

Unit 8 Case Study : Alibaba and Remittance

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From a previous case study on Dianrong, we learned a lot about China's business environment. In China, the banking sector is rather immature, but the technology and Fintech sectors are strong. A significant portion of the population owns mobile devices and has access to internet, but banks just don't give out loans to everyday business owners of Small Medium Enterprises (SMEs). Banks usually only give out loans to State Owned Enterprises (SOEs), despite the fact that SMEs could account for >60% of the GDP and 80% of the urban employment (Davis et al., 2018). This lack lending is apparently because of the absence of quantifiable collateral SMEs can show show banks along with the non-existence of credit bureaus and credit history within the nation. Davis et al. write about the companies Alibaba and their fintech payment affiliate, Ant Financial, as they attempt to fill the void of lending to SMEs and serving immigrant populations when the Chinese banking system is unable to.

1. How does blockchain-based remittance fit into Alibaba's cloud offerings?

Alibaba's Iron Triangle includes three distinct business focuses, which includes e-commerce, logistics, and finance. Normally, in countries like the United States, these functions are separated and no single company performs all three functionings at once. Also, Alibaba has the benefit of not only owning and operating companies in these three functions, but also has their own cloud-vending service that competes with the big three cloud-vendors of the United States - Amazon Web Services, Microsoft Azure, and Google Cloud Platform. While Alibaba Cloud may not be as popular as the big three within the United States, in global markets, as of 2023, Alibaba is actually the third largest cloud provider (Liu & Mac, 2022). Alibaba's expansion into Southeast Asia, Singapore, and Oceania has been extremely successful. Their

ownership of businesses in commerce, logistics, finance, and the data infrastructure is impressive. The data infrastructure helps manage all elements of the Iron Triangle. The multi-cloud approach is becoming more and more common and Alibaba's infrastructure offerings (IaaS) are just as important as the Big Three in the United States.

Blockchain-based remittance is well provided for by Alibaba through their ability to both provide software solutions from the Iron Triangle and also provide data centers for all members of the supply chain to connect to. They can easily track data across borders, across multiple companies, and also provide data centers for the businesses to connect to for a low-latency, relatively high-throughput (25,000 TPS), with the additional benefits of transparency and privacy. Through Alibaba's Cainiao logistics app, they could collect data related to logistics across multiple borders on a single digital ledger (a cross-border chain). The ability to manage payment systems as well, with the subsidiary Alipay, made it so that Alibaba could also legally engage in payments in forex exchanges. Since Alibaba has the ability to both manage risks and manage payments, their remittance services can very easily integrate with their cloud offerings.

2. What unique value does blockchain technology provide in Alibaba's remittance offering?

The remittance market mostly provides unfavorable exchange rates for foreign nationals who are trying to send money back to their home countries. Immigrant populations like Filipino people working in Hong Kong, for example, have to pay way too much money to send money from China back to the Philippines. Alibaba's response to remittance services like MoneyGram and Western Union was with their product GCash, developed by Ant Financial. In mid-2018, Ant Financial enabled hundreds of thousands of Filipino workers in Hong Kong to seamlessly transfer money back home with their blockchain-based GCash service. GCash would form a

joint venture with the Filipino company Globe Telecom, making the transfer of money between AlipayHK and GCash users seamless (Hong Kong to Philippine transfer was easy).

The blockchain, in this case, is a software layer that is essentially connecting the payment systems from these two separate countries and making it seamless for the two apps, AlipayHK and GCash, to instantly, transparently, and cheaply request for a remittance and just get it done.

3. What are the other areas of application for blockchain in Alibaba's cloud business?

It's no mystery that Alibaba is covering a lot of ground with their business ventures. The company is just quite massive and is making deals with hospitals, food delivery services, and a number of other companies to expand their product and service offerings. They are honestly doing just fine from a sector representation perspective, but could do better with their technology innovation, particularly within the cloud computing and blockchain spaces. In more technical terms, Alibaba should focus on fog computing and innovating on zero-knowledge proofs, since these are the last frontiers for scaling blockchains and getting past the "chicken and egg" program. Fog computing as a solution is relevant to both sections 3 and 4, so instead I will focus on zero-knowledge proofs in this section.

Ben-Sasson et al. (2016) briefly describe the concept of zero-knowledge proofs and how we might be able to make them more scalable. Cryptocurrencies like Z.Cash showed that there could be utility in hiding the private data (statistical distribution), while showing aggregations or analysis to network participants. Alibaba has already tried to enter this space and provide zero-knowledge proofs in a case-by-case basis, but it's not such an easy goal to accomplish.

As of now, zero-knowledge proofs that employ homomorphic encryption are not so secure. The private data is far too easy to reverse engineer, which defeats the purpose of the

encryption to begin with. Meldman-Floch (2018) provides the solution of blockchain cohomology, which might be better than standard homomorphic encryption. The problem is that blockchain cohomology may actually need a large kernel pool (CPU pool) to work off of due to the immense computational effort involved in performing a secure encryption that is not reverse engineer-able. It just isn't safe to rely on a centralized cloud-vendor for the kernel pool, but decentralized infrastructure vending models, like the fog/edge computing model, may pair extremely well with cohomology for a faster and safer encryption environment.

4. What is Alibaba's strategy to overcome the "chicken and egg" problem of insufficient transaction liquidity and eventually achieve network effects with its remittance services?

The best way to actually achieve network effects and get more people to be involved with Alibaba's economy while also increasing network throughput might be for Alibaba to actually enter the fog computing space. Essentially, fog computing can be thought of as a decentralized cloud-computing model, where end-users donate their computing power to the overall network (Pisani et al, 2019). Since Alibaba is already a major player in the cloud vending space, and Pisano et al. explains that fog and cloud computing each have their own benefits and time to shine, end-users may be able to just lend their own CPU cycles and help maintain the network, much like miners do in the Bitcoin network.

Enterprises have begun to realize that the underlying technology of cryptocurrency that enables transparency, disintermediation, and security advantages might be more important than the concept of cryptocurrency itself. The cloud vendor revolution helped bring the power of data to more companies than ever, and I think the fog computing revolution will only cause data to be more valuable.

Conclusion

Alibaba is no sleeper in the business world. Their product offerings are rather large and they dominate the markets in China. Their cloud service is now the third largest computing infrastructure provider in the world and their remittance services are helping more people than ever send money back home and support immigrants that work just as hard as everyone else. The future of blockchain will require a higher TPS in order to process more transactions. This might be ethically achieved through the use of fog computing and kernel pooling. Alibaba is already a massive cloud computing player, so entering the fog computing space might be a good next step. Zero knowledge proofs could help push forward vapors policy initiatives or better macroeconomic analysis in general, since the microeconomic condition can be securely measured while respecting user-privacy. When working in conjunction with fog computing and existing systems, cohomology-based encryption strategies may be the solution that makes federated aggregations viable.

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