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THE MOBILE PAYMENT REVOLUTION IN CHINA

WHAT CANADIAN
BUSINESSES NEED
TO KNOW



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EXECUTIVE SUMMARY

Technological advancements of the digital age are making today's businesses more powerful, productive, and efficient, with access to a much wider range of options globally. On the flip side, it also means that they have to constantly adapt to rapid changes and disruptions in order to thrive. For one thing, innovations in payment technologies that are still at their early stage of application in one's home market might have already had profound impacts on current consumer behaviour elsewhere.

In China, a light cash consumer culture has formed its shape as a result of the uptake in mobile payment usage, from urban centres to remote areas, creating new patterns in the ways people shop and unique expectations that merchants are racing to meet. To succeed in such a context, it is necessary for Canadian exporters to comprehend the opportunities and challenges arising from China and Asia's mobile payment ecosystems, hence making themselves better prepared and positioned when mapping out expansion strategies into these fastest-growing retail markets.

With the central objective of providing market insights in the context of China's massive mobile payments adoption tailored to Canadian merchants, this study has three main aims: 1) to enhance Canadian businesses' understanding of the evolving purchasing pattern and consumption behaviour in this mobile-first market; 2) to present the possibilities and limitations when engaging with Chinese mobile payment solutions; and 3) to identify lessons Canadian companies can learn when contemplating establishing a footprint in China and possibly beyond.

CHINA'S MOBILE PAYMENTS LANDSCAPE

Largely employing the quick-response code (QR code) technology, mobile payment solutions in China achieved an unprecedented level of popularity in less than a decade, creating a behemoth, well-developed ecosystem that currently processes the equivalent of several trillion dollars of transactions in a year. Two tech giants, Alibaba and Tencent, are taking the absolute lead with their payment schemes Alipay and WeChat Pay, which together account for more than 90% market share. Each is able to offer the users multidimensional services on a single platform with the support of their respective strengths, delivering a well-integrated and engaging experience. The popularization of mobile payments in China also brings many benefits to the merchants, in terms of cost-saving, improvement in operational efficiency and capital assessment, and, more importantly, digitized and data-driven marketing capacity. With that being said, it is noteworthy that the massive success of mobile payments in China has a unique combination of conditions, namely: the proliferation of mobile internet and smartphones; a high level of cash reliance and the absence of a legacy card payment system; a collaborative banking system; burgeoning digital economy and e-commerce sectors; as well as huge mobile-minded user bases who value convenience and speed.

SHIFTING CONSUMER BEHAVIOUR

Leapfrogging card payments by going directly from cash to smartphones, Chinese consumers, especially the younger segment, are actively embracing the hugely improved convenience and novel ways of shopping enabled by it. Users also gain substantial benefit from the democratization of financial services driven by mobile payment tools. Regulatory efforts on this front have been tolerant and prudent to allow experimentation to happen and new models to develop; only recently has the government taken a more active policy management approach to address the critical risks that have emerged as the industry has grown in scale. While certain concerns and challenges are still present, China's mobile payment service providers and regulatory parties are in general recognized by domestic users as being competent in ensuring the safety of financial and personal data on these platforms.

CANADIAN BUSINESSES' USE OF CHINESE MOBILE PAYMENTS

Actively promoting mobile payments to markets beyond the Chinese mainland, the two Chinese mobile payment titans offer their payment tools to merchants in Canada through payment partners known as independent software vendors. They are gaining traction – particularly among businesses targeting Chinese tourists, and members of local Chinese communities who prefer paying through the mobile channel and with yuan. Businesses interested in capitalizing on this payment revolution in China and the wider region, and in better engaging with mobile-savvy customers, can consider the following takeaways to skilfully craft sensible mobile payment strategies:

- The process for integrating with Chinese mobile payment solutions can vary, depending on the stage a business is at in engaging with Chinese customers;
- Offering mobile payments is not one-size-fits-all, and it is crucial to find the right mix of your selling process and the use of technology;
- Be sure to leverage the high-quality traffic and customer data coming from your mobile payment transactions; and
- Think carefully before replicating strategies succeeded elsewhere in the mobile-first context, and consult with local expertise to best employ the many interlocked and consumer-focused innovations in China.

INTRODUCTION

Asia Pacific countries today are at the forefront of incorporating smartphones and technology-enabled financial solutions into their daily life. Sixty-seven percent of all connected consumers who buy goods and services in a two-second process of waving their mobile devices in front of a scanner are from this region.¹ Consumers in China alone account for nearly half of the world's mobile wallet users and contribute 61.8% of mobile point-of-sale transactions globally.² By now, smartphones have successfully dethroned cash to become the average Chinese consumer's favorite payment option, only five years after the financial technology (fintech) revolution first took off there. Such developments are transforming consumers' way of paying, spending, and living, and the most agile merchants have been quick to tailor their strategies to the needs of their digital-savvy customers.

In Canada and many other developed economies, mobile payments have not gained as much traction. With well-established debit and credit card systems in place, Canadian consumers and merchants tend to view mobile payment instruments with distaste and distrust, leading in part to the relatively slow growth of the sector itself. As a result, the huge influence that this emerging mode of payment actually has on consumers' decision-making and purchasing patterns on the other side of the Pacific can be far from reach – and difficult to comprehend – for many Canadian businesses eyeing those markets. Even fewer have come to the realization that mobile payment platforms in China are already widely employed by merchants as a powerful marketing tool. Acknowledging this knowledge gap, efforts have emerged across relevant industries in Canada and the United States to raise awareness of the new payment ecosystems and to more deeply understand them. For instance, Royal Bank of Canada and Citigroup's Global Consumer Bank have both recently done studies on China's fintech developments and the associated user patterns

¹ "Global Mobile Wallets 2019 - Asia-Pacific Outpaces the World in Mobile Wallet Adoption," Business Wire, April 18, 2019, <https://www.businesswire.com/news/home/20190418005366/en/Global-Mobile-Wallets-2019---Asia-Pacific-Outpaces>.

² Ibid; John Engen, "Lessons from a Mobile Payments Revolution," American Banker, April 29, 2018, <https://www.americanbanker.com/news/why-chinas-mobile-payments-revolution-matters-for-us-bankers>.

to devise their own consumer operation strategies.³ Apart from its significance to the financial and banking industries, understanding a mobile-first market environment is equally – if not more – important for Canadian exporters preparing to tap into markets such as China’s.

As Canada expands its trade diversification efforts, helping a number of Canadian brands unveil their expansion plans in Asia, it becomes all the more important for researchers to fill the knowledge void by equipping businesses with essential market intelligence on China and Asia’s mobile payment ecosystems.⁴ This report looks in detail into China’s mobile payments landscape. It provides an overview of the Chinese mobile payment landscape and the ecosystem built around the two dominant players; it then discusses the shifting Chinese consumer culture and unique expectations due to massive adoption of mobile payments, as well as regulatory and security aspects of the issue. It concludes by providing recommendations on mobile-payment-oriented strategies and approaches for customer-facing Canadian companies to consider in their overseas ventures. The report also presents two case studies, one being an example of regional specificities in the development of mobile payments in China’s inland city of Guiyang, and the other providing additional context of the mobile payment developments in Southeast Asia, with a particular focus on Singapore, that shows some of the complexities surrounding the adoption of this mode of payment.

³ Yuan Yang, “Why Millennials Are Driving Cashless Revolution in China,” *Financial Times*, July 7, 2018, <https://www.ft.com/content/539e39b8-851b-11e8-a29d-73e3d454535d>; John Engen, 2018.

⁴ There have been a number of studies on China’s mobile payment development. *Social Networks, e-Commerce Platforms, and the Growth of Digital Payment Ecosystems in China: What it Means for Other Countries* by Zennon Kapron and Michelle Meertens (2017) is one of the most comprehensive reports that uses China as a case to analyze how payment digitization drives financial inclusion and offers economic opportunities, which informs the framework of my research; while *China Pay Insights: A Guide for Scottish Business* (2018) is a walk-through tailored to Scottish merchants in better engaging with Chinese customers by employing Chinese mobile payment solutions, in the context of inbound Chinese tourism. Also worth mentioning is the domestically focused 2019 *China Mobile Payment Development Report: Mobile Payment Enhances the Future Competitiveness of the City* (2019), which examines the macro-level impact of mobile payments on the basis of a city-level China Mobile Payment Index. This report adds to the body of knowledge by targeting Canadian businesses’ export strategy-making process and explaining why mobile payment development matters to them.

METHODOLOGY

This study is the first of its kind in its Canadian focus, and it complements secondary data on consumer behaviour and market dynamics obtained from pre-existing surveys and reports with field research. More than 20 interviews were conducted with researchers and analysts who study mobile payment and relevant subject areas in China and Singapore; with mobile payment service providers in China and their cross-border payment partners in Canada; with Canadian trade and business representatives on the ground; and informally with local consumers and merchants in China and Canada. To create a more balanced analysis, field research was undertaken in China's first-tier Beijing and Shanghai as well as second-tier Guiyang.⁵ It is hoped that the findings will help increase Canadian exporters' attention to the technology-driven transformations in consumer behaviour happening in Asia, and will contribute to improve their strategic planning and marketing processes to successfully gain a foothold in these markets.



Fieldwork was undertaken in Beijing, Shanghai and Guiyang

⁵ The Chinese city-tier system is commonly used in studies of mainland China as a point of reference for tracking a particular city's stage of development, population size, political administration, as well as market trends and opportunities. The Chinese government has not published an official classification of the city tiers, and definitions and categorizations vary across different indicators. The four largest and wealthiest metropolises of Beijing, Shanghai, Guangzhou, and Shenzhen are regarded as the "traditional first-tier cities," and a city's level of economic, political, and cultural influence generally decreases as one moves down the tiers. See Dorcas Wang, "China's City-Tier Classification: What They Are and How Are They Defined," China Briefing, February 27, 2019, <https://www.china-briefing.com/news/chinas-city-tier-classification-defined/>.

THE RISE OF MOBILE PAYMENTS IN CHINA

Nowhere in the world have consumers so successfully adopted the habit of making payments by mobile phone than in China. But the path of development of this relatively new mode of payment was never a straight line. Prior to 2010, various groups of players, including telecommunications operators, state-owned and commercial banks, the domestic bank card association UnionPay, and internet companies as third-party payment platforms, were all making attempts to gain a foothold in what they believed to be a lucrative business.⁶ Each party, though, was pursuing a somewhat different strategy and testing out service with incompatible technology standards. Neither were there clear rules and regulations allowing non-financial institutions to engage in payment services nationwide. There were many doubts around payment security issues and legal responsibilities if large amounts of funds were to be handled by non-bank service providers. During this period, most mobile payment solutions were based on near-field communication (NFC) technology, which requires advanced hardware in people's mobile devices, at a time when smartphones were still uncommon in the country (see Box 1). This, combined with poor mobile internet coverage, kept demand for mobile payments low in the then-cash-dominant society.

It was not until around 2011 when People's Bank of China (PBOC), the Chinese central bank, formalized the practice by putting forth a number of measures that defined barriers of entry. In that year, PBOC issued licences to 27 third-party payment service providers.⁷ Two rapidly expanding third-party mobile payment schemes – Alibaba's Alipay and Tencent's WeChat Pay – began adopting the QR code as a much more simplistic, hardware-independent way for both consumer and merchant users to execute physical payments offline (see Box 1). At the same time, the exponential rise of small-ticket payment

⁶ "Third-party payment platforms" and "third-party payment service providers" are terms used to differentiate these providers from the so-called "traditional operators of payments," which are the banking and credit institutions. With authorization given by the respective regulating agencies, these third-party service providers are able to access banks' payment and settlement systems to enable transactions.

