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New stakeholder expectations are driving operational, technological and people changes in payments functions. How must they adapt?

### What is the future of the payments function?

#### Changing expectations driving change

The payments function – the operations and technology capabilities within banks and other financial institutions that process the payments of individuals, businesses and governments – is the beating heart of banking, moving money around the financial system to support all financial transactions.

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# Editorial



I am pleased to bring you the latest *Payments* newsletter from the global EY teams across the globe. Certainly, in the Oceania Financial Services market that I work in, there is more focus on payments than ever before. This seems to be driven by a number of factors including, in the merchant acceptance and payment platforms fields, a focus on players either scaling up or concentrating on niche segments.

These themes are reflected in this issue's quarterly M&A and venture capital investment roundup reports where the remarkable success story of Airwallex shows how focusing on a neglected "pain point" – in this case, B2B cross-border payments – can yield big rewards for investors. Meanwhile, a more detailed exploration of how banks can adapt to three M&A waves reshaping the sector is offered by Lars Putensen in his article in this issue.

Even as payments teams adjust strategies to a fast-changing sector, they must also stay ever vigilant of regulatory updates and legislative changes. In this issue, Edgar Barbosa shares valuable lessons from the ISO 20022 deployment to date (including the need for patience!) while Robert Colwell and colleagues reveal the results of their extensive analysis of how PSD2 is shaping the emergence of new third-party providers in Europe. While it's still early days, the impact of this directive on new competition in the payments sector is growing fast.

Across the sector, we are also seeing a shift away from products to end-to-end customer journeys and, inevitably, the payments sector plays a large part in this transformation. Stakeholder expectations are changing quickly, and, as explored by Hamish Thomas's article, reshaping the future of payments. Significant changes are required in operations, technology and people though, as Hamish writes, "a robust understanding of the payments domain and its role as the beating heart of the business will remain a critical pre-requisite for successful payments function teams."

We hope you find this issue of *Payments* useful and, as always, welcome your feedback, including on potential future topics.

Best regards,

**Robert Colwell**

Partner, Financial Services

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# What is the future of the payments function?

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Traditionally, the payments function has been deep in the back office, unnoticed except when something goes wrong, and the impacts are felt by all who use banking services. Now, as financial services adapt to the digital age, payments functions must adapt. Pressure is on to meet increasing customer expectations, satisfy intensified regulatory scrutiny, take on more competitors and use technology to change how services are delivered – all while maintaining the security and stability that underpins trust.

In particular, customer expectations are shifting, with consumers looking less for products from a bank and more for the support needed to achieve desired outcomes. Individuals are looking for help to move into their new home, rather than just “getting a mortgage.” Businesses may be seeking support

to grow through better access to working capital and improved cash flow management, or to run a more efficient business by being able to move money in real time on a global basis.

And everyone wants to make more confident decisions by knowing exactly where their money is, and how hard it is working.

## Meeting the needs of different stakeholders

### Customers

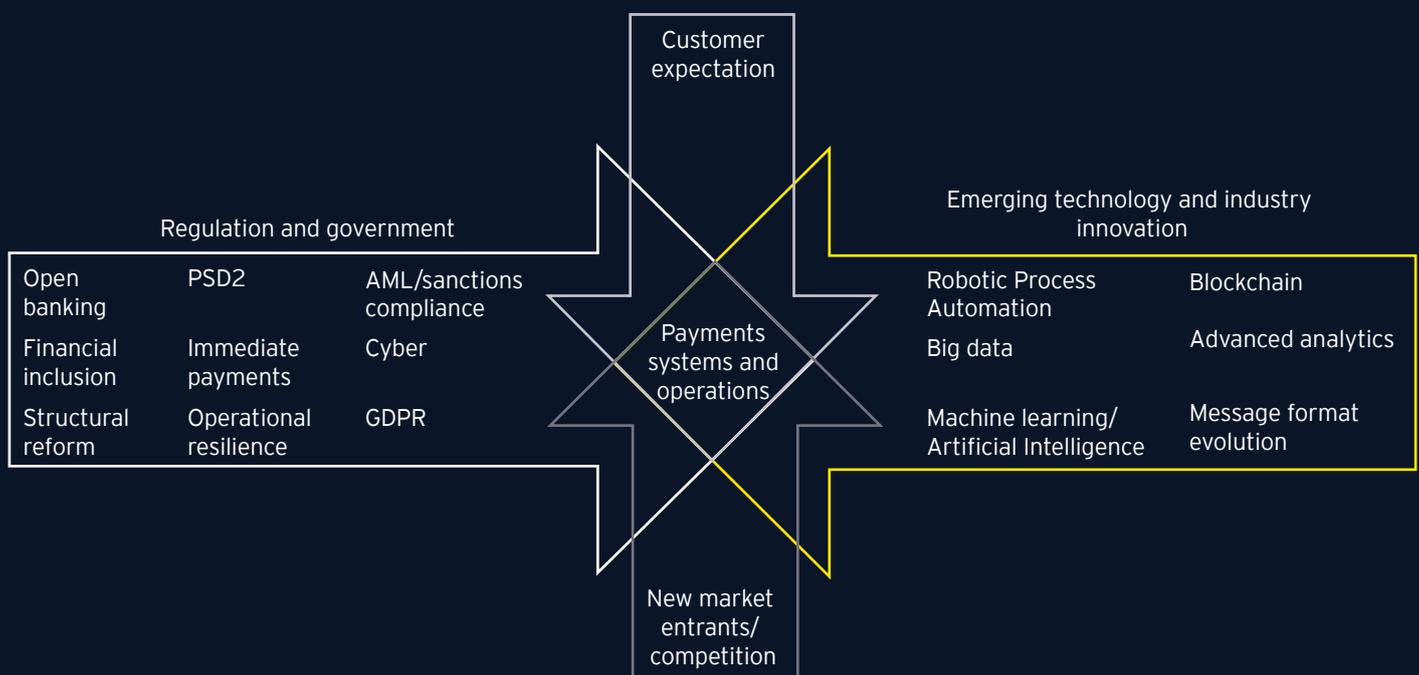
Customers – individuals, businesses, governments, charities, etc. – expect their payments function to be:

- ▶ **Stable and reliable:** Customers must be confident that money will arrive where it should, when it should – without interruption. Payments

failures can have major consequences, from individuals' inability to access funds to economic consequences across markets. Stability has always been critical, but recent high-profile technology issues have heightened scrutiny.

- ▶ **Secure:** The ability to respond to the latest security threats – from channel to back-end processing – is critical. Here, banks have a trust advantage over new entrants which must be protected, even as innovation is embraced.
- ▶ **Easy-to-use, flexible and customizable:** Today's customers expect intuitive, convenient, easy-to-use mobile and digital products, which can be challenging for banks when building enjoyable experiences that also address security considerations.

## The multi-layered drivers of change for the payments function



- ▶ **Immediate:** Real-time payments are increasingly expected from all stakeholders – from individuals making peer-to-payments to corporate treasurers seeking dynamic cash flow forecasting.
- ▶ **Available:** Today's digital economy has created the expectation from both corporate and individual customers that financial services are available whenever, wherever and through multiple channels.
- ▶ **Accessible and transparent:** Even as customers expect payments services to be available across channels, particularly mobile devices, they also demand greater levels of transparency, including a new level of control over transactions and support that suits their needs.
- ▶ **End-to-end visibility:** Historically, payments functions were ring-fenced with limited recognition of the end-to-end flow within which they sat. While operational stability still requires clear lines of responsibility, these functions need to recognize the wider context in which they operate, to better provide the transparency that customers demand, and track the health of the service for business and operational leaders. This is an increasingly complex task as more third-party providers enter the flow.
- ▶ **Low cost:** More competition in financial services, including payments, is pushing customers to demand lower cost, more efficient services from payment providers whose margins are being increasingly squeezed.
- ▶ **Invisible:** Customers demand confidence that payments services should “just work,” without being noticeable.

Business customers have some additional expectations of payments functions:

- ▶ **Easy access to business management information (MI):** Businesses seek meaningful insight to help better understand customer behavior and tap into new business opportunities.

- ▶ **Support to create new revenue generation opportunities:** Businesses expect payment services to both directly and indirectly support their ability to boost revenue; for example, by enabling rapid customer onboarding to improve experience, or helping bring new products to market more quickly.

### Regulators

Regulatory expectations have increased significantly, with recent developments including the second Payment Services Directive (PSD2), open banking, the second E-Money Directive, and the Single Euro Payments Area. These are complicated by other non-payments-focused regulation, including anti-money laundering (AML) and sanctions measures, which also impact the sector.

Transparency and fairness to customers are at the heart of these changes, along with unwavering expectations for control and reporting. In essence, regulators expect payments functions to be:

- ▶ Stable, resilient, secure
- ▶ Easily accessible
- ▶ Adaptable to changing customer needs
- ▶ Free from abuse or misuse by criminals and terrorists

### How should payments functions adapt?

For leaders of payments functions, the question is: how does the payments function need to change to better meet stakeholders' expectations?

The demands can be seen as some “more of the same, but done better” and some “new capability delivered well from the start.” Success will require focusing on several areas of change:

### Operations

Future payments functions will be highly automated, with fewer people. Smaller teams will focus on higher value activities which either cannot (yet) be automated with confidence, or which the business has decided will not be automated as part of a wider strategy,

for example, some aspects of customer service and customer interaction.

- ▶ **New skills and adaptable teams**
  - ▶ With operations teams increasingly working alongside automation technology, they will need to understand these technologies and how they are applied to support payments processes.
  - ▶ With smaller operations teams, people will need to understand and work across a wider spectrum of processes than they do today. This may extend to adjacent functions, such as financial crime prevention.
- ▶ **Different operational metrics**
  - ▶ When people and automation work together, operational metrics will need to change. Traditional KPIs tracking performance will not always be appropriate for automated solutions. For example, productivity will not be seen on a spectrum as it is for people.
  - ▶ New metrics will focus on customer outcomes as well as operational health, e.g., improved customer experience or reduced risk. This requires staff to develop a deep understanding of the role of the payments function in delivering these outcomes across the end-to-end environment.
- ▶ **Revised location strategy**
  - ▶ Location strategies require review when automation changes how many people – and with what skills – are needed in operations functions.
- ▶ **Operations and technology convergence**
  - ▶ Automation and other technologies offer huge potential for payments functions, but maximizing benefit requires integration across operations and technology. Team members with the agility and skills to move across functions will allow for more opportunities to harness digital innovation.

## Technology

Effective use of modern technology is critical in terms of the efficiency, efficacy and agility that is expected of payments functions:

### ▶ **Stability, resilience and security**

These must remain top priority if payments functions are to keep the trust of customers. Cloud technology offers potential to provide this stable and secure environment, while reducing cost, as illustrated by new “cloud-only” entrants and moves by many incumbents to develop cloud-hosted offerings.

### ▶ **Increasing intelligent automation**

Robotic process automation (RPA) already offers potential for repeatable high-volume tasks. When little judgment is required, simple RPA can be applied. However, intelligent automation, that applies artificial intelligence, is rapidly maturing, ready to be deployed across more variable tasks that require judgment and context.

### ▶ **Data as an asset**

▶ The wealth of data that is produced within a payments function is both a blessing and a curse. Significant operational, customer and business information can be derived from this data and from understanding money flows, but finding actionable insights from such high volumes of data is a challenge. Skills not typically found in payments, including data science, will be needed to support a big data agenda that recognizes data as a valuable asset.

▶ The ability to provide easy access to meaningful business and operational MI, and enable simple, meaningful reporting and improved customer service will soon be considered a basic factor for successful payments functions.

### ▶ **Adaptable, flexible architecture**

▶ Technology’s rapid evolution is set to continue. A modern approach

to architecture is needed to exploit micro-services and application programming interface integration that allows for a modular, “component assembly” approach that enables adaptability, flexibility and rapid-change delivery.

