

Bringing the QR Code to Canada: The Rise of AliPay and WeChatPay in Canadian e-Commerce Markets

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Introduction:

The future of mobile payment systems is led by the rapidly growing fintech industry in China. The country has shifted from cash to QR-code based transactions nearly overnight and “by 2012, personal and corporate Internet banking transactions had replaced more than 50 percent of over-the-counter transactions in China” (Zhou et al. 2018). The regulatory framework surrounding fintech development has been led by three leaders: Alibaba, Tencent and Baidu. The implications of the mobile payment technology are multinational. For Canadians, penetration in the market is gray but slowly shifting. Alibaba’s ‘AliPay’ and Tencent’s ‘WeChatPay’ are visible in storefronts today, but as the fintech giants seek to expand reach, and as Canadian banks and businesses adopt this technology, full assessment of the system in China and how this can translate to Canadian borders is necessary.

This study will deconstruct the infrastructure of China’s mobile payment system and discuss its current presence in Canada through Canadian corporate partnerships with companies such as: SnapPay, RiverPay, MotionPay and OTT. The remainder of this study will focus on evaluating key implications of this technological entrance into the North American market. I will discuss critical questions of China’s fintech development system on how the companies predict uptake by Canadian markets for a largely credit based system. How likely are Canadians to adapt to these technological advancements?

The nature of this gray market technology is precarious as we mediate the three relationships between local Canadian digital technology landscapes, fintech development and the interests of overseas entities. The implications here are global, as the politics of Chinese influence over another key Canadian industry looms. As Vancouver sees increasing money laundering scandals and housing crises, it is only more pertinent that Canada be weary of its

financial systems. There is a strong case for mobile payment technology to be the next global disruptor for the North American financial market, and Chinese fintech companies are at the helm.

Methodology:

This research is a preliminary analysis of existing scholarly discourse around the Chinese fintech environment. Discourse around the Chinese entrepreneurial environment for start-up culture is ample. This paper takes the existing research one step further and maps the transition to the Canadian fintech environment. My research explores the history of the QR-code system as a basis for understanding the current Chinese e-payment paradigm. The paper illuminates key themes through the following research question: *how is Chinese fintech being implemented in Canada? To what extent will this fintech technology permeate and manifest in Canadian markets?*

The first portion is a discourse analysis of Chinese fintech, focusing on key developments in e-payment by Alibaba and WeChat platforms.

To supplement the discourse analysis, I have conducted field research on the establishment of the QR-code system in Vancouver, BC. Format for my field research is based on discussions with merchants. These merchants have subscribed to the e-payment service in Vancouver and have had between 1-6 months of the service.

Lastly, my research unites the two components with a discussion on the implications of this technology on Canadian industries and businesses. Through discourse analysis and by introducing my personal field research, I extrapolate various implications based on the technology's uses in Canada, and potential future applications on the Canadian fintech sector.

What is the QR-code?

In 1994 Japan, Japanese company Denso Wave released the QR code. The early QR-codes looked to solve the issue of information storage in the existing 2D barcodes. The existing barcode framework held a limited amount of information, but it was restricted to 20 alphanumeric characters. Head of the QR-code department, Masahiro Hara looked to expand the barcode system to include Japanese Kanji and characters and more information. Ultimately, his research efforts led to the establishment of the QR-code: able to hold 7,000 alphanumeric characters and Kanji as well (Tiwari, S., 2016).

Since its inception, the patent to produce and use QR-codes have been made publicly available. The codes are used widely throughout Japan for marketing and information sharing between mobile users. The technology has spread widely throughout other character-based languages, countries such as China have become early adopters of the QR-code technology for marketing, sales and even e-payment (Bayrak Meydanoglu, 2013, p. 2).

In the context of fintech, the e-payment community has adopted use of QR-codes to facilitate its large quantity of banking information, stored within the advanced barcode. Moreover, QR-code technology is appealing on the consumer level; especially, for businesses that require secure alternatives for sending sensitive information.

One key function is that the QR-code eliminates one-time password protocol. The current paradigm for Canadian financial technology is based on password-based authentication schemes, including: PIN-codes, unique passwords and signature verification. But these systems typically produce single transaction 'sessions' which can 'timeout' or close with too many invalid

password inputs. QR-codes work in conjunction with mobile phone technology, to decode the information stored, with software running on the mobile phone.

Digital Payment in the People's Republic of China

China as a cash-based economy that has been slow to adopt the credit-based system that is so prevalent in the West. The existing fintech environment was adopted under two underlying conditions. Firstly, the existing use of QR-code technology as a method of storing and sharing large amounts of information securely. Secondly, the centralized social media environment that currently focuses on the WeChat instant messaging platform, and subsequently, Alibaba as the prevalent Chinese online shopping platform. Both companies are known for their high traffic online networks accompanied by their rapidly growing business verticals from social media and gaming to grocery sales.