⁷ 2019 China Mobile Payment Development Report: Mobile Payment Enhances the Future Competitiveness of the City (2019中国移动支付发展报告——移动支付提升城市未来竞争力). Beijing: State Information Center of China et al., 2019. <http://upload.xinhua08.com/2019/0508/1557302957552.pdf>.

scenarios in China, including ride-hailing and food delivery, helped break the online/offline boundary and made digital payments more easily acceptable to Chinese consumers. These pre-conditions gave rise to the industry’s eventual takeoff in 2013.

BOX 1

WHAT IS NFC (NEAR-FIELD COMMUNICATION)?

Near-field communication is a set of protocols that allows wireless, contactless communication between two NFC-enabled devices when placed in proximity. NFC technology and devices are frequently used to enable contactless payment systems, such as “tap and pay” and Apple Pay. When performing an NFC transaction, one device operates as an actual or emulated card, while the other operates as a reader to process information. Setting up an NFC point-of-sale system usually costs several hundred dollars, and requires the payer’s mobile device to be NFC-compatible.

WHAT IS A QR CODE?

A QR code, short for quick-response code, is a square-shape two-dimensional barcode that can be read at high speeds by image scanners, such as a smartphone camera, to access stored information in the code. A QR code is smaller in size compared to a traditional one-dimensional barcode, yet is capable of storing over 300 times more information. It can be easily generated with almost no cost, and is platform neutral. At the current stage, most QR code payments are executed in either of two ways: namely “active scanning” (the payer uses the mobile payment app to scan a QR code presented by the payee), and “passive scanning” (the payer displays a dynamic QR code generated by the app to be scanned by the payee).

In 2018, official Chinese data reported that the total value of mobile payments that went through all banking institutions was RMB277.39T (C\$54.4T),⁸ with the volume of transactions reaching 605.31 billion in the entire year; this registered 61.19% and 36.69% year-on-year growth, respectively.⁹ The total value of mobile payment transactions processed on third-party platforms alone was RMB190.5T (C\$37.36T) – growth of 58.4% compared to the previous year, according to iResearch Consulting who predicts high growth to continue into 2019 and 2020, at around 30% every year.¹⁰

⁸ The annual average exchange rates of 2018 (RMB1 = C\$0.1961) published by the Bank of Canada is used for all currency conversions in this report. See <https://www.bankofcanada.ca/rates/exchange/annual-average-exchange-rates/>.

⁹ See Box 2 and Overall Situation of Payment System Operations in 2018 (2018年支付体系运行总体情况, English title translated by the author). Beijing: People’s Bank of China, 2019. http://www.gov.cn/xinwen/2019-03/20/content_5375401.htm.

¹⁰ 2018 China Third-Party Payment Annual Data Release (2018中国第三方支付年度数据发布, English title translation by the author). Shanghai: iResearch, 2019. <https://www.iresearch.com.cn/Detail/report?id=3360&isfree=0>.



Street vendors in Guiyang, China, display static WeChat Pay and Alipay QR codes to receive payments

In the first quarter of 2019, the mobile payment penetration rate among internet users reached 95.1%, as measured by the percentage of survey respondents who had used mobile payments at least once in the previous three months, according to Ipsos China.¹¹ Given the 1.27 billion mobile internet user accounts in China, Ipsos estimated the number of mobile payment user accounts to be approximately 1.01 billion by the end of February 2019.¹² Third-party mobile payments have emerged as Chinese people's primary mode of payment, and were used for 47% of the respondents' average daily expenditures during the same period, outstripping card (23%) and cash (19%) payments.¹³

¹¹ Third-Party Mobile Payment User Research Report for the First Quarter of 2019 (2019第一季度第三方移动支付用户研究报告, English title translated by the author). Shenzhen: Ipsos China, 2019. <https://www.ipsos.com/zh-cn/yipusuoiptoszhongbang-2019diyijidudisanfangyidongzhifuyonghuanjiubaogao>.

¹² Ibid.

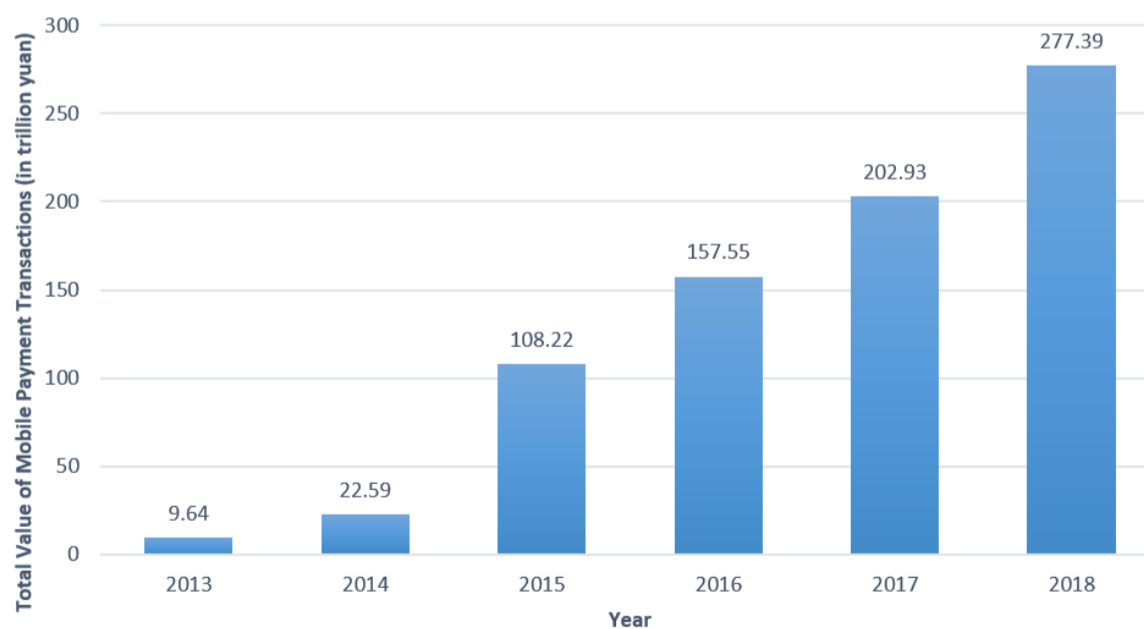
¹³ Ibid.

BOX 2

HOW DOES THE CHINESE CENTRAL BANK (PBOC) TRACK MOBILE PAYMENTS?

The Payment and Settlement Department of PBOC explains that it tracks payment transactions processed by banking institutions and by third-party (non-bank) institutions separately. Mobile payment, for which data is only available in the banking institution category, is treated as one of the six types of electronic payments, which are defined as changes initiated by a settlement account through online banking, telephone banking, mobile banking, automatic teller machines (ATM), point-of-sale (POS), and other e-channels. It is unclear whether and how much non-bank institutions are involved in these types of mobile payment transactions, and researchers frequently cite this particular set of statistics as a proxy for the total size of China's mobile payment business. For payment transaction data of the non-bank institutions, PBOC only reveals statistics in the category named "online payments," which excludes all in-store barcode payments starting from the second quarter of 2018.

FIGURE 1. TOTAL VALUE OF MOBILE PAYMENT TRANSACTIONS IN CHINA, 2013-2018



Data source: *Overall Situation of Payment System Operations, 2013 to 2018*, People's Bank of China.

Note: 2013 is the first year PBOC began publishing data on mobile payments; since 2015, it has specified mobile payment transactions being handled by banking institutions.

KEY DRIVERS BEHIND THE ADOPTION OF MOBILE PAYMENTS

Behind the huge popularity of mobile payments in China, a combination of key factors played an essential role in creating a unique, almost non-replicable market condition for this mode of payment to flourish:

- The wide availability of **relatively fast and inexpensive internet, especially access through mobile devices**, is a critical foundation that enables near-ubiquitous use of mobile payments in China. Internet penetration rate has been growing exponentially in the past decade from 10.6% of China's population in 2006 to 54.3% in 2017, according to statistics released by the World Bank.¹⁴ An overwhelming 98% of China's 800 million netizens today are mobile internet users, thanks to the extensive geographic coverage and service capacity of the country's 6.041 million base stations.¹⁵ The large and highly concentrated population, especially in urban areas, explains why mobile communications infrastructure can be built and expanded at relatively low per-person costs.
- On the hardware side, **proliferation of affordable, relatively competent smartphones** means the average Chinese consumer is adaptive to digital means. Chinese indigenous smartphone brands, such as Huawei, Oppo, and Vivo, are selling handsets with quality comparable to those of the international big names but at significantly lower prices. More importantly, easily obtainable smartphones help fill the so-called "digital divide" in regions where penetrations of PC desktops are lower.¹⁶ For many residents of the lower-tier cities and rural areas, smartphones are their first, or even only, device to access the World Wide Web; thus it is only natural for them to become "mobile first" internet users.

¹⁴ Individuals Using the Internet (% of Population). Geneva: International Telecommunication Union, World Telecommunication/ICT Development Report and Database, 2018. <https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=CN>.

¹⁵ Niall McCarthy, "China Now Boasts More than 800 Million Internet Users and 98% of Them are Mobile," Forbes, August 23, 2018, <https://www.forbes.com/sites/niallmccarthy/2018/08/23/china-now-boasts-more-than-800-million-internet-users-and-98-of-them-are-mobile-infographic/#13af393d7092>; The 41st Statistical Report on Internet Development in China. Beijing: China Internet Network Information Center, 2018. <https://cnnic.com.cn/IDR/ReportDownloads/201807/P020180711391069195909.pdf>.

¹⁶ Third-Party Mobile Payment User Research Report for the First Half of 2018 (2018上半年第三方移动支付用户研究报告, English title translated by the author). Shenzhen: Ipsos China, 2018. <https://www.ipsos.com/zh-cn/yipusuozhongbang-2018shangbanniandisanfangyidongzhifuyonghuanjiubaogao>.

- The absence of a habit of using cards in daily consumption allows China to leapfrog plastic-based payments** to go straight from cash to mobile. Mobile payments emerged at a time when the credit card system was still at a relatively early stage of development in China, where credit card ownership averages less than 0.5 cards per person.¹⁷ Unlike in many developed countries where consumers are already quite satisfied with the level of convenience that credit card payments offer, and where major credit card issuers wield enormous market power, mobile payment service providers in China faced much less resistance from legacy operators. Offerings of various in-app discounts as well as lower transaction fees also make mobile payment a more attractive option to both customers and merchants, as compared with credit cards.¹⁸
- China's banking sector is in general collaborative with the operation of non-bank third-party payment institutions**, at the cost of a significant portion of their own business revenue and the potentially profit-generating customer insights derived from transaction data. Most third-party mobile payment services in China require users to link their accounts to a bank card to access all functions. Under the legally required “two-factor authentication” process, banks are held responsible for verifying the identity of account holders before they can start using mobile payment tools,¹⁹ which in many cases is carried out in the country's more than 100,000 commercial bank branches.²⁰ State ownership of the “Big Four” banks, who control the majority of the assets in the country's banking system, gives them stronger incentives to facilitate a fintech development

17 Xun Zhang, Jijia Zhang, and Zongyue He, “Is Fintech Inclusive? Evidence from China's Household Survey Data,” Copenhagen: 35th IARIW General Conference, 2018. <http://www.iariw.org/copenhagen/zhang1.pdf>.

