

# Top-10 Trends in Payments: 2019

## What You Need to Know



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# Introduction

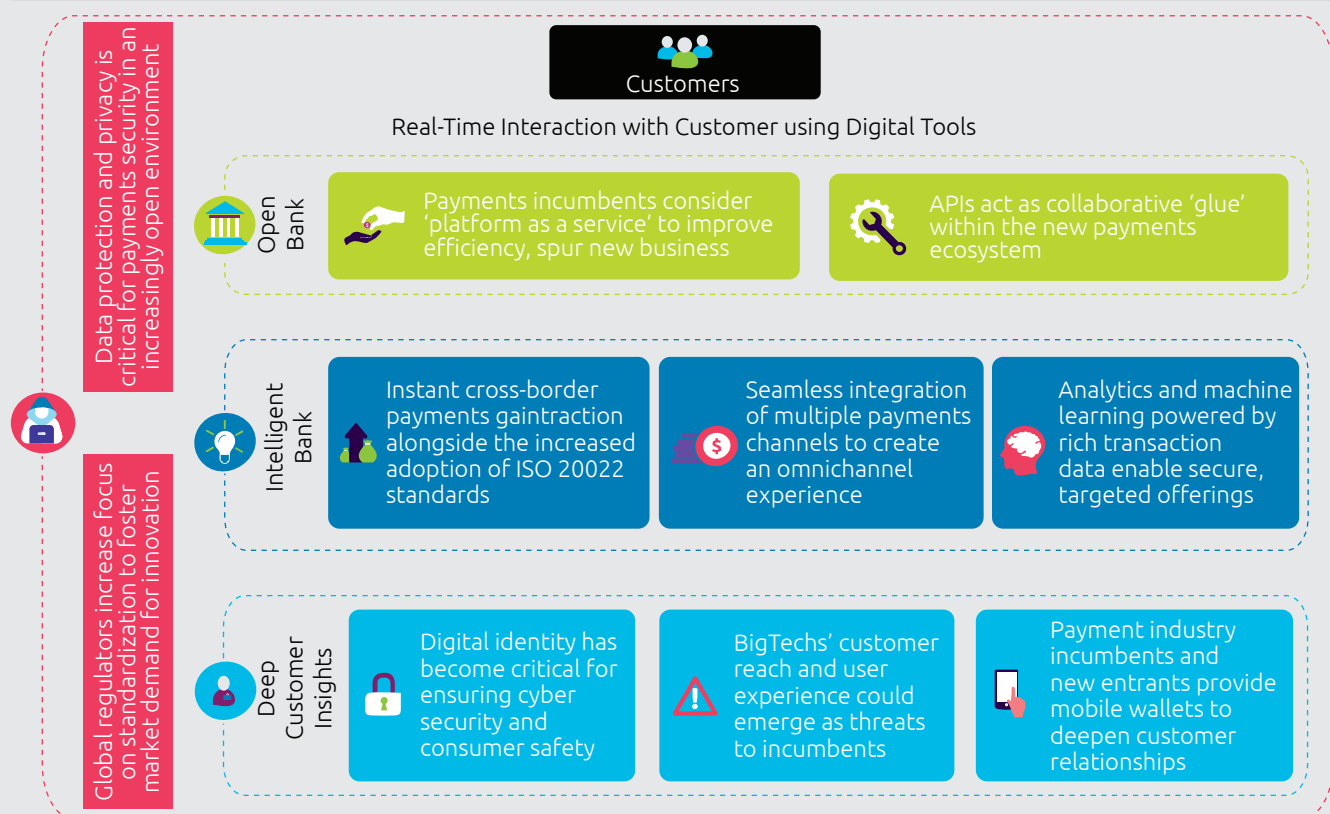


What's causing such fast-paced disruption in today's payments industry? Customers want more value and their expectations are on the rise. Agile competitors are entering the sector. Regulators are pushing for more collaboration and open ecosystems. Business as usual now requires innovation and adoption of emerging technologies such as application program interfaces (APIs), real-time payment (RTP) infrastructure, robotic process automation (RPA), and the Internet of things (IoT).

Payments newcomers – from FinTechs (Transferwise) to e-commerce firms (Amazon), tech giants (Google) to retailers (Walmart) – offer a seamless experience while leveraging user data to generate deep customer insights to develop customized services.

Some payments incumbents have been slow to respond to this multi-front disruption because they lack platform-based ecosystems. However, open banking is encouraging firms to adopt platform-as-a-service (PaaS) delivery models to connect with various stakeholders for exchange of data and value.

## Top Ten Trends in Payments 2019



Source: Capgemini Financial Services Analysis, 2018

Increased openness throughout the payments industry is spurring regulators to emphasize standardization and data-driven compliance to balance supply-push with market demand-pull. Moreover, as the number of digital payments channels expands, banks are leveraging new technology to integrate multiple instruments. As transaction data analysis via machine learning tools gains traction, Intelligent Banks become the norm.

We hope this analysis of the top-10 payments trends for 2019 helps you to better understand the industry's new open ecosystem and its potential challenges and benefits.

# Trend 01: Digital identity has become critical for ensuring cyber security and consumer safety

*Cyber risks mount as new payment methods become increasingly popular. However, advanced digital identity solutions could help mitigate these risks.*



## Background

- With increasing digitalization, cyber attacks are bound to expand. In fact, a 44% increase in new-account fraud was expected from 2014 through 2018, while annual losses were predicted to grow from US\$5 billion to \$8 billion during the same period.<sup>1</sup>
- Online identification, authentication, and customer authorization are critical for ensuring consumer safety in this digital environment. Digital identity encompasses these elements by taking a broad contextual view of the customer.



## Key Drivers

- Increasing identity theft and scenarios such as Synthetic ID fraud are spurring new defensive moves against attacks.<sup>2</sup>
  - Synthetic Identity fraud is driving increased loss through credit cards and grew 5.2% from Q4, 2016 to Q4, 2017.<sup>3</sup>
- Regulations such as PSD2 combined with the open banking trend require robust measures for identity management. The European Banking Authority is encouraging Risk-Based Authentication (RBA), wherein several layers of security must be passed to minimize violation risk.
- IoT-based interfaces such as Amazon's Alexa and Apple's Siri are changing the way people live and pay for things via voice. As the difference between physical and digital channels blur, digital identity management emerges as a critical component.



## Trend Overview

- The number of national ID schemes is growing. A centralized database would help create a robust and integrated digital management solution.
  - Several new national electronic identification (eID) programs (including card and mobile-based schemes) have been launched or initiated in India, Italy, Peru, Singapore, and Philippines.<sup>4</sup>
- Leading banks of some countries are taking measures to develop a digital identity ecosystem.

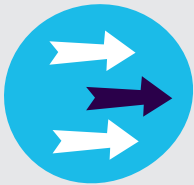
<sup>1</sup> Javelin Strategy, "2017 Identity Fraud: Securing the Connected Life", February 1, 2017, <https://www.javelinstrategy.com/coverage-area/2017-identity-fraud#>

<sup>2</sup> Synthetic ID Fraud is when criminals combine real and fake information to create a brand new and different identity. They use one person's Social Security number and combine it with a different name, address and phone number. Then they open new accounts, acquire credit cards, cell phones, etc. based on the social security number with a different name.

<sup>3</sup> American Banker, "Synthetic identity fraud balances grew 5% last year", Penny Crosman, March 08, 2018, <https://www.americanbanker.com/news/synthetic-identity-fraud-balances-grew-5-last-year>

<sup>4</sup> Biometric Update, "National ID", <https://www.biometricupdate.com/tag/national-id> accessed November, 2018

