

Boost Mobile Banking Monthly Active Customers with Vending Machines

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Abstract In China, commercial banks have launched mobile banking one after another, and the homogeneous products make the competition of mobile banking extremely fierce. Mobile banking monthly active users (MAU) is an important indicator to evaluate the operation results of mobile banking. How to improve mobile banking monthly active users is a problem faced by commercial banks. The purpose of this study is to explore strategies to increase monthly active customers of mobile banking with the help of vending machines. This research is carried out through the literature method and case method. The research results show that the use of vending machines can not only effectively increase the monthly active customers of mobile banking, but also realize the differentiation strategy to occupy the mobile banking terminal market. At the same time, this study is helpful and instructive for commercial banks to develop their business.

Key Words : Vending machine, Mobile banking, MAU, Salary payment, Scan code payment

요약 본 중국에서는 시중은행들이 모바일뱅킹을 출시하고 있으며, 동질화된 상품으로 모바일뱅킹 경쟁이 치열하다. 모바일뱅킹 월간 활성고객(MAU)은 모바일뱅킹 운영 성과를 평가하는 중요한 지표로 시중은행들이 직면한 과제이다. 본 연구의 목적은 자동판매기를 이용하여 모바일뱅킹의 월간 고객활성화를 위한 전략을 모색하는 것이다. 본 연구는 문헌법과 사례법을 통해 연구를 수행하였으며, 연구 결과에 따르면 자동판매기를 사용하면 모바일뱅킹의 월간 활성고객을 효과적으로 향상시킬 수 있을 뿐만 아니라 차별화된 전략을 실현하여 모바일뱅킹 시장을 점유할 수 있다. 동시에 이 연구는 상업 은행의 비즈니스 발전에 일정한 도움과 지도 의의가 있다.

주제어 : 자판기, 모바일뱅킹, MAU, 급여대행, 코드스캔 결제

1. Introduction

In China, with the popularity of the Internet, mobile phones have become one of the essential tools in people's lives [1]. Mobile social networking represented by WeChat[2], mobile payment represented by Alipay[3] and short video platform represented by Douyin[4] have become indispensable software on people's mobile phones. An important tool for payment and entertainment. For commercial banks, the advent of the digital age, the development of financial technology, and the reduction of customers visiting stores have promoted the development of mobile banking.

Mobile banking, also known as mobile banking, is an abbreviation for using mobile phones to handle banking-related businesses. Through mobile banking, you can realize balance inquiry, transfer, foreign exchange sales and settlement, wealth management and investment and other related account operations, and you can also realize convenient services such as recharging phone charges and living bill payment. At the same time, it can meet the needs of people to handle business without leaving home [5]. Mobile banking first appeared in Europe and developed in the United States, but is active in underdeveloped countries[6]. In China, mobile banking is developing rapidly. In 2000, China began to promote mobile banking, but due to technical limitations, high costs and other reasons, the development of mobile banking was slow and stagnated for a period of time; in 2004, mobile banking was restarted, ushering in an era of rapid development of mobile banking. According to a survey report by the China Financial Certification Center, with the increase in the penetration rate of mobile banking, the number of mobile banking users in China has grown rapidly, from 670 million in 2014 to 2.09 billion

in 2019. From 2017 to 2021, the penetration rate of mobile banking and online banking users at the retail end in China will increase from 51% and 51% to 81% and 63% respectively [7].

In China, various commercial banks have launched mobile banking one after another. Mobile banking not only meets the daily financial and living needs of customers, but also becomes one of the important tools for attracting customers[8]. X. Liu & H. Liu. (2013) pointed out that mobile banking can effectively alleviate rural financial problems [6]; J. Li et al. (2020) pointed out that in the face of the new crown epidemic, mobile banking not only improved the performance of commercial banks, but also tested the role of financial technology. role [9]. The importance of mobile banking to commercial banks is self-evident, and it is also a product that commercial banks want to promote [10]. However, the homogenization of mobile banking has led to more intense competition among commercial banks. How to realize the differentiation of mobile banking and rapidly increase market share is the research focus of various commercial banks.

