# Unit 6 Case Study : Dianrong on Peer-To-Peer Lending Through Blockchain in China

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"You will not find a solution to political problems in cryptography…"

- Satoshi Nakamoto

**Unit 6 Case Study : Dianrong on Peer-To-Peer Lending Through Blockchain in China**

This week's case study from the Harvard Business School course pack is about the company Dianrong, founded by Soul Htite and Keven Guo in 2012 (Malloy et al., 2019). Dianrong is a company in China that is trying to change the peer-to-peer (P2P) lending space, but it is at a rather uphill battle for the company. While the company is motivated and ambitious, trying to operate within China while also tapping into blockchain technology creates a unique set of challenges for the company - both regulatory and technical. China as a nation is rather new to the baking and fintech space and many of the banks are state-owned. The nature of the rather new banking environment makes it difficult for small and midsize enterprises (SMEs) to grow, since the banks would rather lend to state owned enterprises (SOEs). The reason for this is that the brick-and-mortar, state-owned Chinese banking sector has massive total costs and would rather dilute the underwriting and operational costs of lending over the larger loan amounts (in RMB) SOEs require. There is very little SOEs can do in the traditional banking sector to really qualify for any kind of loan, since the state just does't want to deal with all the risk. The internet-based P2P lending space, however, which launched in 2007 in China, was set to change that. This paper will dig into the challenges Dianrong is facing in terms of innovating within the P2P lending space as well as try to look into the latest news and leading research that could help Dianrong grow and further its mission of expanding the P2P lending space in supply chain financing and beyond.

**1. What are the trade offs that Dianrong is facing? How should the company prioritize its objectives? What should Soul Htite do?**

Since Dianrong is operating within China, they have no country-wide credit profiling mechanisms to rely on, like the credit bureaus within the United States. This means that Dianrong had to develop their own credit profiling and settlement mechanisms themselves on top of building out any other features that could help manage fraudulent, high-risk loans that might arise between investors and borrowers. This poses some interesting challenges for founders Htite and Guo, since they can't just focus on technology, but rather have to spend a significant amount of time, money, and resources on compliance and risk management. Dianrong needs to be both a crediting agency and a blockchain innovation company in order to thrive, which can create a unique set of challenges when compared to companies that are operating with the United States.

Thankfully, blockchain technology has an answer to many of the concerns Dianrong and Soul Htite may have. Dianrong's proprietary blockchain protocol, Tuan Tuan Zhuan (TTZ) enables Dianrong to be radically transparent in their operations, which is unheard of in the industry. They can both allocate hundreds of thousands of loans while also providing statistics to investors - all in real-time. Crossman (2017) actually criticizes the credit bureaus within the United States and urges congress to consider pushing for blockchain technology-based crediting agencies to replace the existing crediting system. The company Equifax stores personally identifiable information (PII) such as social security numbers in order to verify transactions, but since they have a centrally managed database, their servers are susceptible to hack attacks. Such incompetence is not acceptable, and Crossman makes mention of the company Bloom, which tries to make use of the Interplanetary File System (IPFS), staking, and blockchain to provide security features to a blockchain-based credit rating application. Dianrong is not only trying to

do what Bloom is doing, but also create complex visualizations such as "Knowledge Graphs" to investors, other complex supply chain analytics, and also actually disburse loans to people. While obviously ambitious, I think Dianrong is actually on the right track, since having all of these features in one system could actually be such a useful and disruptive product.

In terms of company objectives and priorities, they should really lean into the blockchain technology research and see how they can create the best end-to-end environment for supply chain financing endeavors within the blockchain. Really, having to create your own crediting agency is not a drawback, since it can really help make the entire process more efficient, since it's not like Equifax really does that good of a job to begin with in the United States. In other words, they should try to absolutely prioritize blockchain technology, as Crossman herself insists congress does in America. It might be more difficult for the company to scale initially, but with a smart corporate structure and the right investments, Dianrong can really hit a home-run!