18 Zennon Kapron and Michelle Meertens, *Social Networks, e-Commerce Platforms, and the Growth of Digital Payment Ecosystems in China: What it Means for Other Countries*. New York: Better Than Cash Alliance, 2017. <https://www.betterthancash.org/tools-research/case-studies/social-networks-ecommerce-platforms-and-the-growth-of-digital-payment-ecosystems-in-china>.

19 Two-factor authentication here refers to the requirement set by the China Banking Regulatory Commission that when a user establishes relations with a third-party payment service provider for the first time, the user's identity needs to be verified by both the service provider and a commercial bank that the user is a customer of. See Notice of the China Banking Regulatory Commission and the People's Bank of China on Strengthening the Administration of Cooperative Business Between Commercial Banks and Third-party Payment Institutions (中国银监会中国人民银行关于加强商业银行与第三方支付机构合作业务管理的通知, English title translated by the author). Beijing: China Banking Regulatory Commission, 2014. http://www.cbrc.gov.cn/govView_EA1CC481C843441FA93AE486FD03B43D.html.

20 IMF data shows that there were 100,064 commercial bank branches in mainland China in 2017. For more information, see <http://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C>.

that can effectively reach the country's still-numerous underserved individuals and businesses and hence improve financial inclusion.

- **The phenomenal rise of e-commerce, the sharing economy, and the O2O market** in recent years has created an abundance of scenarios for people to adopt mobile payments. The 610 million e-shoppers in China's online marketplace are increasingly moving to their mobile devices and are readily using mobile versions of the e-wallets they are probably already quite familiar with to check out.²¹ On the other hand, mobile payment played a key role in reducing friction and making on-demand, small-ticket services easily adoptable when they first began to emerge in China; rapid developments in these sectors in turn further drive the uptake in mobile payment usage.
- China's two largest mobile payment service operators, Alibaba and Tencent, ventured into the payment industry with already **huge customer bases** from their e-commerce and messaging businesses, respectively. On top of this inherent advantage, Chinese consumers in general seem to **place more value on the benefits of convenience, speed, and the ability to access financial means** brought by mobile payments, and are thus more accommodating to security and privacy concerns.²² KPMG's survey found that 9 in 10 Chinese consumers, in contrast to a 7.5-in-10 global average, would share their personal data with a company in exchange for better products, services, personalization, and security protection.²³ Such willingness makes them more easily convertible to subscribers of mobile payment services.

21 The 43rd China Statistical Report on Internet Development (第43次中国互联网络发展状况统计报告). Beijing: China Internet Network Information Center, 2019. <http://www.cnnic.cn/hlwfzj/hlwzbg/hlwt-jbg/201902/P020190228510533388308.pdf>.

22 Connected Life 2017: China Regional Summary. London: Kantar TNS, 2017. <http://connectedlife.tnsglobal.com/>.

23 Joanna Lam, "Nine in 10 Chinese Consumers Are Ready to Share Data for Better Services, According to KPMG Poll," South China Morning Post, November 6, 2018, https://www.scmp.com/business/companies/article/2171907/nine-10-chinese-consumers-are-ready-share-data-better-services?utm_source=Yahoo&utm_medium=partner&utm_campaign=contentexchange; Me, My Life, My Wallet (2nd edition). Atlanta: KPMG Global Consumer Insights Program, 2018. <https://assets.kpmg/content/dam/kpmg/xx/pdf/2018/11/me-my-life-my-wallet.pdf>.



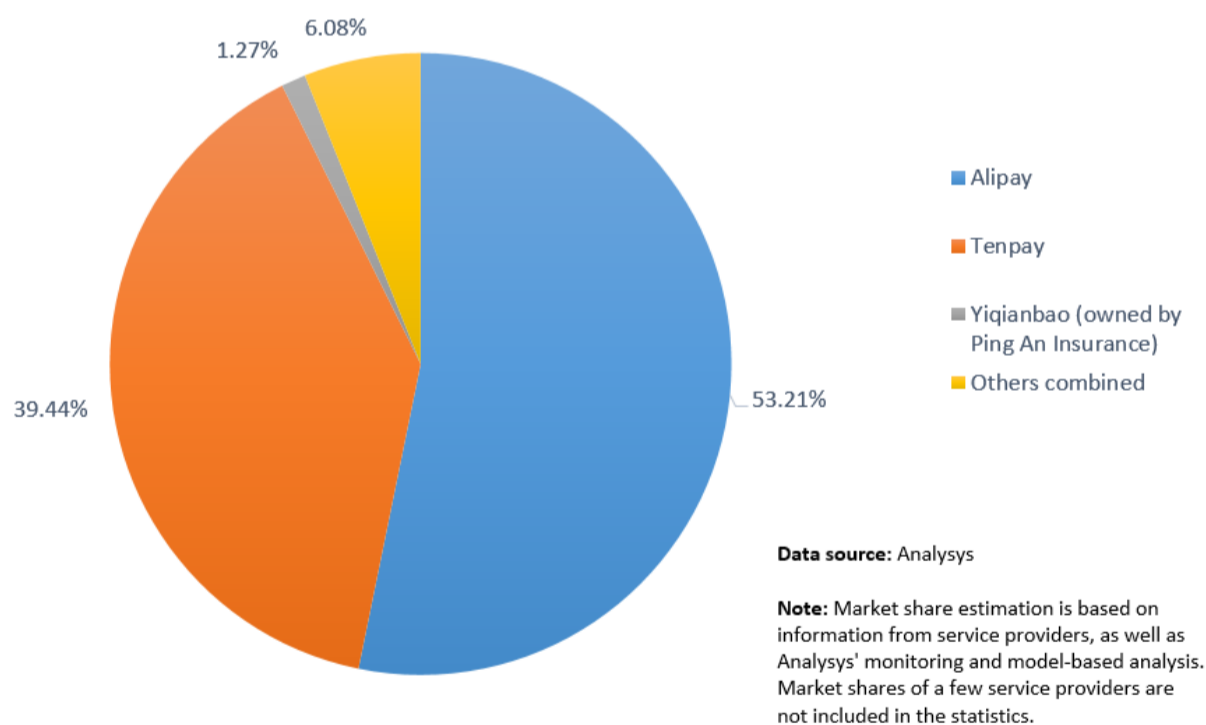
An abundance of scenarios for people to adopt mobile payments have sprung up in recent years



A TALE OF TWO TITANS

Among all mobile payment service providers in China, two oligopolies have emerged in the industry with commanding market shares. Alipay, managed by e-commerce juggernaut Alibaba's financial arm Ant Financial, captured 53.21% of the country's third-party mobile payment market in the first quarter of 2019.²⁴ Tencent Financial Technology, the division grown out of Tencent's umbrella payment service brand Tenpay that includes WeChat Pay and Mobile QQ Wallet,²⁵ held another 39.44% share in the market.²⁶ This leaves less than 8% market share for the other 40 or so players, including state-owned UnionPay's mobile payment tool, which – together with the highly sticky nature of formed payment habits – makes it extremely difficult for smaller players to catch up with the two giants.

FIGURE 2. SHARE OF CHINA'S MOBILE PAYMENT TRANSACTIONS BY THIRD-PARTY SERVICE PROVIDERS, 2019 Q1



²⁴ Quarterly Monitoring Report on China's Third-party Mobile Payment Market in the First Quarter of 2019 (中国第三方支付移动支付市场季度监测报告2019年第1季度, English title translated by the author). Beijing: Analysys, 2019. <https://www.analysys.cn/article/analysis/detail/20019384>.

²⁵ QQ Wallet is a payment tool embedded in Tencent's instant messenger QQ, which used to be the most popular communication app in China in the first decade of the century, prior to the advent of the mobile age and WeChat. Mobile QQ Wallet (25%) has a much lower usage rate compared to WeChat Pay (76%), and its market share is regarded as negligible for the purpose of this report.

²⁶ Quarterly Monitoring Report on China's Third-party Mobile Payment Market in the First Quarter of 2019.

Before growing into the full-fledged ecosystems we know today, Alipay and WeChat Pay were born from quite different origins. The Alipay service was first launched in 2004 on Alibaba's consumer-to-consumer (C2C) shopping site Taobao as a solution to address trust issues in the exchanges of value on the internet in the very early days of e-commerce. It is based on an escrow mechanism in which the service provider, Alibaba, holds onto the funds and only transfers it to the seller after the buyer has received and verified the purchased product. Initially employed by its users to facilitate transactions almost exclusively on Taobao, on which sales were greatly boosted after Alipay's invention, the payment tool soon began to operate as an independent subsidiary under Alibaba's effort to build a separate profile and expand the tool's usage.²⁷ Having teamed up with various banks in China throughout the years to enable and improve the running of internet payments, in 2010 Alipay launched – jointly with the Bank of China – a service named QuickPay that was designed to streamline online credit card payments and became the first third-party payment company in the country linking directly to banks' payment systems.²⁸ Since then, Alipay has been focusing on the mobile end business under its "ALL IN wireless" strategy.

WeChat Pay, on the other hand, was created in 2013. It was never a standalone app, but an added function to the pre-existing WeChat messaging tool.

Despite being a latecomer in the business, the expansion of WeChat Pay was expedited by a series of critical events, including its collaboration with ride-hailing app Didi at a time of soaring usage of such on-demand services. The other auspicious event was Tencent's legendary gamification of China's red-packet-giving tradition during the Lunar New Year holiday period in 2014.²⁹ Throughout what is now referred to as the first "fight for red packets," users sent virtual red packets topped up by funds in their WeChat Pay wallets to individual contacts and chat groups; for the latter, a lucky-draw-like function distributing the money randomly to first-comers further attracted people's interest. The campaign modernized a form of peer-to-peer money transfer

27 Xi You, *Ant Financial: The Rise of the Fintech Unicorn* (蚂蚁金服: 科技金融独角兽的崛起, English title translated by the author). Beijing: CITIC Press Group, 2017.



28 Xiaoming Zhu et al., *Business Trends in the Digital Era: Evolution of Theories and Applications*. Shanghai: Shanghai Jiao Tong University Press and Springer, 2016.

29 Red packets are a common money-gifting custom, practised in China as well as in parts of East and Southeast Asia, to share blessings during traditional festivals and to celebrate special occasions such as weddings and births.

that is highly important in China's interpersonal relationships, and it was so successful that 16 million red packets were exchanged within the first day of its launching.³⁰ Soon after the second Lunar New Year red-packet-grabbing campaign in 2015, the number of users who linked their bank accounts and subscribed to WeChat's payment service exceeded 10 million, reaching the milestone in a much shorter period of time than Alipay did.³¹ As the use of mobile payments extended quickly from online to offline, WeChat Pay, backed by WeChat's indispensable role in Chinese social networks, was able to catch up vigorously to challenge Alipay's dominance.