Mobile banking monthly active customers (MAU) is a statistical term for the number of users, referring to the number of monthly active users using mobile banking APPs [11]. Different commercial banks have different assessments on mobile banking MAU. Some commercial banks' assessment criteria are registration and login for the first time; some commercial banks' assessment criteria are first-time registration and login and an account transaction. No matter what the assessment standard is, the MAU of mobile banking is one of the effective indicators for evaluating the operating results of mobile banking, and it is also an indicator disclosed in the annual reports of various commercial banks. In the face of the new crown epidemic, mobile

banking is one of the key tools used by customers. According to Sina Finance and Economics, entering 2022, the catching up of relevant data of mobile banking will be more "fierce" in the financial reports of listed banks. Taking China's state-owned major banks as an example, as of the end of June 2022, the scale of ICBC's personal mobile banking customers reached 488 million (more than 500 million in August), and the mobile MAU (number of monthly active customers) exceeded 160 million; China Construction Bank has 428 million personal mobile banking users with 156 million MAUs; Postal Savings Bank of China has 335 million mobile banking customers with MAU exceeding 49 million; Bank of China has 245 million mobile banking customers with 73.67 million MAUs household [7].

There are many related studies on mobile banking, but there are very few studies on monthly active customers of mobile banking. In reality, MAU is mainly used for internal analysis of commercial banks and is not disclosed in relevant annual reports. Some scholars have analyzed and compared the number of monthly active customers of mobile banking of various banks, but have not combined vending machines. There are few studies on increasing the number of monthly active customers of mobile banking with the help of vending machines. Therefore, this is one of the innovative points of this study, and at the same time expands the research on monthly active customers of mobile banking.

This research attempts to help commercial banks achieve the goal of quickly occupying the market and increasing customer stickiness through vending machines. Through field visits and investigations combined with literature research, the research results can not only help commercial banks better develop their business,

expand their business marketing thinking, but also enrich the research theory of mobile banking, which is the innovation of this study.

2. Vending Machine

A vending machine, also known as a vending machine, is a machine that pays automatically according to the coins put in. Vending machines are common equipment for commercial automation. They are not limited by time and place, and can save manpower and facilitate transactions [12]. Vending machines are a new form of commercial retail, also known as 24-hour miniature supermarkets. Common vending machines are divided into four types: beverage vending machines, food vending machines, comprehensive vending machines, and cosmetics vending machines. Now vending machines are more widely used in the market, such as noodle vending machines, medicine vending machines, coffee vending machines and so on. Vending machines initially only supported coins for purchase, but now they support banknotes, card swiping and QR code payment.

The first vending machine appeared in the 1st century A.D. and was made by the Greek Hiero to sell holy water; the modern vending machine was developed by the United States to sell cigarettes, stamps, tickets, etc. Vending machines are widely used in Japan and South Korea. According to statistics from the Japan Vending Machine Industry Association, as of December 2020, the total number of various types of vending machines in Japan has reached 4,405,800, of which the number of beverage vending machines is the largest, reaching 2,284,600, accounting for 56.4% of the total number of vending machines in Japan. Followed by self-service vending machines and daily necessities vending machines, the number reached 1,298,100 and 209,000 respectively,

accounting for 32.1% and 5.2% of the total number of vending machines in Japan [13].

In China, vending machines were first introduced from Japan and South Korea in 1993 and used in Guangdong and Shanghai. The first vending machine made in China appeared in Beijing in 1995. In 1999, China began to promote vending machines, but due to ideological concepts and sales environment problems, the vending machine industry developed slowly. With the rapid development of China's economy, the vending machine industry has begun to develop rapidly. As of 2017, the number of vending machines in China has reached 200,000, mainly distributed in developed cities and regions in China [13].

3. China's Commercial Banks' Mobile Banking Business Development Dilemma

3.1 Product Homogeneity

Although mobile banking has brought customers to commercial banks, increased the performance of commercial banks, and met customers' daily financial and living needs, the homogeneity of mobile banking is also a problem that commercial banks must face. The homogeneity of mobile banking products will lead to the loss of mobile banking customers. L. Wang et al. (2013) pointed out that the factors for customers to choose mobile banking include: social influence, perceived innovation, performance expectation and effort expectation. The usage behavior of mobile banking is influenced by perceived entertainment and convenience [5]. With the homogenization of mobile banking, customers will choose commercial banks with greater influence. Therefore, commercial banks should innovate mobile banking and enrich the usability and practicality of mobile banking. In the face of

different customer groups, launch a version suitable for the group. How to achieve differentiation from other commercial banks' mobile banking is the main problem that commercial banks face. According to Analysys data, Industrial and Commercial Bank of China has the largest number of mobile banking customers, which is quite different from the least number[14].

Through literature research and field visits, ICBC has different strategies for different customer groups: for the elderly, ICBC has launched a senior version of mobile banking. The font of this version is very large, which is convenient for elderly customers; for the merchants of ICBC, a merchant version of the mobile banking APP is launched, which allows merchants to understand the payment status more quickly and conveniently; for individual customers, a personal version is launched. The mobile banking APP is convenient for individual customers to use for investment and financial management; for corporate customers, a corporate version of the mobile banking APP has been launched to facilitate the use of corporate customers for checking and reconciling accounts.

