2022 ALTERNATIVE PAYMENT METHODS REPORT

your global guide to Alter native Payment Methods



MAKING PAYMENTS SIMPLE.

About Us

BRIGHTMANGROUP

Brightman Group is an international consultancy firm, focusing on the payment industry. With 60+ years of combined experience in the payment industry, our team of former bankers, legal advisors and compliance experts consult clients on their existing payment flow and offer them alternative solutions to optimize their payment flow and cut costs.

Our business solutions reflect our sound understanding of the payment landscape. Professional advice and the highest quality product standards are a matter of course at Brightman Group. Every day, we are keen to find innovative solutions that meet the needs of our demanding clients.

Our company takes great pride in helping corporate and institutional clients all around the world. We devise a unique approach for each client and offer best-in-class solutions that meet their precise needs in this fast-paced industry.

Sales Team

Email: sales@brightman-group.com Web: brightman-group.com/apply/ Mobile: +447441911308

> 20th Floor, Central Tower, 28 Queen's Road Central Hong Kong



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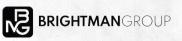
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SUMMARY REPORT 2022

The report encapsulates the current state of the payments landscape across all major Ecommerce markets in the world. It offers payment industry professionals a complete and comprehensive mapping of payment instruments and methods, looking into how people pay and with whom they choose to pay.

The Alternative Payment Methods Report 2022 is a must-read summary of the alternative payment methods in its newest shape and form. Its main goal is to help any finance professional, payment service provider, merchant, or fintech readership, to take informed view on the future of the payment ecosystem which is constantly changing.

Payments companies must anticipate what's next—now. They must constantly flex and adapt in a market that never stands still.

Change in payments was overdue and will only accelerate as multiple omnichannel fintech players enter the banking market. In 2021 and 2022 we have witnessed two very important developments in the regulatory environment which will exponentially increase the number of alternative payment methods and generate further fragmentation of financial services.

In the European Union – the PSD2 will stimulate more payments to be made via the regular SEPA Credit Transfer (SCT) and SEPA Direct Debit (SDD). This will ultimately make it easier for merchants and customers to initiate online payments on their smartphones.

Globally the usage of E-wallets have grown with the emergence of Apple Pay, Samsung Pay and Android Pay as banks enter the market by developing their own E-wallets by partnering with fintech startups.

PAYMENT METHODS DECONSTRUCTED

The purpose behind the report is to provide you with a complete and comprehensive upto-date overview of Alternative Payment Methods by country and take a closer look at the various types of payment instruments and methods.

Because of this - the first part is mainly focused on giving you definition of the current terminology by drawing a line between payment methods and payment instruments. Finally all of the payment methods are disseminated and discussed on a cross-country basis.



PAYMENT METHODS DECONSTRUCTED

Online payment methods refer to the way shoppers can pay for their purchases over the Internet. An online payment method is presented at the checkout or payment page of the merchant and should have a clear recognition by the shopper through means of a well-known logo (e.g. Mastercard, PayPal, iDEAL) or common all-purpose words like 'credit cards', 'bank transfer' or 'payment-ondelivery'. Alternative payment methods refer to online payment methods that are used as an alternative to credit card payment.

Normally, online payment methods refer to online payment method brands (Mastercard, Boleto, Bancontact), online payment solution brands (PayPal, Masterpass) or directly to one of the payment instruments (e.g. 'bank transfer'). In this report, we draw a clear line between the six payment instruments - the actual tools for a transaction, and the payment methods - the ways in which these tools are put for use. Each of the six payment instruments has its own local, regional, global or vertical payment ecosystem. Ecosystems are represented by a specific payment scheme which can be described as the institution that sets the governing rules and technical standards for the execution of payment transactions using one of the underlying payment instruments.

The report covers the ten main payment categories. A payment method can stand in a one-to-one relationship with an instrument, as with credit cards, but it can also incorporate several payment instruments in one method, as with E-wallets (can be topped up by debit / credit card).



PAYMENT METHODS DECONNSTRUCTED

In order to build a complete picture of the payment industry, we will first take a closer look at the different types of payment instruments and methods by covering their main categories.

Online payment methods rely on six payment instruments:

Online payment methods have 10 payment sub-categories:

- Card payments
- Bank transfer payments
- Direct debit payments
- Cash payments
- Cryptocurrency payments
- Direct carrier payments

- Credit Card
- Debit Card
- Prepaid Card
- Online Banking
- E-wallet
- Direct Carrier Billing
- Cryptocurrency
- Direct Debit
- Invoice
- Cash



PAYMENT METHOD CATEGORIES

CREDIT CARD

General Description

Credit cards are issued to cardholders, after which a revolving account is created by the card-issuer, granting a line of credit to the cardholder, from which the cardholder can borrow money for payments to a merchant.

