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Ant Financial (A)

As the clock struck 12:00 a.m., Long Chen, Chief Strategy Officer of Ant Financial Services Group and former Professor of Finance at Cheung Kong Graduate School of Business, was satisfied by the statistics reported for the Global Shopping Festival of November 11, 2016. On that day, Alipay, the third-party mobile and online payment platform under Ant Financial, processed payments for 1.1 billion transactions on Alibaba Group's Tmall.com and Taobao.com; those transactions totaled RMB 120.7 billion (USD 17.5 billion)[a] in value and resulted in 657 million packages that covered 235 countries and regions.[1] This represented a 48% increase in payments processed compared with the same day in 2015 and set a new global record for e-commerce. Such was the scale of the "11.11 Global Shopping Festival," known as "Singles Day" in China, a day dedicated to celebrating singleness primarily through the promotion of online shopping.[2] With a sales volume eclipsing that of both Cyber Monday and Black Friday in the United States,[3] the 11.11 Festival highlighted the scale and potential of the Chinese e-commerce market and reflected the rising purchasing power of Chinese consumers.

Headquartered in Hangzhou, Zhejiang province, Ant Financial was the financial technology (fintech) company behind all the flashy figures. Since the inception of Alipay in 2004, Ant Financial had grown into a fintech "unicorn"[4] (i.e., a private company valued at USD 1 billion or more) with an estimated valuation of USD 75 billion.[5] A major player in the Chinese fintech space spanning a wide range of subsectors, Ant Financial had effectively established an ecosystem centering on Internet finance with 451 million active users in the third-party payment business alone.[6] The fintech empire that the company created had operations in mobile and online payment (Alipay), money market funds (Yu'e Bao), comprehensive wealth management (Ant Fortune), digital-only banking (MYbank), credit scoring (Zhima[b] Credit), consumer credit portals (Ant Credit Pay), cloud technology platforms (Ant Financial Cloud), and insurance service platforms.[7] (See **Exhibit 1** for a list of Ant Financial's products and services.)

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[a] Based on an exchange rate of 6.9 Chinese yuan (RMB) per U.S. dollar (USD), according to foreign exchange quotes from OANDA Corporation.

[b] The direct translation of the Chinese characters for "Zhima" (i.e., 芝麻) was "Sesame."

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To complement the shopping spree on November 11, 2016, MYbank ("网商银行" in Chinese) devised the "11.11 Loan Assistance Program" on August 30 to provide financial assistance to merchants getting ready for the 11.11 Festival.[8] With the program, MYbank provided loans with reduced interest rates (and in some cases interest-free ones) to relieve working-capital pressure for small businesses. For example, an online fashion store owner on Tmall was able to secure funds of RMB 3 million (USD 0.4 million) for inventory purchases.[9] With a literal translation of "Internet Commerce Bank," MYbank was established by Ant Financial, the largest shareholder, with an ownership of 30%, on June 25, 2015, to provide loans to small businesses.[10] From August 30 to October 17, 2016, MYbank provided an aggregate of RMB 34.3 billion (USD 5 billion) in loans to 960,000 small and micro businesses.[11]

However, despite the abundance of institutional voids in the market presenting ample opportunities for fintech firms (see **Appendix A** for an overview of the topic of "institutional voids"), Chen was well aware of several challenges looming large at Ant Financial. For one, realizing the company's ambition to internationalize was easier said than done.[12] Disparate degrees of development of the Internet and a lack of regulatory uniformity, which implied variations in the relevant applications of fintech, posed significant challenges.

In addition, the process of rolling out inclusive finance (i.e., the provision of financial services at affordable costs to the underprivileged segment of society)[13] had not been smooth sailing. Technological underdevelopments and the associated lack of infrastructure made the actual implementation of inclusive finance difficult in rural and remote regions of China. Current demographic shifts were not conducive to the process, as millennials were moving to metropolitan areas, leaving behind in rural villages the elderly and children, both of which groups tended to be unfamiliar with the financial concepts and the technology involved.[14] This in turn hampered the adoption of Ant Financial's products and services for inclusive finance.

Compounding the problems were the regulatory uncertainties that could impair Ant Financial's ability to devise a clear strategy for the future. Most of the associated laws and regulations were unclear in the Chinese fintech sector, which was mostly still in a formative stage within the Chinese economy. For instance, there were regulatory concerns over the facial-recognition technology that MYbank planned to use.[15] According to an industry insider, regulators were "trying to balance innovation and progress with potential risk, which [was] still very unclear."[16] Therefore, how Ant Financial should navigate the geopolitical landscape in light of the risks and uncertainties involved remained a conundrum.

Internationalization initiatives, inclusive finance in rural regions, and regulatory uncertainties were some of the key issues keeping Chen preoccupied. He wondered which area(s) the company should devote more efforts to, in light of the risks and uncertainties involved. He retrieved a report from the printer and headed to the conference room for the post–11.11 Festival review meeting.

China's Fintech Industry

The Traditional Banking Industry in China

According to statistics from a Bank of China research report, assets and liabilities of China's commercial banks posted double-digit growth rates of 15.6% and 15.3%, respectively—from RMB 155.8 trillion (USD 22.6 trillion) and RMB 144.3 trillion (USD 20.9 trillion)—as of the end of 2015,[17] while the nation's economy continued to grow at a stable yet slower pace of 6.7% in the third quarter of 2016.[18] The banking system handled savings deposits of RMB 49 trillion (USD 7 trillion),[19] and the assets of the five major Chinese banks[c] accounted for 55% of total bank assets.[20] (See **Exhibit 2** for statistics on the size and assets of these banks.) On the other hand, the outlook of the traditional banking industry was drawing concerns. The majority of China's banks were state-owned, and capital naturally flowed directly to the large state-owned enterprises, which crowded out the funding for small and medium enterprises (SMEs). Thus, SMEs were increasingly starved of credit to grow. Meanwhile, lending by state banks tended to be directly toward politically driven objectives, which resulted in the proliferation of "zombie enterprises" that were loss-making but could not be closed down.[21] Domestic banks served the Chinese government.[22] Loans might be made at the direction of the government, and capital might be allocated according to its strategic priorities so as to enhance economic stability. At the same time, SMEs were facing difficulties in securing much-needed financing, and the situation was worsening, as they lacked the channels to directly fund-raise from the capital markets.[23] According to Ming Lei, Vice President of Ant Financial, there was a "simple [business] logic" underlying the current limitations of the traditional banking industry in China.[24] Traditional banking services relied heavily on the build-out of physical branches with highly trained professionals and financial advisers servicing clients. Inevitably, because of the high overhead and personnel expenses, traditional banks tended to focus only on market segments offering the highest margins. Small businesses, microenterprises, and the rural population were often underserved.

Problems in the financial sector were further compounded by the lack of an appropriate system-wide credit-profiling mechanism, which would form the basis for banks to properly manage risk and to make collaborative efforts to create a healthy economy. China's Credit Reference Center was currently in charge of the nation's credit-profiling system.[25] While profiles of over 800 million individuals had been collected, many such profiles contained only basic information such as names and identification numbers. In fact, merely 350 million Chinese adults (less than a third of the total number) had credit records, with the rest rendered "credit invisible."[26] In contrast, only about 14% of the U.S. population lacked a credit score.[27]

Due to the reasons given above, inclusiveness in the finance industry was still believed to be an ideal that remained out of reach for many. According to Chen, it was estimated that 2 billion people were "unbanked" in developing countries around the world. Moreover, not only did merely 10% of the population in developing countries have credit cards, but only 21% among those with financing needs were able to obtain loans from financial institutions.[28] The situation was similar in China, where 72% of adults were financially illiterate, 75% of the population was not covered by the traditional credit reporting systems, and loans in rural areas accounted for only 23% of the total loan balance.[29]

The Emergence of Fintech in China

With the emergence of the Internet, the financial sector had become one of the most digitized industries globally.[30] Referring to the application of new technology and innovation in the financial sector, the term "fintech" was coined in the 1980s.[31] While the United States had witnessed waves of start-ups in the sector, the development of China's fintech space had lagged that of its Western counterparts, as the Chinese financial services sector gradually modernized along with the liberalization of the economy. Specifically, innovations beyond electronic payment and Internet banking became prevalent only at the beginning of this decade.