3.2 Poor customer stickiness

In order to promote customers to activate mobile banking, commercial banks will launch activities such as one-point purchase for new customers to attract customers to conduct transactions through mobile banking. However, due to factors such as fewer follow-up activities or inconvenient use, customers often no longer use this mobile banking after activation. Mobile banking APP, what's more, mobile banking will be uninstalled directly. For commercial banks, these customers will become inactive and active customers. Therefore, mobile banking MAU is an

important tool for assessing the operational results of mobile banking. In the face of mobile banking customers, we must not only attract them, but also maintain them. Therefore, commercial banks need to choose different methods for different customer groups to increase customer stickiness. Only by being sticky with customers can customers use mobile banking more and convert traffic into revenue.

Through on-site visits, it is found that Bank of China has done a good job in this regard. Bank of China launched a birthday month gift for birthday customers; launched a monthly recharge activity for ordinary customers; launched a courier coupon activity for individual customers who often send couriers; launched a video membership for customers who like to watch videos Promotional purchases.

4. Strategies and Recommendations for Improving Mobile Banking MAU with Vending Machines

4.1 Different Activities for New and Old Customers

4.1.1 Carry Out 1-point Shopping for New Customers and Introduce New Customers

When commercial banks attract new customers, they can continue to provide customers with "one-buy" discounts through mobile banking, or recharge phone bills or recharge video members, etc., or use vending machines. Commercial banks set up a vending machine in the business hall. After activating mobile banking, customers are guided to the vending machine to buy any product at the price of a penny. The products are considered by each commercial bank, such as mineral water, toothpaste, etc.

Through on-site visits, Bank of Communications has launched this business. There are vending machines in the business hall

of Bank of Communications Zhengzhou Jingsanlu Sub-branch. After activating mobile banking, customers can purchase any product by scanning the QR code and paying a penny. According to statistics, 90% of customers who activate for the first time and purchase products through vending machines have effectively increased the MAU of mobile banking. At the same time, it can effectively increase the three customers, five customers, effective accounts and effective agents.

4.1.2 Old Customers Enjoy Monthly Discounts to Retain Old Customers

After the introduction of new customers, commercial banks need to take measures to retain old customers; only by retaining old customers and increasing stickiness with customers can traffic be converted into revenue. Therefore, different marketing strategies can be adopted in the face of old customers.

For example, for credit card customers, China CITIC Bank has introduced that if the consumption amount exceeds 19 yuan on the same day, they can participate in a scratch prize, which is generally a credit card (no empty prize), and the credit card credit can be deducted when the customer spends next time. In this way, commercial banks have increased the stickiness with customers, retained old customers, and promoted the improvement of mobile banking MAU.

4.2 Cooperate with Partners to Achieve Customer Drainage and Source Technology Lock

4.2.1 Cooperate with vending machine partners to provide conditions for mobile banking scanning code drainage

At first, vending machines only supported coins to be used to purchase products, but now banknotes, QR code scanning and card swiping

have been realized. Some vending machines still only support coin insertion to purchase products. Therefore, commercial banks can cooperate with manufacturers of vending machines to develop a function that supports scanning code payment in mobile banking of the commercial bank, laying a technical foundation for acquiring customers through the vending machine channel.

4.2.2 Carry Out Activities with Union QuickPass to Increase Customer Stickiness

In China, QR code payment is represented by Alipay, WeChat Pay and Cloud QuickPass[15]. UnionPay is an APP, a mobile transaction settlement tool for non-cash receipts and payments. Under the guidance of the People's Bank of China, it is jointly developed, constructed, maintained and operated by China UnionPay together with various commercial banks, payment institutions and other industry parties. The mobile payment APP was officially released on December 11, 2017. The UnionPay APP has three core functions of receiving and paying, enjoying discounts, and card management. The UnionPay APP, UnionPay mobile QuickPass and UnionPay QR code payment are the three major mobile payment products of UnionPay. As of March 2022, the cumulative number of registered users of the UnionPay APP has reached 460 million. As of January 2023, data shows that China UnionPay has issued consumer coupons through the UnionPay APP in more than 280 cities, and the "Prosperity Plan" has covered more than 9 million merchants [16].

The mobile banking APP is inextricably linked with the mobile QuickPass, and the vending machines that support the QuickPass also support the mobile banking APP. Therefore, commercial banks can cooperate with QuickPass

to jointly promote activities and promote the improvement of the commercial bank's mobile banking MAU.

