

# GLOBAL PAYMENTS INNOVATION

SEPTEMBER 2018

# PLAYBOOK

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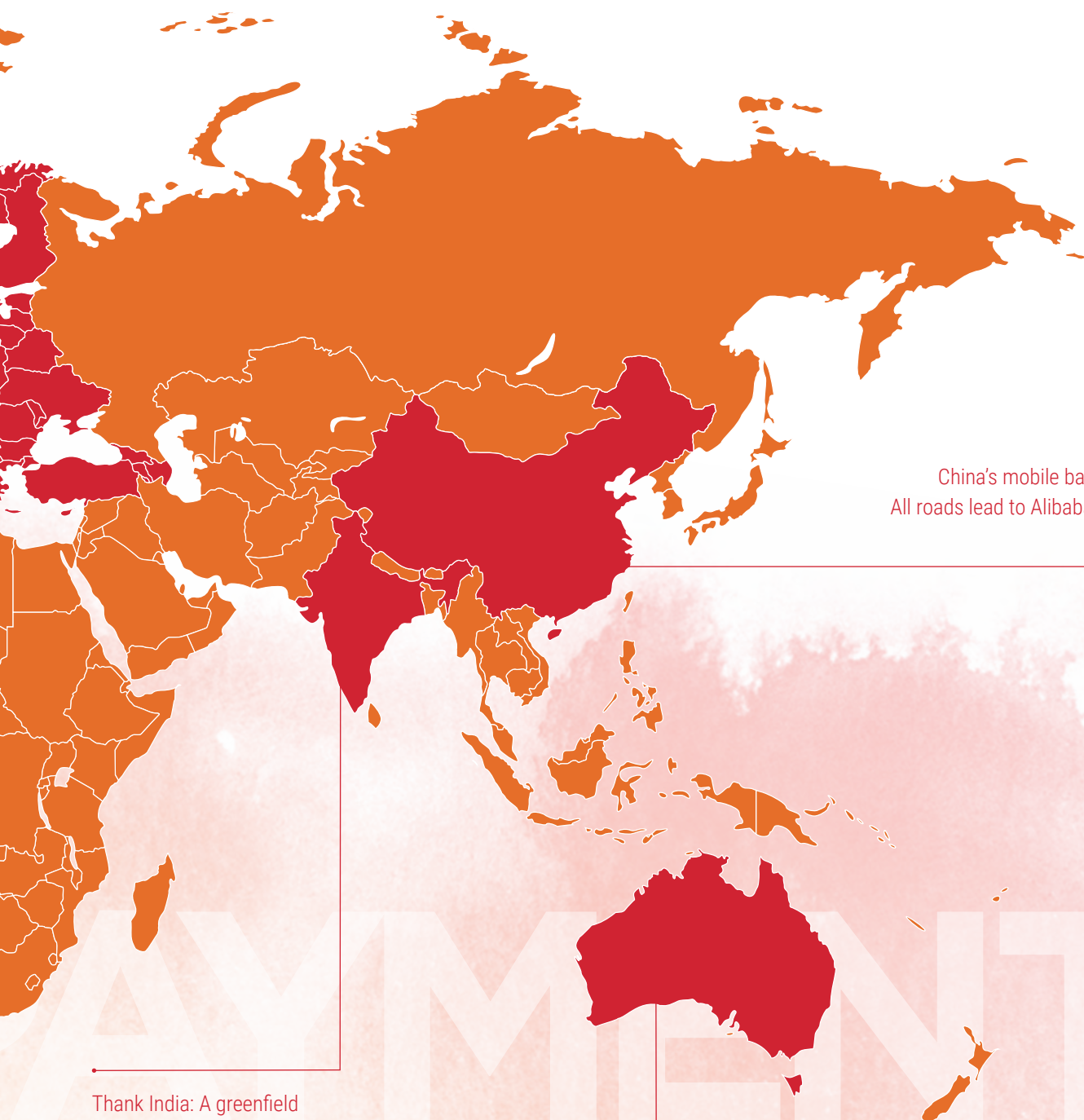
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# EXECUTIVE SUMMARY



Mobile devices' increasing ubiquity is changing how people pay. There are currently 5 billion mobile phone connections on Earth, each fueling the wave of payments innovation centered around digital technology.<sup>1</sup> Worldwide innovators are now using these devices to resolve region-specific payments issues, problems that are critical to clear up if countries want to keep their economies growing.

Cash-dependent regions like India are leading in adopting truly mobile-first payments networks, with previously underbanked consumers bypassing card payments by relying on smart devices to access financial services. Meanwhile, merchants in developed economies like Australia and the United States are taking payments innovation to a new level, seamlessly enabling commerce via mobile phones, voice-enabled virtual assistants and myriad other channels.

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<sup>1</sup> Sawers, Paul. 5 billion people now have a mobile phone connection, according to GSMA data. VentureBeat. 2017. <https://venturebeat.com/2017/06/13/5-billion-people-now-have-a-mobile-phone-connection-according-to-gsma-data/>. Accessed September 2018.



In this vein, it appears worldwide mobile payments are evolving in the same direction and headed toward real-time functionality. There is no global consensus about how to achieve this, however. The market is overflowing with innovators releasing new solutions, each representing another possible path. As usually happens when confronted with multiple possibilities, consumers are getting lost in the maze.

Our research demonstrates that there is no one “correct” way to accommodate consumers in overseas payments markets, but that those in each nation must instead be considered independently of all others. Their preferences tend to be country-specific, according to our findings. Consumers in India have such a strong preference for cash that many of the country’s eCommerce players offer the option to pay with cash upon delivery, for example. Companies looking to reach this market must make room for cash payments.

The case is quite the opposite in China and the United States, where technology giants appear to be making headway. The Chinese mobile payments market is 50 times larger than that of the U.S., and more than 90 percent of its transactions are made via the Alipay

or WeChat Pay mobile payments platforms. These two players’ market dominance has inspired many foreign companies to try to replicate their strategies, albeit with limited success in their own markets. That said, Chinese consumers may have quickly latched onto a tech-dominated payments system, but related privacy and security concerns have thus far led most non-Chinese consumers to steer clear of Alipay and WeChat Pay.

Virtual assistants are gaining traction in the U.S., with 35.6 percent of American consumers reporting using them in 2017, and tech companies are now equipping their products with voice recognition to get ahead of the curve. In particular, Amazon and Google are using artificial intelligence (AI), voice recognition and consumer data analysis to introduce U.S.-based consumers — especially those in the younger age brackets — to a whole new way to shop via their respective Alexa and Home assistants.

Finally, faster payments are the name of the game in Europe and Australia. European merchants and payments providers are increasingly working to leverage the Single Euro Payments Area (SEPA) Instant Credit Transfer Scheme (SCT Inst) to stay

competitive. The scheme, which allows credit to be transferred between accounts in as little as 10 seconds, presents a plausible competitor to Europe's legacy credit card-based payment offerings. European payments are being born anew under SCT Inst, creating a space in which merchants can capitalize on the growing demand for faster, more convenient digital payments.

In Australia, being competitive in the payments sphere has meant developing a customer-facing service that connects to the New Payments Platform (NPP), the nation's common payments interface. Sixty financial institutions (FIs) had already signed on when the platform launched in early 2018. Making use of innovative global payments structures' best practices, the Australian financial sector and government used the NPP to construct perhaps the most advanced real-time payments architecture yet – one that not only offers faster payments, but also includes mechanisms to protect consumers' data and prevent fraud.

Conforming to regionally specific payments rails is the basis of cross-border business. It is necessary to take a deeper look at how and why these rails came to be – including the market forces that created them – if one wants to gain a leg-up on the competition.

Enter the Global Payments Innovation Playbook, a PYMNTS and Cuscal Limited collaboration, examining the key pillars driving financial innovation in Australia, China, the European Union, India, the United Kingdom and the U.S. We have curated some of these regions' most promising and impactful innovations in this report, all to disseminate the important lessons local success stories have to teach.

The following pages offer a glimpse into global innovators' efforts to take eCommerce and mobile payments to new heights. This includes what they can show us about modern consumers' shopping habits, and how businesses might incorporate other regions' successes when looking to expand abroad.



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5 BILLION

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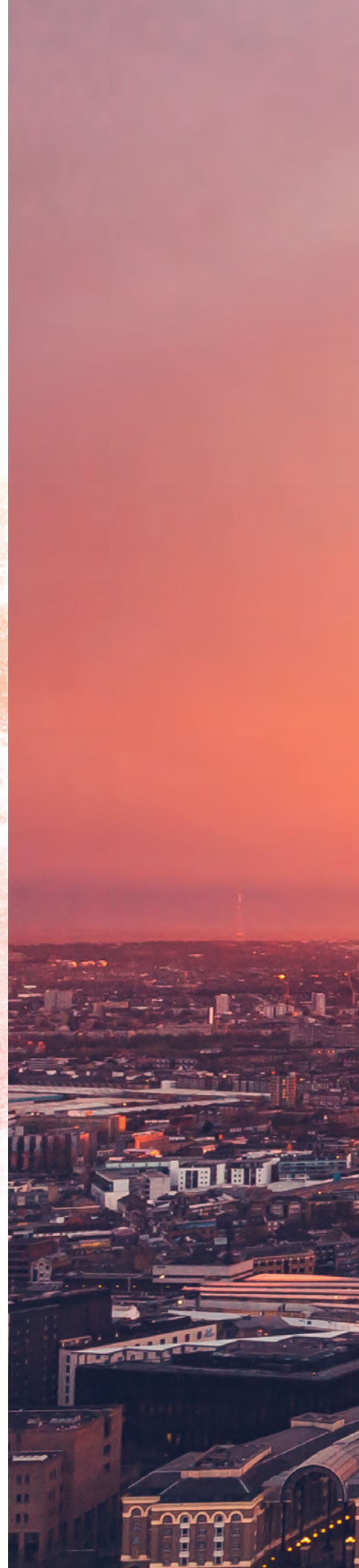
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**REBIRTH:**

WHY  
EUROPEAN  
NATIONS  
ARE

**ADOPTING  
FASTER  
PAYMENTS**







The U.K. was one of the first European countries to invest in faster payments solutions. It has a coveted position as the continent's largest financial center, with the London Stock Exchange being one of the largest on Earth.<sup>2</sup> It is no shock, then, that U.K.-based FIs were the first to pioneer initiatives to streamline and expedite payments, doing so with the helping hand of the local regulator.

The U.K. launched a regulatory scheme called the Faster Payment Service (FPS) in 2008, designed to help facilitate fast and secure transfers between interbank accounts. It aimed to reduce the time needed to make a payment from the three days typically required by the previous batch system to just a few seconds.<sup>3</sup> This was no easy feat.

Clearing and settling those accounts more quickly required banks to invest in new core infrastructure. The system leveraged the existing LINK ATM clearing and settling

network, moving funds between ATM systems and into U.K. consumers' bank accounts<sup>4</sup> using infrastructure provided by Vocalink, now part of Mastercard.<sup>5</sup> It enabled three net settlements per day, and banks could immediately post transactions to customer accounts instead of incurring the previous three-day delay.<sup>6</sup>

In addition to streamlining interbank account transfers, FPS also made headlines for its around-the-clock availability, allowing consumers to receive real-time access to funds regardless of whether banks were open. Thirteen banks had committed to joining the network when FPS first rolled out,<sup>7</sup> and it has since expanded to add more FIs – including those that serve different business and consumer segments.

Along with faster payments came the increased risk of fraud. A newer, faster breed of financial attacks was made possible by the irrevocability of the send, as well as the

<sup>2</sup> Desjardins, Jeff. All of the world's stock exchanges by size. The Money Project. 2016. <http://money.visualcapitalist.com/all-of-the-worlds-stock-exchanges-by-size/>. Accessed September 2018.

<sup>3</sup> Author unknown. How faster payments work. Faster Payments. 2018. <http://www.fasterpayments.org.uk/how-faster-payments-works>. Accessed September 2018.