Despite its late start, China was currently enjoying a "late-mover" advantage in that the fintech sector was witnessing an unrivaled level of growth, according to Chen's article "From Fintech to Finlife: The Case of Fintech Development in China," published in the *China Economic Journal* in August 2016.

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[c] The five major banks were the Industrial and Commercial Bank of China (ICBC), China Construction Bank (CCB), Bank of China (BoC), Agricultural Bank of China (ABC), and Bank of Communications (BoCom).

China's fintech industry had soared in recent years, and the country had leapfrogged the West to become the world's fintech hub.[32] The number of fintech ventures had ballooned, as had company valuations, which enabled Chinese fintech start-ups to capture almost one-fifth of the total venture capital funds raised worldwide, according to a report on fintech trends jointly published by KPMG and CB Insights.[33] As of 2015, the market size of the country's fintech sector was over RMB 12 trillion (USD 1.8 trillion).[34] (See **Exhibit 3** for the details of the China fintech sector.)

Several factors contributed to the rapid pace of developments in fintech, including advances in technological development, proliferation of digital and smart devices, growth in the number of fintech service providers, and the enactment of policies and regulations that were conducive to the growth of digital finance.[35] Specifically, China's e-commerce sector was highly developed and digital adoption was widespread, with over 30% of the nation's population already using Internet payment systems.[36] Moreover, the latent demand[d] for inclusive finance was immense, as incumbent industry players were slow in meeting the needs of underserved customer segments. Also, the nation's open and supportive entrepreneurial environments made the development of innovative products and solutions possible in fintech start-ups.

The Regulatory Background

Establishing a regulatory framework for the fintech sector was one of the top priorities of the Chinese government,[37] which sought to strike a balance between technological innovation and societal stability. Currently, such a regulatory framework was still in its nascent stage of development, and certain subsectors remained underregulated (and unregulated in some areas) in the evolving Chinese fintech space, which had resulted in certain sector-wide issues. For instance, since 2014, the entire Chinese peer-to-peer (P2P) industry[e] had descended into a period of chaos, where hypergrowth was becoming the norm, the quality of industry professionals was declining, and questionable transactions were emerging.[38] Market competition pressured firms to take on risky projects, which eventually led to chaos in the economy (i.e., "a race to the bottom"). The Chinese government had to step in and intervene in August 2016, and it instigated measures for the "Administration of the Activities of the Peer-to-Peer Lending Intermediaries" led by the China Banking Regulatory Commission.[39] The lack of risk-management expertise became a lingering issue in the fintech sector, as regulations tended to lag behind the development of the industry. Within this context, a holistic regulatory framework became pivotal to balance the sometimes competing objectives of innovation (e.g., the notion of "Digital Transformation"), growth (e.g., the "Going Global Strategy"),[f] and financial stability (i.e., the prevention of systematic risks).[40] Indeed, according to Gang Yi, Vice Governor of the People's Bank of China (PBOC), it was important to "balance the benefits and risks in financial innovation" by establishing a proper legal framework to help regulate the fintech space.[41] Chen echoed this sentiment, saying that "the regulators often find themselves between a rock and a hard place too, which was why regulatory forces tended to following a zigzag pattern."[42] Hang Jia, Senior Director of Ant Financial's International Business Division, said: "Sometimes when we were communicating with regulators about what could be done versus what could not, they might not give you a clear answer, which added to the uncertainties involved." Compounding the problems of regulatory uncertainty was the issue of the deregulation of the RMB. The Chinese government had been intervening heavily to support its

[d] "Latent demand" referred to the demand that a consumer was unable to satisfy due to a lack of information regarding the product's availability or a lack of money.

[e] "Peer-to-peer (P2P) lending" referred to the practice of lending money to individuals or businesses through online services that matched lenders directly with borrowers without going through a traditional lender, such as a bank or credit union.

[f] The "Going Global Strategy" (also referred to as the "Go Out Policy") was China's current strategy to encourage companies to invest and operate abroad, as China gradually pursued economic liberalization with its open-door policy.

currency, with the nation's foreign exchange reserves declining from USD 4 trillion in 2014 to USD 3.2 trillion in 2016.[43] Some investors were wondering whether China was losing control of its currency.[44] Analysts felt that the devaluation of the Chinese currency might result in drastic consequences, and could very well trigger a panic and cause chaos in the foreign exchange market.[45]

While fintech regulations might be fragmented and incomplete in their current form, the publication of the "Guiding Opinions on Promoting the Healthy Development of Internet Finance" in July 2015—which prescribed the mandatory criteria for activities such as online fund sales and lending, crowdfunding, and Internet insurance and payments—marked the Chinese government's first extensive regulatory framework for the fintech sector.[46]

Company Overview

History and Background

Founded by Jack Ma in 1999 and headquartered in Hangzhou, Alibaba was one of the world's most prominent e-commerce companies, providing business-to-business (B2B), business-to-consumer (B2C), and consumer-to-consumer (C2C) services via its expansive electronic world trade platform. In the second quarter of 2016, the e-commerce platform boasted a gross merchandise volume[g] of RMB 837 billion (USD 126 billion)[47] with 439 million active buyers,[48] 8.5 million active sellers,[49] and a C2C market share of 96.5%.[50] To facilitate these transactions, Alibaba developed Alipay, an online payment platform, in 2004. As with PayPal, once users registered online and linked their bank accounts to Alipay, they could start making online purchases. During transactions, instead of transferring funds to the sellers' accounts immediately, Alipay kept the money as escrow until the delivery of the associated products or services was made.[51] In other words, Alipay would send money to the sellers only upon confirmation of the receipt of the products or services. Jack Ma, Founder and Executive Chairman of Alibaba, recounted at the 2016 Honour International Symposium in Singapore:

> The lack of development in Chinese e-commerce was due to one missing piece—a mechanism that could facilitate trust between people. I believe that Alipay is the mechanism that can fulfill this gap. . . . [The] Chinese value credibility but lack a system of trust. If Alipay wants to have value in China, it must establish a trust system. . . . Users provide reviews, Alipay facilitates transactions, and all the actions taken on our platform is data. . . . Only with this system would it be possible for users to send strangers money and merchandise solely based on a picture and a few sentences posted online.[52]

China's lack of efficient payment infrastructures and relatively weak consumer protection laws, coupled with deteriorating consumer confidence in C2C and even B2C quality control, made Alipay's escrow service indispensable in Alibaba's journey to international prominence. Chen commented that Alipay and Taobao were synergistic and mutually reinforcing, as the former helped to resolve the "pain point" of a lack of mutual trust between the buyers and sellers of online transactions. Therefore, Alipay would not exist without Taobao. On the other hand, Taobao would not be thriving without the complementary solution for online payments enabled by Alipay.

In June 2010, the PBOC, the central bank of China, with the power to carry out the nation's monetary policy and regulate its financial institutions, required nonbank payment companies to obtain a license in order to operate in China.[53] According to Alibaba's initial public offering (IPO) filing, "[A]lthough

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[g] Gross merchandise volume of Alibaba's Tmall (formerly Taobao Mall), for business-to-consumer (B2C) online retail in China, from Statista.

Alipay was prepared to submit its license application in early 2011, at that time the PBOC had not issued any guidelines applicable to license applications for foreign-invested payment companies."[54] Alibaba was incorporated offshore in the Cayman Islands so as to attract foreign investors. While PBOC provided license application guidance only for domestic Chinese entities, those governing foreign entities were unclear, and those applicable to Alibaba were still unspecified, which in turn created significant uncertainties for Alipay. Therefore, a restructuring of Alipay was necessary in order for the payment company to secure the required business license for its operations in China. Subsequently, Alibaba spun off Alipay to a separate entity that evolved into Ant Financial.[55]

Just prior to Alibaba's New York IPO of USD 25 billion in 2014,[56] with the restructuring of Alipay and the divestiture of Alibaba's small and medium business loan business, Ant Financial was born, subsequently supported by a number of prominent public financial institutions, with some of its largest shareholders being China's national social security fund and China Investment Corporation, the China sovereign wealth fund worth USD 740 billion. (See **Exhibit 4** for details of the company ownership structure.) While commonly known as a "fintech" company, the company could be better portrayed as a "techfin" one, as it was using technology to enhance the quality and efficiency of financial services for the masses. Chen emphasized that "the purpose of fintech was not to disrupt finance, but to empower it instead." Digital technology was transforming business models and revamping the existing infrastructure of the financial sector, which was manifested across multiple aspects:

- **Cost reductions.** Technologies (e.g., Internet, data analytics, blockchain, and cloud computing) were driving down the costs for financial institutions, including customer acquisition costs, operational expenses, and risk management outlay.