### ▶ **From batch services to real time**

▶ Many payment types and supporting infrastructure are delivered through batch processing, but the acceptance of these systems will decrease as real-time services increase. Future payments function technology strategies will need to consider this shift and accept the increasing expectation of extended cutoffs and, eventually, 24x7 processing for all payments.

### ▶ **Convergence of technology across payments types**

▶ It’s said that “a payment is a payment,” but today there is a wider variety of payment types, including cards, Automated Clearing House, Real Time Gross Settlement and emerging immediate payments systems, such as the UK’s Faster Payments Service.

▶ The result has been a broad spectrum of technologies and operating models. However, technology is catalyzing convergence. For example, we see a drive towards common XML message standards, and programs focused on renewing national payments infrastructures, such as the UK’s New Payments Architecture, and the New Payments Platform in Australia.

### ▶ **A different approach to delivering technology change**

▶ New approaches to architecture both enable and demand new approaches to delivering change, with expectations that these will be implemented through agile, rapid release cycles.

▶ The desire to support customer outcomes will influence investment priorities and the desired pace of

change. This presents challenges within a dynamic payments environment unforgiving of interruption, which may have historically had a more “technology-led” approach.

## Future success will hinge on deep payments domain knowledge

The future of payments functions will still center on the stability, security and availability that underpin trust in the system. But, the need to maintain these priorities cannot be an excuse to stand still.

The potential of new technologies should be embraced to improve customer outcomes, better manage risk and reduce cost. Payments functions leaders should develop strategic plans to assess and exploit the value of these technologies, which must include a different approach to operational management. They will also need to recognize the need to support and develop their people to work within a dynamic payments environment where operations and technology converge and a culture of supporting customer outcomes is embedded across the business.

But, even as changing expectations drive technology enablement and new approaches to operational management, a robust understanding of the payments domain and its role as the beating heart of the business will remain a critical pre-requisite for successful payments function teams.



Hamish Thomas

# How is PSD2 shaping the emergence of new payments players?

Europe's revised Payment Service Directive (PSD2) was designed to foster competition in the European payments market by opening the industry to non-banking third-party providers (TPPs). With its go-live date looming, we assessed the trial rollout of PSD2 to date, to explore how the directive was encouraging the emergence of new TPPs and shaping their business models.

Coming into force in the European Economic Area (EEA) in January 2018 and set to go-live in September 2019, PSD2 aims to increase competition among payment service providers, offer a regulatory framework for digital payment service providers, and boost innovation in the sector. Critically, the legislation allowed for two new types of third-party players to enter the payments market – the Account Information Service Provider (AISP) and the Payment Initiation Service

Provider (PISP). Before they can operate in a market, TPPs must first obtain authorization from their individual national regulatory authority.

We analyzed the registers of 23 National Competent Authorities (NCAs) and the central register of the European Banking Authority (EBA) to find out exactly how many TPPs had registered so far, and where they were focusing their business. We also examined the performance of the EBA register, finding serious issues.

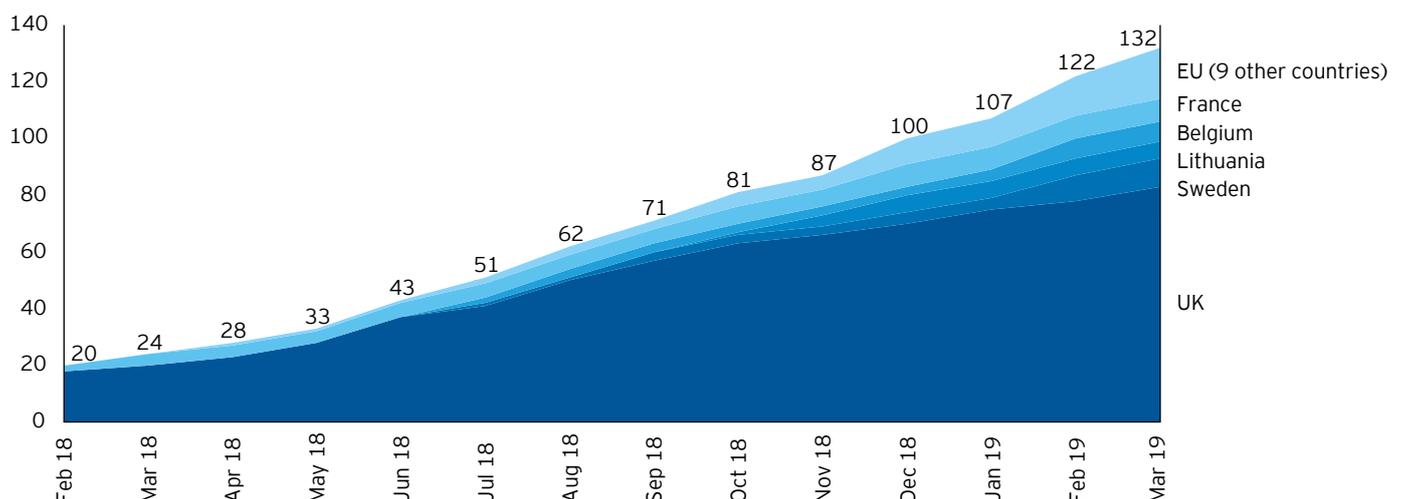
## UK players dominate new PSD2 licenses so far

By March 2019, 63% all new TPPs authorized since the introduction of PSD2 were UK-based.

This is not surprising as the UK's early adoption of open banking positioned the country to be a frontrunner when it came to TPP registrations. Within just a month of PSD2's introduction in Jan 2018, 19 UK companies had been granted permissions and, within

Fig. 1: Number of registered TPPs in Europe (31 March 2019)

Number of licensees



12 months, this number more than quadrupled to 82. With the early surge over, growth slowed in the last two quarters to about three-to-five new registrations per month over the last couple of quarters.

Across continental Europe, progress has been much slower due to most NCAs not being ready in time to register and approve new players. France was the only country able to issue licenses in January 2018, with Denmark following in April. By the second half of 2018, the pace quickened and, by year end, 30 new TPPs were authorized. By the end of March 2019, the figure stood at 49 across 13 countries (excluding the UK). Just four countries make up 63% (31) of authorizations granted - Sweden (10), France (8), Belgium (7) and Lithuania – with 14 European Union (EU) countries, including the Netherlands and Spain, yet to grant any licenses.

### Fewer regulatory requirements makes AISP applications easier

We see some interesting differences between types of licenses sought by TPPs across the UK versus those in continental Europe.

In the UK, the majority of TPPs (58%) have applied for a stand-alone AISP registration, which has far lower regulatory requirements than a PISP license. The benefits of being an AISP are also applicable to a wide range of businesses interested in offering more information and value to customers. Thirty-nine percent of UK-based TPPs and 51% of European TPPs have applied for a combined PISP and AISP license.

Across both the UK and Europe, sole PISP licenses are less popular, accounting for about 4% and 10% of new licenses, respectively. This may demonstrate the

lack of an attractive business model for non-banking players, such as airlines or large retailers, to offer stand-alone payment initiation services.

### New TPPs pursue diverse business models

Those businesses seeking licenses under PSD2 are a diverse mix of recently founded FinTechs (about 70%) and established players from other industries, including accounting software providers and global data providers. The business model pursued by most of the newly authorized TPPs is **money management**-related services (25% of all new TPPs).

These services – the ability to give consumers more insights into their financial information by aggregating transaction data or by categorizing their spending – are considered

Fig. 2: Granted TPP license types (March 2019)

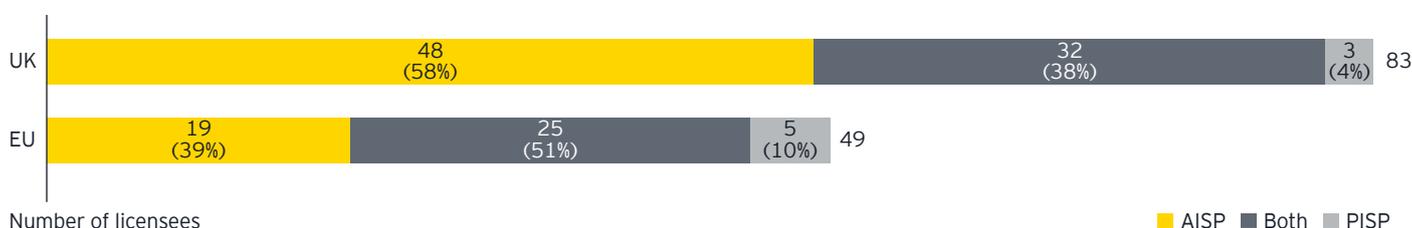
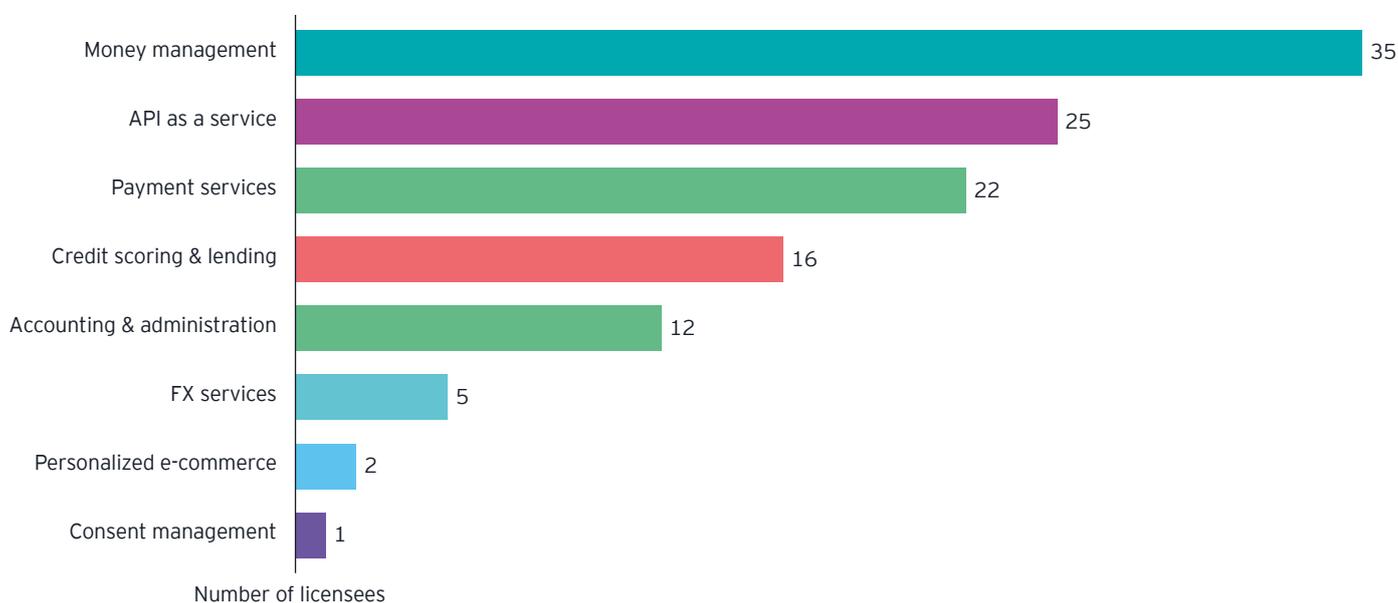


Fig. 3: Main service offerings of newly registered TPPs (March 2019)



\* Total number in this graph is not equal to total number of granted licenses, as not all companies with a license already launched a PSD2 proposition

almost a “must have” for both customers and providers, are relatively easy to offer, yet yield vast, and valuable, data.