<sup>4</sup> Author unknown. Company overview of Vocalink Limited. Bloomberg. Date unknown. <https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=5104178>. Accessed September 2018.

<sup>5</sup> Meyer, David. Mastercard is buying the core of the British Payments Infrastructure. Vocalink. 2016. <http://fortune.com/2016/07/21/mastercard-vocalink-payments/>. Accessed September 2018.

<sup>6</sup> Gupta, D and Washington, J. Faster payments implementation in the United Kingdom and the United States. Federal Reserve Bank of Atlanta. Date unknown. <https://www.frbatlanta.org/-/media/documents/news/conferences/2017/0228-lessons-and-implications-of-increasing-payments-speed/increasing-payment-speed-uk-and-us-background-paper.pdf>. Accessed September 2018.

<sup>7</sup> Author unknown. Our achievements. Faster Payments. Date unknown. <http://www.fasterpayments.org.uk/our-achievements>. Accessed September 2018.



opportunity to divert funds into fraudulent accounts at lightning speeds. FIs did catch on to this possibility, though. The need for both speed and security led to several European entities devoting themselves to enhancing high-speed account transfer security. Many FIs also incorporated new authentication methods – like multifactor authentication (MFA) factors and behavioral biometrics – into their wider security operations.<sup>8</sup>

The U.K.'s FPS was built upon ATM rails, though, meaning it did not have the appropriate banking connections and messaging standards to enable the right level of remittance data to be sent alongside payments. Nevertheless, it was an important early investment in faster payments technology, and its undeniable success inspired many countries to pursue similar initiatives. European banks and FIs across the English Channel were able to consolidate their influence to form their own faster payments schemes, partly in response to FPS' success and also to remain competitive with it.

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<sup>8</sup> Author unknown. Stopping faster payments fraud, faster. PYMNTS. 2017. <https://www.pymnts.com/news/2017/faster-payments-faster-fraud-biotech-uri-rivner/>. Accessed September 2018.

THE EU  
PRESENTS  
**AN IMMENSE  
SCOPE  
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FINANCIAL  
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AND  
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This was no easy task, either. For one thing, payments coordination on the European continent meant tying far more FIs together than ever existed in the U.K. Enabling payments among trading partners across the 8,000 European banks comes with challenges, including complying with 28 different country-specific regulatory requirements. In this regard, the European payments market arguably suffered from market fragmentation

even more severe than that in the U.K. Not surprisingly, many initiatives have focused on streamlining frictions and facilitating faster domestic and EU-wide payments.

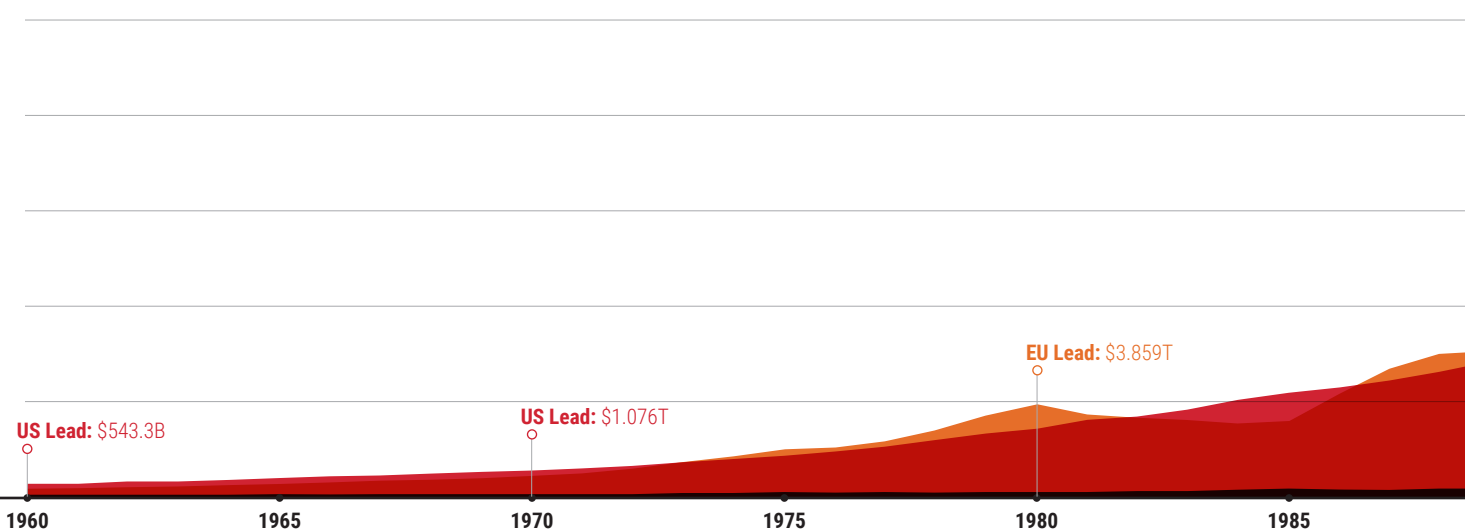
The 28 EU member states generated a gross domestic product (GDP) of more than \$17 trillion in 2017, making it larger than China's, at approximately \$12 trillion USD, and just \$2 trillion smaller than that of the U.S. As it stands today, the EU presents an immense

**FIGURE 1:**

**Development of GDP over time**

Annual GDP of the EU, China and the U.S., 1960-2016<sup>9</sup>

20 Trillion  
16 Trillion  
12 Trillion  
8 Trillion  
4 Trillion



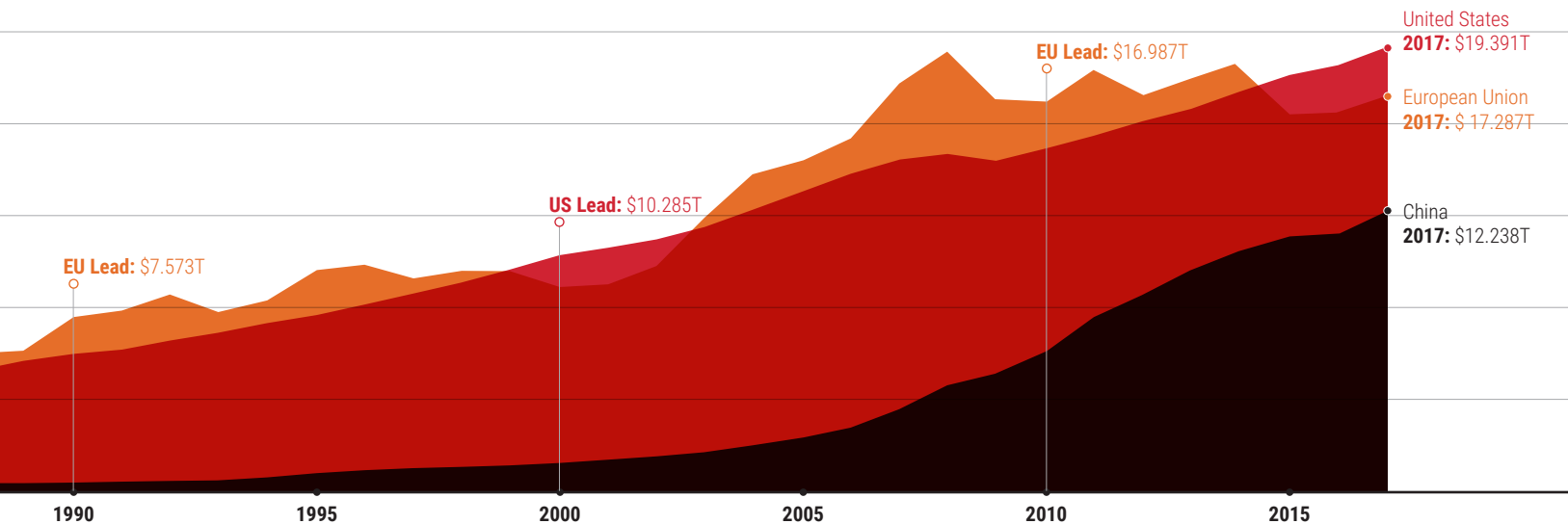
<sup>9</sup> Author unknown. Current US GDP. The World Bank. 2018. <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=EU-US-CN>. Accessed September 2018.

scope and need for financial services that cater to a diverse set of businesses and consumers.<sup>10</sup>

The faster payments movement in this large, complex market was initiated by local banks. In 2015, a collection of representatives from the local financial community, the European Payments Council, approached the Euro Retail Payments Board (ERPB) with an idea: to create a supranational European instant

payments scheme leveraging SEPA.<sup>11</sup> The idea was approved, and the SCT Inst scheme went live in November 2017. The scheme originally saw participation from eight countries,<sup>12</sup> but it now includes 34.<sup>13</sup>

SCT Inst isn't a technological initiative, per se, but rather a legal initiative to enhance the interoperability of electronic payments structures in Europe – a broad initiative to harmonize intra-European payments



<sup>10</sup> Author unknown. The Economy – EUROPA | European Union. Europa. 2017. [https://europa.eu/european-union/about-eu/figures/economy\\_en](https://europa.eu/european-union/about-eu/figures/economy_en). Accessed September 2018.

<sup>11</sup> Author unknown. 11 things you need to know about SEPA instant payments. SEPA for corporates. 2016. <http://www.sepaforcorporates.com/sepa-payments/11-things-need-know-sepa-instant-payments/>. Accessed September 2018.

<sup>12</sup> Author unknown. SEPA instant payments goes live. Finextra. 2017. <https://www.finextra.com/newsarticle/31345/sepa-instant-payments-goes-live>. Accessed September 2018.

<sup>13</sup> Author unknown. SEPA instant payments goes live. Finextra. 2017. <https://www.finextra.com/newsarticle/31345/sepa-instant-payments-goes-live>. Accessed September 2018.



# THE SEPA INSTANT CREDIT TRANSFER SCHEME ALLOWS FUNDS TO BE TRANSFERRED BETWEEN CROSS BORDER ACCOUNTS IN ONLY 10 SECONDS.

functionalities using the best technologies available.<sup>14</sup> Many SEPA schemes center around adopting regulations that define and enforce user data security, for example. This is an ongoing legal project that is still being sorted out within the EU's legal framework.<sup>15</sup>

The legal and technological infrastructure involved in SEPA makes the SCT Inst possible, allowing payments of up to €15,000 to be made between participating countries in as few as 10 seconds via the Instant Credit Transfer (ICT) service. Transferred funds are also made available within 10 seconds, though payments must be denominated in euros. Furthermore, the maximum will be regularly reviewed beginning in November 2018, meaning entities may soon be able to transfer more than €15,000 across European borders at any given time.<sup>16</sup>

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<sup>14</sup> Author unknown. About SEPA. European payments council. 2018. <https://www.europeanpaymentscouncil.eu/about-sepa>. Accessed September 2018.

<sup>15</sup> Author unknown. SEPA timeline. European Payments Council. 2018. <https://www.europeanpaymentscouncil.eu/about-sepa/sepa-timeline>. Accessed September 2018.

<sup>16</sup> Author unknown. More EU countries get instant credit transfers through SEPA. PYMNTS. 2017. <https://www.pymnts.com/news/international/europe/2017/more-european-countries-get-instant-credit-transfers-through-sepa/>. Accessed September 2018.

There is yet another advantage to SEPA Inst which the U.K.'s FPS lacks: a shared infrastructure, giving Europe's more than 500 million consumers access to a common payments platform with the euro as its base currency.<sup>17</sup> So, what would this mean for businesses?