- **Shifts in business models.** Ant Financial was better positioned to gain insights based on the data and information accumulated, which in turn allowed the firm to better identify risks and opportunities.

- **Changes in the purpose of doing business.** Ant Financial was transforming from a conventional B2C model to a C2B one, in which consumers formed the core of the ecosystem and solutions were devised to resolve users' pain points and the society's practical problems.

Ant Financial's vision was to benefit the society at large by facilitating small transactions. Chen emphasized that "Ant Financial's ultimate goal was to resolve practical pain points to better the world, not to chase after profits, which explained why the company was successful so far." This was reflected by the company's vision: "Bring small and beautiful changes to the world." With the notion of "ant" emphasizing smallness, the company's name traced its roots to the myriad entrepreneurs and merchants who sold goods through Alibaba.[57] The company's initiatives included the provision of financial services to both consumers and small and microenterprises. Chen highlighted the immense potential in developing the mass-market segment as well as SMEs for payment, wealth management, financing, and credit. Ant Financial did not seek to disrupt traditional financial institutions, but rather aimed to serve the market segments that were underserved by large banks.[58] Chen articulated that the separation laid the foundation for Ant Financial's independence and subsequently facilitated its strategy for internationalization. "Maintaining Ant Financial's independence proved to be a wise choice and a sound strategy," he said. Chen also elaborated on how Ant Financial "was not tied to any existing platforms and thus was able to negotiate as well as form strategic partnerships with foreign counterparts as an independent entity," which was in turn conducive to Ant Financial's current push to achieve its international ambitions.[59]

One of the reasons for the company's rapid ascent to prominence was the casual approach that traditional Chinese banks took to the e-payment sector at the time of the founding of Ant Financial. While most Japanese banks received their primary income from payment services and a quarter of

Western banks' income was derived from the same source, merely 5% of Chinese bank income came from payment services, with the majority coming from margin interest.[60] As such, at the beginning, most state-owned Chinese banks did not see Internet payment services as an attractive market and were reluctant to pursue opportunities in fintech. With over 450 million active users in 2016, Ant Financial had a market share of 68% in the online payment sector via Alipay, according to statistics from iResearch.[61] (See **Exhibit 5** for details.) While Alipay managed to handle a large number of transactions, given its focus on micropayments, the dollar share of total domestic payment transactions was still very small. Data from PBOC showed that, in the third quarter of 2016, the total number of transactions originating from Chinese nonbank financial institutions[h] accounted for 55% of the total domestic electronic payments. However, in terms of dollar amount, that figure was only about 5%, implying that domestic payment institutions focused mostly on micropayments, which differentiated them from traditional banks and financial institutions.

Key Products and Services

With over a decade of experience under Alipay and direct involvement in the Chinese financial services market, Ant Financial managed to establish a fintech ecosystem in two years, providing services such as Alipay (China's answer to PayPal), MYbank (an online banking system), and Yu'e Bao (a money market fund). Alipay provided payment and escrow services for the e-commerce business of Alibaba. With the breadth and depth of Ant Financial's fintech business came the notion of "finlife," which referred to the fact that fintech was permeating all aspects of daily life and bringing about significant lifestyle benefits.[62] Over the years, the Alipay smartphone app had evolved from a digital wallet to a lifestyle enabler.[63] Alipay extended well beyond the Alibaba e-commerce ecosystem and was used to pay for items in-store and online for goods and services ranging from taxis to restaurants to clothing.[64] As articulated by Chen, "finlife" encompassed a broad range of fintech-enabled lifestyle enhancements, including the ability to hail a taxi, book a hotel, pay utility bills, make doctor's appointments, and buy movie tickets directly from various modules within the Alipay app. While the transaction fees in the United States amounted to about 3%, in China they were only 0.6%.[65] Consumers did not have to pay those fees when they spent money; merchants footed the bill instead.

In May 2014, Yu'e Bao (which meant "leftover treasure," or "余额宝" in Chinese), Ant Financial's money market fund, offered an interest rate of 5% coupled with instant liquidity, which propelled it to become the fastest-growing mutual fund of all time.[66] Contextualizing Yu'e Bao's yield within the macroeconomic environment, China's inflation rate had averaged 5.39% for the past two decades,[67] while interest rates at the major banks for deposits hovered around 2.75%.[68] Yu'e Bao raised RMB 668 billion (USD 108 billion) via the Alipay app as a sales channel reaching the masses. Despite its success, Yu'e Bao was not purely profit-driven. Chen pointed out that the true purpose of Yu'e Bao was to "provide reliable, safe, and liquid financial transaction services, at the same time generating returns for 'fragmented' assets (i.e., assets of small sizes)."

From the very beginning, Yu'e Bao was devised to manage residual cash flows for consumers, so maximizing investment returns was never the primary concern. With Beijing easing its stance on monetary policy,[69] Yu'e Bao's interest rates had declined somewhat but were still 40% higher than those of most Chinese banks in 2015,[70] and the number of users still kept rising. As of early 2017, over 300 million people had used Yu'e Bao. Although bank deposit and lending rates in China had been fully liberalized,[71] and Chinese banks now had the freedom to set lending and deposit interest rates,[72] implicit interest rate control measures still existed. For instance, the PBOC still set reference rates as a

[h] A nonbank financial institution was a financial institution that did not have a full banking license or was not supervised by a national or international banking regulatory agency.

guide,[73] potentially rendering the effects of interest rate liberalization ineffective by sustaining cheap credit flows to state-owned enterprises.

With the rapid rise of Yu'e Bao's popularity, some traditional asset managers responded by launching new offerings. For instance, China Asset Management, which used to be the nation's largest fund manager before being overtaken by Ant Financial, launched online money market funds, such as the ChinaAMC Cash Income Money Market Fund[74] (with Baidu). Also, the Industrial and Commercial Bank of China (ICBC), the largest international bank by assets in the world, had stepped up efforts to garner customer information and compete within the payments arena. ICBC introduced an online shopping platform that reached RMB 70 billion in transaction volume after a year in operations.[75] Known as the "e-Buy Mall,"[76] the platform had foreign exchange and online payment capabilities that were enabled by ICBC's years of banking expertise. Moreover, leveraging their relationships with the government, banks were also reportedly pressuring China's central bank to rein in the growth of fintech companies, such as limiting the number of daily transfers allowed on third-party payment platforms.[77]

(See **Exhibit 6** for a development timeline of Ant Financial's products and services.)

Ant Financial's Advantages

Scenario-Based Prototyping

Ant Financial made extensive use of "scenarios" ("场景" in Chinese)—i.e. use cases for applications and software—in developing, testing, and refining fintech solutions, thereby attracting a critical mass of users for the technology to gradually become mainstream. Emphasizing that "without scenarios, it [would] not matter how well a specific application was designed," Chen alluded to the concept of "scenarization" as the foundation of success within the fintech space.[78] (See **Exhibits 7** and **8** for details on Ant Financial's scenarios.) According to Chen, scenarios provided the use cases for specific applications, and in turn helped to create product awareness, drive technology adoption, and enhance customer stickiness. For instance, the "11.11 Global Shopping Festival" was one of the major scenarios of prototyping for the company, which Ant Financial spent half a year preparing for annually. Fintech "scenarized" financial services and traced the roots of finance back to its original purpose of serving the economy. In other words, "scenarization" allowed for the seamless integration of finance and the economy, which benefited the society at large.