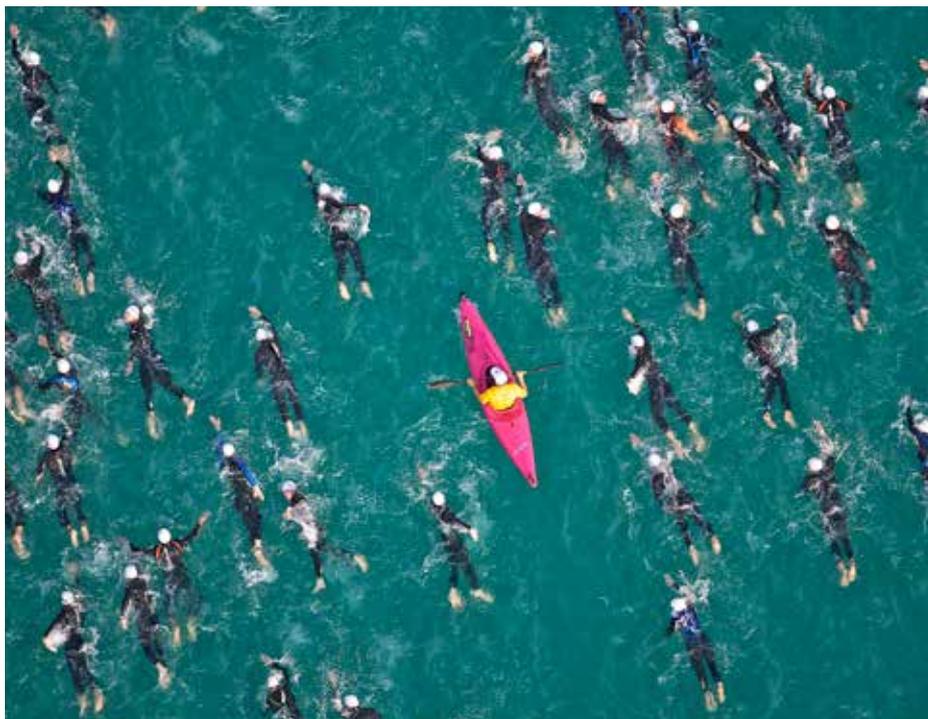
The next most commonly adopted business model is offering **application programming interfaces (APIs) as a service**. These TPPs (19%) either retrieve transaction data, provide aggregated (enriched) data to other parties or provide API technology to connect to banks. These services are appealing to business-to-business (B2B) customers for their ability to bring data together to build a bigger picture of transactional activity.

Seventeen percent of new TPPs offer **payment services**, with most focused on payment initiation services, i.e., executing a payment transaction on behalf of the customer directly from his account. These all-in-one payment solutions are attractive to both bricks and mortar and online merchants.

Twelve percent of newly registered TPPs offer **credit scoring and lending services**, which include information on customer credit worthiness based on transaction data and identifying suitable lending options for individual or small business consumers.

**Accounting and administration services** are offered by 10% of new TPPs. These services tend to include integrated and automated reconciliation, as well as payment and debt collection services for businesses.

**Foreign exchange (FX) services** are offered by five (4%) of new TPPs. These businesses provide consumers with an easier, efficient and secure method to exchange currency or carry and spend money abroad.



A few TPPs have focused on providing **personalized e-commerce** offerings, including loyalty cards or discounts based on the transaction data of users and consumers. One TPP offers a **consent management** service – a software application which allow users to give and monitor consent on where and when they want to share their digital information.

### B2B segments offer more revenue potential for new TPPs

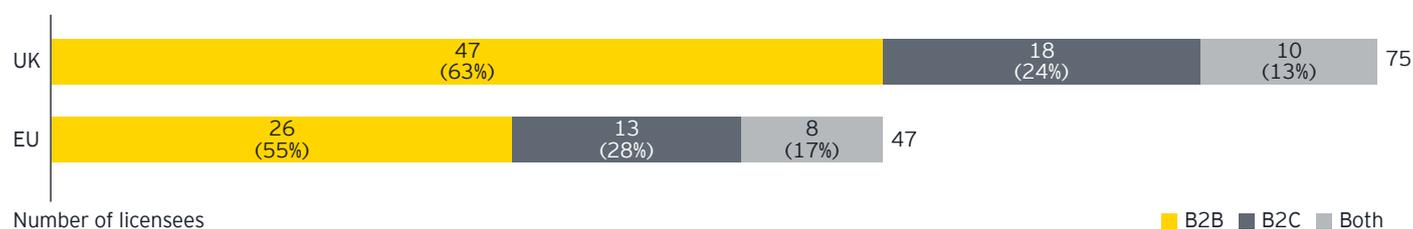
Most of the new TPPs are targeting the B2B segment by pursuing PSD2-related propositions for financial institutions or corporate customers.

The preference for B2B over business-to-consumer (B2C) transactions holds true in the UK as well as for the continental EU (63% and 55%, respectively). B2B propositions include

offering credit scoring data provisions for lenders, or API-based services. In contrast, B2C propositions account for 24% of TPP offerings in the UK and 28% across the continental EU, with these offerings focused on payment initiation and money management. Only a few new TPPs are pursuing business opportunities across both B2B and B2C customers (10% in UK; 8% in continental Europe).

With B2C customers showing little willingness to pay separately for PSD2-enabled services, we expect to see a continuing focus by TPPs on the more profitable B2B segment. These customers are prepared to buy customer data or PSD2-enabled services that add value to their offerings or help improve their competitive position.

Fig. 4: Distribution of customer focus per region





## The European PSD2 register is not yet fit for purpose

The EBA register of payment institutions authorized under PSD2 is a critical element of the legislation – financial institutions must authenticate all TPPs against the register before executing any transaction requests. But we found significant information gaps in the current version of the online database, with license registers of Sweden, Romania and Ireland currently not included and almost 20 NCA authorized TPPs missing from the register.

We also found that NCAs held different views as to whether financial institutions with existing licenses require a separate notification for AIS and PIS service provision. For example, Slovakia and Lithuania believe they do while the UK and Belgium have waived this.

Of greater concern, testing of the EBA database also revealed some serious technical problems, including an inability to conduct a fully-automated authentication process and cope with high demand.

## What next for PSD2?

Europe's PSD2 experience is still in the early stages, but we already see strong evidence of how the legislation has attracted a large number of new entrants to the payments sector. As the

September go-live date in continental Europe draws closer, we expect even more new registrations, primarily in those 14 countries yet to start their registration process and from the continuing boom of payment FinTechs.

Despite their increased volume, the influence of these new players is unlikely to significantly alter the market just yet. Many consumers are still reluctant to share their sensitive financial data with new service providers, partly due to cultural mindsets but also in response to recent high-profile data breaches. However, with time, consumer sentiment should adapt, as TPPs bring new innovation to payment services that add real value for consumers. As we've seen in other sectors, when consumers see benefits gained from sharing information, they'll be prepared to engage more fully, and traction for these new services will grow.

Incumbent payment players can learn from developments so far as they determine where and how to make the most of the opportunities in this emerging payments service market. Depending on the business model and ambition level, they might decide to develop and launch their own AIS or PIS-based services or to partner with others. As more TPPs bring innovation to payments, banks are well advised to keep an eye on these new players and how the market develops.



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# Three M&A waves reshaping the banking payments acceptance segment

Consolidation is driving M&A momentum, and it's time for banks to pick a strategy – expand or sell?

Once the domain of banks with only fragmented competition, the payments acceptance market is fast becoming a global market dominated by a few big players. Consolidation is driving a growing momentum in M&A, with more than 70 M&A transactions recorded in 2018. These deals are just the beginning of what we see as three major waves of consolidation in this space.

## Banks are under pressure to sell assets

Providing solutions for merchants to accept cashless transactions in-store and online has traditionally been the business of banks. It allows them to solidify customer relationships, generate additional revenue and access transactional data. But the rapid transformation of the payments industry is putting banks under pressure. Many are selling their payments acceptance arms in a series of consolidations that are proceeding through three waves:

1. **Wave one:** National assets are sold
2. **Wave two:** Regional assets are consolidated
3. **Wave three:** Transcontinental M&A establishes global payment acceptance leaders

### Wave one: Disposal of national assets

The starting point of consolidation is marked by the sale of national assets focused on domestic business. Sellers

are often banks that played a role in the original establishment of the traditional service providers for the acceptance of card payments in brick-and-mortar retail.

These sales are motivated by banks determining that payments acceptance is not a core part of their business. With a subsequent unwillingness to invest in and expand this element of the business, it makes sense to exit the market at a time when successful providers are increasingly characterized by their ability to continually innovate, operational excellence and economies of scale. Buyers attracted to these assets are usually international payment service providers or financial investors looking for expansion opportunities and suitable platform companies for subsequent consolidation.

In Germany, wave one is well advanced. Previously, Savings Banks, Cooperative Banks, Deutsche Bank, Commerzbank and HypoVereinsbank all had their own payments acceptance assets; now, only Savings Banks (Payone) and Cooperative Banks (VR Payment, former CardProcess) still own service providers (figure 2).

### Notable asset sales include:

- ▶ **Concardis:** Sold by the German banking industry to financial investors Advent and Bain in 2017.
- ▶ **EasyCash:** Sold by Deutsche Bank in 2002 and now in the hands of Ingenico.

As well as banking service providers, other major German players have been sold to international investors:

- ▶ **TeleCash:** Acquired by First Data from the US in 2003.
- ▶ **InterCard:** Taken over by terminal manufacturer Verifone in 2015.

Elsewhere in Europe, consolidation progress differs. In the UK, Ireland and Scandinavia, the first wave is well advanced. In contrast, the French and the Spanish markets are fragmented and the acceptance business is largely still in the hands of banks.

We expect that we'll soon see the first wave of consolidation completed in Germany and begin to accelerate in other European countries, particularly those larger markets with high levels of fragmentation, such as Spain, France and Italy. National assets without sufficient scale will come under increasing pressure as the second and third wave of consolidation in Europe moves forward. Large European players are on the hunt for further consolidation opportunities.

### Wave two: Regional consolidation

In the second wave of consolidation, buyers seek additional assets in adjacent regions to combine them with companies acquired in the first wave. Their objective is to create national or regional market leaders who can gain competitive advantage by leveraging synergies and exploiting economies of scale.

This wave of consolidation began in Europe a few years ago and has gained strong momentum in recent months, with certain companies consolidating to lead the market (figure 3). In January 2019, Nets owners, Hellmann and Friedmann and Advent, and Bain, owners of German Concardis, completed the merger of their assets. Meanwhile, Worldline has been pushing for a consolidation of markets in Belgium and the Netherlands and, in a big move forward, purchased Swiss market leader SIX Payment Services in 2018.

The merger of BS Payone and Ingenico Payment Services (formerly EasyCash) created Payone, the leading provider in the DACH (Germany, Austria and Switzerland) region, in January 2019. In Italy, consolidation is also progressing – financial investors Advent, Bain and Clessidra have joined forces to buy five Italian acceptance assets and are now considering an IPO of the combined Nexi.

Looking forward, regional consolidation activity is likely to continue gaining momentum with less than 10 players set to dominate the European market. Regional consolidation in the DACH region is expected to be largely completed in the next 12-18 months.

### Wave three: Transcontinental M&A

The third wave of consolidation is global. Regional leaders created in wave two are now moving to take over similarly-sized competitors across the world. Buyers aim to achieve international scale to further increase competitiveness, achieve sustainable profitability and meet investors' growth expectations.

This global consolidation process has already begun in the e-commerce segment. One example is the acquisition of British market leader Worldpay by the American merchant acquirer Vantiv for the equivalent of US\$9.9b. Announced in July 2017, and due to be completed in mid-2018, this acquisition will result in Worldpay becoming the world's largest merchant acquirer. Recently, FIS – a global provider of financial services

technology – announced the acquisition of Worldplay, complementing FIS' offering with payments acceptance services (at an enterprise value of US\$43b). In January 2019, Fiserv, another global provider of financial services technology, had already entered the payments acceptance business with the acquisition of First Data for an equity value of US\$22b. The latter two transactions reflect a global consolidation from a broader financial technology perspective beyond the payments acceptance space.

