



Comparative Analysis of the Development of China's Payment By Phone Number and Zelle in the United States

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Abstract. This article introduces the background, development status, advantages, and performance of China's payment by phone number service and Zelle payment tool in the United States, and points out the problems and disadvantages of both. Then analyze the similarities and differences between the two in terms of development models and market size, cross-border payments, security, and privacy protection, and seek inspiration from them. Finally, suggestions were proposed to strengthen partnerships, enhance user experience, and enhance security protection, Intended to provide experience and reference for payment service providers in other countries and relevant industries.

Keywords: China payment by phone number, Zelle, Digital Payment Tool, Development Model.

1 Introduction

With the flourishing development of network technology and digital economy, the public's demand for convenience, security, inclusiveness, privacy, and other aspects of retail payments is increasing. The development of digital economy requires the construction of a new type of retail payment infrastructure that adapts to the requirements of the times and is secure and inclusive. In recent years, with the rapid development of mobile payments, China's payment by phone number service and the US based Zelle have become two important payment methods and will continue to play important roles in their respective markets.

2 China Payment by phone number Service

2.1 Background and current development status

The development of China's mobile payment industry has covered multiple fields, including personal transfer, online shopping, restaurant services, paying bills like water, electricity and gas, public transportation, taxi services, and etc. Mobile payment has

already become an important choice, not only convenient and fast, but also transparent in price. This payment method has changed consumer habits, surpassed traditional credit cards, and overturned the intermediary role between payments and banks.

The payment by phone number service is an important component of the mobile payment market in China. It is a new service launched by the People's Bank of China in 2019 to further improve the level of interbank payment services and facilitate customer payment experience, relying on the new feature of the People's Bank of China's Internet Banking Payment System (IBPS)[1]. The IBPS system achieves free transfer, operating 24-7, and no longer requires inputting the specific branch of bank that recipient open the account. On top of this, "payment by phone number" is provided to individual customers. Users can bind their mobile phone number and bank card, and only need to enter the recipient's name and mobile phone number to achieve fast payment and transfer, further improving the convenience of interbank payments and better meeting the needs of the general public for payment services.

Since its launch, China's payment by phone number service has achieved rapid development in the past few years. Now, the vast majority of banks have opened up this service. With the popularization of mobile payments and the increase in user demand, the market size and number of users of China's payment by phone number service continue to expand [2].

2.2 Advantages and Performance

Reduce communication costs and improve payment efficiency. Due to the reduction in the use of physical cards, checking one's card number on various bank apps also requires verification through a mobile phone number. Mobile phone number payment reduces communication costs for personal transfers, increases convenience, and improves payment efficiency. According to recent news reports from the People's Bank of China, mobile phone number payments have greatly assisted individual businesses and agricultural product purchases and sales in meeting their transfer, payment, and settlement needs, supporting agricultural industry development, rural revitalization, and inclusive finance.

Protect customer personal information better. In terms of consumer personal information protection, payments by phone number use more public mobile phone number information, thereby protecting more private bank card account information. Nowadays, due to the binding of mobile phone numbers to various platforms and applications, people's mobile phone numbers are not easily changed, while bank cards are relatively easier to register and cancel.

Make management account security more conducive. Due to the shorter and easier to remember mobile phone numbers, as well as the presence of a contact list, transferring funds through mobile phone numbers can reduce the probability of transferring funds to unfamiliar accounts. In the case of anti-spam and anti-money laundering, there are higher and more dynamic requirements for account management. Mobile phone number transfers will be transferred to the other party's default account without entering the account opening bank, which can effectively collect customer funds into one account and enable customers to use a main settlement card as much as possible.