For credit cards, we distinguish two different types of schemes: the threecorner model (closed and exclusive scheme, e.g. AMEX, Diners Club) and the four-corner model (open and inclusive scheme, e.g. Mastercard, Visa).

Payment guarantee

When it comes to fraud and chargebacks, credit cards offer the highest protection to consumers. At most, a cardholder is only liable for USD 50 of an unauthorized transaction. Some issuers provide zero liability cards, meaning the cardholder will be reimbursed for the full amount of the fraudulent charge. With credit card transactions, the consumer's cash reserves are not affected. While the available credit for the card may drop temporarily after the fraudulent purchase is made the cardholder is not affected much by the unauthorized purchase.

Brands

- Mastercard
- Visa
- JCB
- Discover and Diners
- American Express
- China Union Pay

Chargeback can be used in cases of goods not arriving at all, goods that are damaged, goods that are different from the description or where the merchant has ceased trading. There is a time limit on chargeback claims – typically 120 days. The time at which this period of 120 days starts depends on the specific circumstances but will usually begin from the day the consumer becomes aware of a problem with the goods. Additionally, once a chargeback has been filed a refund should be credited to the account immediately.

Market Reach

Credit cards are widely used internationally, and enjoy a status of being widely accepted as common payment method for Ecommerce and POS. However, in Asia only 41% of online transactions are completed with a credit card. In some European countries (the Netherlands and Germany) alternative payment methods (online banking e-payments, invoice) are the dominant payment methods for Ecommerce.

PAYMENT METHOD CATEGORIES

Brands

- Visa Debit
- Debit Mastercard
- Maestro
- Dankort (DK)
- V PAY card
- PostFinance Card

General Description

On top of the cards for offline payments, debit cards are also often used online. Functioning in similar way as a credit card, but without several risks of debt, the debit card has become popular in countries that drifted away from credit payments but have no or little accessible online banking options. In several countries where online banking has rapidly developed and increased in popularity (e.g. Germany and the Netherlands), debit cards are virtually no longer used online.

Market Reach

- In the US, credit cards are the dominant payment method for E-commerce.
- In Canada, debit cards (Interac debit) are more popular.
- In Europe, online banking e-payment methods are more widely used.

Payment guarantee

Credit cards have a maximum fraud liability of USD 50. With debit cards, that liability cap only lasts for two days. If consumers do not immediately report a lost or stolen card that has been compromised, the fraud protection decreases significantly. After two days, the liability jumps to USD 500. If consumers let two billing cycles pass, they would not be reimbursed for any of the fraudulent purchases. Additionally, the effects of fraud are felt immediately. A criminal has the ability to completely drain the consumer's bank account before the unauthorized purchases are detected. The law allows banks to take 10 days to review the claim before issuing refunds. While some banks refund the cash much sooner, cardholders usually feel the negative effects of such a limited consumer protection.

General Description

There are no card scheme networks involved in the SEPA Direct Debit (SDD) Core scheme. All communication happens directly between the banks. To set up payments by SDD, the payer must complete a mandate to the merchant. This mandate contains bank-approved wording that makes it clear that the payer is setting up an authorization for the merchant to debit their account. The interface for completing the SDD instruction is controlled by the merchant, who then sends the direct debit initiation to his/her bank. The SDD core scheme can be used for single (one-off) or recurring direct debit collections.

Brands

- SEPA direct debit
- SEPA Express
- RatePAY
- SlimPay
- GoCardless
- NuaPay

Market Reach

SDD has seen the strongest adoption in Germany, Austria, Netherlands and Spain. The payment method is often used for recurring payments, due to the lack of issues with credit card expiration.

PAYMENT METHOD CATEGORIES

prepaid card

General Description

These cards can be used to make purchases or withdraw cash in the same way as a debit or credit card. The key difference is that they need to be loaded up with cash in advance – the balance then operates as the spending limit.

Another type of prepaid cards is the type of card or voucher consumers need to buy before starting a transaction. These cards are usually not run on scheme networks (such as Visa and Mastercard) and are generally authorized immediately.

Brands

- Paysafecard
- NeoSurf
- Cashu

Market Reach

Prepaid cards, with their relative safety for consumers and ease-of-access for under- or unbanked people, make them a popular payment method for consumers in BRIC countries and underage consumers without access to a credit card.