We're yet to see further major global transactions as wave two of consolidation still offers lots of opportunities for consolidation on individual continents. While wave three consolidation in the e-commerce could increase in the short-term, the wave is expected to pick up speed in the in-store business in the mid-term.

### Expand or sell? Time for banks to pick a future strategy

Waves of consolidation are rapidly reshaping the payments acceptance segment – creating a global market dominated by just a few suppliers.

These developments highlight the increasing importance of banks to consider their own payments acceptance strategy. While the trend toward international consolidation is growing, in our experience, only a few large banks can successfully complete this kind of expansion due to the high investment requirements and specific know-how. Most other banks should consider two strategic options for their payments acceptance business:

1. **Expand** existing assets, achieving necessary scale through partnerships with other banks, service providers or financial investors.
2. **Sell** existing assets, instead pursuing distribution partnerships with leading payment service providers.

The strategy chosen will depend on the individual circumstances and goals of

each bank. However, what's important is that banks move now to consider the future of their payments acceptance offering. Neglecting this part of the business at such a critical time will see banks miss out on additional revenue potential and risk, losing customers to competitors with an integrated service offering.



Jan Lettow



Lars Putensen

# What are the lessons learned from the rollout of ISO 20022?

Around the world, more countries are adopting global payment messaging standard ISO 20022, with businesses reaping the benefits of improved methods of capturing and consuming greater volumes of more detailed data. But the implementation of ISO 20022 is a complex journey. What are the key lessons learned from those markets that have done it well?

## Greater availability of more detailed data drives payments modernization

Keeping up with increasing information demands in this transformative age calls for businesses to evolve their payments capabilities and outline strategies to better consume, store and maintain associated data. ISO 20022 is the global standard governing payment messaging structures and is considered an essential component to a modern payments infrastructure. It introduces a greater range of required and optional data fields to enhance remittance information and allows for transmission of user defined fields, including links.

So far, ISO 20022 has been adopted in more than 30 countries around the world, including much of Europe, Australia, Sweden, Denmark and Singapore. Countries with regulation mandating its use embraced it more quickly, but many others have also moved to follow suit, as the substantial advantages of ISO 20022 become apparent. These include:

- ▶ **Productivity improvement.** More detailed remittance information can help simplify business processes, for

example, by reducing the need to investigate payments or capture detailed bank account information from customers and suppliers. And ISO 20022 creates huge potential for automation, which can help businesses realign workforce skills to better meet the new demands of changing technology and customer expectations. Augmented data and visibility allows companies to improve how they manage liquidity, enabling more efficient cash management and forecasting processes.

- ▶ **Interoperability across geographies.** Aligning payment standards across jurisdictions can increase the efficiency of international payments. Standardized remittance information diminishes the need for requisite processes for international payments, reducing the dependency on high-cost intermediaries. Those companies with a multinational presence will see particular benefits through expedited international payments currently subject to long delays.
- ▶ **Enhanced analytics capabilities.** With richer remittance data, companies can begin to contextualize and personalize customer interactions to enhance customer

loyalty and satisfaction. They may even explore new business partnerships to better meet customer needs and find competitive advantage. For example, one potential use case would add a link to an employee's paystub within the payroll remittance, allowing them to view detailed payroll information when checking their personal account balance.

- ▶ **Mitigation of operational risk.** As companies consume, store and process larger amounts of payments data, they gain greater visibility into their supply chains. This can help identify concentration risk or vendors that may be under hardship. It may also open the door to matching cash outlays to needs more quickly, helping optimize investments.

## Key factors to ensure smooth deployment

Around the world, businesses are at different stages of their payments modernization journey. Those with global footprints are most likely to have already established projects to enable implementation of ISO 20022 in their payment processes. Companies just

beginning their transformation can benefit from studying these pioneers – what key lessons have been learned?

- ▶ **Consistency is everything:** The interpretation of the standard needs to be consistent. Lessons learned from implementations in other jurisdictions highlight that there is both a dependency and a requirement to align with partner financial institutions to ensure consistent interpretation of the ISO 20022 standard. Some companies with operations in Europe tell us that there is variability in bank file formats, despite the adoption of ISO 20022.
- ▶ **Get your priorities right:** Global companies may have different regional priorities for ISO 20022 implementation and will need to rank their project spend across geographies to meet budgetary goals. Regions subject to regulatory mandates will typically rank highest. Those companies based in other markets will need to build a strong business case for ISO 20022 adoption if they are to compete for funding.

- ▶ **Be patient – it may take time to see benefits:** The ability of ISO 20022 to transfer more remittance information may accelerate the move to electronic payments, but may also require internal processes to be reworked to accommodate new data and depend on the adoption of the standard across the value chain.
- ▶ **Costs are likely to increase in the short term:** The cost of processing incremental data needs to be factored into the case for change. Organizations may need to update their infrastructure to accommodate the increased volume of data and take advantage of the richer information provided through the ISO 20022 format. That may include retrofitting legacy technology stacks to produce the data required to enable ISO 20022 messaging. It may also include the need to undertake data governance and storage revisions.

Implementation is complex and each organization will face unique challenges in enabling their technology stack to leverage and monetize the large



amount of payments data that can be exchanged in an ISO 20022 enabled infrastructure. But the benefits of ISO 20022 are significant. Even for those companies that have already moved to advance their payments, productivity improvements and the ability to better manage operational risk can positively impact the bottom line. The effort is well worth it.

## Case study: Canada

Canada is in the process of rolling out ISO 20022, which, while providing the necessary standards to create a common messaging format, also allows for adaptation to meet the country's specific requirements.

The Canadian deployment is led by the country's payments clearing and settlement agency, Payments Canada, as part of its wider Payments Modernization Agenda which aims to create cost savings and efficiencies for the Canadian economy. A recent study by Payments Canada and EY Canada found the current cost of payments processing for Canadian businesses reaches nearly US\$5b each year, with other research finding that approximately US\$1b could be saved each year just by reducing the use of checks.

As Canada rolls out ISO 20022, one of the key hurdles may be the interpretation of the standard. Ensuring true interoperability will require participants to adhere to all mandatory standards by a prescribed date. With this in mind, Payments Canada has indicated its intention to leave as little open to interpretation as possible to drive consistent adoption of ISO 20022, although a national deadline for adoption has not yet been set. The multi-year rollout is expected to begin with the inclusion of the messaging standard in the launch of Canada's real-time payments system ("real-time rail"), planned to go-live later in 2019.

Canada's ISO 20022 adoption is an interesting case study. While the country is not at the forefront of accepting the standard, much of the Canadian

adoption to date has been driven by the industry rather than regulators. This may highlight the feasibility of the case for change and why adoption may make economic sense by driving efficiencies and reducing the need for artificial transactional fees.



**Edgar Barbosa**

Edgar Barbosa is the Payments Leader at EY Canada. For more information on financial services trends, visit [www.ey.com/ca/financialservices](http://www.ey.com/ca/financialservices).

# M&A activity

## M&A activity and deal characteristics



Transactions hit a two-year high this quarter despite global geopolitical uncertainties.

The number of disclosed transactions rose 18% in the first quarter of 2019 – the highest increase in the past two years.

Total disclosed transaction value also increased during the quarter, from US\$1.2b in Q4 2018 to US\$87b in Q1 2019, driven by the acquisitions of First Data and Worldpay.

### Megadeals dominate quarter

This quarter's spike in transaction value was driven by two large scale transactions:

- ▶ Fidelity National Information Services' acquisition of Worldpay, valued at US\$43b (equity value of US\$35b)
- ▶ Fiserv Inc.'s acquisition of First Data, valued at US\$41b (equity value of US\$21b)

The FIS acquisition of Worldpay for US\$43b – 11x the last 12 month (LTM) revenue and 28x LTM EBITDA – accounted for nearly half the quarter's total deal value. US-based FIS provides electronic payment processing services, merchant acquiring and related technology solutions across the US, Europe, Asia and Australasia. The deal is expected to help the combined company improve its services in enterprise banking, payments, capital markets and global e-Commerce while increasing FIS's business capabilities and Worldpay's distribution footprint.<sup>1</sup>

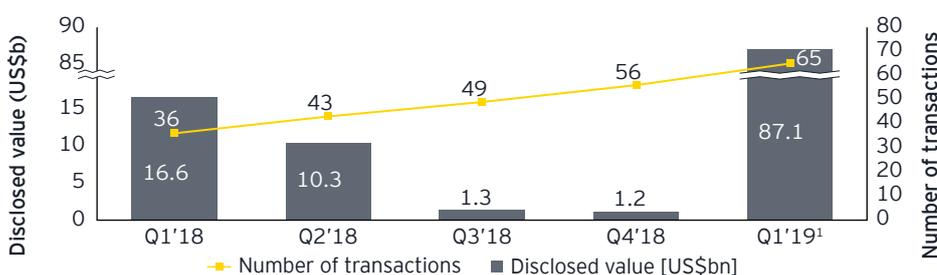
Some analysts were surprised to see the deal so quickly after Worldpay's merger with Vantiv in 2017. FIS anticipates garnering US\$500m of revenue synergies and US\$400m of expense synergies within three years, suggesting a cumulative EBITDA of US\$700m and US\$4.5b of annual free cash flow once synergies are realized.

Also this quarter, Fiserv announced the acquisition of a 100% stake in First Data Corporation for an enterprise value of US\$41b (equity value of US\$21.3b), or 4.7x LTM revenue and 13x LTM EBITDA. Based in the US, Fiserv provides payments solutions, particularly payments processing for merchants, financial institutions and card issuers worldwide. The deal is expected to help First Data and Fiserv link their respective merchant and cash management capabilities, enhance payment capabilities and create value for the customers through complementary products and distribution channels. Also, First Data's capabilities in merchant acquiring services will support the enhanced value proposition for their combined clients.<sup>2</sup>

The combination is expected to generate US\$900m of run-rate cost savings over five years, driven by eliminating duplicate corporate structures, streamlining technology platforms and increasing efficiencies. Revenue synergies of US\$500m over five years were announced, driven by the use of the cloud-based Clover point of sale (POS) and merchant processing, credit issuer processing and biller services.

Another notable deal this quarter was the completion of ACI Worldwide's acquisition of SpeedPay Inc, a US-based firm that provides electronic and cash bill payment services for utility, auto finance, insurance, mortgage and government industries. The US\$750m deal values the company at 2.1x LTM revenue and 8.3x

Fig. 1: M&A market development



Source: EY analysis, Capital IQ, Mergermarket

Note: 1. Includes two major announced deals – US\$43.4bn acquisition of Worldpay by FIS and US\$41.3bn acquisition of First Data by Fiserv

<sup>1</sup> FIS Press Release

<sup>2</sup> First Data Press Release

LTM EBITDA. The transaction is expected to help ACI expand its presence in existing and complementary segments such as consumer finance, insurance, healthcare, higher education, utilities, government and mortgage. This would enable the combined company to more effectively serve a rapidly-evolving category as well as pursue additional vertical segments. It would also enable ACI to strengthen and add scale to its On-Demand platform business.<sup>3</sup>

Also in Q1, GB Group acquired a 100% stake in IDology Inc., a US-based provider of identity verification and fraud detection services, at an implied valuation of US\$300m. IDology helps merchants increase customer acquisitions by enhancing their ability to verify more users and decrease fraudulent transactions. The deal is thought to strengthen the identity verification and fraud prevention product portfolio of GB Group and help the UK-based company gain a strong foothold in the North American market while building strengths in electronic identity verification.<sup>4</sup>

### Small increase in valuations

The median EBITDA multiple for all disclosed deals year-to-date increased from 12.4x in 2018<sup>5</sup> to 12.5x in 2019. The median revenue multiple for the same period also increased from 2.7x to 3.4x.