2.3 Disadvantage and areas for optimization

The enthusiasm of users to open and use the service needs to be stimulated. Due to the current transfer of payment by phone numbers, need both the receiving and paying parties to activate this function before the transfer can be made. In the market environment where third-party payments are popular, the payment by phone number function lacks core competitiveness. Payment by phone numbers must be processed through a mobile bank app, and customers must set up two sets of passwords when opening a mobile bank account. The cumbersome opening of an account makes some customers hesitant. Especially senior customers, due to memory difficulties, they are unwilling to open and use mobile banking, making it difficult to use mobile phone numbers for payment.

The promotion and popularization are not yet in place. Due to limited promotion, the mobile number transfer function has not yet been widely activated. In addition, there is a lack of timely payment experience and subsequent maintenance for registered users, which cannot accurately guide users to spontaneously form a "registration use promotion expansion" fission promotion effect, resulting in a large number of users becoming inactive.

3 Zelle Digital Payment Tool in the United States

3.1 Background and current development status

The current new payment tools for mobile applications in the United States mainly include Venmo, Cash App, Zelle and etc. Venmo has 40 million individual users. Although there is a handling fee of 1.9%+0.1 USD for corporate transfers, there are two million merchants who support Venmo payment. During the 2020 pandemic, 159 billion US dollars were settled. Cash App has 70 million users and a daily transfer limit of \$1000 without providing any personal information, with a transfer fee of 2.75%[3].

Zelle was founded in 2017 and is a P2P payment service jointly launched by banks and financial institutions in the United States. It is supported online by banks and credit cooperatives on its official website. It achieves fast transfer between users by binding with bank accounts and belongs to a network of financial institution alliances. Zelle is a small real-time transfer system between American banks, which can be registered using email and phone number. There is no handling fee for different bank transfers, as long as both parties use Zelle's partner bank. When transferring funds, simply enter the recipient's name, email or phone number used to register Zelle, and the funds will be credited in real time[4].

Zelle faced some challenges in the early stages of its establishment, such as low user awareness and unstable partnership relationships. However, over time, Zelle gradually gained more partners, with more and more banks accessing Zelle and a growing number of users. At present, more than 1800 financial institutions have joined this network and settled 2.3 billion transactions worth 629 billion US dollars in 2022. Due to Zelle's advantages in real-time payment and avoiding intermediary fund custody, it has become one of the most popular P2P payment services in the United States.

3.2 Advantages and Performance

Most users can directly use Zelle's mobile application on the bank's website or app without the need for additional downloads, simply providing an email address or phone number to register. The use of Zelle is simple and fast, and there are no transaction fees. If the other party also has a Zelle account, Zelle payment transfer is definitely more advantageous.

Zelle is different from payment applications such as PayPal in that it is an online payment system purely operated and managed by banks, so there is no need for intermediaries to handle fees. This platform has also achieved success in completing transfer operations in a fast, and secure manner, which is the most noteworthy feature of Zelle after its launch in the United States.

Compared with several major mobile payment applications currently in the United States, Zelle and payment by phone number are the most similar. Both are free and available 24/7, requiring a bank account to use, and can be accessed through the bank's mobile application. The difference is that Zelle not only supports US phone numbers, but also supports the use of email; Not only supporting individual users, but also supporting enterprises[5].

According to information released on Zelle's official website, in 2022, small and micro enterprises (landlords, hourly workers, gardeners, consultants, etc.) received over 150 million transactions through Zelle, totaling over \$72 billion, an increase of 77% and 84% compared to the same period in 2021. At the same time, small and micro enterprises also make salary and rent payments through Zelle, adding 66% of accounts in 2022, with over 133 million transactions, totaling over 87 billion US dollars.

3.3 Problems and Disadvantages

Real time payment has not been fully achieved yet. When both parties have Zelle accounts, the transfer payment is "generally within minutes". Although Zelle's settlement speed has greatly improved compared to traditional check payments, it still takes a few minutes to arrive, and some may even take a day.

Only applicable to domestic banks in the United States. If the billing address is in the United States, the Zelle function can be activated, which is a small real-time transfer system between American banks. If the billing address is in China, the Zelle function cannot be used.