PAYMENT METHOD CATEGORIES online banking e-payment

Brands		
Multi-Bank OBeP:	Overlay OBeP:	
 iDEAL GiroPay MyBank ePS Bankaxess 	 SOFORT Trustly PayWithMyBank 	

General Description

The Online Banking e-Payments (OBeP) scheme is a type of payments network designed to facilitate online bank transfers. In an OBeP scheme, the consumer is authenticated in real-time by his financial institution. The availability of funds is validated in real-time and the consumer's financial institution provides guarantee of the payment to the merchant in case the payment is made as a credit transfer (push payment): i.e. the consumer / buyer initiates the payment. The merchant receives a real-time guarantee so he can continue with the fulfilment process. The actual funds arrive later (D+1), according to the SEPA Credit Transfer Scheme.

Payment guarantee

A successful online banking-based payment is irreversible - the buyer cannot reverse the transfer. The merchant is not faced with a chargeback risk. Another benefit is the relatively low transaction cost compared to card, wallet, or other alternative payments.

Market Reach

- Europe: Online Banking e-Payments represent a significant share in the Netherlands, Germany, and Nordics. It is likely to grow across Europe due to PSD2: more payments will be done via the regular SEPA Credit Transfer (SCT) and SEPA Direct Debit (SDD) infrastructures, since it will become easier for merchants and their buyers to initiate payments online and on mobile devices.
- US: The small market share of OBeP might grow with new players entering the market, providing a better user experience and less risk.
- India: A primary governing body of all retail payment systems in the country, National Payment Corporation of India (NPCI) has launched a Unified Payments Interface (UPI).

PAYMENT METHOD CATEGORIES



General Description

An E-wallet is a digital tool (software or app) for consumers to store their payment methods. It stores credentials of (among others) debit, credit cards and alternative payment methods. Some E-wallets can also store loyalty programmes. An E-wallet allows an individual to make electronic transactions with an improved checkout and payment experience compared to entering all payment credentials every time a purchase is done. Wallets can function both in online and physical stores.

Most prepaid products have a funding limit, and some do not allow multiple cards / vouchers to fund one single transaction.

Payment guarantee

The chargeback risk of an E-wallet depends on the payment instrument used to top up the E-wallet. PayPal offers consumers a protection if they are charged for goods they did not purchase, if the order did not arrive or if the order did arrive but is significantly different than it was described. Merchants are protected by PayPal when selling physical goods that are sold and shipped with proof of delivery from within the US to buyers around the globe.

Market Reach

- US/Europe: Adoption of E-wallets is slower than the initial forecasts have predicted. However, it is expected that their share will increase significantly in the next 3-5 years.
- India: Rapidly growing market due to the conjunction of rising smartphone usage and lack of access to financial services of a large part of the population. Also, demonetization in India has proved a lucrative opportunity for E-wallet players in the country.
- China: For online payments, the E-wallets (particularly Alipay and WeChat Pay) are the most popular form of a payment.

Brands

- PayPal
- Alipay
- WeChat Pay
- Apple Pay
- Samsung Pay
- Android Pay
- Masterpass
- Paylib
- Amazon Pay
- SEQR
- MobilePay
- Lyf Pay
- Yoyo Wallet
- Chase Pay
- Allied Wallet
- Dwolla
- Pay by Bank App
- PayBack



General Description

We distinguish two types of invoice payments: open invoice (payment after delivery) and instalment payments (a series of payments that a buyer makes instead of a lump sum to compensate the seller).

Payment guarantee

Solution providers that offer open invoices often take over the risk of collecting the payment. They guarantee payment to the merchant, either by some sort of insurance or by taking over the invoicing process. To do this they perform their own assessment of the shoppers' risk profile and accept or decline the order online.

Market Reach

- Europe: Open invoice is popular in Germany, Benelux, Austria, Switzerland, and the Nordics (retail segment). In Turkey, 88% of the consumers prefer to use their credit cards instead of debit or prepaid cards to make instalments for online purchases (source: PayU).
- US: In America alternative payment

methods such as invoices have long way to go before they gain a significant market share. This is due to the long tradition of credit card usage among baby boomers. However, companies like Sezzle and FuturePay offer an alternative payment method to credit cards such as online invoices or installments.

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Looking for pre-paid card solutions?

We can help you.

contact our team at

sales@brightman-group.com to find out which payment methods are most suitable for your industry.

NEW:

Get issued China Union Pay pre-paid cards.