McKinsey Global Institute (MGI) reported in *China's Digital Economy: A Leading Global Force*, that China stands as the world's largest e-commerce market with more than 40% of the world's e-commerce transactions happening in China (Woetzel, J., Seong, J., Wang, K.W., Manyika, J., Chui, M., & Wong, W., 2017). The report indicates that China's rapid digital landscape growth is a direct correlation to the nation's large Internet user base. Nearly 1 in 5 users relies on mobile only (Woetzel, J et al., 2017), with 68% of all Internet users making mobile digital payments. These figures have allowed for rapid commercialization, supported by the high user base as an ecosystem for trial and error for newly produced technologies.

The competition between large fintech companies has driven the Chinese start-up ecosystem, "in 2016 [Baidu, Alibaba and Tencent] provided 42% of all venture-capital investment in China, a far more prominent role than Amazon, Facebook, Google, and Netflix that together contributed only 5% of US venture-capital investment in that year" (ibid.). These

factors are further emphasized by government backed collaboration, which further promotes digital technology development in both hardware and software sectors. The unicorn¹ companies have become anchors in the digital technology ecosystem of Mainland China, and have achieved a status that allows the tech giants to work in association with the Chinese government.

Another key factor which MGI indicates as crucial to the digital transformation in China is the space for innovation before the establishment of Chinese fintech policy. “Today, the government is playing an active role in building world-class infrastructure to support digitization as an investor, developer and consumer” (ibid.). When one compares these companies in China to counterparts in Canada, the breadth of industries is what sets Chinese companies apart, as Canadian counterparts look to maximize within verticals.

Two companies leading the mobile payment vertical are Tencent’s WeChat and Alibaba’s Ant Financial. Tencent developed WeChat as a mobile messaging tool. The company has since skyrocketed to pursue a wide variety of functions, from instant messaging, newsfeed dissemination, facilitate city services and e-commerce within the app, and WeChat mobile payment. The mobile payment branch of the company was launched in 2013 and has quickly become one of the largest facilitators of mobile-payment in the world.

Another leader in Chinese mobile payment technology is Alibaba. Created initially as a “Chinese Amazon” facilitating e-commerce for consumer to consumer (C2C) transactions, business to consumer (B2C), and business to business (B2B) sales on the platform. The company has since widened its scope. It formed Ant Financial a subsidiary company designed to manage

¹ A unicorn company is known as a privately held start-up which is valued over \$1 billion; alluding to the rarity of this achievement as a high number of start-ups do not prove to be successful ventures. The term is a reference to Aileen Lee’s “Welcome to the Unicorn Club: Learning from Billion-Dollar Startups”.

its financial branch: AliPay. The company was formed in 2003 and has since been one of the leading mobile payment companies since PayPal (founded in 1998).

Both Ant Financial and Tencent have utilized QR-code technology to facilitate the high-speed mobile transactions. And what is unique to this system is that the transactions span B2C, B2B and C2C transactions, allowing for a wider range of money movement between mobile wallet users. To a great extent the models created by AliPay and WeChat Pay for mobile payment are similar to PayPal, some arguing that AliPay and WeChat Pay have pushed the boundaries of PayPal for the mobile generation.

Understanding the e-payment System

The early fintech company, PayPal, developed the leading model for digital payment over the web. Shortly after the company went public in 2002, PayPal was acquired by eBay and subsequently began using the eBay auction marketplace as their primary transaction test environment. Essentially, the company allowed small merchants to sell items utilizing the PayPal account, with money transferring between the customer's bank account to the merchant's bank account. During this time, the financial system would have required the merchant to apply for a formal business account, but with PayPal, these transactions were sent from bank to bank directly.

For the transaction facilitating company to make money, PayPal began charging service fees for each transaction made. Credit cards and Point of Sale (POS) machines earn per-transaction based on a percentage, ranging from 1 to 1.8% per transaction.

WeChat Pay and AliPay both took this model of transaction-based earnings and adapted it for the mobile-based Chinese market. Using the QR-code system, the merchant is able to send

large amounts of financial data in a single transaction (language friendly, as Chinese Characters are accepted using the QR system). The system effectively phases out the use of cash, by replacing the transaction and exchange of real money, to the use of digital wallet transactions between B2C, B2B and C2C. The POS machines are updated with camera functionalities and can scan the mobile phone of customers (whom also have their own unique QR-code tied to their bank account). The modified mobile-friendly readable screen can also produce unique QR-codes for the merchant and allow customers to scan using their mobile phone (creating a multi-directional payment system to facilitate transactions and refunds).

Despite the convenience of this system, however, it is important to note that the system functions more like a debit transaction, versus a credit transaction. The fund transfers are bank-to-bank direct deposits, but do not accrue points or promotions like various credit cards that are popular in the Canadian and American system.

The Mobile Payment Paradigm in Canada

The Canadian paradigm for mobile payment utilizes an entirely different technological structure. Rather than using the QR-code to send financial data, the mobile payment paradigm uses Near Field Communication (NFC) to send card information to facilitate the fund transfer. This system, however, exists as a mobile wallet that *replaces* credit or debit cards that the user already owns. Instead of connecting the bank information directly through the mobile wallet, the wallet keeps a secure reading of the card's information, and when in range, can facilitate the transaction. The system relies on mobile software built into the phone itself. Common mobile wallets include ApplePay, GooglePay and Samsung Wallet, which are all available on the related company's phones.