MAIN FUNCTIONS AND SERVICES

Alipay and WeChat Pay both offer a variety of payment and financial services, as well as a number of add-ons for day-to-day matters that may involve monetary transactions. Through partnering with third-party service providers, both payment platforms also allow users to pay in almost all common online-to-offline (O2O) contexts directly within their apps.³²

Functionalities (as of July 2019)	 Alipay™	 WeChat Pay
Core functions		
Money transfer	✓	✓
Credit card repayment	✓	✓
Mobile top-up service	✓	✓
Wealth management	✓ (Yu'e Bao)	✓ (Licaitong)
Credit scoring	✓ (Sesame Credit)	✓ (Tencent Credit)
Micro loans	✓ (Jiebei)	✓ (Weilidai)
Insurance	✓ (Ant Insurance)	✓ (WeSure)

30 Alyssa Abkowitz, "The Cashless Society Has Arrived—Only It's in China," The Wall Street Journal, January 4, 2018, <https://www.wsj.com/articles/chinas-mobile-payment-boom-changes-how-people-shop-borrow-even-panhandle-1515000570>.

31 Sinolink Securities, "Reflections on WeChat Pay: How Did the Latecomer Emerge So Quickly? What Can We Learn From it? (复盘微信支付: 入场这么晚, 为何崛起这么快? 我们能从中学到什么? , English title translated by the author)," 21st Century Business Herald, June 28, 2019, <https://m.21jingji.com/article/20190628/herald/879258894d024d8ea70b8198089f05bc.html>.

32 Online-to-offline (O2O) refers to the type of commerce that integrates online actions into the provision of offline services.

Crowdfunding	✓ (Taobao Crowdfunding, Antsdaq)	✓ (through third-party partners in parent app)
Consumer credit	✓ (Huabei)	X
Commodity and futures trading	✓ (Cunjin Bao)	X
Virtual currency	X	✓ (QQ Coin Top-up)

Add-on services		
Local civil services	✓	✓
Utility payments	✓	✓
Donation and charitable giving	✓ (Ant Farm)	✓ (Tencent Philanthropy)
Fitness tracking and healthy lifestyle	✓ (Ant Forest)	✓ (WeChat Sports in parent app)
Healthcare services, such as making hospital appointments online	✓	✓ (through mini programs in parent app)
Bookkeeping and receipt management	✓	✓ (through mini programs in parent app)

Third-party services (main partners listed)		
Travel booking	✓ (Alibaba's Fliggy)	✓ (eLong)
Movie ticket booking	✓ (Alibaba's Taopiaopiao)	✓ (Maoyan)
Food delivery	✓ (Ele.me)	✓ (Meituan)
Online shopping	✓ (Alibaba's Tmall and Taobao)	✓ (JD.com, Pinduoduo, Mogu, VIP.com, Zhuanzhuan)
Ride-hailing	✓ (Uber China, which is now acquired by Didi)	✓ (Didi)
Bike-sharing services	✓ (Hello Bike, Youon Bike, Ofo)	✓ (in parent app)
Courier services	✓ (SF Express)	✓ (in parent app)
Business directory	X	✓ (Dianping)
Real estate and rentals	X	✓ (Ke)

EQUALLY POWERFUL BUT WITH DIFFERENT STRENGTHS

Alipay started off as the largest mobile payment service provider in terms of market share, and has been able to maintain the overall leading position to date. However, when it comes to service coverage and popularity, the Tenpay family has already outperformed Alipay with a combined penetration rate of 89.2%, compared to Alipay's 69.5%.³³ This discrepancy can very much be explained by the WeChat parent app's ubiquitous use for messaging and social networking, boasting one billion monthly active users.³⁴ WeChat's strong social advantage means that users are more likely to use the payment tool as they are carrying out other daily activities in the app, such as chatting or reading news. In offline physical scenarios where mobile payment transactions are more visible, WeChat Pay exerts a strong peer influence between the merchant and the customer as well as between customers, since those who have the WeChat app installed, which is most likely the case in China, can conveniently access it if they see others using it.³⁵ Indeed, an Ipsos survey confirmed that WeChat Pay has strongholds in peer-to-peer payments and small-ticket offline retail payments.³⁶

Alipay also has unique strengths that allow it to prevail in a different set of market segments. It is still the primary choice of payment in many online scenarios, especially when it comes to e-commerce transactions, because of Alibaba's dominance in the online shopping space. Alibaba's business-to-consumer (B2C) platform Tmall has a larger market share (61.5% in the fourth quarter of 2018) than all its rivals combined in the online B2C retail business.³⁷ Another edge that Alipay has is the brand image of originally being a financial management tool. It is able to offer a whole range of financial services and is perceived by many as more professional and reliable when it comes to money matters.

³³ Third-Party Mobile Payment User Research Report for the First Quarter of 2019.

³⁴ Monthly active users (MAU) is a performance indicator, used frequently for internet products, that counts the number of unique users who engaged with a website or an app within the past month.

³⁵ Third-Party Mobile Payment User Research Report for the First Half of 2018.

³⁶ Ibid.

³⁷ "Tmall and JD Had a Combined Market Share of over 85% in China's B2C E-commerce Market in Q4 2018," China Internet Watch, February 13, 2019, <https://www.chinainternetwatch.com/28169/b2c-commerce-q4-2018/>.

WeChat Pay, on the other hand, offers more possibilities of being linked with other services and functions to expand new sales channels. One of the most successful new functions is WeChat's mini program feature introduced in 2017, which allows merchants to set up virtual stores within the app and process transactions using the payment gateway, with minimal costs. This social-network-driven form of e-commerce, known as social commerce, has gained significant traction in China as the traditional e-commerce platforms have become overly saturated and businesses look for new ways to gain traffic.³⁸ By riding the wave of social commerce and by collaborating with some of Alibaba's main competitors, including JD.com and Pinduoduo, WeChat Pay is now actively challenging Alipay's leadership online.

MOBILE PAYMENTS FROM THE MERCHANTS' PERSPECTIVE

China's mobile payment industry evolved out of a tool first adopted by one of the nation's largest online retailers Alibaba. As usage expands in offline scenarios, brick-and-mortar merchants, especially smaller ones, arguably stand to benefit more from the reduction in business operating costs and improvement in efficiency when processing transactions through mobile payments. Corner stores and street peddlers in China very rarely take card payments since installation costs for a point-of-sale terminal and transaction rates are regarded as too high to be cost-effective. Prior to the reform of bank-card payment-pricing schemes in 2016, the average card transaction fee for merchants in the food and beverage industry was 1.25%, while Alipay and WeChat Pay charged around 0.6% – or even 0% during promotion periods – for their mobile payment transactions, representing a significant difference even for a million-dollar business.³⁹

Moreover, the minimally required equipment for merchants to set up mobile payments, other than the smartphones they most likely already owned, was initially a static QR code. The code could just be generated from the shop

³⁸ Social commerce refers to electronic commerce activities and transactions that occur through online social interactions and user-generated content. See Xiaoting Liu, "The Rising Tide of Social Commerce – and Why China is Leading It," Asia Pacific Foundation of Canada, August 27, 2019, <https://www.asiapacific.ca/research-report/rising-tide-social-commerce-and-why-china-leading-it>.

³⁹ Shufang Yang, "Adjustments Made on Card Payment Transaction Fees; New Changes to Third-party Payments Could Be Coming (刷卡费率调整, 第三方支付有什么新变化? , English title translated by the author)," Sohu, September 9, 2016, http://m.sohu.com/n/468118209/?wscrid=95360_6.

owner's personal mobile payment account and printed out on a sheet of paper, with the merchant incurring almost no cost. When a RMB500 daily transaction cap was put in place for self-printed static QR codes in 2018 to prevent fraud and scams, merchants had to pay an extra fee to apply for official fund-collecting QR codes from payment operators – which in fact only cost less than a dollar per code.⁴⁰ The setup cost for accepting mobile payments therefore remains to be extremely low.

Surveys of consumer-facing merchants also pointed to the substantial benefits they have gained in operational efficiency from receiving mobile payments, in terms of significantly shortened processing times and nearly instant settlement, as well as reduced accounting work.⁴¹ Moreover, micro, small, and medium-sized enterprises, whose need for microloan services is usually neglected by China's traditional banking sector, are able to borrow through mobile-payment-supported B2B online lending services. In Ant Financial's MYBank and Tencent's WeBank, credit limits and interest rates for each business client are calculated based on their past mobile payment transactions using big data and AI technologies, so that loans can be delivered within minutes and with more flexible terms.⁴² Under the “more mobile payment collections, more loans” campaign, in just six months MYBank approved loans to 1.55 million credit-thirsty micro and small merchants, many of whom operate in the lower-tier cities, with a default rate as low as 0.78%.⁴³

The most profound impact that mobile payment has on businesses, compared to any other modes of payment today, is its immense power when employed as a marketing tool – which has become a “new normal” in China. The dynamic, updatable nature of mobile payments, as opposed to static cash and cards, allows communications and the flow of information to happen through a channel that is already an integral part of the purchasing cycle. No other forms

40 See Notice from the People's Bank of China on Issuing the Standards for the Barcode Payment Business (for Trial Implementation) (人民银行关于印发《条码支付业务规范（试行）》的通知, English title translated by the author). Beijing: People's Bank of China, 2017. http://www.gov.cn/gongbao/content/2018/content_5299609.htm.

41 In-person and phone interviews conducted with anonymous food and beverage companies in Shanghai on March 22, 2019 and in Guizhou on March 28, 2019.

42 “Young People and Their Phones are Shaking Up Banking,” *The Economist*, May 2, 2019, <https://www.economist.com/special-report/2019/05/02/young-people-and-their-phones-are-shaking-up-banking>.

43 Yingying Chen, “MYBank Goes Offline: 1.55 Million ‘Barcode Merchants’ Received Loans in Six Months (网商银行走向线下: 6个月155万“码商”获贷款 笔均7615元, English title translated by the author),” *China Securities Journal*, December 16, 2017, http://www.cs.com.cn/sylm/jsbd/201712/t20171216_5626815.html.

of payment are capable of forging this automatic, living connection with the payers – the payment apps can send push notifications and digital content to constantly remind potential or returning customers about the brand, giving merchants a quick and easy way to build brand awareness and encourage purchases.