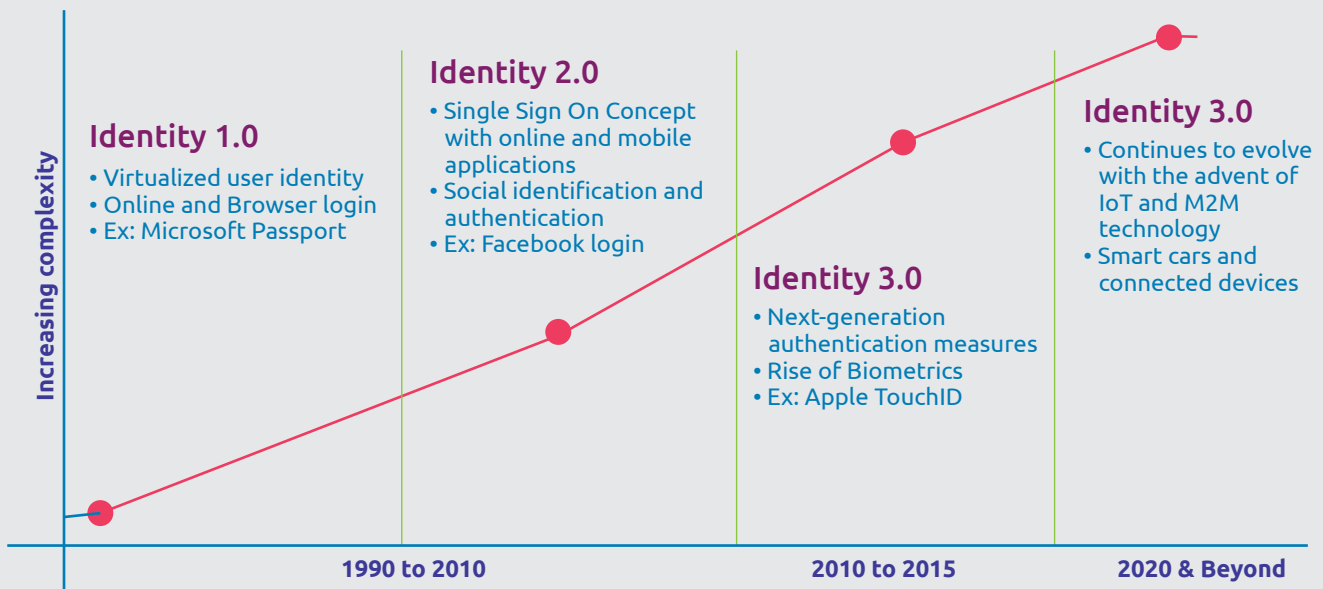
- Canadian banks BMO, CIBC, Desjardins, RBC, Scotiabank, and TD created a digital identity ecosystem in October 2016, and the scheme was to be rolled out in 2018.<sup>5</sup>
- New standards for interoperability and compatibility of digital identity management are emerging.
  - The technical professional organization IEEE launched the “Digital Inclusion through Trust and Agency initiative” in 2017 to standardize digital identity and encourage distributed ledger technology standards that facilitate financial inclusion and other decentralized data-sharing capabilities.<sup>6</sup>
- Next-level authentication and authorization measures are evolving that take a contextual view of the customer.
  - More multi-factor authentication is being adopted including behavioral biometrics, single sign-on for multiple devices, and password-less authentication techniques.
- Identity management may not be limited to the identification of a person and access to data in the future. Identification of devices, sensors, and monitors, and control of access to sensitive and non-sensitive data may also be managed.



## Implications

- As the industry moves to a more open and collaborative ecosystem, there is an increasing need to strike a balance between user experience and security controls. Digital identity can help payments firms provide a secure digital-world omnichannel customer experience.
- Banks and central authorities can collaborate to create a centralized or federated digital-identity database, such as India's Unstructured Supplementary Service Data (USSD).
- Banks can reduce costs by sharing digital identity infrastructure while ensuring standards' interoperability.

**Exhibit 1: Evolution of Identity and Access Management in Payments**



Source: Capgemini Financial Services Analysis, 2018; <https://www.digicert.com/internet-of-things/device-identity-management.htm>; <https://www.gemalto.com/financial/cards/contactless/how-it-works>; <https://www.gigya.com/blog/3-examples-of-the-evolution-of-identity/>; <http://www.iotevolutionworld.com/iot/articles/410328-step-back-time-history-evolution-digital-identity.htm> <http://www.iritech.com/blog/biometric-payment/>; <http://paymentsjournal.com/active-identity-management-key-controlling-fraud/>

5 *Payments Cards & Mobile*, “Digital identity: An opportunity for financial services?”, Alex Rolfe, June 8, 2017, <http://www.paymentscardsandmobile.com/digital-identity-opportunity-financial-services/>

6 *Pymnts.com*, “IEEE Pushes Digital Identity Standard”, April 28, 2017, <https://www.pymnts.com/safety-and-security/2017/ieee-pushes-digital-identity-standard-financial-inclusion>

## Trend 02: Global regulators increase focus on standardization to foster market demand for innovation

*Regulators now emphasize a balance of supply-side push with demand-side pull, through open banking initiatives.*



### Background

- After the 2008 financial crisis, regulators focused on introducing standards to ensure systemic stability and risk reduction.
- From 2015 to 2017, multiple initiatives were introduced to foster innovation and modernization in payment systems.
- Now, the focus shifted back to standardization as regulators work to align their efforts with market demand.



### Key Drivers

- Rationalization of new solutions introduced during ramp-up and consolidation phases of the industry is possible with the help of new standards.
- A set of standards and interoperability measures must be developed and implemented to harmonize the fragmented marketplace.
- Conflicts arising from regulations that overlap in scope and objectives – as well as those regulated differently across different jurisdictions – must be mitigated to ease implementation.



### Trend Overview

- The payments industry has already witnessed an influx of innovative solutions and offerings and is currently entering a consolidation phase.
- Regulators are announcing a new wave of standardization and risk-reduction initiatives to rationalize multiple solutions and offerings.
  - For instance, the launch of SCT Inst (SEPA Credit Transfer Instant) is an attempt by the European Payment Council (EPC) to achieve interoperability across disparate EU IP systems.
    - › As new entrants change industry dynamics, regulators are assessing the segment to ensure a level playing field.
    - › In Brazil and Mexico, regulators are working on new sets of rules for FinTechs and are harmonizing standards through regional collaboration.<sup>7</sup>
    - › The Central Bank of Iran (CBI) has defined three phases of policymaking on FinTechs spread over 18 months (2018 and 2019).<sup>8</sup>
- Globally, several standardization initiatives on multiple fronts are being taken up by regulators.
  - In the United States., the National Automated Clearing House Association (NACHA) launched Afinis, a membership-based standards organization that delivers APIs and other financial services standards.<sup>9</sup>

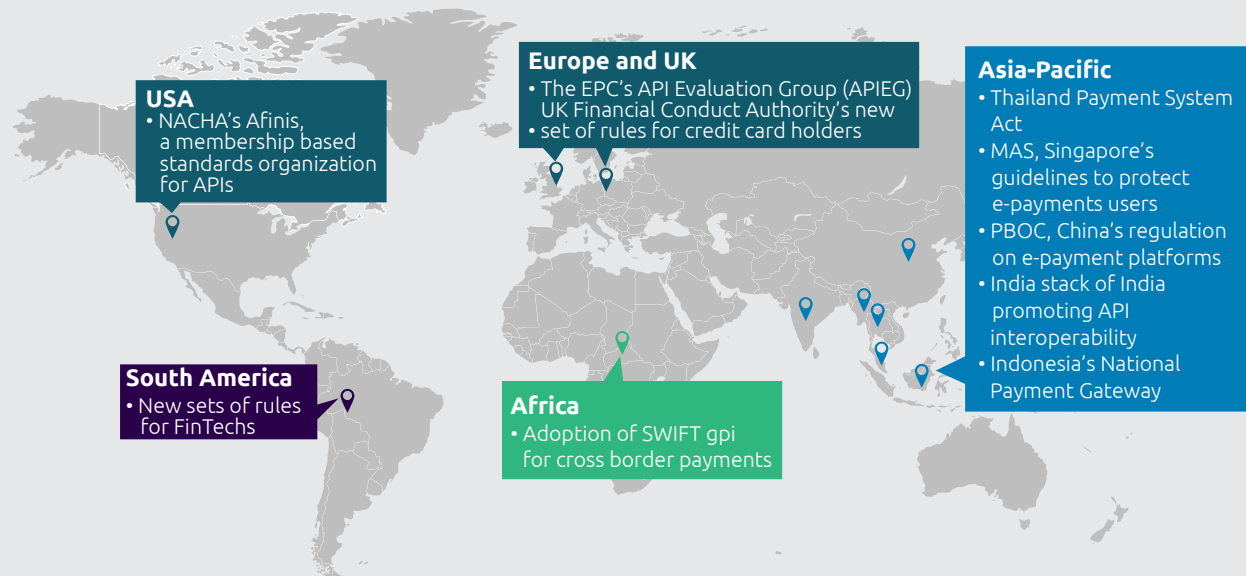
<sup>7</sup> *Latinfinance*, "Regulators put fintech regulations into place in Latin America", November 7, 2017, <https://www.latinfinance.com/magazine/2017/november-december-2017/regulators-put-fintech-regulations-into-place-in-latin-america>

<sup>8</sup> *August Debouzy*, "The Central Bank of Iran's New Policy Regarding FinTech Operations in Iran:" November 13, 2017 <https://www.august-debouzy.com/en/blog/1082-the-central-bank-of-irans-new-policy-regarding-fintech-operations-in-iran>

<sup>9</sup> *PR Newswire*, "NACHA Launches Afinis Interoperability Standards for Financial Services," September 5, 2018, <https://www.prnewswire.com/news-releases/nacha-launches-afinis-interoperability-standards-for-financial-services-300707348.html>

- The European Payments Council (EPC) has constituted an API Evaluation Group (APIEG) to study the five existing standards.<sup>10</sup>
- Thailand's 2018 Payment System Act (PSA) aims to regulate and supervise payment service providers.<sup>11</sup>

## Exhibit 2: Today's Regulators are Focused on Standardization



- The Monetary Authority of Singapore (MAS) launched a consultation in 2018 to protect users of electronic payments (e-payments).<sup>12</sup>
- In late 2017 the Peoples Bank of China raised the reserve funds ratio from 20% to 50% to regulate e-payment platform operations.<sup>13</sup>
- An India Stack initiative, API Stack, helps developers access the API marketplace.<sup>14</sup>
- The regulatory landscape is undergoing a cyclical journey moving from standardization to innovation and modernization – and back to uniformity.
  - Today some standardization-focused initiatives are being introduced to balance regulatory supply and market demand.
  - Initiatives such as PSD2, SWIFT's gpi, and use of non-cash instruments are being implemented collaboratively by the industry and regulators.
- Initiatives, such as cryptocurrency regulations, are treated differently across the globe. The result is a complex environment that may deter corporations from investing in DLT-based initiatives.