Increase the risk of fraud. Although Zelle provides a convenient way to remit money through the banking system, it must also emphasize compliance with consumer protection laws and anti-money laundering laws. Given the continuous surge in transaction volume across the Zelle network and the increasing number of fraudulent activities related to the Zelle network, five Democratic senators in the United States have issued warnings that "Zelle's model has opened the door to large-scale fraud," urging the OCC and the Federal Reserve to "continue to inspect early warning services," and emphasizing the issue of responsible parties and fraudulent behavior when problems arise.

4 Comparative analysis and inspiration

China's payment by phone number shares some similarities with Zelle in the United States, but there are certain differences in development models, market size, cross-border payments, and other aspects. Payment service providers from other countries can learn from this experience and provide more convenient and secure payment services based on local market demand and user habits.

4.1 Different development models

The payment by phone number service in China is a new service that relies IBPS system of the People's Bank of China for online payments. Users can make payments and transfers by binding bank cards or balances. Zelle is a P2P payment service jointly launched by banks in the United States, which mainly relies on bank accounts and phone numbers for payment. It not only supports US phone numbers, but also supports the use of email. Both China's payment by phone number service and Zelle in the United States have certain advantages in terms of convenience [6].

The inspiration of this model is that different markets may require different development models, which need to be adjusted according to the local financial system and user habits.

4.2 Different market scale

Due to the large population in China, payment by phone number services have rapidly developed in the past few years, with a large market size and a much larger number of users than Zelle. The brand, technology, and services of China's mobile payments may have the greatest global influence. In the US market, Zelle's imitation of social networks and other purposes has been well received by consumers, with a focus on "interaction between people" and gaining trust among the consumer community. However, Zelle's market share in the United States is relatively small due to its limited support for small amounts of transfer payments and limited by the small size of the US market.

In terms of market size, China's payment by phone number business has greater potential and opportunities. For payment service providers from other countries, they can learn from experience, actively explore the market, and provide more convenient payment methods.

4.3 Partnership

China's payment by phone number business has established partnerships with major banks and electronic payment platforms in China, forming a complete payment ecosystem. The top-level design of the government and the provision of policies, regulation, and support have created a favorable environment for the formation of the mobile payment ecosystem and the development of the market. Zelle has established stable

partnerships with banks in the United States and financial institutions, which helps improve user experience and promotion.

This provides an inspiration for payment service providers in other countries to actively establish stable partnerships and form a healthy payment ecosystem.

4.4 Security and privacy protection

Both China's payment by phone number service and Zelle in the United States have certain advantages in terms of convenience, using more public mobile number information to protect more private bank account information. Both pay attention to user security and privacy protection, and adopt various security measures, such as dual authentication and encryption technology, to ensure the security of user payment information and funds.

This provides an important inspiration for payment service providers in other countries, which is to pay attention to user privacy protection and security in the development process. Through multi-level security guarantees, including identity and biometric authentication, multi password protection, etc., it effectively improves user security and establishes a reliable payment ecosystem.

5 Conclusion

By comparing and analyzing the development of payment by phone number services in China and Zelle in the United States, the following insights and suggestions can be drawn. First is to strengthen partnerships: establishing stable partnerships can help improve user experience and promotion. The second is to continuously improve user experience: by continuously improving products and services, enhance user experience and increase user stickiness. The third is to continuously strengthen security measures: adopting various technological means to enhance security measures and protect the financial security of users. The fourth is future development: China's payment by phone number business is not limited to transfer payments, but can also explore the derivative financial products in transaction methods.

To achieve high-quality development of the economy and society, it is objectively necessary to have a safer, more universal, and more inclusive new retail payment infrastructure as a public good, further meeting the diverse payment needs of the people, and thereby improving the level and efficiency of basic financial services, promoting smooth domestic circulation, and providing strong support for building a new development pattern. In the future, we have many reasons to expect the development of China's payment by phone number business and the growth of the Zelle market in the United States.

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