For starters, there would be countless opportunities for digital payments providers to grab hold of the European market. There is still no clear vision as to what that common payments backbone should be, meaning FIs in Europe's payment ecosystem have room to "carve out their roles in [a] changing landscape" for the first time in a long time.<sup>18</sup>

SEPA Inst is still in its infancy, but the successes of the U.K.'s FPS and Europe's SEPA have inspired several similar global

payments schemes, perhaps most notably in Australia. The country's NPP is having far-reaching effects on its payments market after launching in February 2018.<sup>19</sup> There are also 16 faster payments schemes in various stages of operation or development around the world, including the U.S.' 2016 same-day ACH roll out.<sup>20</sup>

As the global economy grows more interconnected and the need to send funds across borders increases, demand will likely lead to the implementation of other, faster supranational payments schemes. For Australian businesses and FIs, many of which are looking outward for global engagement and expansion, the success of the cross-border payments schemes in Europe may appear an attractive prospect for future international payments solutions.

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<sup>17</sup> Aghinita, Madalina. Instant payments threaten card schemes in Europe. GlobalData. Date unknown. <https://www.globaldata.com/instant-payments-threaten-card-schemes-europe/>. Accessed September 2018.

<sup>18</sup> Author unknown. Instant payments in Europe: moving from theory to practice. FinTech Futures. 2017. <https://www.bankingtech.com/2017/10/instant-payments-in-europe-moving-from-theory-to-practice/>. Accessed September 2018.

<sup>19</sup> Author unknown. Behind the architecture of Australia's new payments platform. PYMNTS. 2018. <https://www.pymnts.com/news/faster-payments/2018/australia-npp-new-payments-platform-swift/>. Accessed September 2018.

<sup>20</sup> Author Unknown. Deep Dive: the rapid rise of global faster payments systems. PYMNTS. 2018. <https://www.pymnts.com/smarter-payments/2018/global-faster-payment-systems-same-day-ach/>. Accessed September 2018.









**NORTH  
AMERICA**

FINDS  
ITS

**PAYMENTS  
VOICE**

Apple launched the first mass-marketed, voice-activated virtual assistant, Siri, as an iPhone 4S feature in 2011. She could perform basic functions that seemed momentous at the time, including calling or texting contacts, scheduling a calendar event or checking the weather – all through voice commands.

Siri could do it all, or so we thought.

Fast forward to 2014, when Amazon launched Alexa, its own virtual assistant. There was just something about Alexa. She could do everything Siri could and more, and do it so much better. Alexa helped users find new restaurants, manage their bank accounts and shop without ever leaving their rooms.

A great deal has changed since Amazon's

Alexa entered the American market. She currently powers more than 50 products and comes equipped with 30,000-plus skills – functions the virtual assistant can perform in response to a voice command – allowing customers to speak and use her powers anywhere they go.<sup>21</sup> So many innovations are designed to work with the technology that Alexa is now the blueprint for how a virtual-assistant ecosystem might look, and the scope of those services offered is already expanding.

Many consumers now use virtual assistants to manage their finances, and Amazon's Alexa, the Google Assistant and Apple's Siri are increasingly helping them make online purchases. In fact, approximately 36 percent of Americans reported using some type of

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<sup>21</sup> Manjoo, Farhad. Why we may soon be living in Alexa's world. The New York Times. 2018. <https://www.nytimes.com/2018/02/21/technology/amazon-alexa-world.html>. Accessed September 2018.

virtual assistant in their daily lives in 2017.

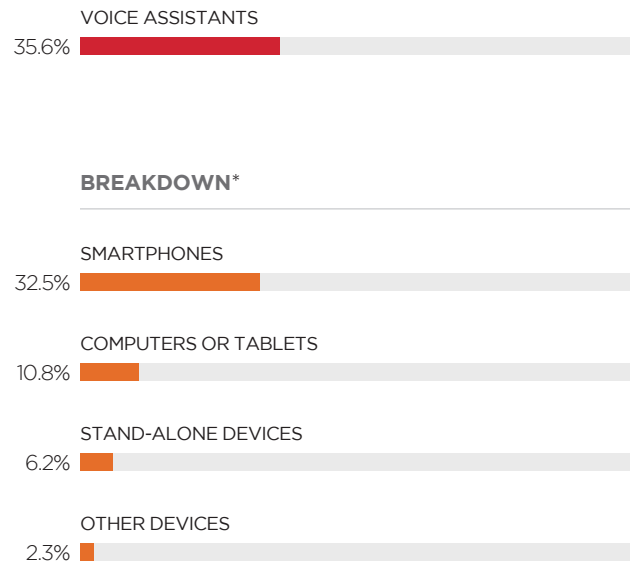
It did not take long for voice-enabled virtual assistant technology to find its way to mobile apps. Bank of America (BoA) introduced its mobile app-based assistant Erica – which amassed more than 1 million users after just two months in the market – in 2018.<sup>22</sup> The solution combines AI, predictive analytics and voice recognition into an all-in-one, mobile, personal banking solution, allowing customers to perform basic functions like searching for transactions, making transfers, viewing bills and balances and obtaining credit scores and account numbers.<sup>23</sup>

The technology may be young, but AI-based virtual assistants have already carved out their own niche in the wider American culture.

**FIGURE 2:**

**Popularity of virtual assistants in the United States**

Portion of consumers using virtual assistants in 2017, by device



\* Some users use multiple devices.

<sup>22</sup> Author unknown. Bank of America surpasses 1 million users on Erica. Bank of America. 2018. <https://newsroom.bankofamerica.com/press-releases/consumer-banking/bank-america-surpasses-1-million-users-erica>. Accessed September 2018.

<sup>23</sup> Author unknown. Bank of America's AI assistant surpass 1M users. PYMNTS. 2018. <https://www.pymnts.com/news/artificial-intelligence/2018/bank-of-america-ai-virtual-voice-assistant-erica/>. Accessed September 2018.





# VOICE ASSISTANTS: THE NEW INTERMEDIARY

**A**l-enabled voice assistants are “the new retail intermediary,” according to PYMNTS’ Karen Webster, one that provides additional value by making shopping more convenient. As the largest, most prominent transactional intermediary in the voice-recognition tech market, Amazon represents a major business opportunity for merchants looking to gain access to customers through its massive ecosystem. Its ubiquity gives merchants a choice: Either do business with Amazon, on its terms, or lose access to the eCommerce platform’s customers.

That’s a robust business strategy, and certainly an established one. The Ottoman Empire did the same when it established the Grand Bazaar in the 1460s, for example, serving as the most prominent commercial hub in Eurasia. Merchants that did not bring their business to the Bazaar had difficulty

competing, and many were even forced out of the market.<sup>24</sup>

A more modern example would be retail giant Walmart, which was able to force the “hard bargain” once it achieved ubiquity in the American market. Ninety percent of Americans now live within 20 minutes of a Walmart location, giving the chain access to a massive consumer base, and its low prices are often able to draw business away from local merchants. This was possible because no one had brought such a large collection of products into one location before, making Walmart, in a sense, the 1990s Grand Bazaar of the United States. Again, the choice was to transact there, or be forced out of business.<sup>25</sup>

What the Grand Bazaar and Walmart have already accomplished, becoming “that place,” Amazon is now trying to replicate in the 2010s. It’s further honing its eCommerce

<sup>24</sup> Webster, Karen. Who’ll rule the future of eCommerce. PYMNTS. 2017. <https://www.pymnts.com/commerce/2017/amazon-alexa-google-alo-voice-activated-devices-and-the-future-of-retail-commerce/>. Accessed September 2018.

<sup>25</sup> Webster, Karen. Say hello to the new retail intermediary. PYMNTS. 2017. <https://www.pymnts.com/news/retail/2017/e-commerce-giant-amazon-replaces-walmart-as-the-new-intermediary-of-retail/>. Accessed September 2018.



strategy through its Alexa voice assistant, bringing the new “Bazaar” directly into consumers’ own homes.

This convenience is punctuated by the role of Amazon Pay, the Amazon voice-assistant ecosystem’s central payment option. Because it is compatible with a wide variety of online merchants,<sup>26</sup> the mobile wallet not only helps Amazon tap into other merchants’ earning potential, but also obtains additional data. Amazon Pay is not just reducing transactional friction, but becoming a crucial component of the eCommerce giant’s expansion strategy.

Businesses aren’t the only valuable entities in Amazon’s ecosystem, though. Younger consumers are also latching onto digital voice assistant technology and using it to transact online. Bridge Millennials are migrating toward virtual assistants in particularly

large numbers. Between 30 and 40 years old, this group is more likely to have a college degree, be employed and earn higher salaries than other consumer personas. It spends approximately \$2,225 per year on retail purchases – \$830 more than baby boomers and nearly \$300 more than younger millennials – and 5 percent of this group reports having used a virtual assistant to make a clothing purchase or to find out where to do so. In fact, Bridge Millennials are twice as likely to have purchased through a virtual assistant.<sup>27</sup>

A limited number of mobile-based virtual assistants currently boast voice-recognition technology capabilities, though. Siri is only available on iPhones, and Erica is designed to assist solely with financial matters. Nevertheless, investment in new voice-recognition capabilities is expanding, and

<sup>26</sup> Author unknown. Amazon’s Gauthier: Alexa says ‘no’ to ads. PYMNTS. 2018. <https://www.pymnts.com/amazon/2018/amazon-pay-patrick-gauthier-amazon-alexa-ads-consumers/>. Accessed September 2018.

<sup>27</sup> Webster, Karen. Bridge Millennials and the threat to physical retail. PYMNTS. 2018. <https://www.pymnts.com/consumer-insights/2018/bridge-millennials-physical-retail-future-online-clothes-shopping/>. Accessed September 2018.

Americans are seeing an influx of related products.<sup>28</sup>

More impactful than the development and popularization of virtual assistants is the wider payments and commerce ecosystem they support. There will likely be a corresponding increase in demand for similar technologies — and the seamless commerce they enable — as voice recognition popularizes.<sup>29</sup>

These developments are painting a vivid picture of how a global payments and eCommerce market could look if voice-recognition becomes more widely available. That future sees consumers browsing for items and services on their mobile devices, then paying for those purchases with their voices and those same mobile devices. The question is, then, might North America's voice-based eCommerce ecosystem appeal to customers in other countries, like, say, Australia?

By some accounts, the answer is yes. A 2018 Accenture report predicted that 23 percent

of surveyed Australian consumers would own voice assistants like Alexa, Home and Siri by year's end, a five-fold increase from 2017. Moreover, 70 percent of them used their smartphones' applications less frequently after purchasing a digital voice assistant, indicating convenience is a universal value.<sup>30</sup>

Only time will tell if the Australian ecosystem would be as willing to allow the digital "Bazaar" into their homes as Americans have been. One recent report suggests that Australian consumers' reception of voice-recognition technology has been lukewarm thus far, with just 14 percent using it daily. The technology appears to be more popular among the country's Asian Pacific neighbors, with 53 percent of India's consumers doing the same.<sup>31</sup>

That said, voice recognition is still very new to the Australian market, as Alexa finally reached its shores in January 2018. It will be some time before her potential for domestic market penetration can be determined.

<sup>28</sup> Webster, Karen. The clash of the voice-commerce titans. LinkedIn. 2016. <https://www.linkedin.com/pulse/clash-voice-commerce-titans-karen-webster>. Accessed September 2018.

<sup>29</sup> Author unknown. What we talk about when we talk about voice (commerce). PYMNTS. 2018. <https://www.pymnts.com/news/artificial-intelligence/2018/voice-commerce-alexa-siri-ai-smart-speakers/>. Accessed September 2018.

<sup>30</sup> Griffith, Chris. Alexa, beam me up. The Australian. 2018. <file:///Users/jenniferruther/Downloads/Alexa,%20beam%20me%20up.pdf>. Accessed September 2018.

<sup>31</sup> Huang, Elaine. Indians make more use of voice-activated tech like Siri and Alexa than peers in Asia Pacific. KrAsia. 2018. <https://kr-asia.com/is-voice-activated-tech-like-siri-alexa-and-tmall-genie-changing-apac>. Accessed September 2018.