Field Research Findings:

In my field research, I observed the developments of AliPay and WeChat Pay company development in over 10 Canadian business ranging from small to multinational businesses in a wide variety of business sectors in Vancouver, BC. Discussions with merchants and users of the system conducted of short questions with the following themes: frequency of use, convenience and security.

From June 2018 to April 2019, I observed the aggressive dissemination strategies by companies that offer the mobile payment service. The most commonly employed strategy is installing the POS machines within companies for lower transaction fees (1.1-1.3%). This rate is below the Moneris, TD or other Canadian brand POS machines that offer Visa, MasterCard and Debit transactions (typically 1.5% charged to the merchant). Additionally, merchants are able to display printed QR-codes which would remove the need of the POS machine all together and have input of payment done on the customer's phone instead of the merchant's machine.

There are security issues brought up by users, typically the issue of chargebacks², which is common for the credit and debit system. To address the issue of chargebacks, WeChat and AliPay have currently been absorbing the cost of fraudulent and disputed charges, rather than charging the merchant. It seems that this is a strategic move to help expand the use of the financial service and increase the sense of trust for Canadian merchants to the QR-code system.

Additionally, there is also the concern for exchange rate. Ant Financial has currently established a system which works on par with Renmenbi (RMB) to Canadian Dolllar (CND) exchanges with no additional fees for the exchange.

² For fraudulent or disputed purchases, the lost money in the transaction is typically charged to the merchant.

The user base is centralized to locations and shops with high density of Mainland Chinese diasporas, such as Vancouver or Toronto. Dissemination of the system within Vancouver is focused on retail stores in Richmond and Downtown Vancouver, where participants in the tourism economy frequent businesses in these regions.

The model, however, is being expanded to include large transactions such as tuition payments for schools. In the current system, the education sector has been very successful in allowing students to send invoices with the QR-code digitally or in print for scanned payments in China or globally. This is one sector beyond retail and tourism where Canadians can see the financial benefits of the bank to bank system facilitated by WeChat and AliPay for international students.

Weighing the QR-code on a Canadian Fintech Scale:

Since 2017, WeChat and AliPay systems have already been introduced to the Canadian market and have become increasingly aggressive. The abundance of commercial companies offering the mobile payment system is increasing, as merchants are eager to take advantage of the massive Mainland Chinese market. Regulations are increasingly stringent, only allowing totals of \$50,000 annually into Canada. The QR-code system complies with this but illuminates a key issue of moving money between nations and alludes to the relevant issue of money laundering in Canada.

Foreign money being laundered through Canadian Casinos have been an extensive topic of discussion for the past five years. For the most part, researchers studying the Canadian real estate crisis and casino operations have led to issues of financial fraud on Canadian soil. As of 2019, the fintech system devised by AliPay and WeChat is only available for Chinese Bank account holders, limiting the user-base only to the Chinese market. But in an increasingly

globalized world, with many individuals travelling between the nations and utilizing the financial system, it seems that introducing the system to Canada is a risk but a necessary step in advancing our financial technology.

For the most part, Canadians are reluctant to move away from the credit-based system, and it seems unlikely that merchants, would move away from the dominant Canadian spending paradigm. However, Canadian companies selling the QR-code system have introduced two systems that would challenge and evolve the existing paradigm. The POS machine currently is PIN and NFC-chip operated, but POS machines in China that contain cameras and touch screen advances, allow for not only “tap” credit and debit transactions, but also the QR-code system.

These device-based advances are critical developments that are pushing the boundaries of Canadian fintech. There are questionable conclusions that can be drawn when one introduces the foreign-owned financial systems into a conservative Canadian market. Beyond the potential for money laundering, scholarly discussion suggests that there are concerns with financial data security and the storage of banking information in Mainland China.

Moreover, there are questions of cultural exclusion. By only being a service available to Chinese nationals with a bank account, does this niche market perpetuate a closed system? Or will it introduce interventions that will allow and expand the QR-code system to the Canadian banking market?

Conclusion:

Questions of future Canadian fintech advancements are critical for grey market policy development. As the system works to manage a cohesive system that follows Canadian foreign transaction restrictions, while also facilitating a swift transfer of money system, it seems that

companies can introduce critical fintech developments that keep in pace with mobile technological developments.

With reference to my research questions: *how is Chinese fintech being implemented in Canada? To what extent will this fintech technology permeate and manifest in Canadian markets?* It seems that the aggressive implementation looks to compete directly with the Canadian system by challenging the POS machine technology. Secondly, there are limitations with this implementation as the closed nature of the paradigm, as it is only available to Chinese Bank account holders. Until Canadians can access and create these accounts, it will be difficult for Canadians to see the benefits of the QR-code system beyond increased payment access to the Mainland Chinese spending power.

Much of the QR-code system is new, and each technological development takes shape in a gray market manner. Canadian policy is delayed but falls under the pressure outlined by external business actors looking to take advantage of China's massive user-base (Woetzel, J et al., 2017). Moving money between nations—be it cash, credit or cheque—has always been challenging. Yet, scanning a code has never been easier with our increasingly mobile app-based economy.

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