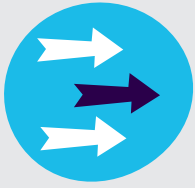
<sup>10</sup> European Payments Council, February 2018, <https://www.europeanpaymentscouncil.eu/sites/default/files/kb/file/2018-04/API%20EG%20019-18%20v1.1%20Summary%20of%20the%20API%20Evaluation%20Workshop%20-%202020180228.pdf>

<sup>11</sup> Bank of Thailand, October, 2017, [https://www.bot.or.th/English/AboutBOT/LawsAndRegulations/SiteAssets/Law\\_E40\\_Payment.pdf](https://www.bot.or.th/English/AboutBOT/LawsAndRegulations/SiteAssets/Law_E40_Payment.pdf)

<sup>12</sup> Monetary Authority of Singapore, "E-Payments User Protection Guidelines", September, 2018 <http://www.mas.gov.sg/Regulations-and-Financial-Stability/Regulations-Guidance-and-Licensing/Payment-and-Settlement-Systems/Guidelines/2018/Epayments-User-Protection-Guidelines.aspx>

<sup>13</sup> Forbes, "China Tightens Regulation Over Mobile Payment Apps -- What's Next For Tencent and Ant Financial?" January, 2018, <https://www.forbes.com/sites/ywang/2018/01/03/china-tightens-regulation-over-mobile-payment-apps-whats-next-for-tencent-and-ant-financial/#49b146f67f1d>

<sup>14</sup> India Stack, "Evolution of India Stack", [www.indiastack.org](http://www.indiastack.org)



## Implications

- A few mature markets such as the UK and Singapore illustrate why a balance between regulatory supply and market demand is both necessary and ideal.
- As the payments industry embraces new solutions and technologies, regulators must normalize such initiatives to maintain a supply-demand balance.
- Countries such as Brazil and China rely heavily on regulators for policies and suffer from the lack of market demand, which is not a sustainable proposition.
- Regulatory action to alleviate conflict in specific overlapping rules and to ensure global regulatory consistency is necessary for establishing a new and sustainable payments ecosystem.



## Trend 03: Data protection and privacy is critical for payments security in an increasingly open environment

*As data becomes more accessible in an open environment, safeguarding and protecting it is becoming more significant than ever.*



### Background

- Payments systems are being forced to open because of technological disruption by non-traditional players, regulatory mandates, and changing customer expectations, which can expose personal payments data to external vulnerabilities.
- European regulations such as General Data Protection Regulation (GDPR) and Electronic Privacy Regulation (ePR) are being emulated in other regions globally.



### Key Drivers

- Openness coupled with new technologies is leading to increased digital identity theft, data breaches, and cyber-attacks.
- Lack of rigid guidelines on sharing of data and consent management may result in information access by unauthorized entities.
- The proliferation of the Internet of Things (IoT) will lead to increased sharing of data, which may spur unsafe treatment.



### Trend Overview

- Globally, regulators are focusing on initiatives promoting data privacy and protection, with several countries emulating the European GDPR.
  - China has made significant additions to its cybersecurity laws and countries such as Canada, Japan, and Israel are working toward data privacy and protection laws on par with GDPR standards.<sup>15</sup>
  - In the United States, the California Consumer Protection Act (CCPA) safeguards customer data.<sup>16</sup>
  - The Council of the European Union published revisions to its ePrivacy regulation in July 2018 that will go into effect in 2019.<sup>17</sup>
- Now that payments systems and data sharing are open via mobile devices, payments data is susceptible to cyber attackers and intruders.
  - A 2018 data breach of 380,000 British Airways accounts leaked passengers' personal and payment details.<sup>18</sup>
  - Account Take Over (ATO), synthetic fraud, mobile remote deposit capture (RDC), and card-not-present (CNP) fraud are among today's leading payments industry threats.<sup>19</sup>

15 DLA Piper, "Data Protection Laws of the World," <https://www.dlapiperdataprotection.com/?t=law&c=CN>

16 Forbes, "How Will California's Consumer Privacy Law Impact the Data Privacy Landscape?" August 2018, <https://www.forbes.com/sites/forbestechcouncil/2018/08/20/how-will-californias-consumer-privacy-law-impact-the-data-privacy-landscape/#447e99dae922>

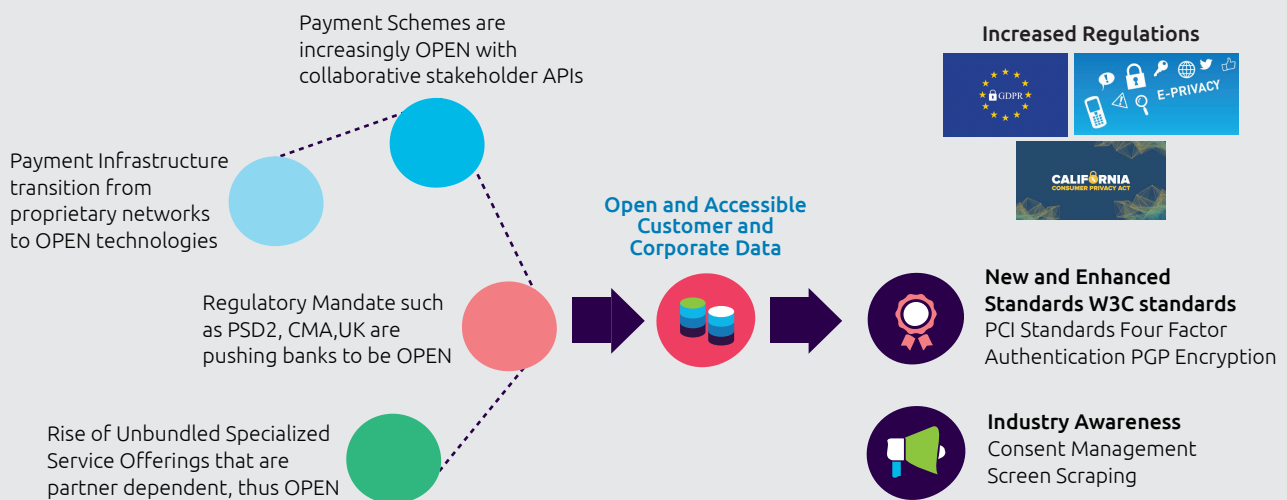
17 Technology Law Dispatch, "Proposed amendments to the ePrivacy Regulation," August 2018, <https://www.technologylawdispatch.com/2018/08/regulatory/proposed-amendments-to-the-eprivacy-regulation>

18 IT News, "British Airways suffers massive payment data breach," Ry Crozier, September 7, 2018, <https://www.itnews.com.au/news/british-airways-suffers-massive-payment-data-breach-512185>

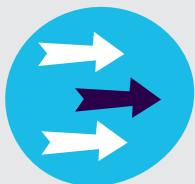
19 Aite Group, "The New Causes of Mobile Payment Fraud," August 2018, <https://www.paymentssource.com/list/data-the-new-causes-of-mobile-payments-fraud>

- Industry groups are striving to develop data sharing and consent management standards.
  - Efforts are underway to embed the EMV 3D Secure (3DS) standards in web browsers for customer authentication in CNP e-commerce purchases.
    - › Examples include the Payment Card Industry's (PCI's) new standard for software-based PIN-entry, acceptance of multi-factor authentication by SWIFT, and increased adoption of PGP encryption and tokenization mechanisms.