A good example is the in-app digital coupons that can be issued to customers based on their purchase histories and membership information, and are directly saved in their mobile wallets to be conveniently pulled up any time.⁴⁴ For businesses in the food and beverage industry in particular, one popular mobile-payment-oriented strategy is to set up their loyalty programs in the WeChat and Alipay apps, so that the membership system can be readily integrated with the payment tool, creating a higher chance of landing a sale. Several fast food chains, including well-known Canadian brands operating in the Chinese market, are investing significantly in encouraging customers to sign up for their WeChat reward programs, using tactics such as lowering the barriers to join and heavily subsidizing purchases.⁴⁵ The most successful merchants are able to leverage the one-stop convenience of the Tencent and Alibaba ecosystems to habituate and retain their customers, thereby creating a cycle of transaction data accumulation, precision marketing, and repeated purchases that constantly feed into one another. Because of mobile payments' extensive use in China, the massive amount of precipitated data can be utilized to create high-quality customer analyses and user portraits of those whose purchasing behaviour and intentions are tracked in the payment apps.⁴⁶ By acquiring these anonymized and quantified real transaction data from the payment service providers, merchants are able to avoid ineffective and repetitive marketing and, hence, lower the customer acquisition cost.⁴⁷

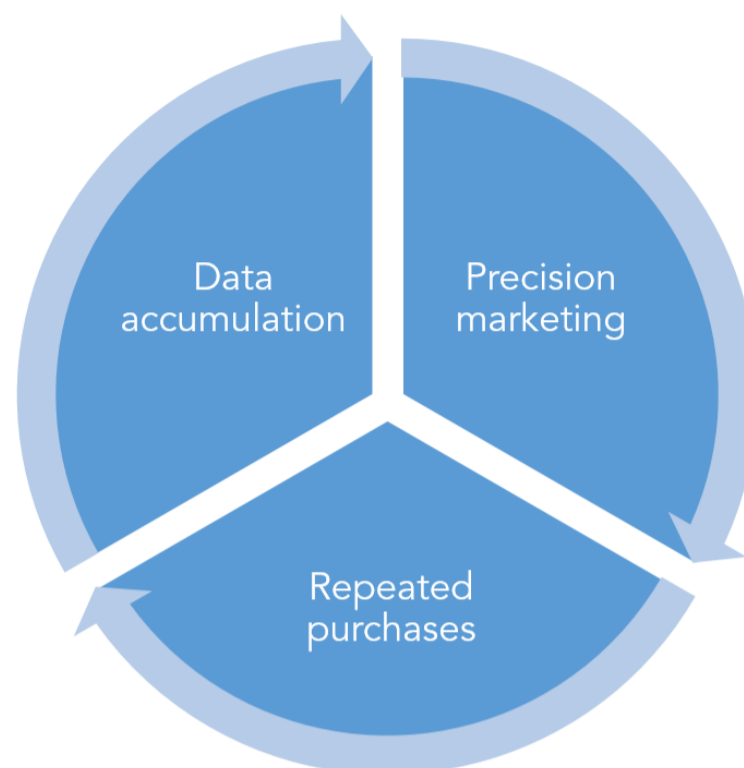
44 Charlie Liu, "Everything You Need to Know about Alipay and WeChat Pay," March 1, 2017, <https://medium.com/@charliecliu/everything-you-need-to-know-about-alipay-and-wechat-pay-2e5e6686d6dc>.

45 Phone interview conducted with anonymous food & beverage company in Guiyang on March 28, 2019.

46 Phone interview conducted with an anonymous mobile payment industry analyst in Beijing on March 14, 2019; In-person interview conducted with an anonymous non-profit organization in Shanghai on March 22, 2019.

47 2019 China Mobile Payment Development Report.

FIGURE 3. VIRTUOUS CYCLE OF MOBILE PAYMENT TRANSACTIONS



This advantage gets further amplified by the fact that both of China's major mobile payment tools are designed to be multi-functional, all-in-one applications. Alipay and WeChat, which started out as an e-commerce wallet and a messaging app, respectively, have expanded to form their own ecosystems by offering a whole range of digital services that complement and induce users' demand for their payment solutions. Driven by the need to chat, shop, or even collect points for walking, users find themselves entering these two apps from various points of access, and are very likely to stay on the same platform as they move from one stage to another in the buying process rather seamlessly and effortlessly. As users get accustomed to using the payment tools, the likelihood of them accessing other functions to fulfil other aspects of their daily needs, such as financial and health care management, also rises. The way that these different functions interlock with each other is blending merchants' sales, marketing, and customer engagement efforts together.

FROM CASH-FIRST TO MOBILE-FIRST: SHIFTING CONSUMER BEHAVIOUR AND EXPECTATIONS

When mobile payments were just starting to gain traction in China in 2013, cash still accounted for 45% of the total value of consumer payments across the country.⁴⁸ The differences between using cash and using a handy device to pay were quite substantial – apart from being able to save the hassle of giving and taking back change, Chinese banknotes are of relatively lower values (the largest bill in circulation is RMB100, which is worth C\$19.61) and cash users would have to carry wads of paper money around.⁴⁹ Risks of receiving counterfeit bills or losing them, for which recovery is nearly impossible, were also greatly reduced. In addition, the improved convenience and speed of transaction in mobile payments have prompted people to spend more money in both online marketplaces and brick-and-mortar shops. According to a Nielsen study, 91% of Chinese consumers surveyed indicated a greater willingness to make purchases if Chinese mobile payment tools are available when they travel abroad.⁵⁰ To them, seeing the familiar QR code is a sign of goodwill that the merchants understand and care about their paying habits.

In macroeconomic terms, mobile payments are boosting private consumption and creating a positive impact on China's transition from an investment-led economy to a consumption-driven one. Moreover, the widespread usage of mobile payments in China has also facilitated the emergence of a number of new business models and innovations, in retail as well as other sectors, which today's digital-savvy Chinese consumers are quite open and receptive to. For the longest time, online and offline retailers in China have been serving very different groups of consumers, with the delivery component of e-commerce

48 Hugh Thomas, Amit Jain, and Michael Angus, *The Global Journey from Cash to Cashless*. New York: MasterCard Advisors, 2013. https://newsroom.mastercard.com/wp-content/uploads/2013/09/Cashless-Journey_WhitePaper_FINAL.pdf.

49 Aaron Klein, *Is China's New Payment System the Future?* Washington D.C.: The Brookings Institution, 2019. <https://www.brookings.edu/research/is-chinas-new-payment-system-the-future/>.

50 *Outbound Chinese Tourism and Consumption Trends: 2017 Survey*. Shanghai: Nielsen Consumer Finance Research Team, 2018. <https://www.nielsen.com/wp-content/uploads/sites/3/2019/05/outbound-chinese-tourism-and-consumption-trends.pdf>.

probably being the closest form of an O2O experience. The boundary has been significantly blurred in recent years, however, as digital payments allow more transactions to be conducted remotely, increasing the convenience for offline retailers to establish an equally strong online presence, and vice versa.

On the one hand, many transactions and financial activities that previously only took place offline can now be done online. Mobile payment users can skip the lines with the option to pay utility bills, purchase wealth management products, or even complete the entire grocery-shopping journey virtually on mobile.⁵¹ The payment tools also help a number of unmanned services – ranging from self-service convenience stores to “scan to order” and “scan to pay” restaurants – to thrive. As a result, Chinese consumers have become more impatient in the sense that they expect seamless transactions wherever they shop, with well-integrated steps and minimal movements across different platforms.

On the other hand, merchants who have traditionally sold in the virtual space have found ways to seamlessly combine their online agility with offline operations. The concept of “new retail,” proposed by Alibaba’s founder, Jack Ma, and embodied by his supermarket chain Freshippo (known as Hema Xiansheng in Chinese), is all about using data technology to enable the integration of online, offline, and logistics components of the retail business. The goal is to offer a more digitized and personalized experience to the ever-more-complicated Chinese customers today. At physical stores like Freshippo, Chinese urbanites are no stranger to going through a hybrid of both offline and online steps to complete their shopping journey, in which payment apps and QR codes forge the link. Mobile payment providers are now striving to get to the next level of making payments truly hardware-independent and “mobile” by testing out unconscious payment solutions and bio-recognition payment technologies, such as facial recognition, in a number of scenarios.

⁵¹ Wealth management products in China usually refer to uninsured financial products with fixed return rates and set maturity dates. While wealth management products are traditionally sold by banks and other financial institutions, recent internet wealth management platforms launched by tech firms in partnership with fund companies are quickly gaining traction.

IMPLICATIONS FOR FINANCIAL DEEPENING AND INCLUSION

Consumers in China nowadays have become far more financially literate than even a decade ago, with mobile payments driving the democratization of financial services, both in breadth and in depth. Being relatively inexpensive and easy to use compared with other forms of non-cash payments, mobile payment is an immensely powerful tool when it comes to improving financial inclusion in the less developed rural areas of China. In these places, people traditionally have difficulty accessing bank services and lines of credit. As digital infrastructure expands, the use of mobile payments quickly became many people's hurdle-free entry point to participate in consuming, selling, and other forms of economic activity. This in part explains why mobile payments in China's hinterlands are more popular than any other forms of digital payments – of the provinces in which mobile payment users account for more than 90% of all Alipay users, all 11 of them are located in the central and western parts of China.⁵² In fact, the acceptance rates for mobile payment in townships and villages are growing faster than in cities, albeit still at lower absolute levels.⁵³

In terms of the depth of financial knowledge, the culture of saving is traditionally very strong in China, and average consumers used to manage their financial assets through only a limited number of ways – most commonly by depositing them in bank accounts with ultra-low interest rates and by investing in the highly volatile stock market. The introduction of wealth management products as a value-added service on mobile payment platforms, led by Yu'e Bao (which literally means “leftover treasure”) launched by Ant Financial, dramatically transformed the way mobile payment users manage their money, and at the same time further encouraged the use of the payment tools themselves. In contrast to traditional money market funds, which normally have high minimum investment thresholds for participation, users of China's mobile financial platforms now find it a lot easier to access financial services. For instance, they can use the money they already have in their

⁵² Third-Party Mobile Payment User Research Report for the First Half of 2018.

⁵³ 2019 China Mobile Payment Development Report; According to a study conducted by Analysys, 15.4% and 43.7% of mobile payment users in China lived in “super first-tier cities” (defined as mega cities Beijing, Shanghai, Guangzhou, and Shenzhen) and “first-tier cities” (defined as provincial capitals and cities in the coastal areas that are relatively well developed and have substantial business activities), respectively, in 2017. See Thematic Analysis of China's Mobile Payment Market 2018 (中国移动支付市场专题分析2018, English title translated by the author). Beijing: Analysys, 2019. <https://www.analysys.cn/article/detail/20019084>.

e-wallets and enter the market with as little as a RMB1 (C\$0.20) investment.⁵⁴ The behemoth assets of these small users combined make it feasible for the service providers to run the program. These online financial products offer the population an in-between combination of risk and return, compared to the two aforementioned options almost at the extreme ends.⁵⁵ As a result, people in China, especially the younger crowd, have become more conscious about how to manage and invest their money through a channel that is also closely tied with their daily spending.

THE ROLE OF MILLENNIALS AND GENERATION Z

Young Chinese consumers today are more influential in leading trends, including the ascent of mobile payments, in their society than their predecessors were. People born in 1978 and later make up the majority of mobile payments users in China – 82% according to the Payment and Clearing Association of China, with the under-30 group, which consists of some millennials and all Generation Z,⁵⁶ alone accounting for 54%.⁵⁷ The “digital natives” of China today wield enormous purchasing power; consumers 35 and younger are poised to contribute US\$2.1T (C\$2.72T) worth of purchases in 2021,⁵⁸ and 69% of the growth in urban consumption in the 2016-2021 period, according to Boston Consulting Group’s projection.⁵⁹ Compared to their parents’ generation, the younger Chinese consumers are in general much more optimistic about their earnings prospects and are more willing to borrow to spend. This mentality drives demand for consumer credit tools, another type of financial service that is offered through many mobile payment platforms. Ant Financial’s Huabei (which means “just spend”), and later Jiebei (means “just borrow”), in the Alipay app function like a virtual credit card and a microloan program, respectively. They utilize the Sesame Credit score derived

⁵⁴ Kapron and Meertens, 2017.

⁵⁵ “In Fintech, China Shows the Way,” *The Economist*, February 25, 2017, <https://www.economist.com/finance-and-economics/2017/02/25/in-fintech-china-shows-the-way>.

⁵⁶ For the purpose of this report, millennials, or “Generation Y,” are defined as people who were born between 1980 and 1994; “Generation Z” is defined as the demographic cohort born between 1995 and 2009, following the millennials.