An Interview with **amazon**'s Patrick Gauthier:

# ALEXA WANTS TO BE A GREAT LISTENER



**The Grand Bazaar and Walmart succeeded because they added value to consumers' experiences, making shopping more convenient than it had ever been by bringing all their needs into one location. This is old news in the digital age, as the internet is now the common market. To make the process more convenient, then, merchants must do more than simply offer one-stop shopping.**

Amazon's Alexa has succeeded by bringing the market to its consumers. It needed to do so in an unobtrusive, pleasant manner for customers if it was going to work out, though, or it could have simply felt like one more pop-up ad. Amazon knows that, too, and Patrick Gauthier, Amazon Pay's vice president and general manager, is adamant that it should not allow advertisements on the Amazon Alexa platform. The decision is not only a reflection of the eCommerce giant's devotion to customer service, but also of its commitment to frictionless, personal shopping experiences.

"I don't know many customers that find ads popping up in life to be convenient and frictionless," Gauthier told PYMNTS' Karen Webster in a recent interview.

Enabling Alexa to communicate with consumers in the most natural way – using their voices – allows

them to feel like they are speaking to a flesh-and-blood customer service associate. In this regard, the company's decision to keep ads out of the Alexa tool kit is likely AI done right.

"We care deeply about the customer experience being natural and personal," Gauthier noted. "Your personal assistant in the room sitting next to you would not be a walking billboard for advertisers, and Alexa shouldn't be either."



The virtual assistant's creators hope their understanding of technology's role in establishing a customer-merchant relationship will help its popularity flourish in the coming years. After all, digitally establishing trust between customers and merchants is the same as between two face-to-face human beings: To understand a new friend, listening before speaking is key.

# CHINA'S MOBILE BANKING SYSTEM:

ALL ROADS  
LEAD TO  
**ALIBABA**  
AND  
**TENCENT**









Using smartphones to transact on a day-to-day basis is a way of life for Chinese consumers, with many making such payments using QR codes and messaging apps. Mobile transaction volume reached a record-breaking RMB 81 trillion (\$12.8 trillion USD) in just the first three quarters of 2017, and the Chinese mobile market is now approximately 50 times that of the U.S.<sup>32</sup>

The country's massive modern payments ecosystem arguably began with Chinese mobile payment platform Alipay's 2004 launch. Designed to cater to eCommerce giant Alibaba's websites, Alipay provided an escrow service to help shoppers securely pay for their online purchases. Its scope of offerings quickly began to expand, eventually encompassing an ever-larger set of financial services that rebranded as the Small and Micro Financial Services company in 2011, then as Ant Financial in 2014.<sup>33</sup>

This is, in a nutshell, how the Chinese internet giant came to be what it is today, starting small and building upon that basic service to reach seismic proportions.

The second Chinese mobile market leader, eCommerce marketplace Tencent, has a similar origin story. Its more widely used financial service is WeChat Pay, a mobile payments platform built upon messaging platform WeChat. With more than 1 billion users, WeChat's parent company began offering financial services via that social platform. Here, too, the strategy was to build up by offering financial services that complemented an existing service rather than starting from scratch.<sup>34</sup>

These two megacompanies have helped the Chinese mobile payments market explode in size, from just under \$1 trillion in 2014 to \$4.3 trillion in 2018.

What makes China's Alipay- and WeChat Pay-run mobile payments ecosystem truly unique is that it is driven by two tech companies instead of a traditional FI like a bank. This means Chinese consumers are not as reliant on traditional FIs to manage their personal finances, and that those FIs are losing business to tech giants.

<sup>32</sup> Shen, Alice. China pulls further ahead of US in mobile payments with record US \$12.8 trillion in transactions. South China Morning Post. 2018. <https://www.scmp.com/tech/apps-gaming/article/2134011/china-pulls-further-ahead-us-mobile-payments-record-us128-trillion>. Accessed September 2018.

<sup>33</sup> Webster, Karen. Ant Financial's great mobile payments race. LinkedIn. 2017. <https://www.linkedin.com/pulse/ant-financials-great-mobile-payments-race-karen-webster/>. Accessed September 2018.

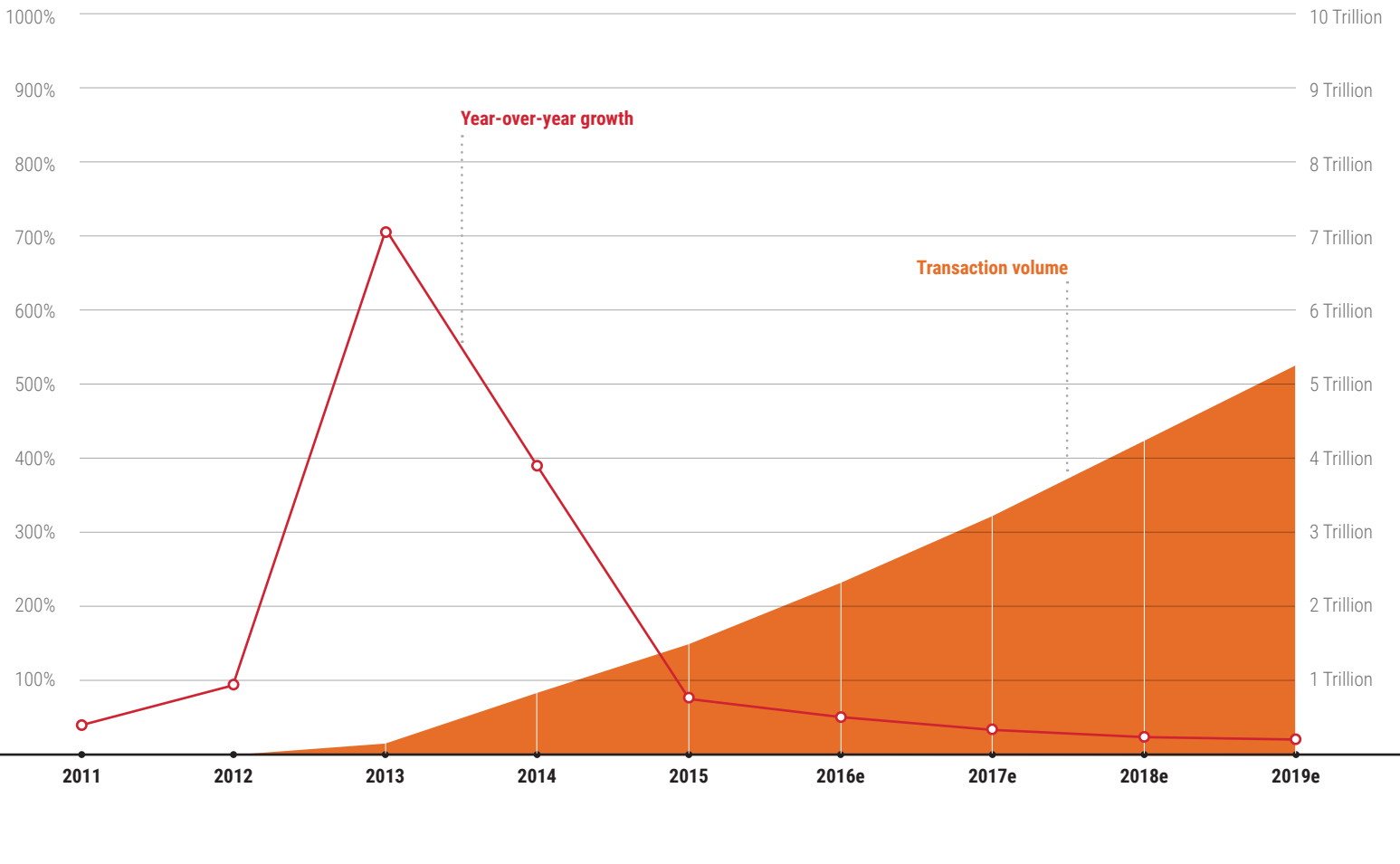
<sup>34</sup> Armstrong, P, Wang, Y. Is Alibaba losing to Tencent in China's trillion-dollar payment war? Forbes. 2018. <https://www.forbes.com/sites/ywang/2018/03/28/is-alipay-losing-to-wechat-in-chinas-trillion-dollar-payment-war/#2357b6488822>. Accessed September 2018.

In many Western markets, FIs earn profits from merchants that pay nominal fees to process card and mobile payments. This is not how the Chinese payments ecosystem works. Alibaba and Tencent serve as both mobile wallets and payment processors, thereby bypassing the need for banks to help facilitate transactions while capturing

the entire payments processing fee.<sup>35</sup> There will likely be less room for such FIs to profit from consumers' payments as the services continue to expand.

Alipay and WeChat Pay are robust business models in terms of profits and functionality, to be sure, and the question is whether this

**FIGURE 3:**  
**Growth of mobile payments in China**  
 China's mobile transaction volume and year-over-year growth, by year



<sup>35</sup> Cannon, C and Surane, J. Why China's payment apps give U.S. bankers nightmares. Bloomberg, 2018. <https://www.bloomberg.com/graphics/2018-payment-systems-china-usa/>. Accessed September 2018.

CHINA'S  
TOTAL  
MOBILE  
PAYMENTS  
TRANSACTION  
VOLUME IS  
**APPROXIMATELY  
50 TIMES**  
THAT OF  
THE U.S.

strategy can be exported. The short answer is that it's complicated, but not complicated enough to stop businesses from trying.

Like most companies, Chinese businesses are looking to expand abroad. Alibaba and other Chinese conglomerates like JD.com and VIP.com are looking to break into the Australian eCommerce market, often seeking agreements with local businesses to do so. Australia's then-Prime Minister Malcolm Turnbull even signed a commitment with Alibaba founder Jack Ma in 2017, agreeing to help bring more local sellers onto the eCommerce platform.<sup>36</sup>

Meanwhile, a wave of foreign companies has also sought to enter the Chinese payments market by partnering with Alibaba and Tencent. One notable effort between Alibaba and hospitality company Marriot International helps the latter's customers book stays via a travel service platform called Fliggy. Launched in August 2017, Fliggy allows users to pay via Post Post Pay (PPP), a service enabling customers with high credit scores to book hotel rooms via their mobile devices without

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<sup>36</sup> Koehn, Emma. Forget Amazon, here are four Chinese e-commerce businesses with their eyes on Australia. Smart Company. 2017. <https://www.smartcompany.com.au/industries/retail/forget-amazon-four-chinese-e-commerce-businesses-targeting-australia/>. Accessed September 2018.



paying a deposit.<sup>37</sup> In this light, the Alibaba-Tencent innovation model appears to be exportable.

On the other hand, it may not be possible for a non-Chinese company to gain the level of dominance Alipay and WeChat Pay enjoy in their home country. Mobile banking and payments do not often supplement other financial services, but are instead the core of their users' financial lives, making both mobile financial services and smartphones necessities.<sup>38</sup> Elsewhere, like in Europe, the U.S. and Australia, mobile technology is an extension of financial services, not their basis.

Mobile phones' proliferation has allowed Chinese consumers to bypass credit or debit cards and leapfrog into the digital age with remarkable speed. Historically underbanked populations in China have gained access to financial services through mobile devices, despite living nowhere near a brick-and-mortar bank branch. In countries where consumers are more attached to legacy payment methods like credit and debit cards, the transition to

mobile payments may take more time.

A very particular character remains in the Chinese payments ecosystem, one related to the country's economic and political systems, and it may prove difficult to replicate. Described as "unregulated," the country has remarkably few legal restrictions on what emerging payments solution providers can do. These firms are given practical free reign to experiment with whatever innovative technology they wish to use to create new and more competitive payment methods.

"If [the government doesn't] explicitly say you can't do it, you can do it," according to Dexter Hsu, China analyst at the Macquarie Group investment bank.<sup>39</sup>

In other words, Chinese payments entrepreneurs can do as they please, thanks to the government's *laissez-faire* economics policy. It has adopted such a stance to bolster technological innovation, all in hopes of making its domestic digital payments and FinTech sector more competitive in the global market.<sup>40</sup>

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<sup>37</sup> Author unknown. Chinese tourists are driving global payment and retail change. PYMNTS. 2018. <https://www.pymnts.com/news/payment-methods/2018/chinese-tourism-fliggy-payment-retail/>. Accessed September 2018.