### Exhibit 3: Data Privacy and Protection in an Open Data Environment



- Digital consent management is emerging as a key aspect for individuals as well as corporations.
  - In an open environment, corporations face significant challenges in managing multilateral consent and approving data access rights to various parties.
- Organizations are leveraging emerging technologies to combat identity theft and data breaches.
  - Using "Differential Privacy" which allows companies to collect and analyze user data in a format that lets them identify patterns of consumer behavior without violating their privacy using Bigdata and AI.
    - › Big data and analytics spending are expected to reach \$96 billion by 2021, according to a forecast by ABI research.<sup>20</sup>
  - Cloud implementation in security services is gaining importance, and the global public cloud management and security services market is expected to reach US\$ 26.41 billion by the end of 2022.<sup>21</sup>



### Implications

- Risk-management of third parties is necessary and requires a comprehensive database of parties with access rights to each organization's data.
- More countries are introducing data privacy and protection regulations aligned with the EU's GDPR, which will continue over the next 2-3 years.
- In addition to AI and machine learning, DLT could be the next privacy frontier for industries and individuals.

<sup>20</sup> Security Industry Association, "Data Privacy and Security Trends for 2018," [https://www.securityindustry.org/wp-content/uploads/2018/01/SIA\\_DATA\\_PRIVACY\\_WHITEPAPER\\_WEB.pdf](https://www.securityindustry.org/wp-content/uploads/2018/01/SIA_DATA_PRIVACY_WHITEPAPER_WEB.pdf)

<sup>21</sup> Persistence Market Research, "Global Market Study on Public Cloud Management and Security Services: North America to Dominate the Global Market in Terms of Revenue and Growth," September 2017, <https://www.persistencemarketresearch.com/market-research/public-cloud-management-and-security-services-market.asp>

## Trend 04: Analytics and machine learning powered by rich transaction data enable secure, targeted offerings

*Information and insights in payments can optimize revenue and lower costs by enabling personalized value-added services (VAS) and cross-selling opportunities.*



### Background

- The payments industry generates valuable structured transaction data. However, until recently, little was done with the data.
- Machine learning (ML) can chart the characteristics of each account based on transaction data and build a model to predict the most appropriate offer for each customer.
- With rising concerns about data protection and legislation such as the EU's GDPR, PSPs must carefully handle sensitive payments data.



### Key Drivers

- As the cost of computing declined, new database and ML-based processing technologies emerged that offer greater insights into available data.
- Countries around the world are modernizing their payments to handle data-rich and seamless payments. Therefore, capitalizing on transaction data insights is on the rise globally.
- Machine learning can now be used to recognize customers, offer personalized experiences and services, and to build loyalty by offering suggestions based on customer behavior.



### Trend Overview

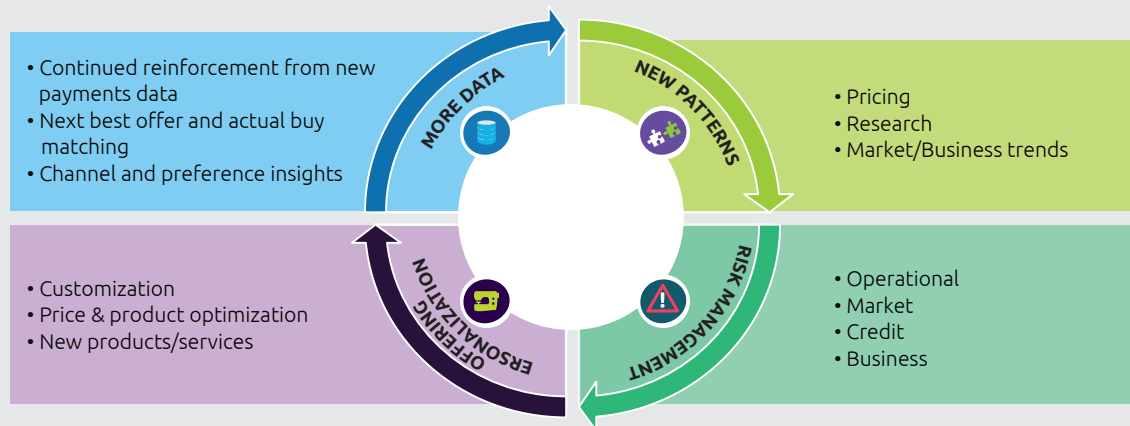
- Machine learning can combine transactional data and data from other sources to help banks better understand customer behavior and improve their experience.
- By knowing customer preferences, their next purchase may be predicted, and payment card use encouraged.
- 50% of U.S. shoppers want location-based discounts sent to their smartphone.<sup>22</sup>
- Machine learning can remove interaction complexity for customers, improve customer experience, and reduce costs.
- Consumers want a personalized experience that recognizes and rewards their purchases and engagement.
  - 77% of shoppers think loyalty programs should offer rewards that reflect their preferences.<sup>23</sup>
- Through transaction data, banks and PSPs can personalize and target loyalty rewards for a specific individual.
- PSPs can help retailers leverage payment data to personalize cart-abandonment emails and win shoppers back.
- Data-activated marketing – based on customers' real-time needs, interests, and behavior – represents an essential part of the new growth horizon.

<sup>22</sup> Adyen, "Customer personalization: What do shoppers actually want?", February 5, 2018, <https://www.adyen.com/blog/customer-personalization-what-do-shoppers-actually-want>

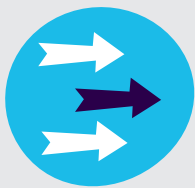
<sup>23</sup> Helloworld.com, "2017 Loyalty Barometer Report" <https://www.helloworld.com/assets/pdf/HelloWorld-Loyalty-Barometer-Report.pdf>

- Individual transaction-level data can help banks and PSPs learn about customer interests, hobbies, and financial position, which can translate into meaningful insights for cross-selling and upselling products and services.

#### Exhibit 4: Potential Advantages of AI and Machine Learning



Source: Capgemini Financial Services Analysis, 2018



#### Implications

- Going forward banks can expect their revenue mix to change as they create new services and plan for competition for some of the services.
- More post-disruption collaboration is expected throughout the industry as players better understand each other's strengths and weaknesses and aim for the most suitable ecosystem placement.
- The ecosystem will support the rise of platform-based API economy where banks offer their own products as well as third-party offerings.
- Some banks will aim to take center stage of their ecosystem, while others will specialize in niche areas, or will offer white-labeled services.
- Banks will strategically prioritize a digital culture among their employees to support transformational initiatives.

# Trend 05: APIs act as collaborative 'glue' within the new payments ecosystem

*As collaboration holds the key to success in the future payments ecosystem, APIs will link stakeholders to define digital strategies.*



## Background

- Open APIs have emerged as having a promising potential to redefine the fundamental payments business models.
- Incumbents core competencies are being challenged by flexible new entrants that focus on the customer and front-end activities.
- Banks are working to reposition themselves but are burdened with legacy systems, regulatory scrutiny, and a lower technological appetite.



## Key Drivers

- Regulatory initiatives such as PSD2 in Europe and Competition and Markets Authority (CMA) in the UK are forcing banks to open their systems and data to third-party providers (TPP).<sup>24</sup>
- Internal API implementation is already a success story with banks in terms of internal efficiency and scalability, so the current focus is on replicating the same for external collaboration.
- New market entrants such as the FinTechs and BigTechs are more innovatively agile than incumbents because of their earlier API implementation, and they offer substantial value through collaboration.



## Trend Overview

- For a successful collaborative approach, it is not enough to integrate and align business strategies. Seamless system integration is also necessary and can be accomplished with the help of APIs. For example:
  - Data or services can be distributed through new channels and devices (IoT) thereby offering enhanced customer experience.
  - New products and service offerings can be developed in addition to extending existing services through market APIs.
  - Emerging technologies such as AI can be leveraged efficiently by integrating with back-end infrastructure for greater agility.
  - Systems can be made available for third-party developers to build their own applications and services to encourage open banking.
- Globally, incumbents have implemented API initiatives on multiple fronts.
  - Several banks have made their systems and data accessible via API calls:
    - › BBVA's API Market makes eight APIs commercially available to TPPs.<sup>25</sup>
    - › Capital One's DevExchange allows developers to engage in instant app development, approval, and roll out.<sup>26</sup>
  - Card firms such as Mastercard and Visa also have launched API stores that allow activities beyond credit card validation and authorization.