4.3 The Distribution Unit Installs Vending Machines to Increase the Scope of Use

In China, vending machines are mainly distributed in communities with large passenger traffic, shopping malls, supermarkets, high-speed rail stations, and airports [17]. Few of the key distribution units of this commercial bank have vending machines. If commercial banks install vending machines in key dropshipping units and launch code scanning payment activities for dropshipping customers, it will have good results.

According to field visits, some provinces of the Bank of China have set up vending machines for key customer groups, especially steel companies. What a treat for employees to have a cool drink in the summer. Therefore, commercial banks can deploy vending machines in key agency issuing units, which can not only effectively increase the MAU of mobile banking, but also increase the number of customers with three, five, valid accounts and effective accounts with agency.

5. Conclusion

This study studies the use of vending machines to improve the MAU of mobile banking through the literature method and field investigation method. Through the clever use of vending machines, the MAU of mobile banking can be improved. This study can help commercial banks to better improve the MAU of mobile banking, and at the same time, expand the marketing ideas of commercial banks, and provide some suggestions for the development of commercial banks.

REFERENCES

- [1] S. Kumar, P. Tiwari & M. Zymbler. (2019). Internet of Things is a revolutionary approach for future technology enhancement: a review. *Journal of Big data*, 6(1), 1-21.
DOI : 10.1186/s40537-019-0268-2
- [2] T. L. Sandel, C. Ou, D. Wangchuk, B. Ju & M. Duque. (2019). Unpacking and describing interaction on Chinese WeChat: A methodological approach. *Journal of Pragmatics*, 143, 228-241.
DOI : 10.1016/j.pragma.2018.08.011
- [3] Z. Fu. (2021). Study on Overseas Market Expanding of Chinese Mobile Payment Enterprises. *Journal of Sociology and Ethnology*, 3(5), 136-143.
DOI : 10.23977/jsoc.2021.030525
- [4] W. Wang & J. Wu. (2021). Short Video Platforms and Local Community Building in China. *International Journal of Communication (19328036)*, 15.
- [5] L. Wang, W. Wei & J. Li. (2013). Influencing factors of personal customers adopting mobile banking. *Financial Forum*, (11), 73-79.
DOI : 10.16529/j.cnki.11-4613/f.2013.11. 002.
- [6] X. Liu & H. Liu. (2013). Mobile Banking, Rural Finance and Mobile Operators. *Wuhan Finance (10)*, 38-40.
- [7] <https://baijiahao.baidu.com/s?id=1749767938413691220&wfr=spider&for=pc>
- [8] Z. Chen, Y. Li, Y. Wu & J. Luo. (2017). The transition from traditional banking to mobile internet finance: an organizational innovation perspective—a comparative study of Citibank and ICBC. *Financial Innovation*, 3(1), 1-16.
DOI : 10.1186/s40854-017-0062-0
- [9] J. Li, S. Jiang & T. Huang. (2020). Bank Fintech performance and digital transformation of financial services under major public health emergencies. *Journal of Lanzhou University (Social Science Edition)*, (03), 84-95.
DOI : 10.13885/ j.issn.1000-2804.2020.03.011.
- [10] F. A. Johne & P. Harborne. (1985). How large commercial banks manage product innovation. *International Journal of Bank Marketing*.
DOI : 10.1108/eb010750
- [11] G. Li, X. Zhang & G. Zhang. (2022). To Use or Not to Use: It Is a Question—An Empirical Study on the Adoption of Mobile Finance. *Sustainability*, 14(17), 10516.
DOI:10.3390/su141710516
- [12] F. C. Lin, H. W. Yu, C. H. Hsu & T. C. Weng. (2011). Recommendation system for localized products in vending machines. *Expert systems with applications*, 38(8), 9129-9138.
DOI:10.1016/j.eswa.2011.01.051
- [13] J. Gu & L. Fang. (2021). The inspiration of Japan's vending machine industry to China. *Popular Standardization*, (19), 159-161.
- [14] H. Fang. (2019). Finance + Technology, ICBC Mobile Terminal Customer Management Achieves New Achievements. *Internet Weekly*, (12), 48-49.
- [15] Y. Zhu & S. Jin. (2022). The Effect of the QR Code Commission Rate on Commercial Banks in China. *Journal of Digital Convergence*, 20(5), 99-105.
DOI:10.14400/JDC.2022.20.5.099
- [16] H. TSEGAYE. (2015). *The Role and Impact of Merchant Acceptance towards Enhancing Bank's Profitability in case of Dashen Bank*. Doctoral dissertation, St. Mary's University.
- [17] S. Hao. (2015). Small machines, big marketing. Creative marketing of vending machines. *Sound Screen World-Advertiser*, (06), 168-170.

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