<sup>38</sup> Author unknown. The mobile payments race: why China is leading the pack – for now. Wharton University of Pennsylvania. 2018. <http://knowledge.wharton.upenn.edu/article/how-will-chinas-overseas-mobile-payment-systems-fare/>. Accessed September 2018.

<sup>39</sup> Wilson, Elliot. China takes a swipe at the fintech sector. Asia Money. 2018. <https://www.euromoney.com/article/b18ws9x3trz4gz/china-takes-a-swipe-at-the-fintech-sector>. Accessed September 2018.

<sup>40</sup> Wilson, Elliot. China takes a swipe at the fintech sector. Asia Money. 2018. <https://www.euromoney.com/article/b18ws9x3trz4gz/china-takes-a-swipe-at-the-fintech-sector>. Accessed September 2018.

Inside this Alibaba- and Tencent-ruled ecosystem, smaller players compete against each other to become affiliated with the two major players – or to be outright acquired by them. Alibaba has an appetite for ambitious tech startups, as a litany of smaller companies have received investment funds or been acquired by Jack Ma’s tech juggernaut. A more recent example can be found in AI company SenseTime, which received \$600 million – the largest venture capital investment in AI – from Alibaba Group in April.<sup>41</sup>

This is just one of countless examples of the fierce competition between Alibaba and Tencent, the catalyst for investment and innovation in the mobile-based Chinese eCommerce and payments ecosystems. This set of factors is an undeniably potent formula for innovative success, leading us to ask: Can this situation, which sees two nearly omnipresent tech giants fulfilling their customers’ almost every commercial need, be recreated in other countries?

In some countries, perhaps, but likely not in Australia.

Australia possesses an advanced payments infrastructure, with a well-banked, relatively high-income population that enjoys access to a broad array of financial services. This should make it almost impossible for a player like Alibaba or Tencent to take root in its ecosystem.

Alibaba and Tencent were able to acquire such a strong grip on the Chinese market for two reasons: Chinese consumers and businesses had no other options, and they were massively underbanked. The Peoples’ Bank of China and some of the country’s other state-backed FIs retained a monopoly on the domestic market, and consumers had little power to influence the way such institutions conducted their business.

Then, along came Alibaba and Tencent, giving Chinese consumers options for the first time. Tencent opened the country’s first privately owned bank in 2014, and Alibaba opened its own monetary fund. These new services were more accepting of customers, and, more importantly, injected an element of competition into the Chinese financial ecosystem. It was then that much of China’s underbanked population finally gained access

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<sup>41</sup> Armstrong, Paul. Alibaba-backed Chinese AI startup SenseTime sets \$600M funding record, Forbes. 2018. <https://www.forbes.com/sites/armstrongpaul/2018/04/10/alibaba-backed-chinese-ai-startup-sensetime-sets-600m-funding-record/#674d5aa57dad>. Accessed September 2018.

to financial services.<sup>42</sup>

This is not Australian customers' experience, though, nor is it the case in the U.S. or Europe, which have always had other options. It's no wonder Tencent- or Alibaba-style companies make less headway in developed economies, then, as the strategy simply does not work.

Take, for example, social media giant Facebook's unsuccessful attempt to follow in Tencent's footsteps and monetize its Messenger service. It tried to become that "one place" for messaging, but, even with a vast user base, failed to do so because its users already had several other options.<sup>43</sup> This same factor inhibits Alibaba and Tencent's ability to root deeply in developed markets with established players.

That's why Alibaba has had success in expanding into other emerging economies, and into economies, as well as into those that have banking infrastructures but a large underbanked population: There is no competition. It is also the reason Alibaba's expansion often follows Chinese tourists, as

they represent a gateway into international markets.

"We know who you are as a Chinese consumer," said Souheil Badran, Alipay's North American president, in an interview with PYMNTS about the company's vision of serving Chinese consumers in the United States. "We can also help drive market campaigns that are specifically important to the Chinese."<sup>44</sup>

That said, Alipay and WeChat Pays' market dominance does not come without drawbacks, particularly from an Australian perspective. Australia's businesses might take issue with the data privacy concerns that go with a Chinese-style payments system, for one, as their data would no longer be their own. Tencent and Alibaba are not known for championing data privacy, though. A 2016 Amnesty International report examining 11 of the world's most popular messaging apps rated WeChat dead last in the category, awarding it a perfect zero out of 100 points.<sup>45</sup>

Alipay has inspired similar privacy concerns

<sup>42</sup> Weinland, Don. China's traditional banks lose branding ground to internet rivals. Financial Times. 2017. <https://www.ft.com/content/196cfd50-46d9-11e7-8d27-59b4dd6296b8>. Accessed September 2018.

<sup>43</sup> Webster, Karen. The missing "M" in Facebook Messenger. PYMNTS. 2017. <https://www.pymnts.com/facebook/2017/can-facebook-monetize-messenger-with-ads/>. Accessed September 2018.

<sup>44</sup> Author unknown. Alipay GM on building bridges to the Chinese consumer. PYMNTS. 2017. <https://www.pymnts.com/news/mobile-commerce/2017/alipay-global-ambitions/>. Accessed September 2018.

<sup>45</sup> Author unknown. How private are your favorite messaging apps.? Amnesty International. 2016. <https://www.amnesty.org/en/latest/campaigns/2016/10/which-messaging-apps-best-protect-your-privacy/?ntvDuo=true>. Accessed September 2018.



among non-Chinese institutions, and its efforts to launch an app in Japan ran into resistance from local banks. Many of the FIs were wary of sharing their customers' financial information with a Chinese tech giant<sup>46</sup> — particularly since the Chinese government is pushing to gain a direct hand in the company's decisioning processes.<sup>47</sup>

Many Chinese consumers have raised the issue of fraud in the last few years, however, pressuring both Alibaba and Tencent to improve their fraud protection programs. QR-based fraud occurs when fraudsters replace official QR codes with their own duplicates, thereby transferring payments from unsuspecting customers to perpetrators' private accounts.<sup>48</sup> Such incidents are on the rise in the Center Kingdom. In fact, the Zhejiang Provincial Bureau of Industry and Commerce received so many reports of WeChat Pay fraud that it issued Tencent a letter on Aug. 13 recommending the tech giant devote more resources to protection.<sup>49</sup>

Whether China's payments ecosystem can be replicated may not be the only important question, then. It is also necessary to ask if businesses and consumers would be open to participating in an all-encompassing payments ecosystem, one without concerns of regulatory and data-related implications.

We may soon have an answer. Facebook seems to have taken a page out of the China strategy, despite previous failed attempts, and is using its influence to launch its own payments platform. It partnered with messaging service WhatsApp to do so, allowing users to purchase goods and services online and spearheading efforts to enter the mobile payments markets in India<sup>50</sup> and South Africa,<sup>51</sup> among others.

To paraphrase Chinese politician Deng Xiaoping, it appears "innovation with Chinese characteristics" is being put to the test abroad, and only time will tell if it yields the intended results.

<sup>46</sup> Nikkei staff writers. Privacy concerns stall Alibaba's plans for Japanese Alipay. Asian Review. 2018. <https://asia.nikkei.com/Asia300/Privacy-concerns-stall-Alibaba-s-plans-for-Japanese-Alipay>. Accessed September 2018.

<sup>47</sup> Yuan, Li. Beijing pushes for a direct hand in China's big tech firms. The Wall Street Journal. 2017. <https://www.wsj.com/articles/beijing-pushes-for-a-direct-hand-in-chinas-big-tech-firms-1507758314>. Accessed September 2018.

<sup>48</sup> Tao, Li. QR code scams rise in China, putting e-payment security in the spotlight. South China Morning Post. 2017. <https://www.scmp.com/business/china-business/article/2080841/rise-qr-code-scams-china-puts-online-payment-security>. Accessed September 2018.

<sup>49</sup> Udemans, Christopher. Zhejiang government calls out Tencent for lack of consumer support in WeChat Pay fraud cases. Technode. 2018. <https://technode.com/2018/08/14/fraud-tencent-wechat-pay/>. Accessed September 2018.

<sup>50</sup> Rai, Saritha. Facebook faces delay to WhatsApp payments in India. Bloomberg. 2018. <https://www.bloomberg.com/news/articles/2018-07-20/facebook-is-said-to-face-delay-to-whatsapp-payments-in-india>. Accessed September 2018.

<sup>51</sup> Author unknown. WhatsApp's expanding payments footprint. PYMNTS. 2018. <https://www.pymnts.com/news/mobile-payments/2018/whatsapp-south-africa-absa-banking/>. Accessed September 2018.

An Interview with  Alipay's Souheil Badran:

# FROM HUMBLE ORIGINS TO GLOBAL AMBITIONS



**“Disruptive” has become the financial services sector’s favorite buzzword in the past few years, and is now almost as taboo as any other term when describing an innovative technology. There is no other word to describe mobile payment provider Alipay, however.**

“We’re here to be disruptive,” Souheil Badran, president of Alipay North America, told PYMNTS’ Karen Webster in a recent interview.

His candor is indicative of Ant Financial’s massive ambition in the global payments sphere. Alipay has cultivated trust and a strong following among its Chinese consumers since its humble beginnings as an escrow service. Those consumers are now roaming the globe in larger numbers than ever, though, and Badran feels Alipay must expand into new regions to effectively serve them.

There’s a subtle distinction between “disruptive” and “destructive” technology, he added – that which improves versus that which destroys – and he must be careful to ensure Alibaba remains the latter.

“We don’t want to be Visa, we don’t want to be Mastercard,” Badran said. “We would, [however], like to ride on their rails if possible, and if regulation will allow.”

With similar services recently launching, like KakaoPay in South Korea and Paytm in India, Ant Financial seems interested in bringing more than just its 4 million native Chinese consumers into its fold, thereby ramping up the competition. In fact, Alipay is aiming to build its network to include as many as 2 billion people around the globe – reaching one-third of the people on the planet.

“I don’t know, Souheil,” Webster said. “That sounds pretty disruptive to me.”











**THANK INDIA:**

A  
GREENFIELD  
RIPE  
FOR  
**INNOVATION?**

India offers the world an inside view of what happens when a country of 1.3 billion people attempts to go digital overnight.<sup>52</sup> Its government infamously – and suddenly – demonetized all 500- and 1,000-rupee notes in September 2016, essentially rendering useless 86 percent of all banknotes in circulation. The unprecedented move was intended to drive adoption of digital payments, crack down on corruption and bring 60 percent of the country’s workforce into the tax fold.<sup>53</sup>

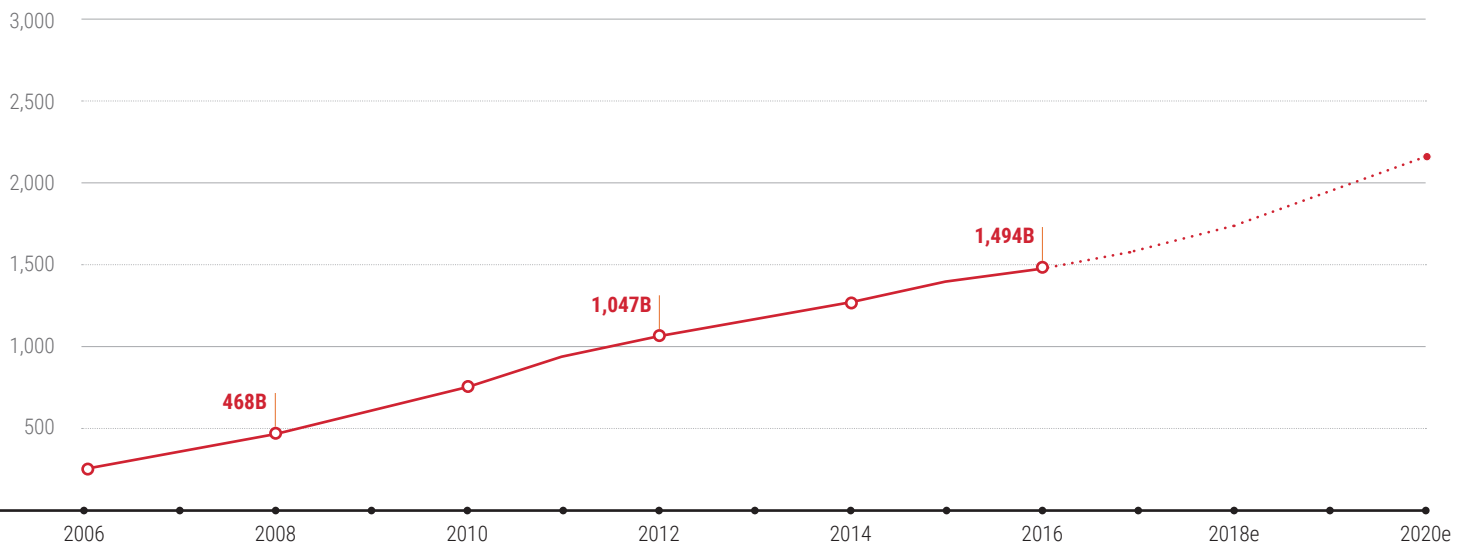
Roughly half of Indian citizens lacked a bank account before demonetization.<sup>54</sup> Moreover, 49 percent of all domestic transactions were paid in cash.<sup>55</sup> India is still a cash-dependent country two years after demonetization, however. In fact, its total cash usage appears to be on the incline. This contrasts with Australia’s Asia Pacific neighbors, where cash usage is generally on the decline.