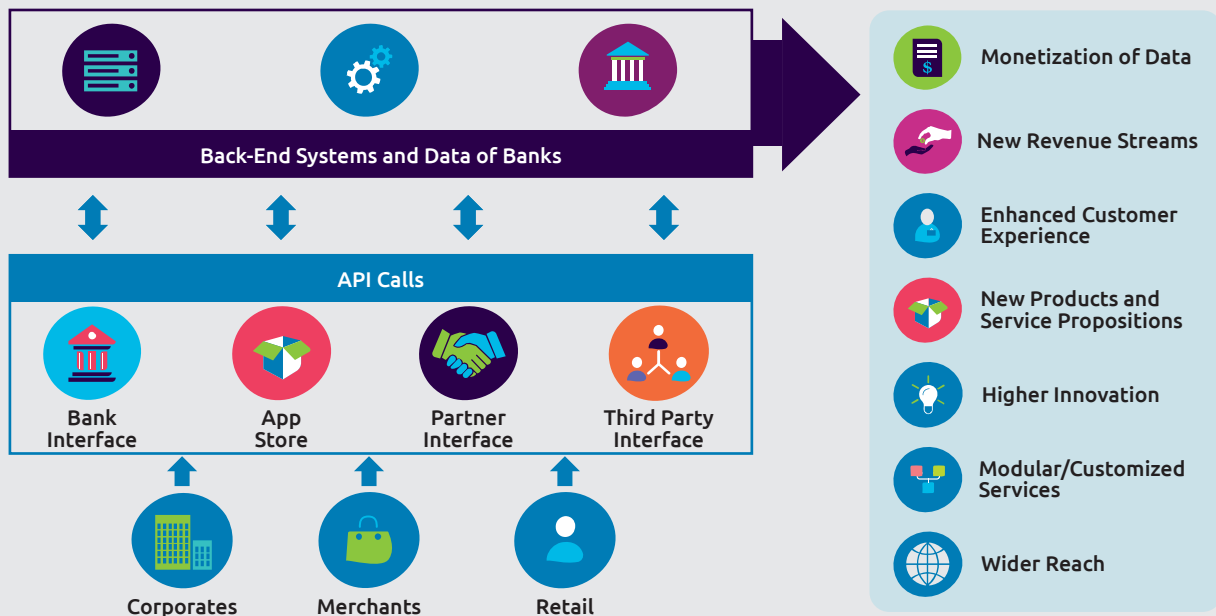
<sup>24</sup> Open Banking Org, "Open Banking Standards to Expand Functionality and Cover all PSD2 Products" November, 2017, <https://www.openbanking.org.uk/about-us/news/uks-open-banking-project-expanded/>

<sup>25</sup> BBVA website, "BBVA Launches Its Open Banking Business", Chris Semple and Luz Fernández Espinosa, May 24, 2017, <https://www.bbva.com/en/bbva-launches-open-banking-business>

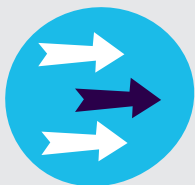
<sup>26</sup> Capital One, "Capital One DevExchange", <https://developer.capitalone.com/>

- › Visa's developer suite contains API-enabled micro-transactions, wish lists, and shopping carts.<sup>27</sup>
- › Mastercard is developing a payment app that leverages conversational commerce APIs.<sup>28</sup>
- Bank-FinTech partnerships are disrupting the marketplace with several collaborative projects.
  - › The Dutch private bank Van Lanschot is using the Fidor OS platform (built using Open APIs) to offer a range of payment services including P2P transfers in addition to special services for the Dutch market such as iDEAL payments.<sup>29</sup>
  - › U.S.-based Fifth Third Bank has a strategic partnership with London's Intellect Global Transaction Banking (iGTB), to develop digital projects using APIs.

### Exhibit 3: APIs Act as Glue in the New Collaborative Payments Ecosystem



Source: Capgemini Financial Services Analysis, 2018



### Implications

- The onset and rise of the open API economy have been a catalyst for non-traditional players (other than FinTechs) including GAFA tech giants and retailers such as Walmart and Tesco that are increasingly disintermediating the payments value chain.
- Therefore, it is critical for banks to offer platform-based services that foster a broader ecosystem of third parties.
- Through platformification and a modular approach, banks can establish a well-orchestrated ecosystem of services and emerge as the ultimate winners in tomorrow's open API economy.

27 Infoq, "Visa Launches Visa Developer Suite of APIs", February, 2016, <https://www.infoq.com/news/2016/02/visa-developer-suite>

28 Bank Innovation, Mastercard API for Conversational Commerce Still in the Works", June, 2018, <https://bankinnovation.net/2018/06/mastercard-api-for-conversational-commerce-still-in-the-works/>

29 Van Lanschot, "Fidor partners with Van Lanschot in the Netherlands to create the first PSD2-inspired Payment Avenue," March 2017, <https://www.vanlanschotkempen.com/en/news/press-releases/2017-03-09-fidor-partners-with-van-lanschot-in-the-netherlands>

## Trend 06: Seamless integration of multiple payments channels to create an omnichannel experience

*The latest technology advancements are enabling integration of multiple payment channels and instruments creating a frictionless omnichannel experience for customers.*



### Background

- With advancements in technology, payments are being injected into new disruptive technologies such as voice assistants and IoT devices leading to the creation of new channels such as voice and mobile.
- Payments that were location bound are now device enabled, and as the technology evolves, payments acceptance will change with shifting customer expectations of a frictionless payments experience.
- With ever-growing payments channels, both online and offline retailers are expanding payments acceptance channels at PoS to enable a frictionless omnichannel payments experience for customers.



### Key Drivers

- The payments industry is rapidly transforming from an infrastructure of cards and terminals to a system dominated by mobile devices such as smart watches, phones, and even IoT enabled cars.
- The transition is being made possible by advances in technologies such as augmented reality (AR), the Internet of Things (IoT), and biometrics.
- Payments infrastructure is quickly moving toward real-time, accommodating digital payment processing with API integration, and capable of advanced fraud detection.
- Customers' expectations around the speed and ease of purchase continue to rise. Today customers expect a seamless experience that follows them across channels and provides the choices they like to use.
  - 80% of consumers say they are more likely to return to a retailer that has previously provided them with a quick payment process.<sup>30</sup>



### Trend Overview

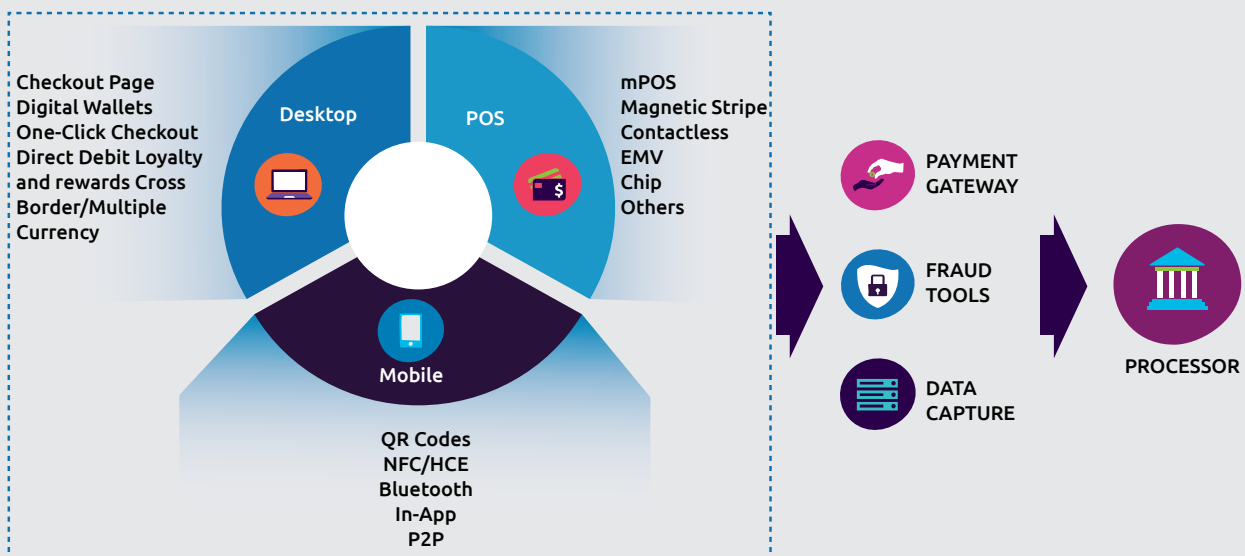
- Technology is fast changing the world around us, and financial services have been one of the biggest beneficiaries of innovations around mobile technology and IoT. Payments are now integrated into a host of devices such as smartwatches, fitness bands, washing machines, and cars.
- New channels of payments are gaining prominence and acceptance rates are rising.
- Globally, the number of customers using voice assistants is increasing with a CAGR of 29.4% and is estimated to reach 1.83 billion by 2021.<sup>31</sup>

30 Retail-week "Infographic: Are consumers ready for Amazon Go?" February 12, 2018, <https://www.retail-week.com/7028254.article>

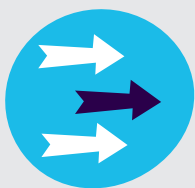
31 Medici, "The Rise of the Voice Payments Ecosystem," April 16, 2018 <https://gomedici.com/rise-of-voice-payments-ecosystem/>

- Advanced authentication methods such as tokenization and biometrics have made these new payment channels much more secure.
  - BBVA is developing payment methods based on biometric technologies to make checkout at stores invisible.<sup>32</sup>
- Customers now expect to buy anytime, anywhere, and anyway they choose while using whichever channel and payments method that suits them.
- An omnichannel experience can also boost revenues for merchants as omnichannel shoppers spend between 50-300% more than single-channel shoppers.<sup>33</sup>

#### Exhibit 6: Omnichannel Payments Development



Source: Capgemini Financial Services Analysis, 2018



#### Implications

- Merchants are expected to prioritize investments in customer service and payments to bring customers an omnichannel experience.
- As merchants move to omnichannel payments processing, they will drive significant efficiencies, reduce time to onboard, enhance sales productivity, and boost overall customer satisfaction.
- Smart PoS solutions could combine merchants' payments into a simple platform with data analytics and back-office support tools for payments in both e-commerce and physical worlds, thus unlocking new customer insights.