### Deal by region and segment

- In Q1 2019, deal targets were based in
- ▶ North America – 40%
  - ▶ Europe – 28%
  - ▶ Asia-Pacific – 22%

Opportunities in the market are expected to increasingly attract cross-border buyers, driving further M&A activity across the globe in 2019.



Andreas Habersetzer



Dawei Wang

### M&A outlook

Despite global geopolitical uncertainties, investment activities in payments have remained strong, reflecting the sector's long-term sustainable market opportunities. As demonstrated by the two biggest transactions this quarter, consolidation will continue to be a major theme of M&A, as players seek scale and capabilities.



Consolidation will remain a key theme of M&A, as players seek scale and capabilities.

Fig. 2: Median enterprise value multiples

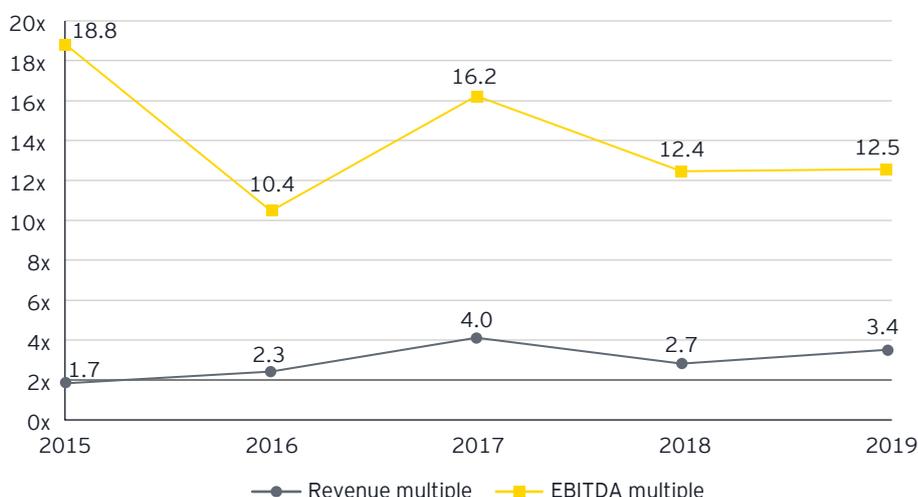
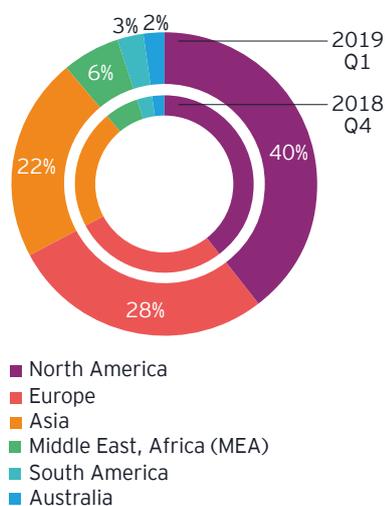


Fig. 3: Targets by region

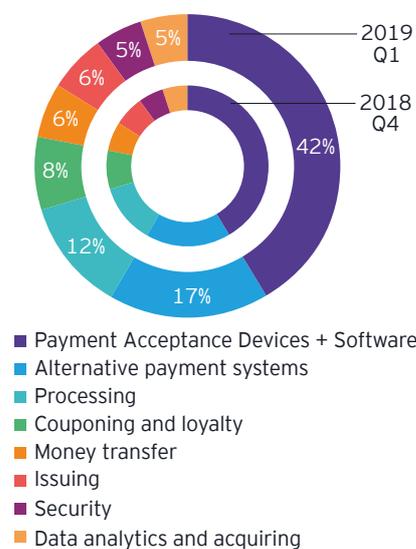
Represents share of each region by number of deals



Source: EY analysis, Capital IQ, Mergerstat M&A Database, Company websites

Fig. 4: Targets by segment

Represents % share of each segment by number of deals



<sup>3</sup> Mergermarket  
<sup>4</sup> GBG Press Release  
<sup>5</sup> Includes all deals in 2018

# Venture capital funding activity

## M&A activity and deal characteristics

### Q1 at a glance:

# 88

venture capital (VC) deals – the highest quarterly result in two years and an almost 13% increase from Q4 2018

# US\$5.8b

total VC deal value

# US\$1.85b

VC investment in Grab



B2B cross-border payments remain a major pain point for businesses, where reconciliation of invoices and payments are still challenging.

## Payments acceptance devices attract one-third of deals

VC investment in the payments sector this quarter was the strongest seen in two years, a result which demonstrates the investor appeal of this dynamic market. A large number of companies coming into the market provide plentiful opportunities for VC investors.

Most funding activity this quarter was contributed by early stage and seed investments. As in Q4 2018, many targets were businesses focused on payments acceptance devices and alternative payment systems. Transactions involving payments acceptance devices accounted for 33% of deals, with those in the money transfers segment accounting for 19%.

Again this quarter, Asia was the region which attracted most transactions (31%), followed by North and Central America (30%), and Europe (27%). Asia accounted for 68% of total deal value, followed by North and Central America (22%), and Europe (5%).

Continuing strong investments in Asia highlight positive investor sentiment driven by expected robust growth in emerging economies. The use of electronic payments in the region is on the rise due to favorable demographics, the push for financial inclusion, supportive regulatory changes, FinTech innovation and a gradual increase in the adoption of alternative payment methods.

## Investors focus on new payment channels

A notable emerging trend in VC investments is the increasing prominence and rising acceptance of new payment channels, as advanced authentication methods such as tokenization and biometrics increase security. The adoption of mobile wallets is also expected to gain traction as the industry moves toward a collaborative ecosystem enabled by integrated and seamless payment experiences.

This quarter, Grab received US\$1.5b in funding from the Softbank Vision Fund (in March) and US\$350m from Tokyo Century (in January). Similar to Go-Jek (which received an additional US\$100m of funding in March), Singapore-based Grab offers a mobile technology platform that integrates city transportation for drivers and customers in Southeast Asia with mobile wallet payment solutions. The solution enables consumers to make credit transfers and transact at the point-of-sale (POS), while providing an enhanced payments experience when used with Grab-rides and Grab-food. The Grab experience highlights how payments have percolated through other sectors and can form the foundation for consumer data acquisition which supports broader business propositions. This latest funding will be used to help develop the app in Southeast Asia, expand into new business verticals and roll out a broader range of services.<sup>1</sup>

<sup>1</sup> Techcrunch

### B2B cross-border payments produce latest unicorn

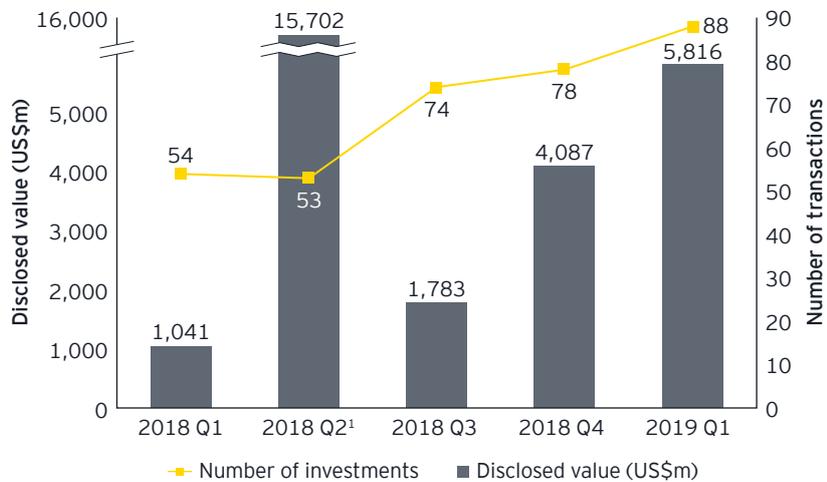
Another major deal in Q1 was DST Global's US\$100m investment in Airwallex, which began as a cross-border B2B payments provider and, on the back of this funding, has become one of the fastest start-ups to gain unicorn status. The valuation of the business reflects the fact that B2B cross-border payments remain a major pain point for businesses, where reconciliation of invoices and payments is still challenging.

Airwallex has gained a strong foothold in the Asia-Pacific, particularly in Australia, mainland China, and Hong Kong and would like to expand globally, especially in Europe. Airwallex founders also have plans to grow beyond B2B cross-border payments and build the next generation of financial services infrastructure globally.

### VC investment trends

Throughout 2019, we expect more investment as non-payment providers move into payments and associated payments services, and crypto currency-driven e-wallets gain traction in certain markets.

Fig. 5: Venture capital deal



Note: 1. Includes US\$1.40b funding raised by Ant Financial from Temasek Holdings, GIC and other investors

Fig. 6: Number of deals by funding stage (in %)

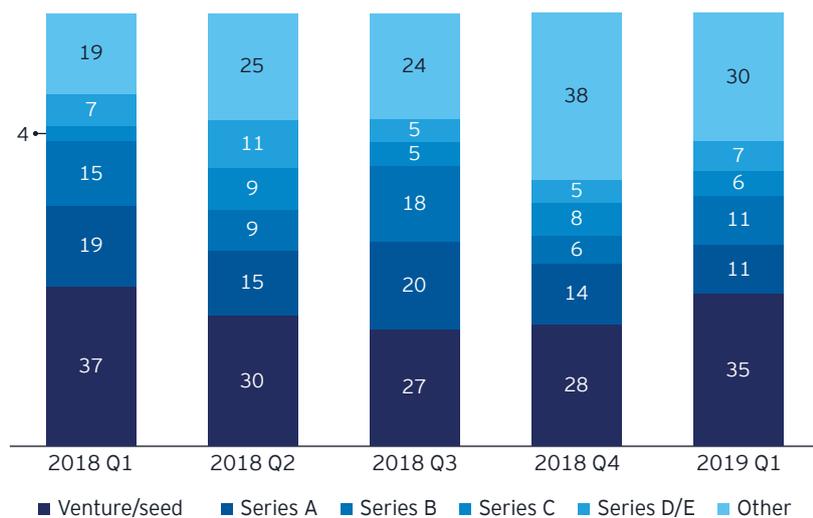
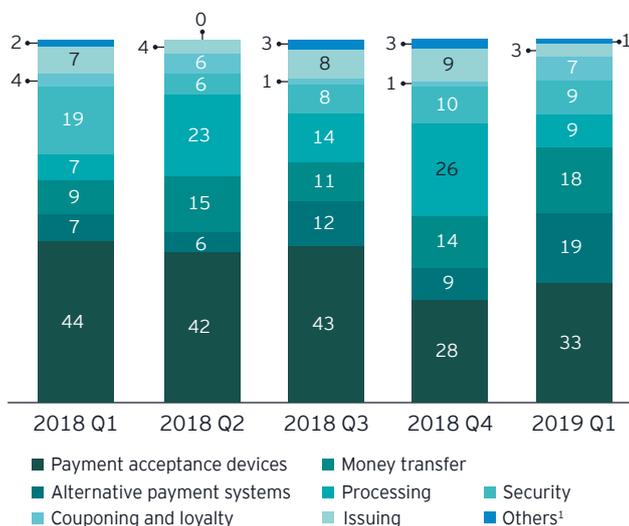
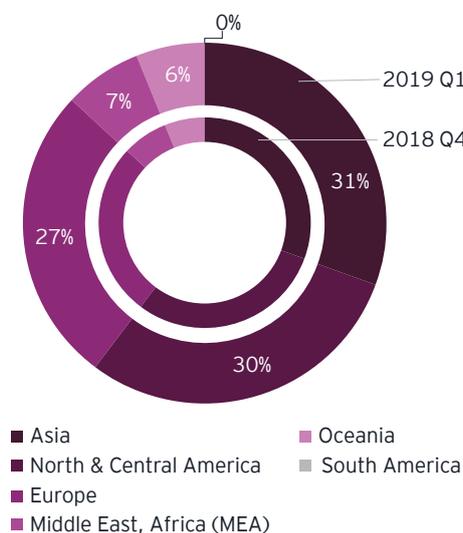


