹¹

The IPR daily joint incoPat Innovation Index Research Center issued the "2017 global block chain enterprise patent rankings (top 100)", the number of patents in the 2017 global public announcement, including applications for inventions, utility models, and design patents.

| Name | Ranking |
|---|---------|
| Ant Small and Micro Financial Services Group | 1 |
| Alibaba | 1 |
| Jiangsu Tongfudun Information Technology Co.,Ltd. | 7 |
| HyperChain | 11 |
| Yunphant Network | 15 |
| JingTum | 22 |
| Hangzhou Fuzamei Tech LTD | 24 |
| Dian Rong | 39 |
| Crypt Ape | 45 |
| Wan Xiang Blockchain | null |
| BitSE | null |
| Canaan | null |
| Onchain | null |
| HPB | null |
| 8btc/bytom | null |
| Shanghai Feixun Communication Co.,Ltd. | null |
| GX Chain | null |
| Bravo Whale | null |
| Suning Finance | null |
| Tong Dun | null |
| Yuan Ben | null |
| ChainNova | null |
| Gingkoo Financial Information Co., Ltd. | null |
| JuZheng Finance | null |
| Bao Quan Network | null |
| Bu Meng Technology | null |
| Shell Coin Internet Technology Company | null |
| Tower Chain | null |
| RaderWin | null |

¹¹ Source: http://www.iprdaily.cn/news_18252.html

Focus Study

In this section, this report investigates features of 5 companies like core team stability, featured product, future strategy and so on. This section, together with former contents, will provide a relatively comprehensive assessment from both the macroscopic and the microscopic perspectives.

Case 1: Canaan

Flashpoint: Hardware Denominator; Cross-industry Ambition; AI Chip Development.

Core Product: Avalon Miner, which has obtained 19.5% of the combined calculation power of all bitcoin miners. Moreover, this machine has a net profit ratio of more than 30%. For year 2017, the sale of it accounts for 99% of total revenue in 2017. (Which is 0.36B RMB.)¹²

Core Service: Mining of Bitcoin and other digital currencies.

Core Team Assessment: This Company has a relatively stable core management and development team. The original founder team is still in company and there's not many recruiting ads for core positions. Plus, its core team is relatively farsighted. They not only withstand the temptation of “easy money” and adhere to the company's original development goals but also have a keen sense of policy. Before the total closedown of China's crypto currency market, this company has made its decision putting the company's R&D priority into the research of AI chips. At the time when Chinese government rises the importance of development of integrated circuit industry to an unprecedented level, its transformation will undoubtedly bring great benefits.

Development Prospect: In general, this company has unpredictable future potential if its IPO succeed. Moreover, many government officers like Governor of Zhejiang Province and Vice chairman of the China Securities Regulatory Commission give very high comments of this company, this indicates its stability from another angle in the short future at least. However, its reluctant transformation and lack of compatible products in the AI chip industry may indicate a step back of the innovative attitude and R&D capability of this company. According to the financial report of year 2017, 99% of its annual income still comes from its old business-sale of miners and 66% of the sale of miners comes from customers in Mainland China. As the policy on digital currency of Chinese government's going increasingly strict, the huge dependence on a single source of income may lay latent danger for its future development.

¹² Source: <http://8btc.com/doc-view-2158.html> (Hong Kong Stock Exchange's prospectus of Canaan)

Case 2: HyperChain

Flashpoint: Ample Patent Storage; Strong R&D Capability; Wide Cooperation

Core Product: HyperChain Platform, which is a mature platform with four layers of self-developed algorithms that provides enterprise level solutions for financial companies.

Core Service: Platform services and accounts receivable management.

Core Team Assessment: Even though its core management team is not dedicated to this company, its R&D team still works efficiently and its recruiting ads show no clue of personnel instability in pivot positions. However, its salary is below the industry average and its profit has been negative for 2 years in a row. This relatively unattractive condition may bring harm to the HR potential of this company.