⁵⁷ 2018 Research Report on Mobile Payment Users (2018年移动支付用户调研报告). Beijing: Payment and Clearing Association of China, 2018. <http://m.mpaypass.com.cn/news/201812/27094816.html>.

⁵⁸ US\$1 = C\$1.2957, see <https://www.bankofcanada.ca/rates/exchange/annual-average-exchange-rates/>.

⁵⁹ Jeff Walters et al., *Five Profiles That Explain China’s Consumer Economy*. Hong Kong: Boston Consulting Group, 2017. <https://www.bcg.com/en-ca/publications/2017/globalization-accelerating-growth-consumer-products-five-profiles-that-explain-chinas-consumer-economy.aspx>.

from data on the mobile payment platform such as the user's financial history and fulfilment of contractual obligations – which in itself also helps establish a credit scoring system previously next to non-existent in China – to issue loans to consumers.⁶⁰ By early 2018, this consumer lending reached RMB600B (C\$117.66B), surpassing the country's second largest bank in that aspect.⁶¹

At the same time, having a powerful young mobile payment user segment also means that the service providers are more compelled than other payment operators to constantly innovate and optimize their products. Members of generations Y and Z in China, while readily embracing digital innovations, are also more conscious about protecting their personal information and privacy than preceding generations.⁶² Their high standards for the quality and resilience of technology-based services are an important driving force that keeps Chinese mobile payment operators vigilant and ahead of the curve.

GOVERNMENT AND REGULATORY APPROACHES

Similar to its attitude toward the internet economy at large, the Chinese government, as highlighted by several interviewees, has been in general supportive of non-state-owned tech companies leading the recent fintech innovations, including development of the mobile payment sector. So far, policy and regulatory steps on this front have been taken cautiously to let the sector grow, first by giving ample room for experimentations and the generation of new models. That being said, since security and risk control are of paramount importance in financial services, the Chinese central bank made sure that barrier of entry into the industry was set high from the very beginning. Thus, it put in place a licensing system with stringent capital and ownership requirements, fostering what could be called a fairly centralized

⁶⁰ The Sesame Credit scoring and loyalty program is a third-party-operated system that is separate from the national Social Credit System currently under development by the Chinese central government, and Alibaba asserts that Sesame Credit data will not be shared with the government or any other third parties without users' consent. Nevertheless, the two programs share some similarities in terms of operational mechanism, and Ant Financial is one of the technological partners in the Social Credit System project. In terms of its applications, Sesame Credit has been working with the Supreme People's Court of China on enforcement measures against debtors. A number of countries, including Canada, Singapore, and Japan, are also accepting Sesame Credit scores as proof of financial standing when reviewing visa applications from Chinese nationals.

⁶¹ "Ant Financial Consumer Lending Reaches \$95 Billion," Bloomberg, March 12, 2018, <https://www.bloomberg.com/news/articles/2018-03-12/ant-financial-consumer-lending-is-said-to-reach-95-billion>.

⁶² Lam, 2018; Phone interview conducted with an anonymous mobile payment industry analyst in Beijing on March 14, 2019; In-person interview conducted with an anonymous academic in Shanghai on March 20, 2019.

ecosystem.⁶³ Meanwhile, various levels of government in China – users of mobile payments themselves – see mobile payment tools as a convenient entry point for people to access government and public services online. They are actively looking to leverage these platforms to digitize and more effectively carry out their work.

Since 2017, there has been a tightening of regulations as the industry grew in scale, and potential problems and risks began to gradually emerge. One most influential new policy effort, known as the “delinking” (Duanzhilian in Chinese), was put in force with the aim of reducing mismanagement and misuse of the over RMB1T (C\$196.1B) prepaid reserves, which third-party payment companies could in the past hold temporarily in accounts at their own banking institutions and generate a good amount of interest.⁶⁴ One cost of this risk reduction and prudence was that mobile payment service providers who used to profit from the interest earnings lost one of their main sources of revenue and investment funding, as well as their bargaining power against their respective partnering banks. In addition, new rules, such as the cap on users’ daily maximum transaction values, were put in place to prevent fraud and protect customers.

SECURITY AND PRIVACY CONCERNS

Consumers in China are largely won over by the benefits of mobile payments and are relatively less concerned with protecting their privacy on mobile platforms, compared to consumers in many developed countries. However, this is gradually changing as a generational shift and better education raise awareness of these issues, but also because the mobile payment industry has grown so much that data privacy and cybersecurity breaches can be catastrophic in this nearly RMB300T ecosystem, where these payment tools have been overwhelmingly adopted.

⁶³ Administrative Measures for the Payment Services Provided by Non-Financial Institutions (非金融机构支付服务管理办法, English title translated by the author). Beijing: People's Bank of China, 2010. http://www.gov.cn/flfg/2010-06/21/content_1632796.htm; Yichen Zhu and Sarah Hui Li, “A Hangzhou Story: The Development of China's Mobile Payment Revolution,” Singapore: Lee Kuan Yew School of Public Policy at the National University of Singapore, 2018. https://lkyspp.nus.edu.sg/docs/default-source/case-studies/a-hangzhou-story.pdf?sfvrsn=2bb6690a_2.

⁶⁴ The delinking policy requires third-party payment institutions to deposit the prepaid funds they get from the customers – starting from approximately 20% of those funds in October 2016 and incrementally increasing to 100% in January 2019 – into designated, interest-free accounts at the central bank. See Peng Chen and Di Fu, “Depositing 100% Prepaid Funds: Payment Institutions Say Goodbye to Easy Cash (备付金100%交存 支付机构告别躺着赚钱, English title translated by the author),” Xinhua, July 3, 2018, http://www.xinhuanet.com/fortune/2018-07/03/c_1123069544_2.htm.

By far, China's mobile payment service providers and regulatory parties have been quite successful in managing risks and threats. For their part, users in general recognize major third-party payment service operators as trusted parties for managing their money and information, with almost similar confidence to what they have in the banks, if not more.⁶⁵ Alibaba, for instance, has been investing heavily in the research and development of technology solutions (approximately C\$8.4M in 2015) to safeguard users' data and personal information.⁶⁶ With its fifth-generation artificial-intelligence-powered risk-control engine AlphaRisk, Alipay managed to lower its fraud loss rate to 5 in 10 million – laudable given that the leading third-party digital payment operator in other markets maintains a much higher rate of 2 in 1,000.⁶⁷ Both Alipay and WeChat Pay have recently worked with the police to launch the “deferred settlement” option to better prevent financial losses due to error or fraud.⁶⁸

On the flip side, Chinese mobile payment systems' reliance on QR code technologies for conducting transactions is arguably the most common source of security risks to date. Compared to near-field communication devices, QR codes are easy to adopt but also easy to forge. Research conducted by UnionPay underscored malicious scanning or unidentified QR codes as one of the major high-risk behaviours when using mobile payments, and the probability of it leading to actual financial losses is higher compared with other types of security concerns.⁶⁹ For instance, fraudsters may replace merchants' fund-collecting QR codes with their own code, linked to their mobile wallets. It can happen without being noticed if the merchant does not pay attention to the QR code used (QR codes are highly similar in design) or does not check payment confirmations, and can result in serious financial losses from time to time. To address this problem, the big two mobile payment operators are

⁶⁵ Yuan Yang, 2018.

⁶⁶ Zhu and Li, 2018.

⁶⁷ Mengyao Chen, “Account Security Protects Over 400 Million, Financial Security Education Reaches 100 Million: Alipay (支付宝: 账户安全保障已覆盖超4亿人、金融安全教育已触达1亿人, English title translated by the author),” Xinhua, September 25, 2018, http://www.xinhuanet.com/tech/2018-09/25/c_1123480337.htm.

⁶⁸ “Enabling This Function on WeChat and Alipay Will Allow You to Withdraw Money Transfer: Police (警方提醒: 微信、支付宝开通这功能, 遇到诈骗能撤回转账, English title translated by the author),” Sina Finance, July 17, 2019, <https://t.cj.sina.com.cn/articles/view/2288064900/8861198402000nbrx?from=tech>.

⁶⁹ 2018 Mobile Internet Payment Security Survey Report (2018 移动支付安全大调查分析报告, English title translated by the author). Shanghai: China UnionPay, 2019. <http://m.mpaypass.com.cn/Download/201901/23111754.html>.

employing measures to encourage the use of their official fund-collecting QR codes, which merchants have to apply for and are only issued by the payment operators. Alipay is also working with insurance companies to launch a program allowing affected merchants to claim for compensation in cases of financial loss due to QR code fraud.⁷⁰

Another potential concern is the ethical use of consumer data by the mobile payment operators, especially since many are questioning the degree to which the Chinese government has access to transactional and personal data in the mobile payment ecosystem, and how this information will potentially be used in the future. Like any major tech companies, Ant Financial and Tencent both abide by a strict privacy policy to not share their users' information with a third party without consent, unless when responding to a legal request in situations where national or public safety is at stake, like any other country in the Organization for Economic Cooperation and Development (OECD).⁷¹ Government's regulatory and management efforts on mobile payment data have so far been focused on cracking down on economic crimes such as money laundering, and are viewed positively by the majority of Chinese mobile payment users. Although it is evident that the major Chinese mobile payment service operators have successfully built a level of trust within China, as they actively expand the use of their payment schemes overseas, there is still much work to be done to convince users in the new markets that their data will be properly managed by a foreign financial entity.



QR codes come with some security concerns, while easy to adopt they are also worryingly easy to forge

⁷⁰ Chen, 2018.

⁷¹ "Alipay Privacy Policy (支付宝隐私权政策)," Ant Financial, March 14, 2019, <https://docs.alipay.com/policies/privacy/alipay#c5>; "Tenpay Privacy Policy (财付通隐私政策)," Tenpay, October 31, 2018, <https://www.tenpay.com/v3/helpcenter/low/privacy.shtml#cat07>. For OECD references about standard shared information practices, the guidebook can be found here: <https://www.oecd.org/publications/standard-for-automatic-exchange-of-financial-account-information-in-tax-matters-second-edition-9789264267992-en.htm>.

DEALING WITH CHINESE MOBILE PAYMENTS AS CANADIAN BUSINESSES

As the domestic market becomes increasingly saturated and mobile adoption rates start to slow down, major Chinese mobile payment operators have been trying hard since 2017 to promote this mode of payment and their products to a broader audience outside of mainland China, with the hope of replicating the success story on the international stage. Mobile payment leaders like Alipay, WeChat Pay, and UnionPay have seen some results in expanding their presence beyond the Chinese border, and they are now accepted in some 50 countries and regions. However, due to the highly complex nature of financial and data regulations in different jurisdictions, as well as users' unfamiliarity and other concerns, consumer usage of Chinese mobile payment tools outside of China is more or less limited to outbound Chinese tourists and Chinese diasporas, and they have not really been able to penetrate in the local communities.