Brands

- atePAY
- Afterpay
- Klarna
- AcceptEmail
- FuturePay
- Sezzle

PAYMENT METHOD CATEGORIES Cryptocurrency

General Description

Cryptocurrency is a digital currency in which the regulation of the amount of currency units and the verification of transactions of these units are done through cryptographic techniques. Cryptography is generally used to secure the transactions, and also to control the creation of new currencies or coins. The first cryptocurrency to be developed was Bitcoin in 2009. Nowadays, there are hundreds of other cryptocurrencies, often referred to as altcoins. However currently Bitcoin is the largest cryptocurrency when it comes to market capitalization, volume, acceptance, and notoriety. Bitcoin allows people to pseudo-anonymously buy goods and services over the internet.

Brands

- Bitcoin BTC
- Ethereum ETH
- Ripple XRP
- Stellar XLM

All transactions are publicly visible, but the account numbers are anonymized, thus they are not in someone's name as is the case with other payment methods.

Cryptocurrency payments happen in two ways: firstly, a transaction from one cryptowallet to another. These transactions are made exclusively in a cryptocurrency. Secondly, a transaction in a cryptocurrency is made to a crypto-wallet but can be transferred into a payments account that uses an institutional currency, e.g. EUR or USD.

Market Reach

By the beginning of 2021, it was estimated that over 150,000 merchants worldwide accepted Bitcoin, the world's most popular cryptocurrency, as one of their payment methods. This list includes major retailers like Amazon, Walmart, eBay, Expedia, Microsoft, Apple and even coffeehouse giant Starbucks. Most notably, cryptocurrencies are mostly adopted in the online gaming industry. Possible explanations: security, no chargeback risk, the (pseudo) anonymity factor, the immediacy of the transactions, the low-cost and evidently the adoption of the payment method among online gamers.

Payment guarantee

Cryptocurrencies do not allow payments to be reversed because there is no third party involved, thus it's a direct payment between the sender and the receiver.



PAYMENT METHOD CATEGORIES direct carrier billing

General Description

Direct carrier billing can be defined as making a payment for goods or services which is charged to the customer's mobile phone account, either to the monthly bill (for customers with a contract) or as a debit from prepaid credit.

Presently online purchases of digital content (games, music, video, e-books, ringtones) are primarily used with a direct carrier billing.

Payment guarantee

Payments cannot be reversed by the buyer. When a buyer fails to pay his telephone bill it is up to the telecom operator to collect the money.

Market Reach

Direct carrier billing helps merchants to monetise consumers who do not own a debit or credit card, such as the unbanked (i.e. consumers who do not have access to banks or credit unions), underbanked (i.e. consumers either having a checking or savings account, but also relying on alternative financial services) and the younger demographics.

Brands

- DIMOCO
- BANGO
- FORTUMO
- BOKU



"The financial industry is going through a period profound change. In this evolving landscape, market infrastructures and financial institutions are having to renew their infrastructure and reshape their business models to meet customer expectations and capitalize on new opportunities."

- Alain Raes, Chief Executive EMEA and Asia Pacific, SWIFT



ALTERNATIVE **PAYMENT** METHODS

Europe

E-commerce has been exponentially increasing in size and value throughout the European Union in the past ten years. This, in combination with economic stability and high GDP per capita, has led to clear consumer preference towards online merchants and fintech banking solutions. Europe is one of the most diverse market places for E-commerce ranging from high tech countries when it comes to payment solutions, to more traditionally credit and debit card oriented countries in the less developed parts. This has led to an ecosystem where every country has an individual unique composition of traditional and alternative payment methods. Banks have been a major player in Europe when it comes to payment methods; as of now they account for more than 60% of all transactions done. Having said that, the new PSD2 regulation will heavily impact the retail banking in Europe and promote much more saturated market in which

 primate role.

 Europe E-commerce Market Size

 in billions

 € 700.00

 € 600.00

 € 500.00

 € 300.00

 € 200.00

emerging fintechs will challenge the banks

2017 2018 2019 2020 2021 2022

Next – this report will take a closer look at the payment industry per country, introducing the popular payment methods, the relevant E-commerce developments, and finally the most used alternative payment methods in the country.

E-commerce in Europe was worth €534 billion in 2021.

€ 100.00

€ 0.00

PAYMENT SOLUTIONS EUROPE

ALTERNATIVE **PAYMENT** METHODS

Europe Market Overview

BRIGHTMANGROUP

Europe has a wide range of payment methods, and a wealth of payment service providers that offer many different fintech solutions. The biggest E-wallets in Europe are global players. PayPal has been the most used E-wallet in Europe due to its easiness of integration with most of the E-commerce platforms. It also recently completely overhauled its mobile app to create a better user experience and is expected to maintain their strong position in Europe (*TechCrunch*).