32 BBVA press release, "BBVA launches its 'invisible payments' strategy," March 19, 2018  
<https://www.bbva.com/en/bbva-launches-its-invisible-payments-strategy/>

33 Worldpay, "The Store of the Future and the Role of Omni-Channel Payments in Driving Business Growth,"  
<https://www.worldpay.com/sites/default/files/WPUK-Omni-channel-payments-store-of-the-future.pdf>



## Trend 07: Payments incumbents consider 'platform-as-a-service' to improve efficiency, spur new business

*Platformification could give payments incumbents greater network reach and a strong foundation for success in the post open banking era.*



### Background

- Payments incumbents no longer consider FinTechs as a threat and increasingly are looking to work together with FinTechs to build innovative offerings.
- Under Open Banking, incumbents will have no choice but to rethink their business models especially as platformification is gaining traction with many e-commerce, social media, and technology giants implementing it.



### Key Drivers

- Changing customer expectations for more contextual and value-added offerings is forcing the payment firms to rethink their business models.
- Regulations and industry initiatives such as PSD2 and open banking have set the stage for collaboration between banks and FinTechs/other third-party developers.
- The payments industry is witnessing increasing partnership between banks and FinTechs, and as banks look to collaborate with more and more stakeholders, they need a sustainable model in place.
  - ING has partnered with Yolt for account aggregation.<sup>34</sup>
  - France's Groupe BPCE teamed with Transferwise, to offer customers low-cost money transfer service.<sup>35</sup>



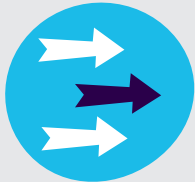
### Trend Overview

- A cloud-native platform-based approach could be the way for incumbents to create a collaborative environment to connect and exchange value with various stakeholders while gaining agility to scale up based on changing customer demand.
  - Such models allow payments firms to create customer-centric solutions by bringing together best-in-class services from various stakeholders in a single ecosystem.
  - Payments firms can access customer and transaction data that can be leveraged to offer customized solutions.
  - Cloud-native platforms enable payments firms to create new ways of reaching out to customers while also creating new business propositions.
  - The cloud allows banks and PSPs to create microservices that they can bundle dynamically based on the customer requirement.

<sup>34</sup> ING Website, "FinTechs help change our culture – Benoît Legrand", 27 July 2017, <https://www.ing.com/Newsroom/All-news/FinTechs-help-change-our-culture-Benoit-Legrand.htm>

<sup>35</sup> Pymnts.com, "TransferWise teams up with Groupe BPCE to offer In-App transfers", 04 June, 2018, <https://www.pymnts.com/news/banking/2018/groupe-bpce-transferwise-partnership-international-money-transfers>

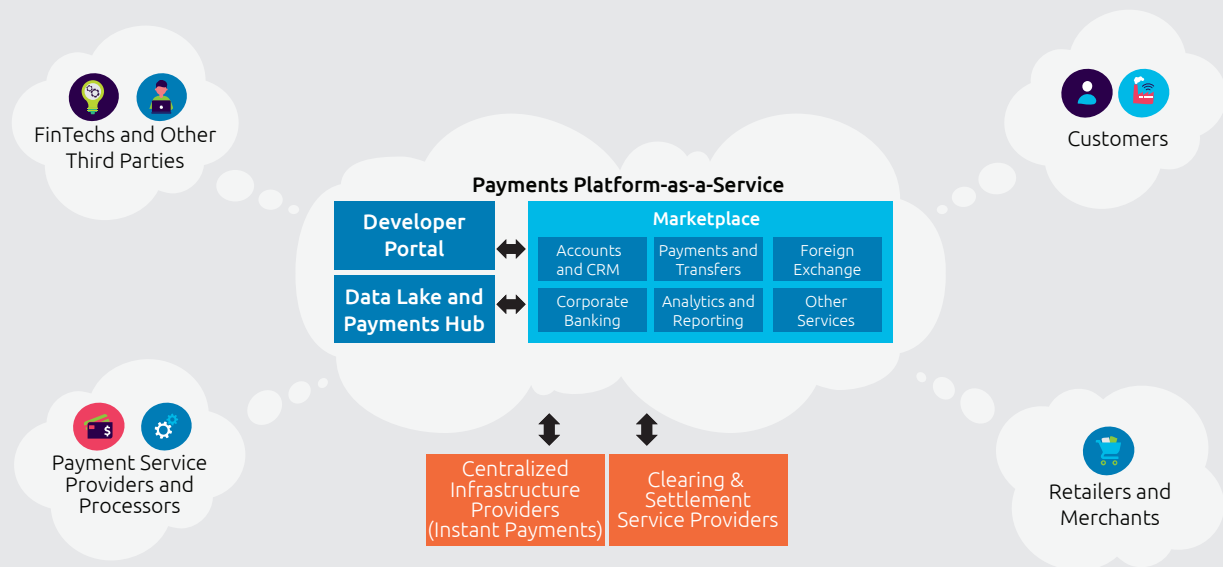
- › Bancorp and Fidor Bank have already started providing a platform model that makes them future ready and provides the ability to scale up based on customer demands.<sup>36</sup>
- Payment service providers such as Stripe have already changed their business model to develop solutions for accepting payments in marketplace or platform models.
  - › Stripe Connect for marketplace and platforms enables seamless onboarding and cost-effective solutions for merchants.<sup>37</sup>



## Implications

- Banks that implement such platforms will have first-mover advantage and a competitive edge over new payments sector entrants.
- As the industry moves toward platform-based models, payment firms – along with FinTechs and other third parties – need microservices to offer various value-added services.
- With PSD2, e-commerce players such as Amazon may face challenges in becoming a licensed provider of regulated payment services, which could open the door for payment providers such as Stripe to offer plug-and-play payment services to their platforms and marketplace.<sup>38</sup>

**Exhibit 7: Payments Platform-as-a-Service Model**



Source: Capgemini Financial Services Analysis, 2018

36 Bank-As-A-Service website, "Overview of APIs and Bank-as-a-Service in FinTech," <https://www.bank-as-a-service.com/BaaS.pdf>

37 IDC, "The Business Value of the Stripe Payments Platform", Jordan Jewell and Matthew Marden, March 2018, [https://stripe.com/files/payments/IDC\\_Business\\_Value\\_of\\_Stripe\\_Platform\\_Full%20Study.pdf](https://stripe.com/files/payments/IDC_Business_Value_of_Stripe_Platform_Full%20Study.pdf)

38 Stripe, "How PSD2 impacts marketplaces and platforms: A Stripe guide for navigating the European regulatory changes", <https://stripe.com/connect/eu-guide> accessed October 2018

## Trend 08: Instant cross-border payments gain traction alongside the increased adoption of ISO 20022 standards

*Real-time payments have emerged as a mature global trend paving the way for instant cross-border payment schemes and increased adoption of ISO 20022 standards.*



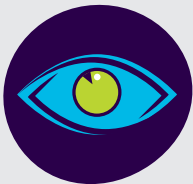
### Background

- Three major real-time payment schemes were launched in 2018—Real Time 1 (EBA RT1) for the processing of SEPA Credit Transfer Instant (SCT inst) in Europe, The Clearing House (TCH) Real-Time Payments in the United States, and the Australian New Payments Platform (NPP).
- As the implementation of such schemes continues, instant cross-border payments and adoption of ISO 20022 are evolving as significant sub trends for the future landscape.