Breakthroughs in Credit Profiling

The provision of inclusive finance hinged upon the capability to develop individual credit profiles in an innovative, efficient, and scalable manner. With low population coverage, the current credit-profiling system in China was far from perfect. Ant Financial's Zhima Credit was dedicated to the development of a complete credit system in China.[79] Back in early 2015, the PBOC granted Zhima Credit and seven other private crediting companies a preparatory license to provide personal credit reference services.[80] The company had since devised a credit rating system, with scores ranging from 350 to 950 and determined by five factors (with a higher score indicating better credit).[81] (See **Exhibit 9** for more details on the underlying factors.) For Ant Financial, data was "a resource that was real-time and multidimensional," stated Li Guang, an executive from Zhima Credit. Leveraging Ant Financial's "scenario-driven" advantage, the company had accumulated a wealth of data on user behavior. The company had established an independent credit-scoring firm, which created a holistic credit-scoring system using public data (e.g., government databases including criminal records, citizen identification information, and academic profiles), data from their partners (e.g., car rental and hotel statistics from partnering companies),[82] and internal consumer behavior statistics (e.g., records of relocation trends, utility bills, money transfers, wealth management, and shopping activities from Alibaba and offline merchants) given users' consent. This allowed for the identification of consumer credit profiles, which enabled Ant Financial to provide tailored services to creditworthy consumers and lowered the social transaction costs involved, thus helping the company realize its philosophy of "Credit Equals Wealth."[83] Ant Credit Pay, Ant Financial's consumer credit portal, extended credit lines based on a series of indices such as users' consumption frequency and payment habits.

While it was estimated that less than 5% of those profiled at Zhima Credit had credit scores of 750 or above,[84] better credit yielded benefits in daily life in China, as a result of its wide-ranging acceptance by other organizations. For example, some documents might be waived when users applied for travel visas as long as they met certain credit score requirements (e.g., 700 for a Singapore visa).[85] Additional benefits included the ability to enjoy car rental and hotel booking services without reservation fees or up-front deposits. According to a company executive at Zhima Credit, users could also borrow umbrellas and portable cell-phone chargers from partnering convenience stores without a deposit as long as their credit profiles were of sufficient quality.

The sheer volume, variety, and depth of the information that Zhima Credit had access to set the organization apart from other credit-scoring companies. The company was able not only to provide credit scoring for both individual customers and online financial firms but also to more accurately predict customers' repayment behavior. The ability to analyze information about consumers, ranging from customers' contact information to shopping behavior, was the foundation of the company's competitive advantage. Consequently, Ant Financial was able to remain one step ahead of the competition and to identify consumer trends, behaviors, and preferences through applications of data analytics and artificial intelligence. Advances in such technologies enabled the company to make inferences based on purchases, such as the presence of an infant within the household based on data indicating the recent purchase of a cot. Armed with credit-profiling technologies, Ant Financial was able to better serve the financial needs of the masses to achieve its vision in inclusive finance.

Processing Capabilities and Risk Management

Ant Financial leveraged the use of data analytics and artificial intelligence in order to provide timely and "intelligent" customer service. Recent advances in data mining [i] and semantic analysis [j] technologies enabled the company to resolve issues for customers in an automated fashion.[86] The use of artificial intelligence driven by data analytics assisted the company in completing 95% of online customer inquiries during the 11.11 Global Shopping Festival in 2015. The company dedicated upward of half a year of planning for the special day. The data analytics were made possible with Ant Financial's financial cloud technology platform. Since its introduction, the Ant Financial Cloud managed to keep the IT cost of each transaction to under RMB 0.1 (US ¢ 1.4). It was also able to achieve real-time risk prevention and security measures with capacity to provide millisecond-level risk prevention. With a robust capital security management system in place, the cloud had the capacity to handle tens of billions of daily transfers per day, allowing for a peak workload of 120,000 transactions every second with high availability and disaster recovery solutions (up to 99.99%) in place. Ant Financial's cloud architecture held several advantages over the traditional ones. First, it had tremendous concurrent processing capability. The cloud system helped process Alipay's core functions

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[i] Data mining was a process turning large volumes of raw data into business insights by using software to look for patterns in large batches of data.

[j] Semantic analysis was the process of relating syntactic structures from the levels of phrases, clauses, sentences, and paragraphs to the level of the writing as a whole.

(e.g., accounting and payment) around the clock, with peak processing power reaching 120,000 transactions per second (a world record) during the 11.11 Festival in 2016. Second, the system used low-cost PC server clusters to replace traditional database servers, thus lowering the overall hardware costs. Third, elastic computing allowed system performance and capacity to be increased on demand by adding more servers, making close to 100% system utilization possible. Finally, by keeping multiple synchronized data replicas on multiple servers in multiple locations, Ant Financial had 99.99% service uptime. The company managed to achieve a capital loss rate of less than 0.001%, which was significantly lower than that of its rivals.[87] Because of its technology strength and risk management capacity, Ant Financial was able to offer insurance products like Account Security Insurance at low and customized premiums ranging from RMB 0.88 to RMB 2.58 for RMB 1 million in coverage. According to Anna Qi, Senior Strategy Expert of the Strategy Research Division at Ant Financial, the ability to handle large real-time transaction volume, enhanced cloud computing capabilities, and drastic reduction in the costs of providing financial services were the core strengths of the company.

Thanks to innovations in credit-profiling techniques driven by data analytics, Ant Financial's MYbank managed to approve small loans for individuals and businesses 24 hours a day, 7 days a week, providing capital and liquidity for the masses in China. As China's second online bank approved by the government in 2015,[88] explained Liang Feng, Product Director of MYbank, "MYbank had been operating on the '3-1-0' system, with users promised registration within 3 minutes, approval within 1 minute, with zero human intervention." Using data analytics for credit-profiling purposes, the loan application process was simplified substantially. According to Chen, the 3-1-0 system was specifically devised to "address customers' pain points" by reducing the cost of lending significantly while enhancing the efficiency of the loan-application process. The loan approval and issuance process was entirely digital and solely driven by credit scores, representing a shift away from the traditional homeowner mortgage model usually used by the Chinese banking sector. As of January 2017, MYbank had served more than 5 million small businesses and individual entrepreneurs, with loans averaging RMB 17,000 each, and an aggregate loan volume exceeding RMB 800 billion, which was more than six times that of Grameen Bank's total lending amount for the past 39 years (USD 18 billion).[k] MYbank helped to amplify the already large scale of China's 11.11 Festival, during which credit was provided to 1.33 million merchants with a cumulative loan amount of almost RMB 50 billion (USD 7.2 billion). With MYbank, Ant Financial was empowering finance with technology, thus unlocking exponential growth in the financial services sector.

Risk management had been one of the top priorities at Ant Financial since its establishment, as demonstrated by its computer network of 2,000 servers dedicated to the treatment, analysis, and monitoring of risk.[89] The company also had a total of 1,500 employees assigned to its risk management function, which represented over 20% of its 7,000-member workforce. More than half of the company's employees were technical professionals, which contributed to Ant Financial's product breakthroughs, innovation pursuits, and risk management capabilities.[90] Its technical advantages aside, Ant Financial was very cautious and prudent when dealing with issues pertaining to data privacy. Specifically, the company aimed to achieve strict adherence to the legal regulations regarding data security (with explicit consent sought from users for the use of personal data to protect consumers), establishment of sound data security standards and procedures enhanced by data analytics to safeguard users' data and information, and robust technical support for data security (with data classification, desensitization, encryption, anti-tampering, auditing, and risk evaluation) to improve overall security.

[k] Founded in Bangladesh in 1983, Grameen Bank was a Nobel Peace Prize–winning microfinance organization and community development bank. It made small loans to the poor without requiring collateral.

Ant Financial's big-data-based fraud risk management capabilities enabled the company to implement effective control measures within 0.1 second.[91] The company also made improvements in the payment industry's security protection performance as a whole, partnering with Alipay merchants and users, higher education institutions, specialized research laboratories, software and hardware developers in the risk management space, third-party payment firms, and other financial institutions. As a result, Ant Financial managed to achieve a capital loss rate of less than 0.001%, which was significantly lower than that of its rivals and other payment companies.[92]

Rural Strategies

Aside from serving small businesses and providing wealth management products with enhanced accessibility to consumers via MYbank and Yu'e Bao, Ant Financial had been working closely with Alibaba to assist farmers and villagers in purchasing quality goods conveniently and in gaining access to products and services similar to those available to people living in metropolitan areas. The market potential was huge, with China's rural population standing at 609 million, according to the World Bank.[93] With the rapid proliferation of 3G networks, 3G was expected to be available nationwide in China by the end of 2018. On the other hand, over the past five years, a lot of rural regions in China had been urbanized, averaging an addition of 21 million permanent urban residents and a reduction of 10 million people below the poverty line every year. The provision of inclusive financial services in remote rural areas represented only part of a grand vision, which was the reconstruction of rural villages and the agricultural industry.