Fig. 7: Investment by sectors (in %)



Note: 1. Includes ATM, Acquiring and Data analytics

Fig. 8: Investment by region (in %)



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# M&A

	Date announced	Target company	Country/region	Target description	Buyer(s)	Country/region	Enterprise value (US\$m)	Stake (%)
1	01 January 2019	Weizmann Forex Limited	India	Weizmann Forex Limited provides money changing and transfer services. It purchases and sells foreign currencies, notes and provides Weizmann Forex co-branded prepaid forex cards, Weizmann Forex multi-currency travel cards.	EbixCash World Money Limited	India	-	75%
2	02 January 2019	E-payment Terminal products from PAX Global Group	Hong Kong	PAX Global Technology Limited, an investment holding company, engages in the development and sale of electronic funds transfer point-of-sale products worldwide.	Hi Sun Technology (China) Ltd	Hong Kong	-	-
3	03 January 2019	YouFirst Money Express Pvt. Ltd.	India	YourFirst Money Express offers a wide range of versatile gifting solutions which include a variety of prepaid gift cards and vouchers.	EbixCash World Money Limited	India	-	10%
4	07 January 2019	Besepa Technologies S.L.	Spain	Besepa Technologies S.L. develops direct debit platform API. As of January 7, 2019, Besepa Technologies S.L. operates as a subsidiary of Enxendra Technologies S.L.	Enxendra Technologies SL	Spain	-	100%
5	07 January 2019	Kaalbi Technologies Pvt Ltd.	India	Kaalbi Technologies Pvt Ltd. provides a cloud based solution that protects online businesses from bots and Web scraping.	Radware Ltd.	Israel	-	100%
6	08 January 2019	First Billing Services, LLC	United States	First Billing Services, LLC provides electronic bill presentment and payment solutions to utility and municipal government clients.	Paya, Inc.	United States	57.5	100%
7	08 January 2019	QUOVO INC.	United States	QUOVO INC. develops and markets a platform that provides financial analytics, data management, and insights to small and mid-sized investors.	Plaid Inc.	United States	-	100%
8	09 January 2019	CenPOS, LLC	United States	CenPOS, LLC provides payment platforms for merchant commerce. The company provides enterprise, data security, and payment solutions.	Elavon Inc.	United States	-	100%
9	09 January 2019	DialCom24 Sp. z o.o.	Poland	DialCom24 Sp. z o.o. develops and provides Przewlewy24, an online payment platform.	Dotcard Sp. z o.o.	Poland	-	100%
10	10 January 2019	GreenSky, Inc.	United States	GreenSky, Inc., a technology company, provides point-of-sale financing and payment solutions to merchants, consumers, and banks.	Dragoneer Investment Group, LLC	United States	-	13%
11	10 January 2019	Bohemian Wrappsody AB	Sweden	Bohemian Wrappsody AB develops a reward application that connects to client's bank card to get personal rewards and offers from shops and brands.	Meniga Ltd	United Kingdom	-	100%
12	16 January 2019	First Data Corporation	United States	First Data Corporation provides electronic commerce solutions for merchants, financial institutions, and card issuers worldwide.	Fiserv, Inc.	United States	41215.6	100%
13	18 January 2019	Coins.ph	Philippines	Coins.ph Pte. Ltd. provides a mobile wallet that empowers consumers and small businesses to access various financial services.	PT Go-Jek Indonesia	Indonesia	72.0	100%
14	22 January 2019	Prisma Medios de Pago S.A.	Argentina	Prisma Medios de Pago S.A. develops multi-platform solutions for various processing and payment methods.	AI Zenith (Netherlands) BV	Netherlands	-	51%
15	22 January 2019	Repay Holdings, LLC	United States	Realtime Electronic Payments (REPAY) is a full service provider of electronic transaction processing services for retail merchants.	Thunder Bridge Acquisition, Ltd.	United States	672.6	100%

# M&A

	Date announced	Target company	Country/region	Target description	Buyer(s)	Country/region	Enterprise value (US\$m)	Stake (%)
16	22 January 2019	Flypay Limited	United Kingdom	Flypay Limited provides a mobile payment app for the hospitality business. It offers Flypay that enables users to check, split, and pay bills at restaurants.	Just Eat plc	United Kingdom	31.0	92%
17	22 January 2019	SBI Payment Services (SPS)	India	Provide cashless transactions by accepting payments through digital payment acceptance touch points with products like Point of Sale machines (PoS), Bharat QR and BHIM-Aadhaar-SBI.	Hitachi Payment Services Pvt Ltd	India	-	26%
18	26 January 2019	SandPay Network Service Development Co., Ltd.	China	SandPay Network Service Development Co., Ltd. offers financial payment solutions to merchants. The company offers card issuance and acceptance, Internet payment, and mobile payment services.	Shanghai Shanrui Investment Co., Ltd.	China	155.0	8%
19	29 January 2019	Reliant Account Management, LLC	United States	Reliant Account Management, LLC provides third party payment processing services to facilitate commercial transactions. The company provides payment gateway to link client and merchant processors.	Capitala Group; Westshore Capital Partners	United States	-	100%
20	30 January 2019	Euroclear Holding SA/NV	Belgium	Euroclear Holding SA/NV is a financial market infrastructure company, which provides settlement, custody, and collateral management services in Europe.	London Stock Exchange Group plc	United Kingdom	-	5%
21	31 January 2019	Paygent Co.,Ltd.	Japan	Paygent Co.,Ltd. provides payment collection services to e-commerce companies. It offers settlement options, advanced data security, and management screens and connection modules.	NTT DATA Corporation	Japan	115.8	50%
22	31 January 2019	BillBird SA	Poland	BillBird SA provides bill payment and money transfer services in Poland. Its products enable customers to pay their household bills at supermarkets, grocery stores, convenience stores, and gasoline stations; and billers to accept payments from consumers for mass bills.	Centrum Rozliczen Elektronicznych Polskie ePlatnosci S.A.	Poland	-	-
23	31 January 2019	Netmove Corporation	Japan	Netmove Corporation provides payment gateway services.	SBI Sumishin Net Bank, Ltd.	Japan	-	100%
24	31 January 2019	AthleteTrax, LLC	United States	AthleteTrax is a payments-focused software platform that serves recreational sports leagues and facilities through a POS system.	Synergy Commerce, LLC	United States	-	100%
25	01 February 2019	All Assets and Intellectual Property of FS Card	United States	All Assets and Intellectual Property of FS Card comprises the business of providing and issuing credit cards to people with bad or no credit.	Continental Finance Company LLC	United States	-	100%
26	06 February 2019	Joint-Stock Company ELECSNET	Russia	Joint-Stock Company ELECSNET provides a payment service that allows consumers to make electronic payments. It also offers processing services to banks for the payment of telecommunication operators and other providers in their ATM networks and Internet banking systems.	Credit Bank of Moscow (public joint-stock company)	Russia	-	49%
27	07 February 2019	PEIMI, S.A.P.I. de C.V.	Mexico	PEIMI, S.A.P.I. de C.V. owns and operates a social peer-to-peer payment platform.	Rappi S.A.S.	Colombia	-	100%

# M&A

	Date announced	Target company	Country/region	Target description	Buyer(s)	Country/region	Enterprise value (US\$m)	Stake (%)
28	08 February 2019	Syspay Ltd.	Malta	Syspay Ltd. develops and offers multi-currency and payment platform.	EMPCorp	Luxembourg	-	100%
29	11 February 2019	The StoneEagle Group (nka:StoneEagle F&I)	United States	The StoneEagle Group designs, develops and delivers software solutions and enterprise administration systems. The company provides SEcureCard, a business to business payment solution that addresses the specific needs of the service contract administrator.	F&I Administration Solutions, LLC	United States	-	100%
30	11 February 2019	IDology, Inc.	United States	IDology, Inc. develops digital identity verification and authentication solutions.	GB Group plc	United Kingdom	300.0	100%
31	11 February 2019	RevChip	United States	RevChip is the most complete software for EMV and Apple Pay. RevChip removes the operational complexities of EMV. It installs simply and runs in a manner customary to merchants and support staff.	ACI Worldwide	United States	-	100%
32	11 February 2019	Transend	United States	TranSend provides infrastructure software and services to the payments industry. It is specialized in EMV, transaction switching, terminal management, and point-of-sale optimization solutions.	ACI Worldwide	United States	-	100%
33	12 February 2019	GiftCertificates.com, Inc.	United States	GiftCertificates.com, Inc. provides e-commerce reward solutions and gift products for corporate and consumer markets.	Tango Card, Inc.	United States	-	100%
34	13 February 2019	Woolworths Holdings Limited	South Africa	Woolworths Holdings Limited provides financial products and services, such as store cards, credit cards, and personal loans.	-	-	-	-
35	14 February 2019	World First U.K. Ltd.	United Kingdom	World First U.K. Ltd. provides foreign exchange and money transfer services to individuals and businesses. It offers services in the areas of online seller accounts, corporate accounts, personal accounts, exporters, marketplaces, Amazon, and Lazada.	Ant Financial Services Group	China	-	100%
36	15 February 2019	UAB Baltic Banking Services	Lithuania	UAB Baltic Banking Services develops banking software applications.	iSignthis Ltd	Australia	3.4	100%
37	18 February 2019	Canvas	Singapore	Canvas comprises a prepaid visa card brand. The asset is located in Singapore.	Singapore Life Pte. Ltd.	Singapore	-	100%
38	19 February 2019	Buyatab Online Inc.	Canada	Buyatab Online Inc. provides eGift Card online infrastructure and marketing services for medium-and large-sized businesses for merchants in the United States, Canada, Europe, and Asia.	Stored Value Solutions	United States	-	100%
39	22 February 2019	Electronic Calculators, Ltd.	United States	Electronic Calculators, Ltd., doing business as, BEC provides hospitality Point-of-Sale technology.	NCR Corporation	United States	-	100%
40	22 February 2019	nCipher Security Limited	United Kingdom	nCipher Security Limited designs and develops cryptographic and security solutions for general purpose hardware, cloud, blockchain, and digital payments applications.	Entrust Datacard Corporation	United States	-	100%
41	26 February 2019	Alpha-Cash OHG	Germany	Alpha-Cash OHG manufactures electronic payment and point-of-sale (PoS) devices.	Heidelberger Payment GmbH	Germany	-	100%