Important to note are the top global tech players decision to expand into Europe; both Apple, Samsung, and Android Pay have launched in several countries, with Google Pay following shortly. Alipay, the E-wallet associated with Alibaba, has recently gained the support of more than 900,000 merchants in Europe in order to reach Asian communities and travelers abroad. Reach and adaptability remain a key challenges for E-wallets and in recent years many have tried to address this problem by initiating cooperation or acquisitions for expanding market reach.

However, many local financial startups are operating in the E-wallets ecosystem by targeting specific regions and populations which have been left behind by mainstream banks and tech companies. The localized and highly customized strategy appeals to smaller underbanked markets, often contained in one country or region. Local E-wallets are mostly backed by a bank or a group of banks that are market leaders for the regions in which the E-wallet operates. There are some very successful initiatives which have combined the innovation initiative of banks and merchants to deliver more open and widely usable E-wallets, like the French Lyf Pay, created by four banks and three merchants. Some E-wallets developed from loyalty platforms that later added payment functionality, like the German Payback, part of American Express which revolves completely around loyalty to merchants.

AUSTRIA payment solutions

E-commerce in Austria will be worth €6.6 billion euros by 2021. In 2021 more than 4.9 million users made online purchase and additional 900,000 are expected to be shopping online in the next 3 years. The average revenue per customer is around \$1,300 USD.

The revenue in Austria is dominantly controlled by big retailers with 46.3% being earned by the top 10 online merchants. These retailers include Amazon.at, Universal.at and Zalando.at. Amazon Austria pulled in €477.1 million euro alone last year.

While 35% of the transaction volume is processed through cards, bank transfers follow closely at 31%. Customers use immediate transfers and EPS directly at checkout.

E-wallets are also commonly used in Austria, at 14% of the transaction volume. PayPal is the most popular E-wallet used by 40% of shoppers. Offline methods of payment are still popular at 8% of the transaction volume - this includes payment upon delivery.

SOFORT, debit, cash on collection, cash on delivery and payment in advance are all used by online shoppers in Austria.

Mobile shopping is gaining popularity in Austria. Approximately 40% of the 1,015 Austrian mobile phone users questioned in a 2021 survey, shop over their smartphone.



country overview

Population	8.773 million
GDP per Capita	\$47,290.91 USD (2021)
Internet Access Rate	82 %
Internet Country Code	.at
Currency	euro (EUR)
B2C E-commerce Market Size	\$4.4 billion USD (2021)

- SOFORT
- SEPA
- PAYPAL
- KLARNA
- EPS
- POST FINANCE
- INGENICO
- PAYONE



BELGIUM payment solutions

The E-commerce market in Belgium surpassed the \notin 10 billion euros threshold in 2021 and is expected to reach \notin 11.84 billion euros in 2022. With a population of over 11.35 million more than 8.25 million shop online due to the high internet usage rate - around 89%. By 2021 the average online shopper will spend \$878.32 USD annually.

90% of the Belgians make online purchases on by using computer while 6% uses smartphones or tablet. Currently, Belgium is on the ten European countries with the highest M-commerce penetration. The projected compounded Mcommerce growth, in Belgium, is 8% until 2022. In Belgium, credit cards and bank transfers are the most popular methods of payment at around 26% and 21% respectively.

Credit cards by Visa (13%), MasterCard (4%) and American Express (1%) hold a comparatively small portion of the card market. The Mister Cash (Bancontact) debit card is very popular market leader, with 82% of all Belgian cards under its brand.

In 2020, 86% of all online card transaction where made using Bancontact. E-wallets and cash payments are popular methods of payment as well. In 2021, E-wallets accounted for 13% of Belgian E-commerce transactions and 2% of point of sale transactions. The most famous E-wallet is PayPal used by 11% of Belgians last year.



country overview

Population	11.35 million
GDP per Capita	\$43,323.81 USD (2021)
Internet Access Rate	89 %
Internet Country Code	.be
Currency	euro (EUR)
B2C E-commerce Market Size	\$10.1 billion USD (2021)

- SOFORT
- SEPA
- BANCONTACT
- KLARNA
- NEOSURF
- IDEAL
- WORLDLINE
- MISTERCASH



DENMARK payment solutions

With a population of only 5.6 million, Denmark is expected to have 3.85 million online shoppers by 2021. Internet usage is very high in Denmark with 99 % of Danes using the Internet, while 70% of them shop online. In 2021, Danes spent \$3,188 USD per capita online, compared to \$19,916 USD at brick-and-mortar shops.