That said, demonetization did help pave the road to future payments innovation. Much of

**FIGURE 4:**

**Historic and projected total cash usage (billion USD)**

Total cash usage in India, measured in USD



<sup>52</sup> Author unknown. Population of India 2018. India Population 2018. 2018. <http://indiapopulation2018.in/>. Accessed September 2018.

<sup>53</sup> McCarthy, Julie. Why do so few people pay income tax in India? NPR. 2017. <https://www.npr.org/sections/parallels/2017/03/22/517965630/why-do-so-few-people-pay-income-tax-in-india>. Accessed September 2018.

<sup>54</sup> Shepard, Wade. How India is surviving post-demonetization. Forbes. 2017. <https://www.forbes.com/sites/wadeshepard/2017/07/29/how-india-is-surviving-post-demonetization/#841b8e211643>. Accessed September 2018.

<sup>55</sup> Author unknown. New report: Why cash still beats digital payments in Asia-Pac. PYMNTS. 2018. <https://www.pymnts.com/cash/2018/asia-pacific-india-china-global-cash-index/>. Accessed September 2018.

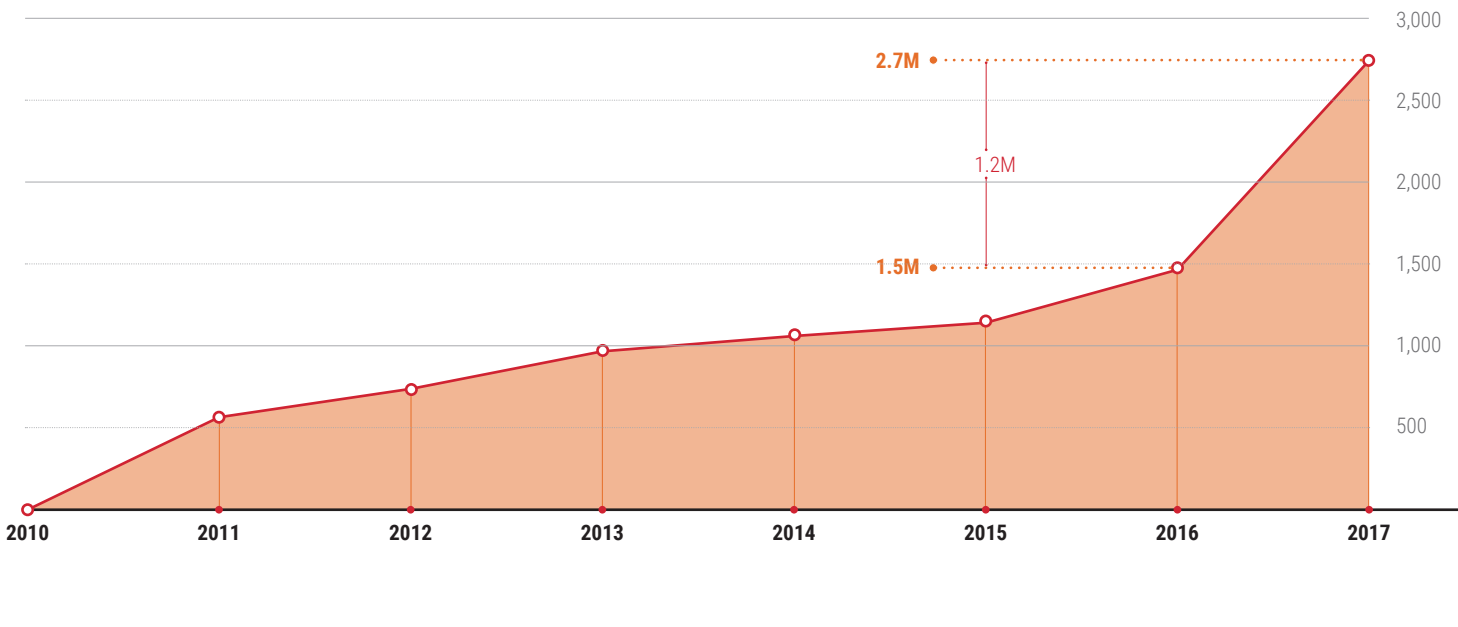
India’s population scrambled to open online banking and payments accounts after the policy was enacted, sending the local mobile market value soaring. One platform stood out as the primary beneficiary of India’s aggressive demonetization policy, though: Paytm, backed by none other than Alibaba. The number of registered Paytm users reportedly increased 105 percent between January and November 2016, reaching 250 million.

Penetration of Indian point-of-sale (POS) terminals also increased dramatically between

2016 and 2017. The number grew from 1.5 million to 2.7 million in the year post-demonetization, too, as seen in Figure 5.

While the Indian economy continues its cash-centric ways, it has leapt toward a mobile-first digital future. Mobile phones are at the center of most Indian citizens’ digital lives. Seventy-eight percent of them accessed the internet via mobile devices in 2017, with 234 million browsing it in their native regional languages and 175 million perusing in English, as seen in Figure 6.<sup>56</sup> The bulk of these consumers used mobile apps not only for instant messaging

**FIGURE 5:**  
**Penetration of POS according to the Reserve Bank of India, 2010-2017<sup>57</sup>**  
 Total number of POS terminals in India over time (million units)



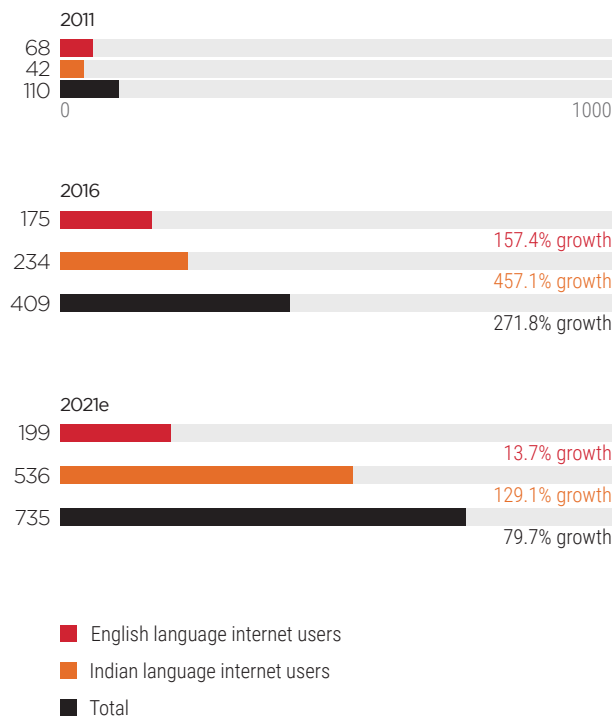
<sup>56</sup> Iyengar, Rishi. India poised for smartphone revolution. CNN. 2017. <https://money.cnn.com/2017/09/26/technology/india-mobile-congress-market-numbers/index.html>. Accessed September 2018.

<sup>57</sup> Author unknown. Database on Indian economy, payment system indicators. Reserve Bank of India. 2018. <https://dbie.rbi.org.in/DBIE/dbie.rbi?site=home>. Accessed September 2018.



**FIGURE 6:****Internet user base in India (in millions)<sup>58</sup>**

English-speaking internet users compared to Indian-language internet users



MORE THAN  
**60%**  
 OF INDIAN CONSUMERS  
**SHOP**  
**5+ TIMES**  
 MONTHLY VIA  
**MOBILE APPS.**

and social media, but also for online shopping. More than 60 percent shopped five or more times monthly via mobile app, and 74 percent used two to five apps when they did so.<sup>59</sup>

For Indian consumers, the preference to shop online and, more specifically, on mobile comes down to convenience. Shopping online via a mobile channel provides them access to a plentitude of options, all at the tip of a finger. More than 40 percent download and shop through retail apps for their convenience, and 38 percent value the ability to browse thousands of products in one setting.<sup>60</sup>

This affinity for mobile phones comes at a time when the Indian government is advocating for digital transformation, and the two forces have coincided to produce a nationwide burst of activity in the payments sphere. India's leadership has undertaken several such measures to help usher in a new, digital age – most notably, perhaps, the introduction of its 12-digit Aadhaar, or

<sup>58</sup> Author unknown. Indian languages – defining India's internet. KPMG. 2017. <https://assets.kpmg.com/content/dam/kpmg/in/pdf/2017/04/Indian-languages-Defining-Indias-Internet.pdf>. Accessed September 2018.

<sup>59</sup> Airtel. An Average Indian spends 2.5 hours per day on mobile internet. Quartz. 2018. <https://qz.com/1219243/an-average-indian-spends-2-5-hours-per-day-on-mobile-internet/>. Accessed September 2018.

<sup>60</sup> Author unknown. About 74 per cent Indians install two to five mobile shopping apps: Criteo Study. Best Media Info. 2017. <http://bestmediainfo.com/2017/10/about-74-per-cent-indians-install-two-to-five-mobile-shopping-apps-criteo-study/>. Accessed September 2018.

“foundation,” national identity system. The system, which translates to “foundation.” The system first launched in 2009 to prevent benefits fraud, and 90 percent of the country’s population is now registered. It holds biometric data including fingerprints and iris scans, making it the largest biometric database on Earth, by far.<sup>61</sup>

One major component of the Aadhaar system was the Unified Payments Interface (UPI). As the name suggests, the UPI is an interface facilitating inter-account transfers, not a financial platform or app. FIs that wish to use the government-backed system must develop mobile apps that can support it.<sup>62</sup>

Furthermore, all UPI-made transactions are regulated by the Reserve Bank of India (RBI),<sup>63</sup> not a for-profit company which might otherwise act as a payments provider. This is in contrast with China’s Alipay- and WeChat Pay-dominated mobile payments ecosystem, which sees two for-profit payments providers

facilitating more than 90 percent of the country’s mobile transactions. There are no additional charges or fees when paying via the UPI, but some FIs may charge extra for consumers to transfer funds using it.<sup>64</sup>

The UPI was well-received, but it created security concerns. This should come as no surprise, considering the large amount of sensitive, personal information concentrated into one database. These concerns were not without basis, either, as there have been several reports of system data leaks.<sup>65</sup> In January 2018, officials filed a police complaint in response to a report that citizens’ personal details were being sold for just 500 rupees online, or approximately \$7.80 USD.<sup>66</sup>

Aadhaar-related privacy concerns culminated in a Jul. 17 declaration by the National Payment Corporation of India (NPCI) ordering banks to discontinue all Aadhaar-based UPI and Immediate Payment Service (IMPS) transaction. The corporation cited the yet-

<sup>61</sup> Tiwari, Manas. Aadhaar now world’s largest biometric database: 5 facts from UIDAI CEO’s presentation in Supreme Court you must know. Financial Express. 2018. <https://www.financialexpress.com/aadhaar-card/aadhaar-now-worlds-largest-biometric-database-5-facts-from-uidai-ceos-presentation-in-supreme-court-you-must-know/1108622/>. Accessed September 2018.