The experience of subscribing to Chinese mobile payment services as individuals living outside of mainland China is far from being frictionless and can dissuade many from adopting them. Without meeting the real-name authentication and bank-related requirements, usage of the tools will be limited. Most Chinese mobile payment platforms, including Alipay and WeChat Pay, require customers to link their account to either a valid ID or a card issued by a bank located in mainland China, or likely both, to be able to access all payment features. For Alipay, users are technically allowed to use Chinese residential IDs, foreign passports, or the "mainland travel permits" (for Hong Kong, Macau, and Taiwan residents) as the identification document, yet users who do not have Chinese IDs on file will not be able to purchase Alipay's wealth management products (i.e., Yu'e Bao and Zhaocai Bao).⁷² WeChat, on the other hand, is only permitted to provide its payment services to users registered in mainland China, Hong Kong SAR, South Africa, and Malaysia (i.e., to

⁷² "Procedure for Activating Financial Management Services (理财开通流程)," Alipay Services Center, accessed September 9, 2019, https://cshall.alipay.com/lab/help_detail.htm?help_id=257031.

users with phone numbers from these regions), plus those who can link their accounts to a Chinese mainland-issued bank card.⁷³ Similar to Alipay, only WeChat Pay users who have provided Chinese ID information can use certain functions, including making payments to merchants when outside of mainland China, purchasing wealth management products, and receiving or sending more than RMB10,000 (C\$1,961) in a single transaction.

In November 2019, the big two Chinese mobile payment operators both made the significant move to start making their services available to international card holders travelling to China. In Alipay's case, it launched a separate international version to provide short-term visitors a 90-day access to its payment services without having to link a local mobile number or bank card; for WeChat Pay, Tencent is partnering with Visa, MasterCard, American Express, Discover Global Network, and JCB to start allowing users to pay with these major international credit cards on several apps - such developments are anticipated to give a good boost to the internationalization of Chinese mobile payment platforms.

On the merchant side, though, Alipay and WeChat Pay are gaining traction overseas relatively faster, especially in the brick-and-mortar shops targeting tourists and Chinese communities, as the benefits of offering their customers' preferred method of payment are significant enough to this type of merchant. In 2018, Nielsen found that mobile payments accounted for an average of 32% of Chinese tourists' overseas transactions, outstripping the use of cash (30%) for the first time.⁷⁴ When making shopping decisions, tourists from China also seem to place greater weight on the modes of payment accepted by local merchants – equally important as discounts and prices – as compared to tourists from other countries.⁷⁵ Among visitors to the United States and/or Canada last year, 61% used mobile payments.⁷⁶ Other than familiarity and habit, using mobile payments abroad, whenever they are available, is

73 "Why Can't I Access the WeChat Pay?," WeChat Help Center, accessed September 9, 2019, https://help.wechat.com/cgi-bin/micromsg-bin/oshelpcenter?t=help_center/topic_detail&opcode=2&plat=3&lang=en&id=150821aqi3y2150821bmjfb&Channel=helpcenter

74 Perspectives from Merchants and Consumers: 2018 Trends for Mobile Payment in Chinese Outbound Tourism. Shanghai: Nielsen Consumer Finance Research Team, 2018.

75 Outbound Chinese Tourism and Consumption Trends: 2017 Survey.

76 Perspectives from Merchants and Consumers: 2018 Trends for Mobile Payment in Chinese Outbound Tourism.

particularly convenient for Chinese customers since the in-app currency conversion based on real-time exchange rates means they can pay in Chinese yuan and the merchant receives payment in the local currency, removing the hassle and the potential foreign exchange loss of using cash or credit.

With Chinese consumers taking 150 million outbound trips and spending approximately C\$156B overseas in 2018 alone, it is in fact a key global expansion strategy of the Chinese mobile payment giants to follow the footsteps of outbound Chinese tourists to extend their influence internationally.⁷⁷ In the most frequently visited destinations – including Canada – major Chinese mobile payment platforms tend to be more cooperative than competitive, working toward a shared goal of making this mode of payment widely available. In most cases, you will see a merchant offering WeChat Pay alongside Alipay. In Canada, they authorize a number of common partnering intermediaries, known as independent software vendors, to operate as payment solution providers and third-party fund-settlement agencies. This way, Canadian merchants who are thinking about incorporating Chinese mobile payment schemes in their home market are able to deal directly with locally registered and complying institutions, and not be bounded by the limitations of trying to access the Chinese payment platforms from abroad.

The Canadian payment partners, many of which are financial technology firms themselves, offer business clients a number of options for integrating mobile payments, including website-embedded and in-app payments online, as well as smart POS terminals and QR code stickers offline. Many of them also invest considerable time and effort in educating their potential clients on the revenue-raising and marketing potential of mobile payment tools, such as the opportunities to take part in promotional campaigns with Alipay and WeChat Pay.⁷⁸ Cadillac Fairview's shopping malls in major Canadian cities and outdoor clothing brand Arc'teryx were among the earliest Canadian retailers to have integrated Chinese mobile payment systems and have been a step ahead when it comes to serving Chinese customers coming from afar.

77 "Big Data Report on Chinese Outbound Tourism for 2018 Released (《2018年中国游客出境游大数据报告》出炉, English title translated by the author)," Travel Weekly China, March 14, 2019, <https://www.travel-weekly-china.com/73800>; 2019 China Mobile Payment Development Report.

78 In-person and phone interviews conducted with anonymous industry representatives in Vancouver on May 2, 2019 and June 17, 2019.

FOUR TAKEAWAYS FOR CANADIAN BUSINESSES

For Canadian businesses interested in breaking into the attractive yet extremely challenging Chinese market, the rise of mobile payment and other forms of digital capabilities has unfolded so quickly that many have not had the time to deliberate the best ways to utilize them. Fast consumerism has been permeating urban China as the convenience of technology increases, leaving little time for brands to design strategies for a longer business cycle. The increasingly affluent Chinese consumers are quickly moving beyond the stage of being largely focused on price and practicality. They now are looking for brands with stories behind them – a strength many Canadian brands have if they could be promoted alongside sensible mobile payment strategies. Below are recommendations for consideration for Canadian businesses contemplating their approaches to mobile payments:

- Depending on what stage a business is at in terms of engaging with Chinese customers, the **process of integrating Chinese mobile payment solutions could vary**. Businesses operating in the Canadian home market (except for several non-applicable business categories, such as real estate) that are hoping to better appeal to Chinese travellers, students, and new residents would most likely begin with consulting one of Alipay and WeChat Pay's certified payment partners in Canada. They have to put together an application containing basic business information to get assessed by the payment solution provider for authenticity and



Mobile payment options are must-haves for store holders in China

level of risk.⁷⁹ For those aiming to have their products sold to Chinese customers through cross-border e-commerce channels, the most popular online marketplaces will already have either Alipay or WeChat Pay, or both, embedded in the checkout system.⁸⁰ If you are to go one step further and operate a physical store in China, mobile payment becomes a must rather than an option to consider. For small and medium-sized merchants, it is all the more important to stand on an equal footing with the franchises – who already accept mobile payments – from the very beginning.

- **Offering mobile payments to your customers does not have a one-size-fits-all strategy.** Given the variety of tools and services merchants can make use of when adopting mobile payment schemes, it is necessary to think about what combination of applications will be the most suitable for the nature of your business and products. Allowing the customers to “scan to order” from an embedded digital menu so that billing is processed seamlessly on the same mobile payment platform can be nice at fast food restaurants. But for businesses for which human-to-human interactions and personalized services are the key selling points, keeping a larger part of that exchange of information offline is likely a more reasonable “less is more” approach. Customizing your strategy to find the right mix of your own selling process and the use of technology is crucial to the overall success of your day-to-day operations.
- **Leverage the high-quality traffic coming from your mobile payment transactions.** The ability to track customer behaviour and to conduct precision marketing enabled by mobile payments is quite unprecedented, and it offers a great opportunity for merchants to revamp their business model and operations to become more digitized and data-driven. Customers that forge a connection with the merchant by making an actual purchase, rather than through shallower interactions in the forms of social media and newsletter subscriptions, bring with them more accurate and detailed information on their purchasing behaviours, and will likely have

⁷⁹ Phone interviews conducted with anonymous industry representatives in Vancouver on April 30, 2019 and June 17, 2019.

⁸⁰ For more information, see *An Introduction to E-commerce in China* (2017 edition). Ottawa: Trade Commissioner Service of Global Affairs Canada, 2017.

a stronger sense of attachment to the brand. Being able to know precisely which groups to target, with the help of payment-associated data and analysis, means that you have a much better chance of retaining them than trying to identify potential customers in the sea of shoppers.

- **Before replicating strategies that have worked in other places, think through whether it would be compatible with a mobile-first market.** Many of your local competitors in China have already dived deep into the art of using this all-in-one marketing, sales, and communications channel enabled by mobile payments; new rules and business models have emerged in the Chinese consumer market with the popularization of mobile payments and the formation of an entire ecosystem behind it, creating the need to reinvent operation and strategic thinking. In this context, it becomes all the more important for Canadian businesses entering the Chinese market to take a holistic approach mindful of the local consumption habits, culture, and regulatory environment – meaning that they should invest in local expertise to master interlocked innovations such as mobile payments, social commerce, and O2O channels. Canadian companies could also play a positive role in advocating for streamlining mobile payment usage in cross-border contexts to reduce existing barriers to trade, to greater benefit all the parties involved.

CASE ONE: GUIZHOU GOES DEEPER INTO THE MOBILE PAYMENT REVOLUTION

While residents in China's largest metropolitan areas may view mobile payment through the lens of convenience for expediting a variety of daily transaction needs, to many living in the country's hinterland, mobile payment is their first – if not their only – access to non-cash payments. In 2017, Guizhou Province in southwest China tied for first place with central Shanxi Province in Alipay's ranking of user dependency on its mobile payment tool. In these two provinces, 92% of all Alipay transactions during the year were done on the mobile end, rather than on desktop PCs, outnumbering the already-high national average of 82% in that year.⁸¹

Guizhou is located in a mountainous, landlocked region and remained one of China's least developed provinces for decades. Just at the time when massive transport infrastructure projects began to unlock its economic potential, the central government made a policy commitment in 2016 to establish the first National Big Data Comprehensive Pilot Area in Guizhou and turn it into the country's "big-data hub." Being built from scratch, Guizhou's digital economy has been growing faster than that of other provinces, and the big data sector alone now accounts for over 20% of the provincial GDP growth.⁸² Signs of a vibrant digital industry are frequently seen in urban areas and newly developed districts in the form of innovation clusters, smart shopping malls and supermarkets, data-powered logistics services, cross-border e-commerce centres, and of course omnipresent QR codes that allow people to "scan to access" and "scan to pay."

Against the backdrop of a rapidly expanding digital economy, mobile payment is arguably one of its most tangible and relatable aspects to local residents'

81 Yining Ding, "Alipay Reveals Nationwide User Habits for 2017," SHINE, January 2, 2018, <https://www.shine.cn/biz/tech/1801028539/>.

82 Xinyu Tan, "Big Data Driving Digital Economy Boom in Guizhou," China Daily, June 24, 2019, <http://www.chinadaily.com.cn/a/201906/24/WS5d1099a9a3103dbf14329ed2.html>.

daily life. With a relatively large proportion of the population living under the poverty line, governments in Guizhou were quick to leverage mobile payments and other fintech tools to improve financial inclusion. One of capital city Guiyang's "Ten Practical Projects" in 2018 was to advance smart governance, including the promotion of convenient modes of payment.⁸³ In 2017, the city was designated by Alipay as its fifth "cashless city" (and the first in southwest China), which was followed by a series of joint projects between Ant Financial and the municipal government launched to expand coverage of Alipay services.