Denmark has reached \$21 billion USD market size when it comes E-commerce in 2021. A steady growth of 9% is expected until 2022. Meanwhile, mobile payments, benefiting from an extremely high adoption rate, are expected to double in the same period.

Credit and debit cards are the most widely used payment method in Denmark with 42% of online transactions being payed by card. In 2021, 26% of online payments and 2% of point of sale transactions were processed through E-wallets. Alternative payment methods, including E-wallets such as PayPal (5% of the E-commerce market share) and Skrill are witnessing mass adoption in the last year. This type of payment will continue to grow strongly in the future as will other alternative payment methods. Cash payments are declining following the Nordics cashless trend and affection towards financial technology and electronic money usage.

Contactless payments have also become a big part of the Danish everyday life, both with younger and older generations. The Rejsekort - first contactless prepaid, travel card in Denmark is gaining popularity. It can notably be used to pay train and bus fares all over the country.



POPULAR **AITERNATIVE** PAYMENT **METHODS** SFPA **KLARNA** SKRILL • PAYSAFECARD • PAYPAL UKASH • • TRUSTLY DANKORT • REJSEKORT •



FRANCE payment solutions

Online shopping grew by 14% in France last year making it one of the biggest E-commerce markets in Europe. The online B2C revenue was worth €82 billion euros and is expected to grow up to €93 billion euros by the end of this year. The growth rate in E-commerce is expected to be around 14% until 2022. The established M-commerce market will nearly double in the next few years, accounting for more than a third of E-commerce by 2020.

When French consumers shop, they do it mainly on foreign websites (42%) from non-EU countries. The majority of cross-border deliveries came from China (74%).

The French enjoy spending their money online – It's ranked as the sixth biggest E-commerce market worldwide and in Europe only Germany and the United Kingdom are bigger. The preferred payment methods are (local) credit and debit cards, but in recent years, E-wallets have become increasingly popular, in particular the bank-backed Paylib, which already holds three times more users than PayPal in France - 40 million users, according to E-commerce Europe (2021). France is one of the rare developed countries where PayPal is not market leader.

Wa! and Fivory, the two electronic wallets developed respectively by BNP Paribas and Carrefour, merged in 2020 to Lyf Pay and started pooling their expertise around a single app-based mobile payment solution in France. The E-wallet is intended to help meet the strategic goals of digitizing commerce and making life easier for customers.



country overview	
Population	66.5 million
GDP per Capita	\$41,200 USD (2021)
Internet Access Rate	84 %
Internet Country Code	.fr
Currency	euro (EUR)

€82 billion EUR B2C E-commerce Market Size (2021)

- SEPA
- PAYLIB
- LYF PAY
- TICKET PREMIUM
- **INGENICO** •
- CARTE BLEUE
- WORLDLINE
 - CM-CIC



GERMANY payment solutions

Germany is an interesting market for retailers because of its high internet penetration, its population of 83.2 million and the openness to cross-Border payments. Germany follows right behind the US and UK when it comes to volume of cross-border transactions. In the following years, E-commerce and M-commerce are expected to grow – in 2021 E-commerce in Germany managed to grow 9.5%. This year a total 80% of the German population made a purchase online reaching all time high. The most common method offered by leading online retailers in Germany where Ewallets (91%), credit card (90%) and conventional payment methods (78%).

Germans are very open-minded towards international E-commerce as over 50% of online retail purchases took place on a cross-border merchant website. Yet despite this willingness, non-credit card payment methods such as SEPA direct debit (a Europe-wide direct debit system), SOFORT, and Giropay account for the majority of online transactions.

E-wallets account for 20% of transactions online, and most of those are PayPal transactions. However, local E-wallets struggle to get much traction in Germany as opposed to their Nordics counterparts where they are much preferred solution to cards. This is evidenced by the recent failure of Yapital, an initiative by Otto Group. One viable local E-wallet is Payback, a loyalty scheme, owned by American Express, that has enjoyed some success among Germans reaching 29 million users.



country overview

Population	83.2 million
GDP per Capita	\$46,900 USD (2021)
Internet Access Rate	82.62 %
Internet Country Code	.de
Currency	euro (EUR)
B2C E-commerce Market Size	\$85 billion USD (2021)

POPULAR ALTERNATIVE PAYMENT METHODS • SEPA • KLARNA • PAYPAL • SOFORT

- GIROPAY
- PAYBACK
- PAYONE
- SKRILL



ITALY payment solutions

E-commerce in Italy was worth \$28.3 billion USD in 2021. Although a country of only 61 million inhabitants, Italy is the fifth largest E-commerce market in Europe.