<sup>62</sup> Author unknown. How UPI works. LiveMint. 2018. <https://www.livemint.com/Industry/bTGwxmykXhSKX5Vf8050NI/How-UPI-works.html>. Accessed September 2018.

<sup>63</sup> Author unknown. Unified Payments Interface (UPI). Investopedia. 2018. <https://www.investopedia.com/terms/u/unified-payment-interface-upi.asp>. Accessed September 2018.

<sup>64</sup> Motiani, Preeti. Do you know the real cost of digital transactions? Economic Times. 2017. <https://economictimes.indiatimes.com/wealth/spend/do-you-know-the-real-cost-of-digital-transactions/articleshow/61543269.cms>. Accessed September 2018.

<sup>65</sup> Christopher, Nilesh. Security experts say need to secure Aadhaar ecosystem, warn about third party leaks. Economic Times. 2018. <https://economictimes.indiatimes.com/news/politics-and-nation/there-is-a-need-to-secure-full-aadhaar-ecosystem-experts/articleshow/63459367.cms>. Accessed September 2018.

<sup>66</sup> Aadhaar: ‘leak’ in world’s biggest database worries Indians. BBC. 2018. <https://www.bbc.com/news/world-asia-india-42575443>. Accessed September 2018.

unclear role of Aadhaar in the wider economic framework as its motivation, stating: “[The] Aadhaar number is a sensitive information [element], and the revised framework about its usage in the payments landscape is still evolving.”<sup>67</sup>

Given the scope and depth of the ambitions behind its creation and implementation – the first of its kind – it comes as no surprise that the Aadhaar system would encounter roadblocks along the way. There has been no indication that it will be reintroduced in the foreseeable future.<sup>68</sup>

Nevertheless, the system benefited the Indian economy in very real, significant ways. Its adoption is seemingly driving more consumers into the digital banking fold, for example, as an estimated 270 million bank accounts were opened using the Aadhaar payment app in the three years following its launch, amassing \$10 billion in digitized deposits.

It’s safe to say that Indian consumers’

high adoption rate was driven, in part, by government-paid incentives like free life insurance. The NPCI launched the UPI five months before demonetization, enabling bank-to-bank transfers with Aadhaar as an identifier.<sup>69</sup> It was UPI that gave India’s digital payment structure its innovative potential. Many UPI-connected eCommerce platforms are now working to bridge the gap between India’s cash-loving consumers and digital services.

Flipkart, one of the largest eCommerce platforms in India, recently expanded to include additional services through its UPI-enabled PhonePe mobile app, allowing customers to pay gas and electric bills online. Meanwhile, another native Indian company, telecom giant Reliance, recently partnered with PayU, which owns a caller ID app called Trucaller, to offer instant personal loans. The loans can range from INR 100 to INR 100,000 and are offered for a term of 15 days to two months.<sup>70</sup>

<sup>67</sup> FE Bureau. Discontinue Aadhaar-based payments through UPI and IMPS, NPCI tells banks. Financial Express. 2018. <https://www.financialexpress.com/money/discontinue-aadhaar-based-payments-through-upi-and-imps-npci-tells-banks/1251410/>. Accessed September 2018.

<sup>68</sup> Burt, Chris. Indian regulatory body t shut down ‘pay to Aadhaar’ system. Biometric update. 2018. <https://www.biometricupdate.com/201807/indian-regulatory-body-to-shut-down-pay-to-aadhaar-system>. Accessed September 2018.

<sup>69</sup> Wadhwa, Vivek. What the U.S. can learn from India’s move toward a cashless society. The Washington Post. 2017. [https://www.washingtonpost.com/news/innovations/wp/2017/01/23/what-the-u-s-can-learn-from-indias-move-toward-a-cashless-society/?utm\\_term=.25e4ddbbaea7](https://www.washingtonpost.com/news/innovations/wp/2017/01/23/what-the-u-s-can-learn-from-indias-move-toward-a-cashless-society/?utm_term=.25e4ddbbaea7). Accessed September 2018.

<sup>70</sup> Rai, Ankita. From mobile wallet to digital lender; fintech players diversify to provide short-term credit to boost revenues. Financial Express. 2018. <https://www.financialexpress.com/lifestyle/from-mobile-wallet-to-digital-lender-fintech-players-diversify-to-provide-short-term-credit-to-boost-revenues/1278674/>. Accessed September 2018.



India's innovation-friendly environment has also garnered interest from many international companies seeking to capitalize and move into the domestic payments space – including Google Tez, WhatsApp Pay and Amazon Pay.<sup>71</sup>

Google Tez allows consumers to pay for utility and insurance bills, and has gained a particularly strong grip in a short time.<sup>72</sup> It facilitated 52 percent of all UPI transactions as of December 2017, making it more popular than the Bharat Interface for Money (BHIM), the Indian government's UPI application.<sup>73</sup>

Despite its surging use of digital platforms, India is still heavily dependent on cash for payments. This may be because no common payments system has achieved the level of market penetration Alipay and WeChat Pay have in China. Its most commonly used payment method is still cold, hard cash and, for all the government's efforts, it will likely be some time before another option reaches the same ubiquity.



<sup>71</sup> Bajaj, Kashika. UPI App BHIM records 16.3 Mn transactions in June 2018. Inc 42. 2018. <https://inc42.com/buzz/upi-app-bhim-records-16-3-mn-transactions-in-june-2018/>. Accessed September 2018.

<sup>72</sup> Author unknown. Google launches Bill Pay in India. PYMNTS. 2018. <https://www.pymnts.com/news/payment-methods/2018/google-tez-finance-app-bill-pay/>. Accessed September 2018.

<sup>73</sup> Bhattacharya, Ananya. Google is beating the Indian government at its own game: UPI. Quartz. 2018. <https://qz.com/india/1216715/googles-tez-not-modis-bhim-is-winning-the-upi-payments-race/>. Accessed September 2018.



Nevertheless, the demonetization policy provided a real benefit to the Indian economy, encouraging its consumers to adopt digital payments. As Ritesh Pai, chief digital officer of YES BANK, pointed out in an interview with PYMNTS, many of the country's digital bankers would not have been incentivized to make the move to digital channels without it.

"What it ended up doing is it gave [us] a jump of about three to four years," Pai said. "Otherwise, to do it in a more organic way would have taken much more time."

India's developing digital payments infrastructure is being built on public systems like UPI and Aadhaar, rather than on a platform built by a commercial enterprise. The latter is the case in China, the U.S. and Australia, but the former has the potential to alter the course of future developments. Because the government, not a private enterprise, is providing a basis for digital payments, India's domestic ecosystem may evolve down a different path than its Chinese and American counterparts.

It does not appear that being based on a public system is hindering the ecosystem's growth, either, as many digital payments platforms are expanding in India. A recent Credit Suisse report found Google's app was

already processing nearly as many digital transactions as Axis Bank, the nation's fourth largest FI, after just four months of operation in the country. This resulted in an eight-fold increase in the government's UPI transactions. The same report concluded that the aggregate of all domestic digital payments will grow five-fold to \$1 trillion USD by 2023, if the influx of foreign actors into India's mobile payments continues its current trajectory.<sup>74</sup>

This thriving digital payments market is founded on the ever-deepening penetration of mobile devices, and further intensified by the government's push to embrace the digital economy. These factors render India uniquely situated to grow into a massive, extensive digital economy, one which will likely be driven by openness, consumer choice and a mobile-first approach to payments and financial services.

Other markets like Australia might not be able to benefit from the "leapfrog effect," but India's mobile-first payments success may offer a glimpse of how it could look if mobile devices' popularity continues to expand.

INDIA'S  
TOTAL  
**DIGITAL  
PAYMENTS  
VOLUME**  
IS  
EXPECTED  
TO REACH  
**\$1 TRILLION  
BY 2023.**

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<sup>74</sup> Author unknown. Could India's FinServ market be primed for open banking? PYMNTS. 2018. <https://www.pymnts.com/news/b2b-payments/2018/india-open-banking-aadhaar-payment/>. Accessed September 2018.





**AUSTRALIA'S**  
NEW  
**REAL-TIME**  
**PAYMENTS**  
ENVIRONMENT







AUSTRALIA'S  
NPP  
HAD  
ALREADY  
**SIGNED ON**  
**60 FIs**  
WHEN IT  
LAUNCHED.

Australian's ecosystem is bursting with FinTechs and startups producing countless new digital payments solutions, many of which aim to make both domestic and international payments faster and easier to manage.

Contactless payments are rapidly proliferating throughout the Australian market, and their usage increased from 10 percent to 60 percent of all POS transactions between 2013 and 2016.<sup>75</sup> In addition, more than 90 percent of all September 2017 face-to-face payments were made with contactless cards.<sup>76</sup>

Even in Australia's rapidly evolving, vibrant FinTech industry, the country's financial services sector was, until recently, built upon a decades-old batch processing system. As such, transfers of funds between Australian bank accounts often took multiple days.

That all changed in 2018, when representatives of the Australian financial industry, with support from its central bank, took measures to ensure the creation of a

<sup>75</sup> Author unknown. Down under, cash remains steady. PYMNTS. 2017. <https://www.pymnts.com/cash/2017/cash-usage-australia/>. Accessed September 2018.

<sup>76</sup> Author unknown. The rise of contactless payments around the globe. Visa. 2018. <https://usa.visa.com/visa-everywhere/innovation/contactless-payments-around-the-globe.html>. Accessed September 2018.



faster payments solution: The New Payments Platform (NPP). It launched in February 2018 and had already signed on more than 60 FIs when it rolled out. That diverse group included the country's largest banks as well as credit unions with fewer than 20,000 members.<sup>77</sup>

"There is a view that, in Australia, every time we want to create a new, different payment system, we start again from scratch," said Adrian Lovney, CEO of NPP Australia. "In a country of [only] 25 million people, that wasn't seen as particularly efficient ... We needed a more efficient way of creating our next piece of infrastructure."<sup>78</sup>

The NPP provides a common payments structure between its FI participants, including Australia and New Zealand Banking Group (ANZ), Australian Settlements Limited, Bendigo and Adelaide Bank, Citigroup, Commonwealth Bank of Australia (CBA), Cuscal, HSBC Bank Australia, Indue, ING Australia, Macquarie Bank, National Australia Bank (NAB), the Reserve Bank of Australia

(RBA) and Westpac.<sup>79</sup> It enables these FIs to support indirect models with sponsored services, allowing more than 50 smaller banks to benefit from immediate payments between accounts and increasing the NPP's reach.

The Australian payments ecosystem supported four separate payments structures: direct entry, which is similar to ACH; bill payment system BPAY; the electronic funds transfer at point of sale (EFTPOS) domestic card scheme and real time gross settlement (RTGS). These solutions were disparate in their underlying technology and how they were governed, however, resulting in a highly fragmented set up.<sup>80</sup> The NPP was designed to resolve this issue.

NPP Australia is a company owned by these 13 participating Australian FIs<sup>81</sup> that emerged as a part of an industry initiative to streamline payments services. Its implementation marked a significant improvement over the country's 50-year-old batch processing system for another reason, too: all-day access. The

<sup>77</sup> Author unknown. Behind the architecture of Australia's New Payments Platform. PYMNTS. 2018. <https://www.pymnts.com/news/faster-payments/2018/australia-npp-new-payments-platform-swift/>. Accessed September 2018.