The spread of mobile payment solutions in Guiyang, though, is never just a repeated version of what has already happened in more developed regions of China. While Alipay and WeChat Pay still dominate the game – especially in the areas of food, beverage, and general stores – Guizhou's indigenous app GZTPay (or Guizhoutong, which literally means "the pass of Guizhou" in Mandarin) gained a foothold in the local market by first focusing on certain areas of specialization. Unlike in many first-tier cities where users would more often "scan to pay" in the subway systems, the provincial capital has only one subway line so far and buses remain the most commonly used form of public transit. To suit this local context, GZTPay launched digital bus passes as one of its very first functions and focused on really making it work. With a few simple steps, users can register and obtain a "cloud bus pass" in the app, which can be topped up with several mobile wallet and online banking options. The funds are instantly ready to use, and perks such as free transfers were offered to encourage residents to sign up. Within a year, coverage of the bus pass quickly expanded to 70% of bus routes in the province's nine major cities and prefectures above county level.⁸⁴ The app now has over 2.5 million registered users, with nearly 80% of them – or 2 million users – activating the bus pass function within it.⁸⁵

⁸³ "Proposed Ten Practical Projects of the Municipal Party Committee and Municipal Government of Guiyang for 2018 (2018年市委、市政府为民办“十件实事”拟办项目, English title translated by the author)," The People's Government of Guiyang, February 26, 2018, <http://www.guiyang.gov.cn/zfxgk/ghjh/gzjh/sjss/20180226/i1473756.html>.

⁸⁴ Jian Li, "Scan Your Phone to Ride the Bus: GZTPay's Guiyang Cloud Bus Pass Users Exceed 1 Million (手机坐公交 贵阳公交云卡用户破百万大关, English title translated by the author)," Guizhou City News, January 16, 2019, <http://news.gzds.com/gz/2019/0116/100949.html>; In-person interview conducted with an anonymous industry representative in Guiyang on March 26, 2019.

⁸⁵ Sourced from GZTPay.

FIGURE 4. EXAMPLE OF A "CLOUD BUS PASS" IN THE GZTPAY APP



Also integrated in GZTPay are some special features that facilitate other transportation alternatives, including traffic ticket payment and a car registration lottery program, which are designed to address the locals' main issues of concern. Leveraging substantial amount of passenger information, the platform is also expanding beyond its niche into other underserved areas of civil services, such as social insurance payments and online medical appointments, with the end goal of creating a multifunctional digital identification system where payment is an easy point of entry. Moreover, GZTPay's some 300,000 daily active users are further stimulating Guizhou's strength in big-data technologies.⁸⁶ The constant flow of massive data on the platform on a daily basis is helping in refining smart services, while also boosting efficiency in real economic sectors.

Notwithstanding these rapid developments, the absolute usage of mobile payments in Guizhou is still not as extensive as in more developed regions.⁸⁷ The pattern of adoption remains uneven outside of the urban centres, including around the Huangguoshu Waterfall, the province's most visited natural tourist attraction. QR code payments are still alien to certain street peddlers, especially seniors. And a mobile network that is overloaded at times can cause delay or error for payment transactions. Yet the relatively unsaturated market may mean that there is more room for players other than the two giants to thrive. UnionPay, for example, is rolling out a large-scale market campaign in an effort to gain market share for its mobile payment app in second- and third-tier cities, for which payments in convenience stores and on the public transit system seem to be two of its targeted areas in Guiyang.

⁸⁶ Daily active users (DAU) is a performance indicator, used frequently for internet products, that counts the number of unique users who engaged with a website or an app within a given day; In-person interview conducted with an anonymous industry representative in Guiyang on March 26, 2019.

⁸⁷ 2019 China Mobile Payment Development Report.

CASE TWO: MOBILE PAYMENTS IN SOUTHEAST ASIA

The evolution of the Chinese mobile payment ecosystem prompted people to ask whether this mode of payment is eventually going to gain the same momentum elsewhere in the world. In particular, many set their sights on a number of Southeast Asian countries where there exist similar conditions, such as inadequate financial infrastructure with cash-reliant populations, a burgeoning digital economy and e-commerce sector, dramatically increasing smartphone and internet usage, as well as mobile-minded and overwhelmingly affluent millennial consumer segments. PwC's latest consumer insights survey suggests that the percentage of consumers using in-store mobile payments in Vietnam grew the most in 2018, from 37% to 61%, among all 27 economies studied.⁸⁸ Moreover, 6 out of 10 markets with the highest mobile payment adoption rates belong to the Association of Southeast Asian Nations (ASEAN).⁸⁹ In contrast to the largely duopolistic structure in China, Southeast Asia's mobile payment markets tend to be more competitive, with service operators coming from very diverse backgrounds, including banking, telecommunications, e-commerce, air transportation, ride hailing, and gaming.

Geographic proximity and demographic dividend (i.e. a relatively large young, working-age population) in Southeast Asia also make it an important battlefield for the Chinese tech giants – Alibaba and Tencent have already emerged as prominent players in the region's digital scene, to the point that smaller local players have to align with one or the other “camp” to be able to grow.⁹⁰ Through acquiring and investing in indigenous companies, Alibaba and Tencent hope to not just promote their payment tools, but to re-create the kind of all-in-one platform that comprises e-commerce, logistics, and other services to make users stay within the ecosystem – which is exactly the strategy Ant Financial employs when working with Lazada, the region's largest

⁸⁸ Global Consumer Insights Survey 2019. New York: PricewaterhouseCoopers, 2019. <https://www.pwc.com/gx/en/consumer-markets/consumer-insights-survey/2019/report.pdf>.

⁸⁹ Ibid.

⁹⁰ Phone interview conducted with an anonymous mobile payment industry analyst in Vancouver on May 14, 2019.

online shopping site.⁹¹ In fact, under its model of exporting technologies and expertise to empower local partners – which allows for more flexibility in calibrating areas of focus based on each local context and need – Alipay is actively testing out localization of its payment solution in the cases of GCash in the Philippines (for remittance), and the Touch ‘n Go eWallet in Malaysia (for toll payments).⁹²

To be sure, payment market conditions across Southeast Asian countries are far from universal, creating a wide range of landscapes and thus ample opportunities for alternative routes to be taken. With its well-built digital infrastructure and tech-savvy consumer base, Singapore is one of the first countries in the region to start building a cashless system as part of its Smart Nation national initiative; since 2014, the government has invested heavy top-down policy efforts to push for the adoption of mobile and other electronic modes of payment.⁹³

In contrast to the Chinese government’s approach of intentionally fostering a centralized system with high barriers of entrance, the Singaporean government has been very careful about not creating a monopoly by allowing as many players as possible, so as to maximize users’ choices, encourage competition and innovation, and avoid downside risks of market dominations.⁹⁴ The favourable regulatory environment and supposed abundance of options have so far only generated an uptake in usage that is moderate at best, since fragmentation has in fact created more confusion than convenience for both merchants and consumers. Hence, the crucial appeal of mobile payments – offering a seamless transaction experience – is missing.

91 Ibid; Ran Liu, “Alibaba and Tencent’s ‘Copy and Paste’ Game in Southeast Asia (阿里腾讯们在东南亚的复制粘贴游戏, English title translated by the author),” Huxiu, January 6, 2019, <https://www.huxiu.com/article/279911.html>.

92 See “Getting Started,” GCash, accessed September 10, 2019, <https://www.gcash.com/get-started>; and “PayDirect,” TnG Digital, accessed September 10, 2019, <https://www.tngdigital.com.my/paydirect.html>.

93 Ong Ye Kung, Singapore’s former Minister for Education, described electronic payment in Singapore’s context as being “associated with e-wallets or various tap-and-go payment modes” in his “E-Payments for Everyone” keynote speech delivered at the 45th Annual Dinner of the Association of Banks in Singapore on June 20, 2018. See <https://www.mas.gov.sg/news/speeches/2018/epayments-for-everyone>.

94 Phone interview conducted with an anonymous mobile payment industry analyst in Vancouver on May 14, 2019; Christina Soh and Dolly Leow, “A Tale of Two Ecosystems: E-payment in China and Singapore,” Nanyang Business School at the Nanyang Technological University, December 26, 2018.

To address this, the Monetary Authority of Singapore (MAS) recently made a major move by launching a unified QR code – something the Chinese central bank is also said to be considering. This universal “SGQR code” is designed to replace the 27 QR codes issued by different e-payment schemes that merchants have to display to accept payments, with the aims of streamlining adoption and improving interoperability between different platforms.⁹⁵ It remains to be seen whether such a measure will be effective in merging the country’s e-payment space, but the real challenge may lie elsewhere – that Singaporeans are in general quite content with the existing, traditional debit and credit payment systems, and most likely do not view the adoption of a new payment method as necessary or compelling.⁹⁶ Lack of trust and confidence in the less familiar payment providers is another major factor that discourages people from going mobile, as J.D. Power finds.⁹⁷ The use of cash payments, although on a downward trend, is still preferred by the island nation’s small vendors such as hawkers and heartland stores, who are in fact the government’s main targets in pushing forward the cash-to-mobile transition. Given the government’s strong resolution in promoting payment innovation and its belief that the country has “the right ingredients,” it will be interesting to watch whether it will eventually come up with a solution to overcome the problem of fragmentation and, most importantly, to really succeed in driving the demand-side incentives.⁹⁸

95 Irene Tham, “Universal SGQR Code for Cashless Payments, Interbank Fund Transfer System to be Opened to Non-banks,” *The Straits Times*, September 17, 2018, <https://www.straitstimes.com/singapore/universal-sgqr-code-to-replace-multiple-qr-codes-interbank-fund-transfer-system-to-be>.

96 Ploy Ten Kate, “Mobile Payments in Vietnam Fastest Growing Globally, Thailand Emerges Second in Southeast Asia,” *PwC Thailand*, April 30, 2019, <https://www.pwc.com/th/en/press-room/press-release/2019/press-release-30-04-19-en.html>.

97 “Singapore’s Path to Digital Economy Still Facing Some Roadblocks, J.D. Power Finds,” *J.D. Power*, July 25, 2018, <https://www.jdpower.com/business/press-releases/2018-singapore-retail-banking-satisfaction-study>.

98 Lee Hsien Loong, “National Day Rally 2017 Speech,” *Singapore Prime Minister’s Office*, August 20, 2017, <https://www.pmo.gov.sg/Newsroom/national-day-rally-2017>.

ACKNOWLEDGEMENTS

LEAD RESEARCHER AND AUTHOR

Xiaoting (Maya) Liu

This research project and fieldwork was funded by the Asia Pacific Foundation of Canada's Post-Graduate Research Fellowship. I would like to express my gratitude to my colleagues at the Foundation who provided invaluable expertise, insight, and support that greatly assisted the research, in particular (last names in alphabetical order):

- **Grace Jaramillo**
Interim Program Manager
- **Iris Jin**
Program Manager, Sustainable Asia
- **Charles Labrecque**
Research Manager
- **Isaac Lo**
Post-Graduate Research Scholar
- **Jeffrey Reeves**
Vice-President, Research
- **Pauline Stern**
Program Manager, Business Asia
- **Kai Valdez-Bettcher**
Research Specialist
- **Zining Wang**
Program Specialist, Youth Programming and Networks

I am immensely grateful to the many experts, analysts, and industry and business representatives who agreed to speak with me, for sharing with me their wisdom and experience without reservation; I am also grateful to the people who connected me to them. In addition, I'd like to express my sincere thanks to the Canadian Trade Commissioner Service as well as the Canada-China Business Council for their generous help during the course of this research.



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