In 2021, Italians spent \$469 USD per capita online and \$11,958 USD per capita at brick-and-mortar shops. The Italian E-commerce market is expected to grow by a 12% in the next seven years.

Last year 33% of E-commerce happened at domestic, national sellers – 2% increase from 2020, while at the same time cross-country E-commerce grew at 10%.

About one fifth of Italian consumers use mobile phones or tablets to shop. M-commerce is expected to at least double in growth in the next few years.

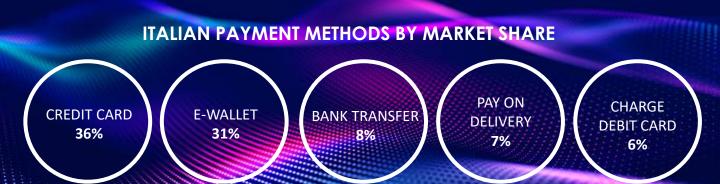
The Italian customers prefer pay-on-delivery payments when it comes to national E-commerce and credit cards when it comes to cross-border transactions. The most important methods of payment in Italy are card payments holding 36% of total market share. Following cards, E-wallets are the second most used method of payment, as Italians used mobile wallets to pay for 31% of their E-commerce transactions.

The most widely used E-wallet in Italy is PayPal. Other popular methods of payment include MonetaOnline, Voucher ePay, Klarna, MyBank, Neosurf and Cartasi. Interestingly, the average amount of cards transaction decreased, even though the number of transactions and total amount spent increased.

country overview

0 . 0	
Population	61 million
GDP per Capita	\$35,700 USD
Internet Access Rate	70.85 %
Internet Country Code	.it
Currency	euro (EUR)
B2C E-commerce Market Size	\$28.3 billion USD (2021)

- SEPA
- PAYPAL
- KLARNA
- MYBANK
- NEOSURF
- MONETAONLINE
- CARTASI
- VOUCHER EPAY



ISRAEL payment solutions

Even though Israel is very advanced in terms of technology and innovation, its E-commerce market is lagging behind when it comes to fintech. However, many new Israeli start-ups are attracted to innovate in the fintech ecosystem by large technology investors from Asia, Europe and the USA - helping to move the market in the right direction.

Nevertheless, Israeli E-commerce has a strong growth potential due to a rising mobile penetration rate among the younger generations. The compounded annual growth rate is expected to be of 7.3% until 2021. During the same period, it is predicted that there will be nearly 5 million Israeli online shoppers. Online retail is gaining popularity, as it helps people counter the high cost of living.

Data from Israeli Postal Company shows that Israeli consumers purchased the highest number of packages per capita among the Organization for Economic Cooperation and Development (OECD) countries.

Credit cards penetration when it comes to Ecommerce in Israel sits at 74% rendering them the most serious player in the field. In 2021, they have experienced further growth, attributed to their convenience and efforts by the Bank of Israel towards a cashless society.

The two largest credit card companies, Isracard and Leumi Card, will be required to separate from their respective banks, Bank Hapoalim and Bank Leumi le Israel. This should create a more competitive landscape, as bank will have to offer all cards.

country overview

Population	8.7 million
GDP per Capita	\$40,270 USD (2021)
Internet Access Rate	80 %
Internet Country Code	.il
Currency	Israeli new shekel (ILS)
B2C E-commerce Market Size	\$2.99 billion USD (2021)

- LEUMI CARD
- YANDEX MONEY
- PAYPAL
- WEBMONEY
- PEPPER
- ISRACARD



NETHERLANDS payment solutions

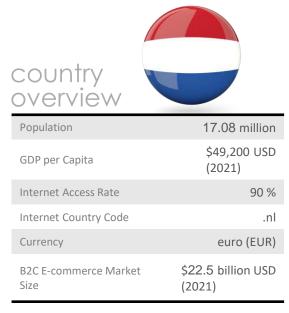
The Dutch online shopping market revenues reached €22.5 billion euros in 2021. This is due to the high Internet usage in the Netherlands as 90% of the population uses the internet and/or mobile net, which means that continuous growth in M-commerce can be expected.