"Villagers oftentimes [had] to walk long distances, sometimes up to 10 miles, in order to deposit or obtain cash," Ming Lei said, citing examples of specific pain points. Low population density, coupled with a lack of sufficient usage frequency, rendered traditional payment solutions unjustifiable. Even with more than RMB 100 billion (USD 14.5 billion) of investments made in agricultural products annually, the overall profitability of the agricultural sector in China was relatively low.[94] The meager profits often prompted farmers to abuse the use of loans provided to invest in high-risk opportunities in pursuit of higher profits, which in turn resulted in higher default rates for rural lending.[95]

Ant Financial's rural strategy partly benefited from Alibaba's provision of e-commerce services in rural areas, with "Rural Taobao"[96] ("农村淘宝" in Chinese) as one of the key foci serving farmers and bringing innovative practices to villages. The approach of Rural Taobao could be summarized using "Five One's": "one village center," "one dedicated network cable," "one computer," "one large screen," and "one group of trained technicians." Ant Financial was able to provide financial services such as electronic payments and other forms of support (e.g., facilitating online purchases) for farmers and villagers in rural areas of China, where most transactions were conducted in cash. One of the first financial service products of MYbank specifically tailored for the rural market, "Wangnong Credit" ("旺农贷" in Chinese) aimed to provide credit of up to RMB 500,000 (USD 72,500) for farmers and villagers. These loans were originated purely based on credit (i.e., unsecured and without collateral), with varying maturities (e.g., 6 months, 12 months, or 24 months).[97] At the same time, "Wangnong Pay" ("旺农付" in Chinese) provided Internet remittance, recharge, transfer, and other payment services to the rural population.[98]

Ant Financial also made use of supply chain finance.[99] It would work with key enterprises with the supply chain of the agricultural sector in Alibaba's e-commerce ecosystem, and provided loans to their upstream suppliers (i.e., farmers in rural areas).[100] Money borrowed was sent to farmers' Alipay accounts, and capital use was restricted to the direct procurement of production tools and farmingrelated accessories on Alibaba's sites, effectively transforming the mechanics of lending from one of "borrowing money" to one of "borrowing things."

Internationalization

Beyond China

While the company was successful within China, Ant Financial had considerable international ambitions and had adopted a two-pronged internationalization strategy.[101] "The company's internationalization strategy included providing Chinese consumers with more scenarios to use Alipay abroad, as well as replicating the success of e-wallet development in China in foreign countries, thereby allowing the company to serve overseas markets better," Anna Qi explained. The latter strategy, which enabled consumers in developing countries to use mobile payment services as Chinese consumers did, was deemed more meaningful and significant.

Ant Financial was targeting a customer base that already outnumbered the population of Western Europe.[102] The company was proactively forming strategic partnerships with its foreign fintech counterparts, and capturing Chinese tourists' spending when they traveled. The company had managed to achieve considerable progress, including an investment made in Paytm (a mobile payment firm) in India,[103] a strategic partnership forged with Ascent Money (a mobile payment company) in Thailand,[104] a joint venture with Kakao Corp known as Kakao Pay (another mobile payment platform) in South Korea,[105] an agreement with Ingenico Group SA (a Paris-based mobile-payment system), and collaborations with Wirecard and Concardis to offer mobile-payment services to Chinese tourists in Germany, France, the United Kingdom, and Italy,[106] as well as an acquisition of the U.S.-based EyeVerify for its biometric authentication technology.[107] By supporting and empowering overseas fintech counterparts, Ant Financial would be able to provide fast, convenient, and low-cost financial services to consumers in developing countries, albeit indirectly. The potential for growth was immense. Based on statistics published by the World Travel & Tourism Council (WTTC), Chinese tourists spent a total of USD 215 billion on outbound travel in 2015, representing a growth of 53% over 2014.[108] Currently, Alipay was supported in 70 countries and regions, with in-store payments covering more than 100,000 retail stores. To use Alipay for payments and transactions, foreign merchants provided their bank information to Ant Financial. When customers made payments via their accounts, Alipay would convert the funds into the respective foreign currencies. Upon reaching the threshold of USD 5,000, the funds would be credited to the merchants' bank accounts.[109]

Overseas Investment and Strategic Partnerships

Moving beyond China, Ant Financial became a shareholder of Paytm in early 2015, holding a combined stake of 40% along with Alibaba.[110] Having grown from a mobile recharge service provider to India's largest mobile payment platform, Paytm boasted a 230% increase in transactions from 2015 to 2016, a monthly transaction rate of 52 million, and a user base of 122 million.[111] As with Alipay of Ant Financial, Paytm users could buy bus tickets and book taxi rides. Unlike Alipay, however, Paytm did not have an associated e-commerce site and instead relied on data originating mostly from local (offline) Indian merchants.[112] Ant Financial was planning to share with its Indian counterpart not only technological expertise but also human capital and available talent.[113] Ant Financial had helped Paytm achieve a six-fold increase in its total transaction amount, propelling the latter to become India's biggest and the world's third-largest electronic wallet. Paytm had also become the only fintech company in India to obtain a payment-banking license from India's Central Bank. Commenting on the strategic partnership with Paytm, Hang Jia said that "each country [was] different in terms of the local market conditions, cultural influences, and customer needs, but in most cases the business models, experience, and product technologies [were] transferrable from one context to another."[114]

Ant Financial's international ambitions had also extended to Thailand, where the company forged a strategic partnership with Ascend Money, a Bangkok-based fintech company specializing in payroll, online and offline payments, domestic and foreign remittances, and mobile wallet services. With operations in Indonesia, the Philippines, Vietnam, Myanmar, and Cambodia, Ascend Money was a provider of e-payment services and microloans to underserved customers in the region. According to a report by China's Ministry of Commerce, Ant Financial purchased a 20% stake in Ascend Money, a subsidiary of the Thai conglomerate Charoen Pokphand, with an option to raise its stake by an additional 10%.[115] By establishing a broad partner network, Ant Financial was able to provide Chinese tourists with payment options that they were familiar with during overseas travels. Ant Financial aimed to share strategic and technical expertise with Ascend Money in order to help the latter expand its offering of financial services and payments, both online and offline.[116]

South Korea was another country on which Ant Financial had made its mark, with a USD 200 million investment in Kakao Pay, the mobile payment subsidiary of the Korean messaging platform Kakao Corporation.[117] Kakao, best known for its online messaging platform Kakao Talk,[118] had a user base of over 48 million, and enjoyed a penetration rate of over 95% in South Korea.[119] Together with Korea Telecom and other investors, Ant Financial invested in the establishment of the K-Bank,[120] which was the first full-service online bank licensed by the Korean government in over two decades.[121]

Developing countries (often with a weak financial infrastructure) had more potential than developed ones in Ant Financial's grand scheme for internationalization. Jia explained that the general direction of overseas expansion for Ant Financial could be "Southeast Asia, then South Asia, then Middle East and Africa."[122] Jia elaborated on how Ant Financial's partners were learning from the company:

> It was primarily Ant Financial's business model, industry experience, operational expertise, transaction-processing capabilities, technical know-how, as well as insights regarding the future development of the industry. The experience and knowledge that the company had accumulated over the past 13 years would be helpful to these emerging enterprises, saving them time and costs, which was paramount because time was always of essence.

Major Competitors in China's Fintech Market

Tencent

Tencent, another technology giant, operated its flagship product WeChat, a popular messaging application used by over 500 million people for daily communication and payments.[123] With a total of 846 million monthly active users as of the third quarter of 2016,[124] the company had a 30% annual growth rate in user acquisition.[125] The monthly active users of QQ (the original desktop-based social application developed by Tencent before WeChat) topped 808 million in the fourth quarter of 2013, with a peak of 200 million simultaneous users.[126] The WeChat development team was beta-testing[1] "mini programs" in WeChat that would provide a seamless user experience, which helped to enhance user convenience, free up memory space, and facilitate the social sharing process. With its dominance in social media, WeChat managed to deliver a holistic and seamless experience for users enabled by the integration of financial technology, a concept similar to Chen's notion of "finlife." Like Alipay,

[1] "Beta testing," also known as user testing, was conducted at the end user's site to validate the usability, functionality, compatibility, and reliability of a computer program.