### Key Drivers

- With several national level instant payments schemes going live, instant cross-border payment systems across regions emerge as a logical next step.
- The need to for greater transparency and cost reduction costs underpins a strong business case for instant cross-border payment systems.
- In order to overcome challenges related to multiple message formats, the adoption of standards (such as ISO 20022) is gaining prominence.



### Trend Overview

- Several countries are launching/planning national instant payments systems.
  - Belgium, the Republic of Congo, Hong Kong, Malaysia, Portugal, and Spain planned to launch instant-payments systems in 2018.<sup>39</sup>
  - France, Hungary, and the Netherlands announced national systems to go live by 2019. Canada's Real-time payments rails (RTR) first phase is expected to go live by 2021.<sup>40</sup> Colombia and Peru are exploring similar schemes.
- Launched in November 2017, the pan European SCT inst scheme was the first cross-border instant payments scheme, paving the way, worldwide, for other similar schemes.<sup>41</sup>
  - As the part of ASEAN 2025, member states are engaged in the modernization and integration of their financial infrastructures to ultimately lead to a pan-regional, real-time payment ecosystem.<sup>42</sup>
  - In November 2017, Malaysia, Thailand, Vietnam, Singapore, and Indonesia signed an agreement to connect their internal payment networks to form a regional real-time cross-border payments network.<sup>43</sup>

39 PYMNTS, "Deep Dive: The Rapid Rise of Global Faster Payment Systems," April 06, 2018, <https://www.pymnts.com/smarter-payments/2018/global-faster-payment-systems-same-day-ach>

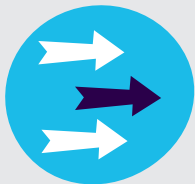
40 InstaPay, "Instant payments: Taking the reins," March 21, 2018, <https://www.instapay.today/insight/instant-payments-taking-the-reins>

41 Finextra, "Sepa Instant Payments Goes Live", November, 2017, <https://www.finextra.com/newsarticle/31345/sepa-instant-payments-goes-live>

42 The Association of Southeast Asian Nations (ASEAN) was established in August 1967. Member States include Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam.

43 ASEAN Today, "Payment tie-ups between ASEAN nations are up for discussions", October, 2018, <https://www.aseantoday.com/2018/01/payment-tie-ups-between-asean-nations-are-up-for-discussions/>

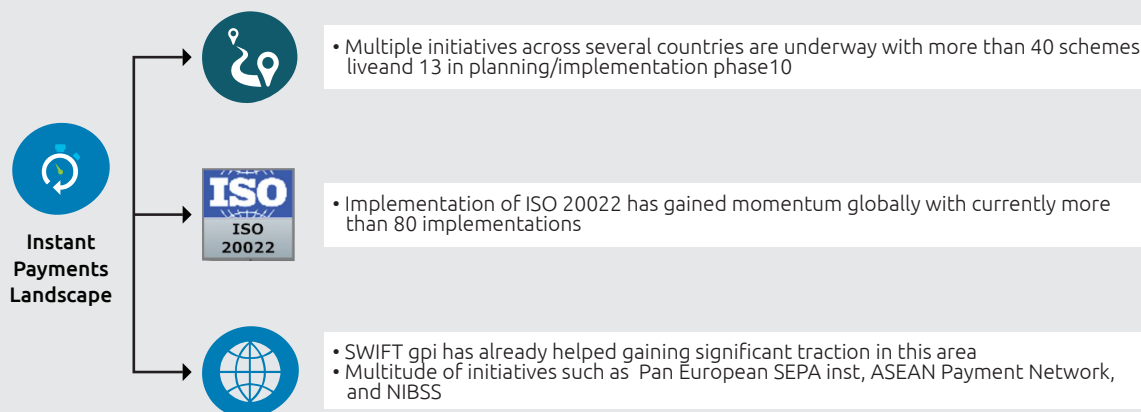
- Distributed Ledger Technology (DLT) together with the Society for Worldwide Interbank Financial Telecommunications (SWIFT)'s global payments innovation (gpi) initiative have revolutionized cross-border payments.
  - SWIFT announced plans in August 2018 to test cross-border payments in Asia-Pacific.<sup>44</sup>
  - Through DLT-based solutions, players such as Ripple and Stellar are challenging the correspondent banking model.<sup>45</sup>
  - Amid these developments, banks and regulators seek to make payment market infrastructures interoperable to enable banks and PSPs to offer multiple IP rails simultaneously catering to different needs of speed, volume, and value.
- As multiple national and regional systems exist, fragmentation is posing a challenge to FIs, PSPs, and corporations.
  - Implementation of ISO 20022 in one initiative that is being undertaken to achieve interoperability and has gained momentum with currently more than 80 implementations across 40 markets areas such as trade finance and cash management, as well as payments.<sup>46</sup>



## Implications

- Banks such as JP Morgan are setting up blockchain-based systems such as Interbank Information Network (IIN) that currently has more than 75 banks.<sup>47</sup>
- In the future, banks may consider different IP schemes for separate co-existing payments flows such as high-volume, low-value, and low-volume, high-value types.
- Corporations are increasingly embracing ISO 20022 as a messaging standard, and it may soon emerge as a global messaging standard.

### Exhibit 8: Trends Shaping the Global Real-Time Payments Landscape



Source: Capgemini Financial Services Analysis, 2018

<sup>44</sup> SWIFT website, "SWIFT tests instant cross-border gpi payments service in Asia Pacific", 23 August, 2018, <https://www.swift.com/news-events/news/swift-tests-instant-cross-border-gpi-payments-service-in-asia-pacific>

<sup>45</sup> Financial Times, "Ripple and Swift slug it out over cross-border payments", <https://www.ft.com/content/631af8cc-47cc-11e8-8c77-ff51caedcde6>

<sup>46</sup> VolanteTech website, "ISO 20022 Implementation and Adoption", <http://www.volantetech.com/solutions/capital-markets-industry/iso-20022-implementation-and-adoption>

<sup>47</sup> IIN is an inter-ledger protocol-based system that can be used for cryptographic validation and messaging for cross-border transactions

## Trend 09: Payment industry incumbents and new entrants provide mobile wallets to deepen customer relationships

*Payment industry stakeholders are adopting different strategies and approaches for implementing mobile wallets to enhance and secure customer experience.*



### Background

- With increasing e- and m-commerce, there is a rise in demand for seamless and integrated digital payments methods.
- Digital technologies and innovations such as near field communication (NFC), QR Codes, real-time payments, and APIs have simplified the execution of mobile wallets.



### Key Drivers

- Tech-savvy customers are looking for a fast and secure one-stop solution to take care of their lifestyle needs.
- Non-bank players have long understood changing customer expectations and have leveraged emerging technologies to create superior check-out experiences through customer interfaces such as mobile wallets.
- Incumbents are increasingly focusing on simplified user interfaces, seamless customer experience, and integrated value-added services offered through mobile wallets to more effectively compete against new entrants.

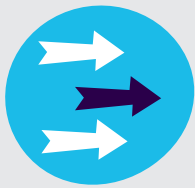


### Trend Overview

- Payment firms including banks, payment service providers, and card networks are implementing mobile wallet solutions either individually or in consortium.
  - The primary mobile wallet strategy is to control the user engagement and leverage transaction data to provide value-driven offerings.
  - A consortium of U.S. banks came together to offer Zelle, a real-time P2P payments service that processed more than 247 million payments in 2017, a year-over-year increase of more than 45%.<sup>48</sup>
  - Global card networks Visa, Mastercard, and Amex have rolled out digital wallet services such as Visa Checkout, Masterpass, and Amex Express Checkout, respectively.
- Merchants, retailers, and e-commerce players are creating wallet solutions mainly to increase customer stickiness by creating a digital ecosystem of various services so that customers can meet all their lifestyle needs seamlessly.
  - Retailers such as Walmart and Starbucks have started their own closed-loop mobile wallets to offer rewards and customer loyalty.
  - E-commerce firms Amazon and Alibaba have created their own digital ecosystem to provide a host of financial services without scrutiny from bank regulators.