**2. As detailed in Exhibit 1 of the case, there are different collaboration models that Dianrong has adopted in working with various parties on technological development. How should the company decide on the nature of collaboration for technological developments in the future (via organic and in-house developments, partnerships, joint ventures, or acquisitions)?**

Dianrong has a complex and hierarchical organization structure, with the top level of the umbrella being called the DR Group. The DR Group manages a number of wholly owned entities, joint ventures, and partnerships. This corporate structure allowed for a freedom to enable a concept they called "The New Finance," which helped expand the kinds of business ventures the company as a whole was able to take. Should they focus more on investing in their internal credit rating system which was managed in-house, or instead, focus on expanding their

joint ventures through the Chained Finance blockchain experience? The DR Group's structure really allows for it to be able to successfully apply any kind of collaboration model they want, as long as it makes sense. Looking into their acquisition decisions, their acquisition of Quark Finance's Credit Studio, which was renamed to "Credit Factory," enabled the company to provide comprehensive loan underwriting data collection and servicing, while also enabling data analysis through automation scripts or help from human, customer-facing data analysts. Such an end-to-end crediting service isn't even provided by the United States!

The in-house developments and acquisitions were surely useful for the company early on to help get them off the ground, but as of now, the company should focus on their joint ventures. Currently, Dianrong has a joint ventures with both FnConn and the Hanwha Group. Hanwha (2016) reports on how Dianrong and Hanwha were trying to expand their market from just China to both China and Korea back in late-2015. Dianrong set up a subsidiary in Korea to try and expand their P2P lending services into the Korean market.

Dianrong's joint venture with FnConn, a subsidiary of FoxConn (Apple's iPhone manufacturer), lead to the creation of the distributed ledger they dubbed "Chained Finance." This is arguably Dianrong's most powerful product, since it provides the supply chain industry with a unified, immutable, and transparent ledger of the 1000s of suppliers who work under Foxconn and are involved with the creation of the iPhone, for example. The "Chained Finance" blockchain app has the potential to help support smaller suppliers of the iPhone while enhancing transparency and reducing inefficiencies.

**3. Assuming that the company manages to raise an additional US$100 million, how should Dianrong allocate the capital across its many business units to maximize value in the long**

**run? Should the company spend the money on internal R&D initiatives or M&A pursuits? Or both?**

Dianrong acquired Credit Studio because of the lack of public crediting infrastructure in China. This decision ended up working well for them, so it is difficult to say whether Dianrong should go all into R&D or M&A. Wang et al. (2021) try to shed light as to when R&D or M&A should be prioritized for a company. Large groups like Alibaba have the funding to get greenfield research projects going, but what about Dianrong? Unfortunately, the answer is not so simple, since M&As are also not cheap. In fact, Wang et al. conclude that when the cost of M&A exceeds a certain threshold, tech M&As are abandoned in favor of in-house R&D efforts. If Dianrong is capable of utilizing the new knowledge gained during R&D efforts directly for a profit, they can continue to reinvest and make the product better during each iteration. An M&A is not always the right move, since it can both cost a significant amount of money and lead to new tangible and intangible burdens for the enterprise. Considering the current size of Dianrong as well as the innovative nature of the "Chained Finance" initiative, it might be a good idea for the money to go towards researching and improving their distributed ledger product.