WeChat offered a suite of lifestyle-enhancing capabilities, such as top-ups for mobile phones, taxi reservations, and takeaway orders, as well as financial management, bank transactions, and peer-to-peer payments. Tencent also operated its digital payment business WeChat Pay.[m] WeChat Pay emerged as one of the main electronic payment applications because of WeChat's status as the default platform for communication in China,[127] thanks in part to the C2C electronic "red packet" feature.[128] Unlike Alibaba and Alipay, Tencent kept WeChat as its subsidiary instead of a separate company.[129]

Baidu

While Tencent dominated the social media scene, Baidu had emerged as the largest search engine provider in China. Established in 2000 and headquartered in Beijing, Baidu ranked second in the 2016 *MIT Technology Review*'s "50 Smartest Companies" globally.[130] The company prided itself on its technological innovations, with tens of thousands of engineers dedicated to the research and development of its search engine and related capabilities. Its R&D strength resulted in solid business performance. According to statistics from its second-quarter 2016 interim financial report, monthly active users of Baidu Search reached 667 million, with 343 million for Baidu Maps (the Chinese equivalent of Google Maps) and 80 million for Baidu Wallet (Baidu's answer to Alipay and WeChat Pay).[131] The company currently enjoyed a market share of 73.5% with its search engine, covering 97.5% of Internet users and handling 6 billion searches daily in China.[132] Baidu offered advertising services similar to Google AdWords.[n] On the other hand, the Baidu research institute had been conducting research into artificial intelligence, one of the key strengths of the company, with a multitude of applications (e.g., driverless cars and natural language processing).[o] "Artificial intelligence was the DNA of Baidu," noted Baidu's Chief Scientist, Andrew Ng.[133] One of Baidu's fintech initiatives was the Financial Services Group (FSG), which was declared to be of "strategic importance" at the company. Established in December 2015, FSG provided services spanning consumer finance, wallet payment, wealth management, Internet banking, and insurance.

JD.com

The Beijing-based Chinese electronic retailer JD.com (formerly known as 360buy)[134] operated one of China's largest online B2C stores. With a gross merchandise volume of RMB 462.7 billion (USD 67.1 billion) in 2015,[135] the company started off in 2004 as an online magneto-optical equipment[p] retailer and later diversified its product offerings across electronics, mobile phones, and computers.[136] In collaboration with the NASDAQ-listed fintech company ZestFinance, JD had recently made its foray into the digital consumer finance space by forming a joint venture called the "JD-ZestFinance Gaia."[137] The joint venture would leverage ZestFinance's machine-learning technology and JD's reserve of consumer data from over 100 million active customers to provide credit-risk profiling services tailored for China.[138] On the other hand, JD's rural strategy covered the entire value chain of rural finance. The company had devised consumer credit products tailored specifically for the rural market, such as "Rural Consumer Credit"[139] ("乡村白条" in Chinese), rural wealth management, and crowdfunding services. To date, JD had established more than 1,500 county service centers and deployed about 270,000 rural marketers across the nation.[140] JD's rural e-commerce initiative had a coverage of 5,000

[m] WeChat Pay was also known as TenPay.

[n] Google AdWords was an online advertising service through which advertisers paid to display brief advertising copy to web users.

[o] "Natural language processing" referred to a computer's capability to communicate with an intelligent system using a natural language, such as English, enabled by artificial intelligence.

[p] A magneto-optical drive was an optical disc drive capable of writing and rewriting data on a magneto-optical disc.

villages in China, with an aim of scaling up operations to serve 80% of China's villages in the next two to three years. Tencent began investing in JD in 2014,[141] gradually increasing its stake to 21.25%.[142] According to industry insiders, the collaboration was mainly devised for WeChat Pay to be incorporated within JD's e-commerce platform.[143] The two companies were pursuing a co-branding strategy and collaborating in the provision of electronic payments services.[144] For instance, JD's Sales Department and WeChat had recently launched multiple co-branded social marketing activities, attracting hundreds of millions of online shoppers.[145]

Ping An

Founded in Shenzhen in 1988, Ping An was a financial services conglomerate with core businesses in insurance, banking, and investment,[146] with a vision to "[lead] finance with technology and facilitate life with finance."[147] As of 2015, Ping An's online customer base totaled 242 million, which represented an increase of 75.9% compared with that of 2014. The total number of users of its Internet finance subsidiaries had reached 183 million.[148] Ping An also had a 43% stake in Lufax (LU.com), which was the largest peer-to-peer lending platform in China.[149] Headquartered in Shanghai with 23.4 million registered users, Lufax (formally known as the Shanghai Lujiazui International Financial Asset Exchange Co., Ltd.) was an online finance marketplace in China. Charging a 4% fee on each loan originated from the platform, Lufax had completed an aggregate of over 200,000 loans with a total value of more than $2.5 billion since its inception.[150] Lufax's IPO, expected to raise up to $5 billion,[151] was scheduled for 2017.[152]

Each of Ant Financial's competitors had different strengths. Tencent was competing with Ant Financial across the whole spectrum of industry subverticals within the fintech space, ranging from payment to lending to crowdfunding. On the other hand, Ping An, a traditional player in China's financial services industry, was particularly strong in banking, insurance, and wealth management and distribution services. JD had maintained a presence in the payment, lending, insurance, wealth management, and crowdfunding subsectors, and was emerging as a viable competitor in the fintech space. In addition, other companies, such as the state-backed UnionPay (a bank-card services firm enjoying a monopoly on credit-card payments in China so far),[153] were vying for a share of the pie in the fintech sector as well.[154] (See **Exhibits 10** and **11** for a summary of the fintech competitive landscape in China.)

The Road Ahead

Topping the 2016 Fintech 100 Ranking as a "Leading Global Fintech Innovator" in a report published by H2 Ventures and KPMG,[155] Ant Financial was poised for an IPO of unprecedented proportions.[156] Chen pinpointed that Ant Financial was tackling "the challenge [of] how to get inclusive, sustainable growth" with an ultimate goal to "[make] finance accessible [with an] affordable price."

As Chen readied himself to address the executives in the conference room, his mind was occupied with the issues at hand. Ant Financial was facing several dilemmas. First, the process of overseas expansion would likely not be smooth sailing. Some of the challenges that the company would likely face included rising operating costs overseas, coordination complexities, and cultural and regulatory differences. Was Ant Financial's current strategy of globalizing its business an optimal one? How should the company accelerate its expansion overseas? Second, its current rural strategies served only a fraction of China's rural landscape. With a lack of proper infrastructure along with other logistical challenges, how should the company roll out its inclusive finance initiatives in China's vast rural areas? Third, how should Ant Financial manage its relationship with traditional banks and navigate the regulatory uncertainties (domestic and international)?

Exhibit 1 Ant Financial Products and Services

English Name	Functionality	Chinese Name & Pinyin
Alipay	Mobile and online payment platform	支付宝 (zhī fù bǎo)
Ant Fortune	One-stop personal investment and wealth management platform	蚂蚁聚宝 (mǎ yǐ jù bǎo)
Yu'e bao	Money market fund	余额宝 (yú é bǎo)
Zhima Credit	Social credit scoring system	芝麻信用 (zhī má xìn yòng)
MYbank	Internet banking service provider	网商银行 (wǎng shāng yín háng)
Ant Credit Pay	Online consumer credit portal for short term credit services	蚂蚁花呗 (mǎ yǐ huā bei)
Insurance	Insurance service platform	蚂蚁金服保险服务平台 (mǎ yǐ jīn fú bǎo xiǎn fú wù píng tái)
Ant Financial Cloud	Cloud technology platform	蚂蚁金融云 (mǎ yǐ jīn róng yún)

Source: Company document.