Development Prospect: Its recent investment guarantees its near future development, and its featured product has its own competitive power and protection of many patents. However, the lack of profitability and abnormally estimated market value plus the uncertainty of state regulations may bring risks for the company and investors.

Case 3: Bu Meng

Flashpoint: Active Community; Closed Loop Ecosystem; Covenant-lite IDE.¹³

Core Product: Bu Meng Community

Core Service: Block Chain Infrastructure Construction; IDE Development, API¹⁴ services; Digital Property Exchange.

Core Team Assessment: This Company has a dedicated R&D team which is very energetic. However, its management core team is not dedicated and less organized. Moreover, there're too many recruiting ads comparing to its scale. Consider all these facts, there are some doubts of its personnel stability.

Development Prospect: This Company is relatively tiny. Its below-average salary and unstable profiting performance makes it less appealing to elites who's seeking a stable position and satisfying welfare. However, its community form blockchain is

¹³Integrated Development Environment

¹⁴ Application Programming Interface

quite creative and user-friendly. Without too much professional knowledge on blockchain, its users may create their own applications or put their digital property in the community for exchange. This innovation created a board and cozy market for itself and without too much competitive pressure, it will focus more on the development of fundamental technologies.

Case 4: RaderWin

Flashpoint: Blockchain + Health Care; Small with Big Ambition.

Core Product: Rader Chain (In development), which is a platform links data of patients, doctors, hospitals and suppliers all together to simplify the procedure of health care and improve the efficiency of current health care system. According to the latest update, this new technology is nearly-accomplished and has been experimented in cooperation with some hospitals and medical agencies.

Core Service: Distributed medical records; Drug traceability.

Core Team Assessment: This Company has a very tiny but coherent team. The founders of this company are typical idealists of future and one of them is the CTO of this company at the same time. Since it's still at the stage of start-up, it may be attractive to some radicals seeking challenges. However, its too small scale and lack of profitable product makes it vulnerable to financial disturbances. Moreover, it sometimes delays employee's salary. So it may be difficult for this company to recruit.

Development Prospect: Consider its lack of sponsor and profitability, doubts on the viability of this company may be bought. However, this company has an innovative angle combining blockchain with an industry that has been neglected by many innovators. It's future Rader Chain, if succeed, will bring radical changes to the health care industry. Moreover, as the first one to eat the crab, there's almost no direct competitors in this market by far, (However, we can't exclude the possibility that some flagships may stick to this market and use their advantage on scale and capability to rapidly build their dominance. If so, it will be extremely harsh for this company to survive for its lack of patent barriers.) So as long as this company can persist, it will meet its golden time in the future.

Case 5: Tongfudun

Flashpoint: Extremely Low-Profile; Powerful R&D Capability; Reliable Product; Cross Industry.

Core Product: Tongfudun Cloud, a cloud platform offers sophisticated security protection and verifications through block chain.

Core Service: Financial Security Protection; Personal Identity Verification; Internet Security Services; Anti- Fraud Services; Confidential Data Storage and Verification; Develop and deploy blockchain platform for governments.

Core Team Assessment: This Company has its own dedicated experienced management team and a mysterious but very powerful development team. Many of whom working for this company are former employees of world-class flagships like IBM, Microsoft or Oracle. Moreover, this company provides its own employees with above industry average salary and very healthy, friendly working environment. According to feedbacks of its own staff, many agree that it's comfortable to work there and see their company as a potent unicorn. It's secure to conclude that this company has very stable personnel and attractive HR potential.

Development Prospect: A company focusing on development of online security and cooperated with many flagship companies even the government. Its now featured product is now profitable and expanding in fast speed. Moreover, it's been evaluated by Ari Consulting a 5.4B RMB market value. Therefore, it's reasonable to say this company is a positive developing company. Very practical featured product with very substantial profit potential, plus its stability of its core team and financial support, this company has its own mysterious but reliable pace of development. And the market it targeted has massive demand of application of blockchain, This Company will gain advantage in future competitions as the first comer in this field. Moreover, its strong patent barrier guarantees its core competition power in the future.