<sup>78</sup> Author unknown. Behind the architecture of Australia's New Payments Platform. PYMNTS. 2018. <https://www.pymnts.com/news/faster-payments/2018/australia-npp-new-payments-platform-swift/>. Accessed September 2018.

<sup>79</sup> McLean, Asha. What is Australia's New Payments Platform? ZDNet. 2018. <https://www.zdnet.com/article/what-is-australias-new-payments-platform/>. Accessed September 2018.

<sup>80</sup> Author unknown. Behind the architecture of Australia's New Payments Platform. PYMNTS. 2018. <https://www.pymnts.com/news/faster-payments/2018/australia-npp-new-payments-platform-swift/>. Accessed September 2018.

<sup>81</sup> Author unknown. Our company. New Payments Platform. 2018. <https://www.nppa.com.au/our-company/>. Accessed September 2018.

batch system's functionality had been limited to a small window of time, including business hours from Monday through Friday. The NPP remains operational throughout the entire day, much like India's UPI and the U.K.'s FPS.<sup>82</sup>

In some ways, the NPP is like India's UPI: not a central operational hub, but rather a distributed system upon which each FI builds its own network gateway. This makes it capable of 24/7 payments processing.<sup>83</sup> Unlike the UPI, Australia's NPP does not require a government-issued identification number. The former is managed by the NPCI, a not-for-profit company set up with the support of the RBI and the Indian Banks' Association (IBA).<sup>84</sup>

Before Aadhaar payments were halted, a user needed his Aadhaar number to process a UPI payment. The NPP processes payments in conjunction with the RBA, which provides Fast Settlement Services, without entering account information or government-issued IDs. Instead, users can provide something as

simple as an email address or phone number, a "PayID."<sup>85</sup>

The NPP is distinct from the U.K.'s FPS in that it performs real-time transactions. FPS makes payments faster than most, but it does not make instant payments. Rather, it performs a Deferred Net Settlement three times per day, with settlements stored on a ledger and processed in batches.<sup>86</sup> This is not the case with the NPP, which transfers funds in seconds thanks to the RBA's Fast Settlement Service.<sup>87</sup>

There are other areas in which the NPP differs from FPS, and possibly even surpasses it, namely data security and fraud protection. The FPS was forced to grapple with increased fraud immediately after its launch, but Australia's NPP was set up with several security features in place. In a March 2018 speech, Michele Bullock, the RBA's assistant governor, financial system, acknowledged the inherent challenge of preventing fraud in a

<sup>82</sup> Author unknown. Behind the architecture of Australia's New Payments Platform. PYMNTS. 2018. <https://www.pymnts.com/news/faster-payments/2018/australia-npp-new-payments-platform-swift/>. Accessed September 2018.

<sup>83</sup> Author unknown. Behind the architecture of Australia's New Payments Platform. PYMNTS. 2018. <https://www.pymnts.com/news/faster-payments/2018/australia-npp-new-payments-platform-swift/>. Accessed September 2018.

<sup>84</sup> National Payments Corporation of India: About us. National Payments Corporation of India. 2018. <https://www.npci.org.in/about-us-background>. Accessed September 2018.

<sup>85</sup> Author unknown. New Payments Platform: Frequently Asked Questions. New Payments Platform. 2018. <https://www.nppa.com.au/the-platform/frequently-asked-questions/>. Accessed September 2018.

<sup>86</sup> Author unknown. Faster Payments – Bank of England Settlement. Faster Payments. 2018. <http://www.fasterpayments.org.uk/access-payments/faster-payments-bank-england-settlement>. Accessed September 2018.

<sup>87</sup> Author unknown. Australia readies for real-time payments. PYMNTS. 2018. <https://www.pymnts.com/news/b2b-payments/2018/australia-real-time-payments/>. Accessed September 2018.

system that processes real-time payments. She also confirmed that FIs on the NPP had taken several preemptive measures to reduce such fraud risk in its functionality.

“These include such things as transaction limits, two-factor authentication and algorithms designed to identify suspicious transactions,” Bullock said.

She noted that the NPP’s PayID system, which allows customers to assign aliases to their accounts, requires senders to confirm the account to which they are sending money before the payment is initiated.<sup>88</sup> In doing so, it appears to have outdone its British predecessor by tackling a potential issue before it occurred for consumer, business and government recipients.

Finally, in contrast with China’s payments ecosystem, which is dominated by two mega-corporations, Australia’s digital payments ecosystem under the NPP is not an oligopoly. Instead, it encompasses a large variety of FIs of varying sizes, all of which share equal access to the NPP. As many as 60 Australian banks, building societies and credit unions are

scheduled to connect to the NPP, each with its own, unique portals.<sup>89</sup>

Australian consumers and businesses thus have a considerable selection of FIs at their disposal, and are largely free to do business with whichever they please. This is not the case for Chinese consumers’ whose choices are often restricted to either Alipay and WeChat Pay. Variety in payment options is part of what distinguishes Australia’s payments ecosystem from others throughout the world.

More than being unique among digital payments systems worldwide, the NPP also represents a significant operational improvement over Australia’s previous payments architecture: a larger data limit, for example. The country’s previous batch system limits the amount of data its users could process with a transaction to 18 characters of text, but the NPP allows up to 280 characters due to its ISO 20022 data standards. This means it can transfer a greater amount of data at a time, making funds transfers more informative for recipients.

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<sup>88</sup> Author unknown. Australia Central Bank acknowledges faster payments’ risk challenge. PYMNTS. 2018. <https://www.pymnts.com/news/b2b-payments/2018/australia-banking-faster-payments-fraud/>. Accessed September 2018.

<sup>89</sup> Author unknown. Australian new payments platform launches to the public. InstaPay. 2018. <https://www.instapay.today/article/australian-new-payment-platform-launches-public/>. Accessed September 2018.



In addition to constant accessibility, the NPP offers users a more streamlined payments functionality. The financial product making this possible is Osko, a product of electronic bill payment system BPAY that was designed to help facilitate electronic payments between consumers.<sup>90</sup> A user can use Osko to transfer money directly between two bank accounts using a PayID instead of a recipient's account number. He or she needs to register a self-determined identifier – an email address or phone number – with his or her bank to establish a PayID, then simply enters it into his or her online banking services when it's time to pay. The payee's name can be confirmed before committing to the payment.<sup>91</sup>

The NPP has become a pillar of the Australian digital payments ecosystem in the time since it rolled out, registering more than 1.9 million PayIDs as of February 2018 – and handling more than 25 million transactions.<sup>92</sup> Australia's digital payments ecosystem is not as large as that of China, and it is not yet stylish for its consumers to make payments with the

AI-based assistants growing increasingly popular in the U.S. Rather, the NPP's real-time payments functionality has resulted from very particular market circumstances.

Australian consumers were already tech savvy, far ahead of their American counterparts in digital payments adoption. The need to consolidate those digital payment options made the NPP the next logical step in the country's payments ecosystem progression. That said, there is no telling how emerging global technologies might influence the market's future development. Will domestic consumers take to voice-enabled personal assistants, or will they eventually opt for an infrastructure maintained by tech giants, as popularized elsewhere?

As the global economy grows increasingly interconnected, Australian consumers will likely have more access to alternative payment methods. The only question is whether these options will strike a chord with the nation's consumers.

<sup>90</sup> Fitzsimmons, Caitlin. Goodbye cash and cheques, faster electronic payments are nearly here. The Sydney Morning Herald. 2018. <https://www.smh.com.au/opinion/goodbye-cash-and-cheques-faster-electronic-payments-are-nearly-here-20180101-h0c41k.html>. Accessed September 2018.

<sup>91</sup> Yeates, Clancy. BPay Group unveils 'Osko' brand for real-time payments. The Sydney Morning Herald. 2017. <https://www.smh.com.au/business/banking-and-finance/bpay-group-unveils-osko-brand-for-realtime-payments-20170512-gw3s3j.html>. Accessed September 2018.

<sup>92</sup> Evers, James. Big banks turn on Osko as the 'new payments platform' rolls out. Financial Review. <https://amp.afr.com/business/banking-and-finance/financial-services/osko-campaign-to-promote-big-bank-payments-innovation-20180830-h14qau>. Accessed September 2018.



An Interview with 's Adrian Lovney:

# THE NPP, IN PERSPECTIVE



**The U.K.'s FPS took 10 years to successfully implement a widely used, near-real-time payments system, but Australia's NPP did the same in just six months – a major achievement in faster payments. Many innovations have occurred in the last decade, though, thereby allowing for this expeditious result.**

Back then, it was difficult to imagine that any country could build a payments scheme to process individual payments in a matter of seconds – and yet, it's here. How was this possible? More importantly, how will the NPP impact the future of Australian payments?

PYMNTS' Karen Webster spoke with NPP CEO Adrian Lovney to gain an inside perspective on what drove Australia's new system and where it's headed. Australia's own government was the spark that ignited the financial sector's desire to develop the NPP, he explained. It "was born from the intervention by a regulator" in the Australian financial services industry, giving local FIs the kick they needed to invest in faster payments and replace their decades-old batch system.

That newer, faster system left Australia's legacy payments architecture in a bind, as the promise of an alternative payment scheme has led to an outpouring of FIs looking to part with it.

"I'm surprised at how quickly banks have shifted their attention to... removing legacy costs," Lovney said. "[It happened] much more quickly than I had anticipated."

He believes the transition to a real-time payments infrastructure will be a fast one.

"I do think that within five or 10 years, it is likely that Australia will move to a single set of rails, which might accommodate [all types of payments]," Lovney explained. "[On the other hand,] sometimes, it takes longer to deliver them than we think."



The most likely short-term scenario is that NPP and legacy B2B payment methods like cards and checks will continue to coexist for some time. Regardless, the NPP's success means it's conceivable that an all-in-one, real-time Australian architecture may be possible – and much sooner than expected.

# CONCLUSION

Innovation is about solving problems for both businesses and consumers, and those vary based on different nations' financial and economic infrastructures. Each region's payments innovation course also differs, meaning country-specific solutions will not always be applicable in other markets.

Businesses and consumers everywhere have expressed a growing demand for faster, easier digital payments, and all signs point toward the continued integration of financial solutions into a common payments architecture to enable them. Successful development and evolution of worldwide faster payments solutions demonstrates there are lessons to be learned from existing payments innovations, too, regardless of their origination. The U.K.'s FPS successes shaped the development of SEPA Inst, for example, and Australia's NPP incorporated the common interface structure pioneered by India's UPI to land among the world's most advanced payments structures.

Meanwhile, technology giants in the United States and China are taking bold strides to capture greater payments market share. Amazon's Alexa is blurring the lines between shopping and payments, and Alibaba and Tencent's unprecedented dominance is inspiring global eCommerce and social media platforms to try their hands at creating innovative payments solutions.

It's clear that payment technology development is proliferating and paving new ways for ambitious businesses to make their mark. How will the future of payments look? It is up to merchants, innovators, regulators and customers to decide.







# ABOUT

## PYMNTS.com

[PYMNTS.com](http://PYMNTS.com) is where the best minds and the best content meet on the web to learn about "What's Next" in payments and commerce. Our interactive platform is reinventing the way in which companies in payments share relevant information about the initiatives that shape the future of this dynamic sector and make news. Our data and analytics team includes economists, data scientists and industry analysts who work with companies to measure and quantify the innovation that is at the cutting edge of this new world.

## Cuscal

Independent payment solutions provider Cuscal is Australia's largest payment processor, after the Big Four banks and the Reserve Bank of Australia, and offers the widest range of products and services. It represents its clients' interests on all the country's major payments boards and associations, working to increase competition and create a more level playing field. Cuscal is responsible for enabling more than 60 percent of the financial institutions that were live on the real-time New Payments Platform at its launch, and has helped its clients to be the first to offer customers all three global mobile wallets – Apple Pay, Google Pay and Samsung Pay. Visit [www.cuscalpayments.com.au](http://www.cuscalpayments.com.au) for more information.

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