Exhibit 2 Major Chinese Banks

Company	Valuation (USD Bn)	Total Assets (USD Bn)	Net Profit Margins (%)
Industrial and Commercial Bank of China	223	3,473	28.1%
China Construction Bank	193	3,017	26.5%
Bank of China	141	2,612	21.9%
Agricultural Bank of China	144	2,816	24.2%
Bank of Communications	58	1,209	19.2%

Source: FactSet financial data and analytics, December 31, 2016, accessed April 13, 2017.

Exhibit 3 China's Fintech Market

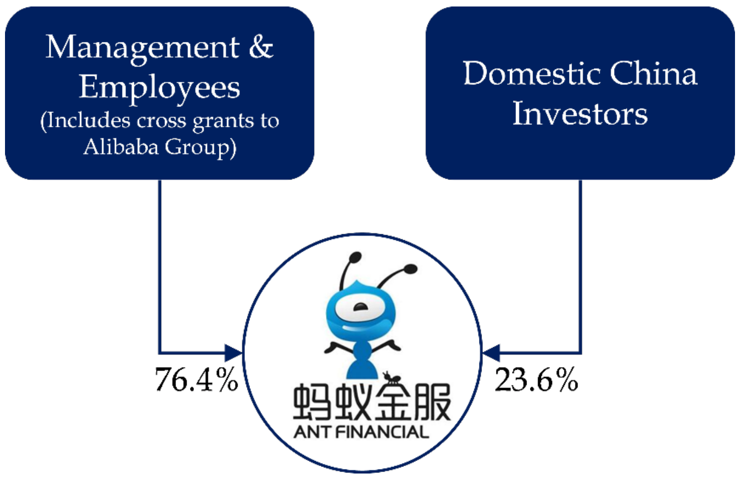
By the end of 2015, the market size of China's Internet finance sector exceeded RMB 12 trillion (USD 1.8 trillion).

Internet Finance Sectors	Amount (USD Bn)	(%)
Third-party Payments	**1,603.8**	**89.4%**
Wealth Management	**88.3**	**4.9%**
Fund Sales	86.8	4.8%
Other Wealth Management Products (e.g., Trusts, Private Equity)	1.4	0.1%
Financing	**73.8**	**4.1%**
Crowdfunding	1.4	0.1%
Peer-to-peer Lending	36.2	2.0%
Small and Micro Loans	36.2	2.0%
Other	**28.9**	**1.6%**
Insurance	2.4	0.1%
Cloud and Direct Banking	26.6	1.5%
Total	**1,794.8**	**100.0%**

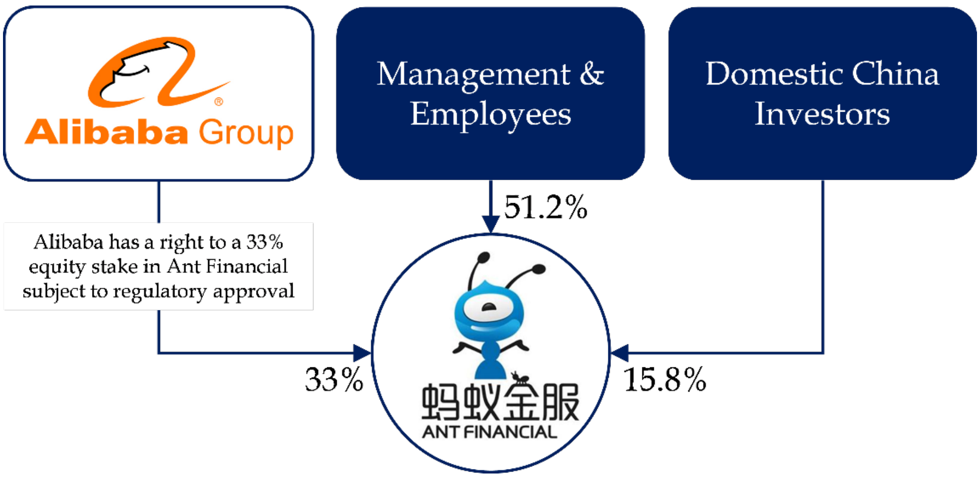
Source: Joseph Luc Ngai, John Qu, and Nicole Zhou, "What's next for China's booming fintech sector?," July 2016, http://www.mckinsey.com/~/media/McKinsey/Industries/Financial%20Services/Our%20Insights/Whats%20next%20for%20Chinas%20booming%20fintech%20sector/Whats-next-for-Chinas-booming-fintech-sector.ashx, accessed December 2016.

Exhibit 4 Ownership Structure of Ant Financial

Current Shareholding Structure



Shareholding Structure *if* Alibaba Converted its Rights in Ant Financial



Source: Company presentation, June 2016, http://www.alibabagroup.com/en/ir/pdf/160614/12.pdf, accessed December 2016.

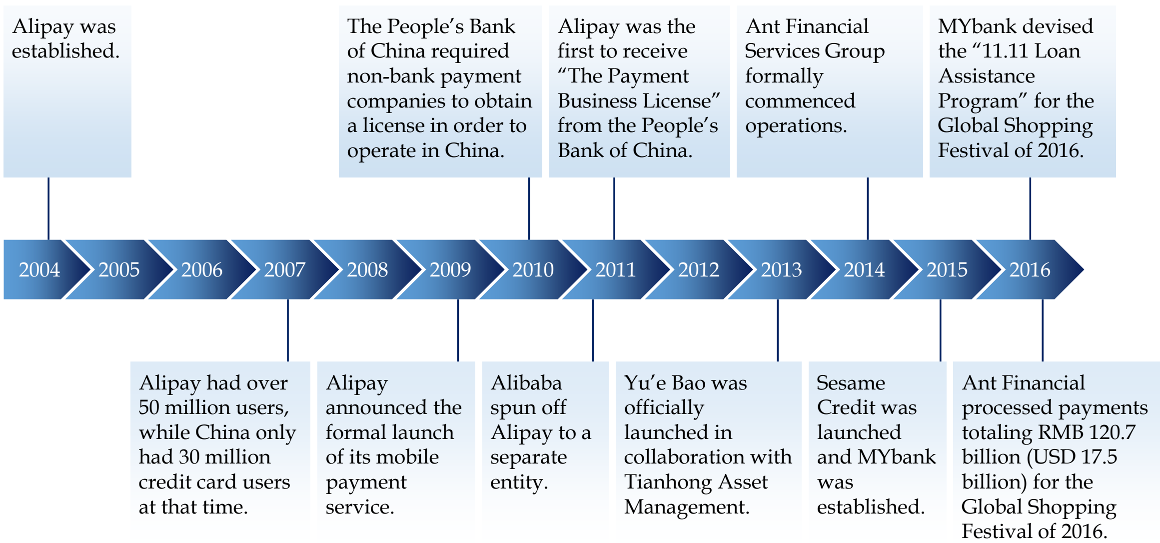
Exhibit 5 China's Third-Party Mobile Payment Landscape

Company	Market Share
Alipay	68.4%
WeChat Pay	20.6%
Lakala	2.4%
Umpay	1.2%
Lianlianpay	1.2%
99Bill	0.6%
Yeepay	0.5%
Pinganpay	0.5%
JDpay	0.5%
Bestpay	0.5%
Baifubao	0.5%
Others	3.2%

Source: "China's Third-Party Mobile Payment Market Shot Up 69.7% in 2015," April 11, 2016, http://www.iresearchchina.com/content/details7_21238.html, accessed December 2016.

Note: Only third-party companies are considered in the calculation of GMV, excluding banks and UnionPay. iResearch will update historical data in accordance with the latest market conditions. China's third-party mobile payment GMV was 3,109.65 billion yuan in Q4 2015. Source: The data were calculated based on the financial results published by enterprises and interviews with experts in iResearch statistical model.