<sup>48</sup> Zelle website, "Press Release", <https://www.zellepay.com/press-releases/zelle-moves-record-75-billion-in-2017>, 29 January, 2018

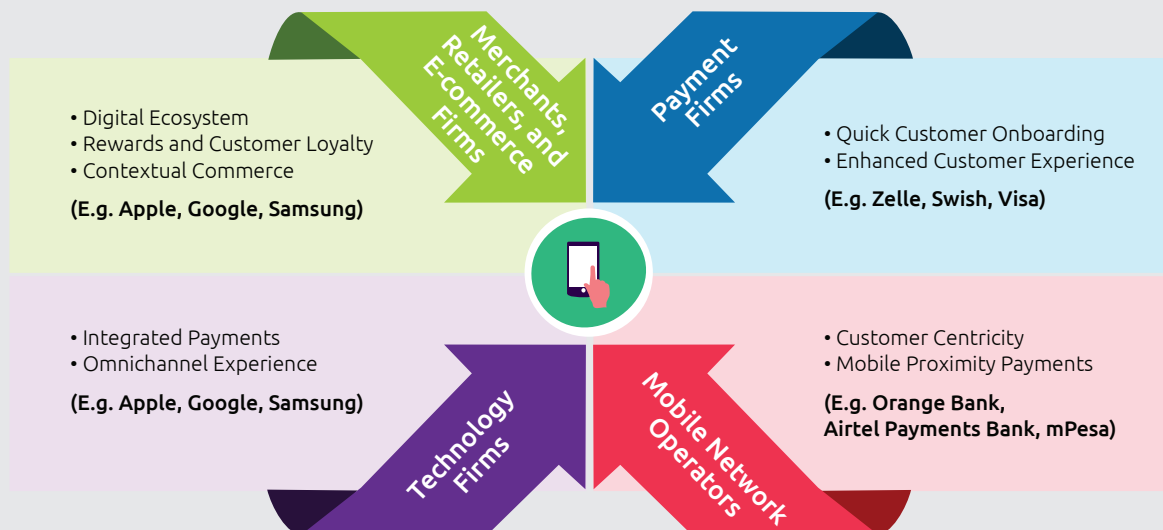
- Tech giants Google, Apple, and Samsung have also created mobile wallet solutions mainly to strengthen their digital ecosystem and offer integrated in-store payments as well as in-app payment services for their partner firms.
  - Google Pay (previously Tez in India) had 12 million active users in India and, in November 2017, 73% market share for instant mobile payments.<sup>49</sup>
- Mobile network operators (MNOs) Orange and Airtel leverage their customer base and telecom infrastructure to offer competitive proximity-based mobile payment services.
  - MNOs can enable customers to pay with direct carrier billing on partner platforms (e.g., Netflix, Spotify, Audible) and offer more choice of payment methods (e.g., mPesa).



## Implications

- As the industry moves to a collaborative ecosystem, the adoption of mobile wallets is expected to gain prominence in support of integrated and seamless payments experiences.
  - According to the *World Payments Report 2018*, global wallet transaction volumes are estimated make up around 8.6% of global non-cash volumes, and there is still potential for new entrants as well as incumbents to expand their respective wallet markets.
- With PSD2, open banking, and real-time payments (RTP) gaining traction across the globe, mobile wallets combined with RTP could emerge as an alternative payment option for cards.
  - Consumers would benefit from reduced fees because they no longer will pay interchange fees.
  - Merchants would benefit from payments' instant availability and simplified reconciliation.

**Exhibit 9: Stakeholders Offering Mobile Wallets and Their Strategies**



Source: Capgemini Financial Services Analysis, 2018

<sup>49</sup> Goldman Sachs Global Investment Research, "Payments Ecosystems," 3 August, 2017

## Trend 10: BigTechs' customer reach and user experience could emerge as threats to incumbents

*Platform-based businesses have enabled BigTechs such as Amazon, Alibaba, Facebook, and Tencent to enter the financial services market, threatening incumbent banks that slowly respond to the digitalization of the industry.*

### Background



- By integrating payments into their platforms and developing their own digital ecosystems, BigTechs are making a foray into payments by enhancing customers' user experience.
- With payments becoming central to their business, BigTechs are reimagining and recreating finance, leveraging the proliferation of mobile platforms with payments and complementary services such as bill payments, entertainment, and rewards.
- With their vast customer base, excellent data capabilities, and advanced tech resources, BigTechs could emerge as a threat to incumbents.

### Key Drivers



- BigTechs have mostly focused on payments and view them as a tool to further enhance client stickiness. They are monetizing via advertising, e-commerce, or other services (such as AWS).
- While payments and transaction services are the first areas of BigTech disruption, the creation of an integrated financial ecosystem as part of a holistic customer engagement strategy is their ultimate objective.
- Application- and data-centric firms such as Apple and Google entered financial services from a technology and data management perspective.
- Voice assistants from Apple, Amazon, and Google have found rapid adoption, giving rise to the possibility of voice emerging as a new channel.

### Trend Overview

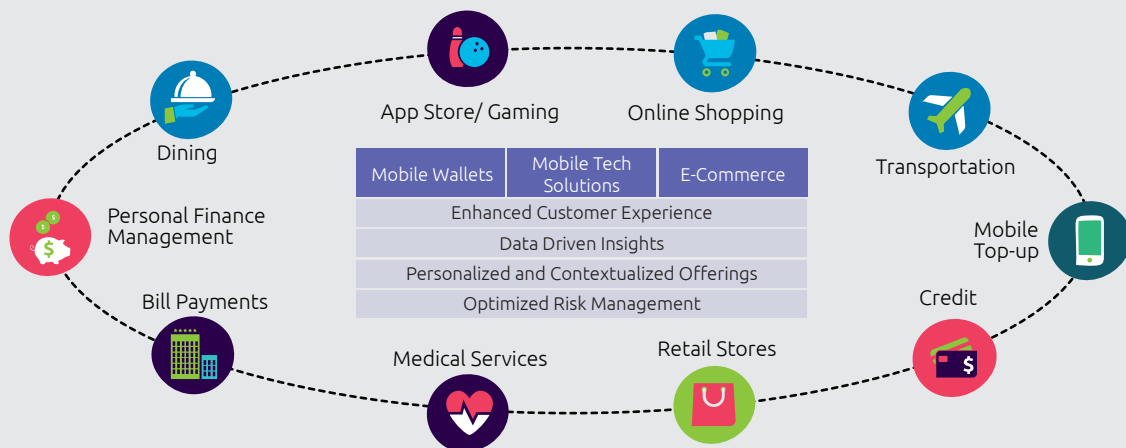


- Chinese BigTechs (Alibaba, Tencent, and Baidu) – have a significant head start in their financial services initiatives and have ventured into most key FS segments.
- In developed markets, BigTech players are yet to reach the scale and reach of their Asian peers, but they have started to position themselves and are looking to slowly capitalize on efforts such as those of Amazon in North America and Apple's Apple Pay, which have witnessed stellar growth.
- BigTechs have leveraged emerging technologies and an innovative mindset to create data-driven and customer-centric products.
  - Leveraging the Chinese tradition of sending red packets during the lunar year celebration, WeChat introduced virtual red packets in 2014, which gained instant popularity. In 2017 WeChat users sent around 46 billion Red Packets.<sup>50</sup>

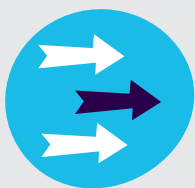
<sup>50</sup> Reuters, "WeChat users send 46 billion digital red packets over Lunar New Year – Xinhua" 04 February, 2017, <https://www.reuters.com/article/us-lunar-newyear-wechat-redpackets-idUSKBN15J0BG>

- Using the concept of the official account, WeChat could enable KFC to open a virtual store and enable its entire menu on WeChat, so users can order, pay and schedule delivery with a few clicks.<sup>51</sup>
- Alipay can be used to pay utility bills, shop online retail, recharge a mobile phone, buy tickets, or check an account balance.
- BigTech players are very agile and fast to respond to market changes, Alipay mobile payment app now owns over 50% of the \$5.5 trillion Chinese mobile payments sector, with tech giant Tencent as its only major competitor.<sup>52</sup>
- Although some BigTechs have established payment services, they are still mostly reliant on using traditional banking partners. They could pose a significant threat in the future, however.

## Exhibit 10: BigTech Ecosystem Development



Source: Capgemini Financial Services Analysis, 2018



## Implications

- BigTechs are trusted by customers and have enough funding to create robust payments solutions making them a credible threat to PSPs.
- Disruptive models could potentially erode close to a third of incumbents' volumes for payments and investments.<sup>53</sup>
- With BigTechs already making payments inroads, challenges related to regulatory pressure, legacy infrastructure and a lack of nimbleness might put incumbents at a disadvantage.
- Banks might develop partnerships with BigTechs in situations where value can be shared, including payments products that bring in more revenue to all parties.

51 Daxueconsulting, "Why Should Food Companies Set Up a WeChat Store?" 28 February, 2017, <http://daxueconsulting.com/food-companies-set-up-wechat-store>

52 Fortune, "Tencent and Alibaba Are Engaged in a Massive Battle in China" 13 May, 2017, <http://fortune.com/2017/05/13/tencent-alibaba-china>

53 Citi Group, "Bank of the Future: The ABCs of Digital Disruption in Finance", March 2018, <https://www.citi.com/commercialbank/insights/assets/docs/2018/The-Bank-of-the-Future>



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