# M&A

	Date announced	Target company	Country/region	Target description	Buyer(s)	Country/region	Enterprise value (US\$m)	Stake (%)
42	28 February 2019	SpeedPay, Inc.	United States	SpeedPay, Inc. provides electronic and cash bill payment services for utility, auto finance, mortgage, insurance and government industries.	ACI Worldwide, Inc.	United States	750.0	100%
43	28 February 2019	Benefit Mobile, Inc.	United States	Benefit Mobile, Inc. develops a mobile payment application that can be used at checkout for shopping in store and online. It serves consumers, fundraisers, partners and merchants.	National Gift Card Corporation	United States	-	100%
44	04 March 2019	Currency Technologies Pty Ltd	Australia	Currency Technologies Pty Ltd develops an integrated foreign exchange payments and hedging SaaS solution.	World First Pty Ltd	Australia	-	100%
45	04 March 2019	Red Comercial Influyente, S.A.P.I. de C.V.	Mexico	Red Comercial Influyente, S.A.P.I. de C.V. develops and operates a digital wallet mobile application software.	Fomento Económico Mexicano, S.A.B. de C.V.	Mexico	-	30%
46	05 March 2019	Nvoicepay, Inc.	United States	Nvoicepay, Inc. develops and provides cloud-based accounts payable software solutions. It offers payment automation software that enables customers to pay their invoices electronically.	FleetCor Technologies, Inc.	United States	-	100%
47	06 March 2019	Raya Holding for Financial Investments SAE	Egypt	Raya Holding for Financial Investments SAE provides e-payments solutions and financial services, as well as microfinance services to craftsmen, small businesses, and microenterprises.	Mona Khair Eldin & Partners Company	Germany	210.5	37%
48	07 March 2019	Blackboard Transact Business Unit Including Cashnet	United States	Blackboard Transact Business Unit Including Cashnet comprises campus engagement and payments solutions business.	Reverence Capital Partners LLC	United States	-	100%
49	08 March 2019	Trans-Fast Remittance LLC	United States	Trans-Fast Remittance LLC provides payments network solutions. It offers person-to-person, business-to-person, and business-to-business payments services through API, SFTP, web, and mobile product applications.	Mastercard Incorporated	United States	-	100%
50	08 March 2019	OpusCapita Solutions Oy	Finland	OpusCapita Solutions Oy through its platform offers payment solutions, such as Source-to-Pay, Cash Management, and Product Information Management (PIM).	Providence Equity Partners LLC	United States	-	100%
51	11 March 2019	Way2pay Limited	Ireland	The Way2Pay gateway provides integrated payment solutions for schools and clubs in Ireland and the UK.	EVO Payments, Inc.	United States	-	100%
52	11 March 2019	Ecentric Payment Systems (Pty) Ltd	South Africa	Ecentric Payment Systems (Pty) Ltd develops a third party payment platform. It provides card processing, remittances, issuing, cash management, and reconciliation services.	Financial Software & Systems Pvt. Ltd.	India	-	46%
53	12 March 2019	Linq3 Technologies LLC	United States	Linq3 Technologies operates a payments platform used in the sale of lottery products, ATMs and other POS devices.	InComm, Inc.	United States	-	100%

# M&A

	Date announced	Target company	Country/region	Target description	Buyer(s)	Country/region	Enterprise value (US\$m)	Stake (%)
54	12 March 2019	Ethoca Limited	Canada	Ethoca Limited provides technology solutions that assist merchants and card issuers collaborate in real time to identify and resolve fraud in digital commerce. It offers solutions to enhance card acceptance, stop fraud, recover lost revenue and eliminate chargebacks from fraud.	Mastercard Incorporated	United States	–	100%
55	12 March 2019	Software Express Informática Ltda	Brazil	Software Express provides technology solutions to merchants of different sizes, including multi-acquirer EFT, multi-acquirer EFT POS, reconciliation, a payments gateway and automated recurring payments.	First Data Corporation	United States	–	100%
56	15 March 2019	Digital Asset Management Holding Joint Stock Company	Vietnam	Digital Asset Management Holding Joint Stock Company develops blockchain software for trading and management of digital assets, bonds, and stocks.	HVA Investment Joint Stock Company	Vietnam	–	30%
57	18 March 2019	Worldpay, Inc.	United States	Worldpay, Inc., through its subsidiary, Worldpay Holding, LLC, provides electronic payment processing services in the United States, Europe, Asia, and Australasia. It offers solutions including Technology Solutions, Merchant Solutions and Issuer Solutions.	Fidelity National Information Services, Inc.	United States	43406.3	100%
58	19 March 2019	OK IT B.V.	Netherlands	OK IT B.V. develops and offers OK, a payment and loyalty application, that allows users to make payments in stores as well as serves as a wallet for storing store loyalty cards.	Talpa Holding N.V.	Netherlands	–	–
59	19 March 2019	Qwikilver Solutions Pvt Ltd.	India	Qwikilver Solutions Pvt Ltd. designs and develops SaaS based gift card exchange platform. The company offers pre-paid cards, electronic and physical gift cards, E-promotion cards, loyalty programs, discount cards, and other physical and virtual card based programs.	Pine Labs Pvt. Ltd.	India	110.0	100%
60	20 March 2019	Transerv Pvt. Ltd.	India	Transerv Pvt. Ltd., a digital payment company, provides payment program management solutions to engage in cash free transactions for individuals, corporates and partner merchants.	Indiabulls Consumer Finance Limited	India	15.9	42%
61	21 March 2019	ayCash GmbH	Germany	ayCash operates well-known digital properties, YesCash and Cash4Less, and offers technical solutions for Girocard and credit card acceptance to DACH-based merchants.	First Data Corporation	United States	–	100%
62	21 March 2019	Amplified Payment Systems Ltd	Nigeria	Amplified Payment Systems Ltd develops an online payment platform that accepts and manages one-time and recurring payments for subscription businesses in Nigeria.	One Finance Limited	Nigeria	–	100%
63	25 March 2019	Fuel Card Business of Euro Garages Limited	Netherlands	–	WEX Inc.	United States	–	100%
64	26 March 2019	Message Mobile GmbH	Germany	Message Mobile GmbH, a leading provider of enterprise messaging, communication and payment solutions.	MIND C.T.I. Ltd	Israel	3.0	100%
65	27 March 2019	Octopus Retail Management Pte. Ltd.	Singapore	Octopus Retail Management Pte. Ltd. offers retail management solutions from the Point of Sales (POS) to the back-of-house inventory to customer relationship management and e-commerce.	Shopmatic Pte. Ltd.	Singapore	–	51%

# Venture Capital

	Date announced	Target	Country	Round	Volume (US\$m)	Funding (US\$m)	Investor(s)	Segment	Description
1	04-01-19	Payformance, LLC	USA	N/D	3.00	3.00	-	Payment acceptance devices + Software	Develops Infinicpt a suite of automated services that supports merchant acceptance, underwriting, boarding, and back office operations.
2	07-01-19	Grab	Singapore	H	350.00	6400.00	Tokyo Century	Alternative payment systems	Offers mobile wallet payment solution.
3	07-01-19	KinerjaPay	Indonesia	N/D	200.00	200.00	Investa Wahana Group	Payment acceptance devices + Software	Provides digital payment solutions to brick-and-mortar businesses in Indonesia and South East Asia regions.
4	07-01-19	PayGenius (Pty) Ltd	South Africa	N/D	-	-	-	Processing	Provides payment processing services.
5	07-01-19	Zwipe	Norway	Venture	13.92	35.00	-	Security	Offers a fingerprint reader for contactless payment cards.
6	10-01-19	Akulaku	Indonesia	D	100.00	220.00	Ant Financial	Alternative payment systems	It is a multinational e-commerce platform that offers online services such as cardless installment shopping, cash loan, bills payment, mobile and game top ups on installment and travel and leisure packages on Installment.
7	10-01-19	BITROCK PTE.LTD.	Singapore	N/D	4.00	4.00	Yeecall	Alternative payment systems	Develops blockchain based software and operates electronic payment wallet for digital assets management.
8	10-01-19	Digiteal	Belgium	Debt	0.96	1.97	-	Payment acceptance devices + Software	Develops platform for electronic invoicing and payments.
9	11-01-19	ePaylater	India	Seed	-	3.30	ICICI Bank	Payment acceptance devices + Software	Provides digital payment solution that enables a "Buy Now, Pay Later" solution for frequent online purchasers.
10	11-01-19	Yourpay	Denmark	Venture	3.40	3.40	Nordica Capital Partners, Artha Kapitalforvaltning	Processing	Works as a payment facilitator and offers a payment gateway.
11	12-01-19	Amazon Pay	USA	N/D	42.62	246.90	Amazon	Alternative payment systems	Provides consumers, merchants, and developers a way to pay and get paid online.
12	14-01-19	AccessPay	UK	Venture	11.55	12.83	Beringea	Payment acceptance devices + Software	Develops and offers cloud-based payment and cash management solutions.
13	16-01-19	Instamojo	India	B	7.00	10.10	AnyPay	Processing	Allows users to create payment link, share with customers, and collect payment from anywhere.
14	18-01-19	Momo	Vietnam	C	100.00	133.80	Warburg Pincus	Money transfer	Provides and develops ewallet and payments app that allows users to pay online and transfer money to each other digitally.

# Venture Capital

	Date announced	Target	Country	Round	Volume (US\$m)	Funding (US\$m)	Investor(s)	Segment	Description
15	18-01-19	Allied Payment Network	USA	Venture	4.00	5.90	-	Money transfer	Offers online bill payment services for financial institutions including banks, credit unions, and direct customers.
16	18-01-19	Kiwi	Switzerland	A	2.80	3.70	investiere   Verve Capital Partners	Processing	Offers acceptance of card payments between micro, small and medium enterprises.
17	18-01-19	PayTrip SAS	France	Venture	1.14	1.14	-	Money transfer	Provides payment facilitation services. The company opens accounts of customers in order to contain and transfer funds directly from accounts.
18	21-01-19	Mooncard	France	A	5.70	5.70	RAISE	Issuing	Operates as an online platform which allows businesses to track and manage its expenses incurred with plastic cards.
19	21-01-19	Tangem	Switzerland	Seed	15.00	15.00	SBI Crypto Investment	Alternative payment systems	Develops blockchain smart card wallets.
20	22-01-19	Dosh	USA	B	20.00	77.00	Western Technology Investment	Coupons/Loyalty	Provides cash reward platform that provides offers attached to any credit/debit card allowing consumers to earn on every transaction.
21	25-01-19	BRD	Switzerland	B	15.00	54.00	SBI Crypto Investment	Alternative payment systems	Designs and develops cryptocurrency wallet which enable users to send and receive any amount of money, anywhere, at any time with financial privacy.
22	26-01-19	Fire Financial Services Limited	Ireland	N/D	3.42	8.17	Colm Lyon	Payment acceptance devices + Software	Offers online payment solutions to businesses and individuals.
23	27-01-19	Featurespace	United Kingdom	Venture	32.99	71.20	MissionOG	Security	Provides adaptive behavioral analytics solutions for fraud prevention in payment transactions.
24	28-01-19	Mobeewave	Canada	B	3.50	26.60	Samsung Venture Investment	Payment acceptance devices + Software	Provides secure and contactless payment-acceptance capability software for mobile phone.
25	29-01-19	Petal	USA	B	30.00	46.60	Valar Ventures	Issuing	Develops and issues credit cards to people who do not have traditional credit history, students, and immigrants.
26	29-01-19	Stripe	USA	E	100.00	793.50	Tiger Global Management	Payment acceptance devices + Software	Develops application programming interfaces (APIs) and tools that enable businesses to accept and manage online payments.
27	30-01-19	Mimiro	USA	B	30.00	38.20	Index Ventures	Security	Provides data intelligence to help firms understand the risk of who they're doing business with, while automating compliance and risk processes.