Exhibit 6 Ant Financial's Development Timeline

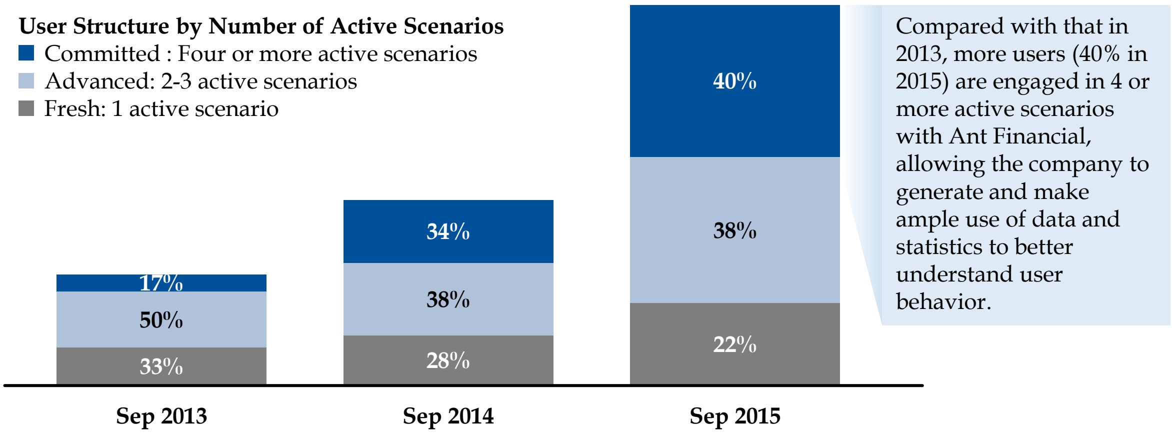


Source: Company website, https://www.antgroup.com/, accessed December 2016.

Exhibit 7 Types of Consumption Scenarios

Source: Company presentation, http://www.alibabagroup.com/en/ir/pdf/160614/12.pdf, accessed November 2016.

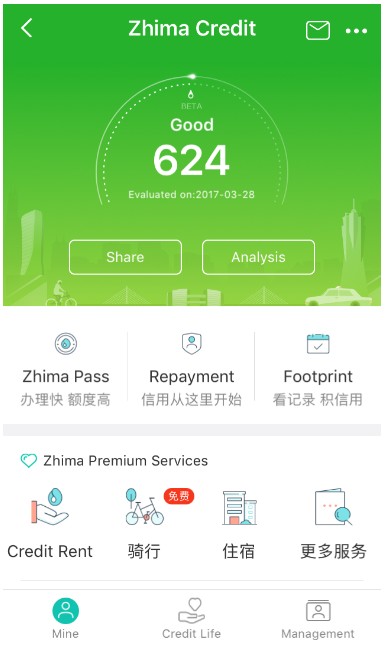
Exhibit 8 Evolution of Consumption Scenarios



Source: Company presentation, http://www.alibabagroup.com/en/ir/pdf/160614/12.pdf, accessed November 2016.

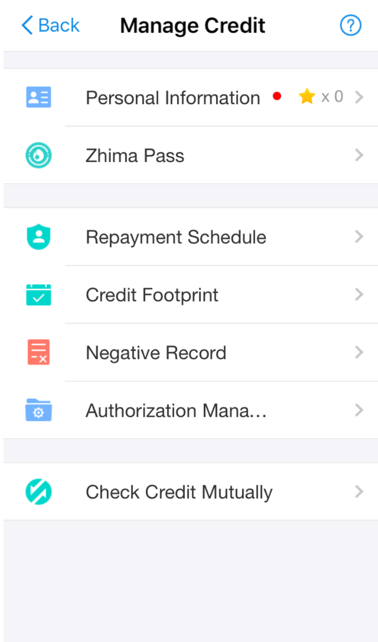
Exhibit 9 Zhima Credit

Zhima Credit App Homepage



Credit Analysis

Credit Management Interface



Five Credit Profiling Factors

Credit History: Reflects a user's past payment history and indebtedness. This consists of areas such as credit card repayment, utility bill payments.

Behavior & Preference: Shows user's online behavior, including how active he/she is, the product categories he/she shops at and the consumer segment the user belongs to, etc.

Fulfillment Capacity: Reflects the user's ability of adhering to contracts such as financial products and loans. It is evaluated based on asset information, including payment for social insurances (similar to the Central Provident Fund in Singapore), properties and cars, etc. Indicators also include use of Alibaba's financial products / services and Alipay account balances.

Identity Characteristics: Rates the extent and accuracy of user's personal information. For example, home address, length of time of residence, mobile phone number, education level and employment. User can fill in information or import information from LinkedIn or other external systems.

Social Relationship: Reveals the user's influence within his/her network, and his/her influence to the network.

Source: Ant Financial Zhima Credit App, accessed April 2017.

Exhibit 10 China's Financial Technology Landscape

	Ant Financial (and Alibaba)	Tencent	Ping An	JD
Payment	✓✓✓	✓✓	✓	✓
Lending	✓✓	✓✓	✓	✓
Bank	✓✓	✓✓	✓✓✓	×
Insurance	✓✓	✓✓	✓✓✓	✓
Securities	✓	✓✓	✓✓	×
Wealth Management & Distribution	✓✓✓	✓✓	✓✓✓	✓
Credit-scoring	✓	✓	✓	×
Crowdfunding	✓	✓	✓	✓

Source: Credit Suisse Analyst Report, "China Internet Finance Sector," February 15, 2016, p. 1.

Note: Number of ticks based on the competitiveness in each business.

Exhibit 11 Market Capitalization of the Global Fintech Companies

Company	Country	Market Capitalization (USD Bn)
China FinTech Majors		
Alibaba	China	213.4
Tencent	China	231.9
JD	China	36.7
Ping An	China	92.5
Baidu	China	57.1
Payment		
PayPal	United States	47.6
MasterCard	United States	112.4
Visa	United States	181.2
Global FinTech Leaders		
Lending Club	United States	2.1
OnDeck Capital	United States	0.3
PayPal	United States	47.6
Moneysupermarket	United Kingdom	2.0
Other FinTech Players		
Yirendai	China	1.2
East Money	China	8.7
Noah	China	1.2
Hithink Royalflush	China	5.3

Source: FactSet financial data and analytics, December 31, 2016, accessed April 13, 2017.

Appendix A

Institutional Voids

Consider the used-car market, in which information asymmetry causes the buyer to approach the transaction with a degree of apprehension and mistrust, especially when the seller is unknown to the buyer prior to the transaction. Since the seller knows the true value of a car, he will only accept an offer price that exceeds the car's intrinsic value. With a strategy of bargaining for prices lower than the asking price, the buyer will only consummate deals that are systematically adverse to her interests.

The situation above has several implications. First, information asymmetries and incentive conflicts between buyers and sellers create significant problems in markets. If these issues are not addressed properly, they will lead to a loss of confidence among market participants, potentially to a complete breakdown of a market. Second, it is possible to devise institutional arrangements to mitigate these types of problems and make the markets work significantly better than they would in the absence of such institutions. Advanced economies have devised many such institutions to make their markets work well. Third, while such institutional arrangements make many market participants better off, their emergence will adversely affect those benefiting from institutional voids. The creation of market institutions, therefore, will be resisted by such groups, and building market infrastructure is both an economic and political matter.

High transaction costs make an economy inefficient, leading to higher cost of capital, less labor mobility, and increased cost of trading. Advanced economies have developed several complementary solutions: credible information disclosure, enforceable contracts, market intermediaries, and market regulation. Disclosure of high quality and credible information reduces information asymmetries. Enforceable contracts ensure that buyers can be confident that sellers will not behave opportunistically. Market intermediaries help buyers and sellers come together to conduct transactions efficiently, by providing aggregation, certification, analysis, and advice. Market regulation ensures fair play by all parties by defining and enforcing a clear set of rules.

All of the above mechanisms rely on an extensive soft and hard infrastructure. This infrastructure includes advertising agencies and media outlets that facilitate corporate communication, market research companies and logistics consultants that assist retailers, and credit rating agencies that collect consumer credit information to assist credit card companies. Physical infrastructure for low-cost movement of goods from producers to retailers is also essential. And public institutions such as national, state, and local governments that promulgate rules, consumer unions that lobby for such rules, and courts that enforce these rules, all play an important role.

In emerging markets, many of the types of institutions are either underdeveloped or entirely missing. The macro context of an economy both shapes its market context and is a response to it. One of our key premises is that many challenges and opportunities for investing and managing in emerging markets arise out of the "institutional voids" in these markets. Therefore, for anyone interested in emerging markets, spotting institutional voids is a key first step.

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