**4. How should the company work with the local regulations in China? Should the company focus on reviving the P2P industry in China in the process? If so, how?**

Soul Htite's company, Dianrong, has been around the scene since 2012. While blockchains and cryptocurrency were officially a thing after Nakamoto released his paper in 2008, it was not until 2014 that Vitalik Buterin would begin to push for customizable-smart contract-focused blockchains to become mainstream. Dianrong was a part of China's early, internet-based P2P lending platform, which itself was only founded in 2007. China was a little late in entering the fintech craze when compared to the United States, but by 2011, the state-run

P2P lending platform was beginning to get serious investments from retail investors and larger loans were starting to disburse to SMEs. Interestingly, China's fintech space has ballooned in size, but without good regulations and fraud prevention mechanisms in place, by 2014, the entire market became a race to the bottom and was in a downward spiral. By 2016, Chinese police would begin to begin to try and protect retail investor's assets by arresting founders of companies such as Ezubao. It became difficult for P2P platform operators/lenders who were honest to try and grow, since regulators wanted to prevent fraud in the space. Fortunately, by 2017, Dianrong acquired an online small-loan license in China, which lead to the creation of the "Small Loan Business" division. Dianrong is actually successfully disbursing loans in the amount of $1,500 - $ 150,000!

Dianrong is already doing a decent amount to revive the P2P lending space within China, but Murray (2018) reports that Dianrong's supply chain finance solution was strategically added to the Corda Blockchain's platform. Week 4's case study back in late September was actually about the Corda blockchain, and as we read there, Corda's R3 distributed ledger was trying to provide transparency and interoperability to the supply chain databases through their notary services. Dianrong and Corda both want to be technologically and geographically agnostic platforms, and by working together they could better solve the inequality-exacerbating paradigm found in supply chain financing. The CorDapp is being developed through a partnership between the two companies, as they want their blockchains to work well together.

It might be in the cards for Dianrong to both work with the local regulations within China, as they previously have, while also expanding into international markets. They already

snagged a partnership with Corda and joint venture with Hanwha, so their company could thrive in both Chinese and international markets.

**5. Are there other technologies that Dianrong should consider adding to its already expansive portfolio of technologies? In contrast, are there technologies that may seem redundant at the firm at the moment? How should Dianrong manage this to improve its competitive edge with its "technology DNA?"**

Dianrong has been around for quite some time. In fact, since they have been around since 2012, they have some more archaic partners who may not be the best fit for them. As is, Dianrong has to have some functions in-house that other companies will not have to simply due to the regulatory environment they exist in, but their partnership with Suzhou Bank could be troublesome in the future. The regulatory environment in China makes it so that P2P lenders are moreso information intermediaries and Suzhou Bank is doing nothing but get Dianrong some customers for now. Since Dianrong is trying to be an end-to-end creditor, lender, and supply chain risk manager, they may not have the need to keep some of the partnerships, like their partnership with Suzhou Bank, going. This partnership in-particular seems a little redundant.

Furthermore, they should continue to add to their current technology portfolio. Wang et al. (2023) provides some peer-reviewed research on how blockchain can be leveraged to better enable collaboration within supply chains. Researching the Stackleburg game model for consensus could help Dianrong improve their ability to engage in joint venture ships, if they are trying to scale in a way that helps minimize their risks in the future. Current blockchain innovations require companies to invest in R&D for consensus research if they are to properly create a system that scales. If they can combine Stackleburg game models with blockchain cohomology concepts, it could lead to a truly secure, efficient, and fair transaction environment for SMEs that Dianrong wishes for.

## Conclusion

Dianrong shows that Fintech companies trying to establish themselves in young or immature banking sectors still have the ability to innovate and push boundaries. Despite the

country of China not having their own crediting beauties, Dianrong has acquired the right companies to get the job done. Their underlying proprietary blockchain, Tuan Tuan Zhuan, has the potential to pack quite the punch. Both crediting, lending, and analytics can be done in one environment. Also, their joint venture with FnConn ("Chained Finance") has clearly shown that blockchain can be used to improve the complicated iPhone manufacturing supply chain. In the future, Dianrong should take the risk to invest more into R&D initiatives, explore their partnership with Corda's R3, as well as investigate Stackelberg game models for consensus. Corda's focus on cohomology, federated aggregations, as well as notary services plus Dianrong's focus on efficient and novel consensus mechanisms dedicated to supply chain could be the right combination to finally get production ready web 3.0 Dapps that are ready for the prime time.

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