# Venture Capital

	Date announced	Target	Country	Round	Volume (US\$m)	Funding (US\$m)	Investor(s)	Segment	Description
28	31-01-19	TRM Labs	El Salvador	Seed	1.70	1.70	Blockchain Capital	Security	It operates token relationship management (TRM), a platform that uses machine learning to help clients manage relationships with their customers, and detect and block suspicious activity.
29	31-01-19	FWDPay	Netherlands	Seed	17.16	17.16	Startupbootcamp Commerce Amsterdam	Payment acceptance devices + Software	Develops a social payment software application that enables others to transact via direct debits.
30	31-01-19	TypingDNA	USA	Seed	1.50	1.60	Techstars, Gecad Ventures, Gapminder VC	Security	Develops and builds biometrics security solutions based on individual typing patterns of people used to protect SaaS, Web applications, eLearning, ePayments, and devices.
31	31-01-19	Line Pay	Japan	N/D	184.22	184.22	LINE Corporation	Money transfer	Designs and develops a mobile money transfer and purchasing.
32	07-02-19	Bink	UK	A	12.95	23.40	Barclays	Couponing/ Loyalty	Develops a mobile application that links card payment to loyalty schemes.
33	11-02-19	Second Measure	USA	A	20.00	25.00	Goldman Sachs	Data analytics	Analyzes credit card transactions to answer real-time questions on consumer behavior.
34	12-02-19	Tango Card	USA	Venture	10.00	54.80	FTV Capital	Couponing/ Loyalty	Develops a platform to send digital rewards for enterprise customers. The company's reward delivery platform helps in sending e-gift cards, prepaid cards, and non-profit donations.
35	12-02-19	Chainanalysis	USA	B	30.00	47.60	Accel	Security	Designs and develops anti-money laundering software for Bitcoin businesses.
36	12-02-19	SendFriend	USA	Seed	1.70	1.70	The Legatum Center, Techstars, Taiyou Fund, Ripple, New York Angels, Mahindra finance, MIT delta v, MIT Media Lab, Deloitte, Barclays, 2020 Ventures, 8 Decimal Capital	Money transfer	Uses blockchain technology for money transfer which reduces cost.
37	12-02-19	Qu	USA	B	10.00	12.90	Cota Capital	Payment acceptance devices + Software	Develops omni-channel point of sale technology software for restaurants.
38	13-02-19	Rapyd	UK	B	40.00	40.00	Stripe	Payment acceptance devices + Software	Operates as a cardless mobile payment network that provides modular payment services for financial needs.
39	13-02-19	Vbill	China	N/D	-	-	EQT	Alternative payment systems	Provides third-party payment services in mainland China.
40	13-02-19	OpenSparkz	Australia	Seed	1.06	1.83	Louise Daley	Couponing/ Loyalty	Develops and provides loyalty and offers enablement platform.

# Venture Capital

	Date announced	Target	Country	Round	Volume (US\$m)	Funding (US\$m)	Investor(s)	Segment	Description
41	14-02-19	SBI Cosmoneasy Co., Ltd.	South Korea	Venture	2.66	2.66	SBI FinTech Solutions Co., Ltd.	Money transfer	Provides overseas remittance services in the Philippines, Vietnam, Cambodia, China, Indonesia, and Nepal.
42	18-02-19	GoCardless	United Kingdom	E	75.00	122.30	Salesforce Ventures	Processing	Provides online payment processing services to businesses.
43	19-02-19	NsKnox	Israel	A	15.00	15.00	Viola Ventures	Security	Provides security that protect payment by automatically detecting and preventing fraud attempts in real time.
44	20-02-19	InfraDigital Nusantara	Indonesia	Seed	-	-	AppWorks	Payment acceptance devices + Software	Provides online payment services which can be used by offline billers such as schools, foundations, or course institutions, and others.
45	21-02-19	Coindirect	Isle of Man	Seed	1.14	1.14	Concentric	Alternative payment systems	Develops and provides wallet to buy, store, and convert cryptocurrencies.
46	21-02-19	BharatPe	India	A	17.00	19.00	Sequoia Capital India	Money transfer	Provides QR code-based payment app for offline retailers and businesses.
47	22-02-19	Yordex	United Kingdom	Seed	0.65	0.65	Bloc Ventures	Money transfer	Operates as a spend management platform to save cost, increase visibility into spend, get paid on time and improve cash flow.
48	28-02-19	TeamApt	Nigeria	A	5.50	5.50	Quantum Capital Partners	Payment acceptance devices + Software	Provides financial technology for developing Digital Banking, Business Solutions and Payments Infrastructure.
49	04-03-19	Simplepay Group	Australia	Seed	5.00	5.00	Versatile Group	Payment acceptance devices + Software	Develops mobile apps for point of sale payments.
50	04-03-19	DIRIGIO, Inc.	Japan	N/D	-	-	KLab Venture Partners Co. Ltd, iSGS Investment Works, Inc., Japan Angel Fund, Yu Akasaka, Nobuhiro Ariyasu and Jun Nishikawa	Payment acceptance devices + Software	Develops a mobile payment application.
51	04-03-19	Go-Jek	Indonesia	F	100.00	3100.00	PT. Astra International Tbk – TSO Salemba	Payment acceptance devices + Software	Provides transportation, logistics, mobile payments and food delivery services.
52	04-03-19	Curlec	Malaysia	Seed	-	-	Captii Ventures	Payment acceptance devices + Software	Develops and provides bank-to-bank payment system that enables businesses to easily collect payments from their customers.
53	04-03-19	SymphoPay	Romania	Venture	0.74	1.36	Early Game Ventures	Payment acceptance devices + Software	Allows merchants and banks to centralize card payments through POS on a single platform.

# Venture Capital

	Date announced	Target	Country	Round	Volume (US\$m)	Funding (US\$m)	Investor(s)	Segment	Description
54	06-03-19	BAM Worldwide	USA	Debt	30.00	10.00	Solar Capital Partners	Processing	Provides and develops solutions for payment processing and invoice automation.
55	06-03-19	Sea	Singapore	IPO	1400.00	2600.00	Tencent Holdings	Alternative payment systems	Provides e-wallet services to consumers through AirPay App.
56	06-03-19	Grab	Singapore	H	1500.00	8100.00	"SoftBank Vision Fund"	Alternative payment systems	Offers mobile wallet payment solution.
57	07-03-19	Heliocor	United Kingdom	A	2.50	2.50	-	Security	Develops and provides solutions for anti-fraud detection and prevention.
58	08-03-19	"Danal Co Ltd "	USA	Debt	13.26	99.03	BNK Securities Co. Ltd., Industrial Bank of Korea, KEB Hana Bank, NH Investment & Securities Co. Ltd., Samsung Securities Co. Ltd.	Alternative payment systems	Offers digital content payment services, smartphone barcode payment services, and cell phone billing services.
59	08-03-19	Lightspeed POS	Canada	IPO	179.00	471.00	-	Payment acceptance devices + Software	Provides point of sale and omnichannel transactions solutions for retailers and restaurateurs to manage their businesses.
60	11-03-19	Dopay	United Kingdom	Debt	1.12	4.40	FMO (Dutch development bank)	Issuing	Provides a cloud-based payroll service and issues DoPay card and Dopay app for making payments electronically.
61	11-03-19	SendFX Pty Ltd	Australia	Venture	0.28	0.28	Novatti Group Limited	Money transfer	Offers cross-border remittance and payment services to individuals and SMEs.
62	11-03-19	Silot	Singapore	A	8.00	11.70	SBI Investment	Payment acceptance devices + Software	Provides payments acceptance solutions to merchants through a range of touch points, e.g., QR codes.
63	13-03-19	Mswipe	India	E	31.59	97.50	Falcon Edge Capital, Logo of Epiq Capital, DSG Consumer Partners, B Capital Group	Payment acceptance devices + Software	Provides mobile POS solution that works with smartphones, tablets, computers, and links to bank account.
64	13-03-19	The Mint Corporation	Canada	N/D	0.75	111.49	-	Alternative payment systems	Offers mobile application which linked to a global payment card in UAE.
65	14-03-19	PT. Visionet Internasional (OVO)	Indonesia	Venture	-	-	PT. Tokopedia	Payment acceptance devices + Software	Designs and develops application software for the payment solutions.
66	14-03-19	Zip Co Limited	Australia	N/D	36.83	84.60	-	Alternative payment systems	Provides point-of-sale credit and digital payment services to consumers and merchants in Australia and New Zealand.

# Venture Capital

	Date announced	Target	Country	Round	Volume (US\$m)	Funding (US\$m)	Investor(s)	Segment	Description
67	15-03-19	Innoviti	India	Debt	11.50	24.60	Trifecta Capital Advisors	Payment acceptance devices + Software	Develops payments processing, credit distribution, and payments management software solutions.
68	18-03-19	InstaReM	Singapore	C	21.00	59.00	Vertex Growth Fund	Money transfer	Provides digital international money transfer services to individuals and businesses.
69	18-03-19	MoolahGo Pte. Ltd.	Singapore	Venture	-	-	Eric Barbier	Money transfer	Provides currency exchange and cross-border payments to individuals and businesses.
70	18-03-19	Novatti Group Limited	Australia	Debt	1.42	9.72	-	Payment acceptance devices + Software	Develops mobile and alternate payment technology for service providers in the utilities industry.
71	18-03-19	Wallet.ng	Nigeria	Seed	0.15	0.15	Y Combinator	Money transfer	Provides accessible payments by enabling users to send, receive money, and make payments through a phone.
72	18-03-19	VertoFX	USA	Seed	0.15	0.15	Y Combinator	Money transfer	Provides easy access to foreign currencies with seamless international online payment services.
73	19-03-19	Bankify Ltd	Finland	Venture	-	0.29	Plug and Play Tech Center	Alternative payment systems	Develops a social wallet that helps users to balance money spending within their social network.
74	19-03-19	Paygevity, Inc.	USA	Debt	0.10	1.50	-	Payment acceptance devices + Software	Provides payment processing technology platform that integrates vendor management, vendor payments, and a vendor analytics dashboard.
75	19-03-19	YuuZoo Networks Group Corporation	Singapore	N/D	22.21	33.21	Swiss-Asia Financial Services Pte Ltd	Processing	Engages in social networking, e-commerce, payments, and gaming businesses in Singapore and internationally. Its mobile payment segment provides a payment platform enabling both online and mobile payment processing solutions.
76	21-03-19	Marqeta	USA	E	250.00	366.30	-	Payment acceptance devices + Software	Develops platform for innovators who want a simplified way of managing payment programs so they can power new modes of commerce.
77	21-03-19	Tigapo	Israel	Seed	1.00	1.00	Chazen Capital Partners, LLC	Alternative payment systems	Provides a payment platform to pay for services with phones or NFC tags.
78	21-03-19	Bitmo	USA	Seed	3.00	4.50	"Longboard Capital, Jeff Haux, Everplus Capital"	Couponing/ Loyalty	Provides user to send a gift card as easily as a text and exchange unwanted gift cards with no fee.
79	22-03-19	PhonePe Private Limited	India	Venture	107.56	305.43	Flipkart Payments Pvt. Ltd.	Money transfer	Provides a mobile payments app that allows you to transfer money.

# Venture Capital

	Date announced	Target	Country	Round	Volume (US\$m)	Funding (US\$m)	Investor(s)	Segment	Description
80	22-03-19	SatoshiPay	United Kingdom	Venture	–	2.00	Aeternity	Alternative payment systems	Provides micropayment platform that enables digital transactions on a micro-scale.
81	25-03-19	VeryConnect Ltd	United Kingdom	Debt	0.07	0.07	Digital Growth Fund	Payment acceptance devices + Software	Provides software solution which includes features like payments processing, member database, email campaigns, and donations collection.
82	25-03-19	Rewire Ltd	Israel	A	12.00	12.00	Viola FinTech	Money transfer	Provides money transfer services from Israel to internationally.
83	26-03-19	Airwallex	Hong Kong	C	100.00	202.00	DST Global	Money transfer	Offers integrated solutions to businesses for cross-border transactions.
84	26-03-19	TransferWise	United Kingdom	N/D	29.03	424.73	Merian Chrysalis Investment Co. Ltd	Money transfer	Provides money transfer service allowing private individuals and businesses to send money abroad.
85	27-03-19	MineralTree	USA	C	50.00	72.70	Great Hill Partners	Payment acceptance devices + Software	Provides cloud-based software which automates the invoice-to-payment process for businesses.
86	27-03-19	Paylt	USA	B	100.00	104.50	"Insight Venture Partners"	Payment acceptance devices + Software	Provide solutions that simplify doing business with state, local and federal government through its mobile transaction and payment platform.
87	28-03-19	Blue Mobile International Co.,Ltd.	Thailand	C	–	–	Ant Financial Services Group	Processing	Provides payment gateway for telecom operators in Thailand.
88	29-03-19	Toast	USA	E	250.00	496.00	Tiger Global Management	Couponing/ Loyalty	Provides all-in-one point-of-sale for restaurant business and offer integrated rewards program that restaurant owners can use to increase guest frequency.



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