In 2021, the Dutch spent \$1,578 USD per capita online and \$11,989 USD per capita at point of sale locations. The Dutch E-commerce market is expected to grow at a compounded annual growth rate of 14% until 2022.

iDEAL's Market Dominance

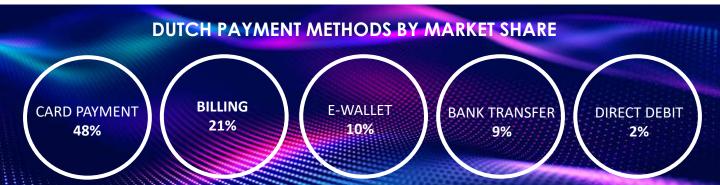
The most widely used method of payment in the Netherlands, iDEAL is a local fintech company. It is used for more than 77% of all mobile transactions. The iDEAL payment method redirects consumers from online shops to their own bank's website, authorizes their transaction data after the consumer enters their account number and their two-factor authentication. Second most popular payment method are credit cards with 48% of all online transactions. The most popular credit cards are Visa, MasterCard and American Express, with MasterCard holding 95% of the card market and Visa, 4%.

The direct online payment method Sofort is one of the popular alternative payment methods in the Netherlands. Mobile wallets were used to pay for 10% of E-commerce transactions and 3% of POS transactions in 2021.



The most widely used E-wallet is PayPal. Smaller, but not to be underestimated are the payment solutions: **Trustly**, **Capayable and Billpay.**

- IDEAL
- SOFORT
- TRUSTLY
- SEPA
- PAYPAL
- BILLPAY
- CAPAYABLE
- ACCEPTGIRO



NORWAY payment solutions

With over 5 million residents, Norway achieved an Ecommerce revenue of €15 billion euros in 2021 and a yearly growth of 12% is expected until 2022. The internet usage rate, at 99%, is very high. Online shopping for fashion is especially popular in Norway, bringing in almost €1.5 billion euros - a large part of the entire E-commerce revenue of Norway in 2021. In 2021, Norwegians spent \$2,347 USD per capita online.

Most of Norwegians use desktop computers for online purchases, however with 12% adoption rate of smartphone M-commerce, Norway is one of the European frontiers.

As was the case with Denmark, Norwegians prefer credit cards with 28% of online purchases being made with credit, while bank transfers are the second most used online method with 21% market share, followed in third place by E-wallet with 12%.

Card payments make up a total of 37% of the payments. Although this number was expected to go down, cards still remain the best choice for Norway. This can be mostly explained by the strong technological infrastructure providing safe and efficient POS terminals in most shops. Alternative methods of payment including E-wallets are becoming more popular.

Popular payment methods in Norway include notably SEPA, Trustly, Klarna, PavPal, Skrill, Paysafecard, MoneyToPay, Bankaxess, PayByBill, AcceptEmail, Ukash and AfterPay.



GDP per Capita	\$68,400 USD
Internet Access Rate	99 %
Internet Country Code	.no
Currency	Norwegian Krone (NOK)
B2C E-commerce Market Size	€15 billion EUR (2021)

- **KLARNA**
- SKRILL
- PAYSAFECARD •
- TRUSTLY •
- SFPA
- PAYPAL •
- BANKAXESS •
- MONEYTOPAY •
- UKASH



POLAND payment solutions

Internet usage in Poland is comparatively low for a European country at 67.15 % - however those 22 million internet users are expected to make at least one online purchase by 2022. E-commerce is expected to grow at 23% in 2023 meanwhile M-commerce should erupt in the next four years as only 6% of the total online transactions happened on mobile device or tablet.

In 2021, Polish spent \$303 USD per capita online and \$6,238 USD per capita at brick-and-mortar locations.

The Polish payment markets is dominated by simplified online bank transfers at 41% usage rate. Fast transfers services, such as those offered by PayByNet, Przelewy24 and Dotpay, are used by almost half of online shoppers.

A further 16% of transactions are processed by debit card while only 7% of the transactions are made with credit card — unusually low number for European country. Pay-on-delivery is used by 12% of the population.

Looking towards the future, payment methods such as E-wallets are expected to grow in popularity. In 2021 E-wallets were used to pay for 17% of Ecommerce and 1% of POS transactions. Popular payment service providers in Poland include PayLane, DotPay, PayByNet, Przelewy24, Neosurf, T Pay, PayPal and eCard S.A.

country overview	
Population	38.6 million
GDP per Capita	\$26.500 USD
Internet Access Rate	67.15 %
Internet Country Code	.pl
Currency	Polish Zloty (PLN)
B2C E-commerce Market Size	\$10 billion USD (2021)

- PAYPAL
- TPAY
- NEOSURF
- PRZELEWY24
- DOTPAY
- PAYLANE
- PAYBYNET
- ECARD S.A



RUSSIA payment solutions

More than 144 million people live in Russia, where the internet usage rate is at 86%. In 2021, Russians had \$25,400 GDP per capita, spent \$231 USD per capita online and \$8,612 USD per capita at brickand-mortar locations. However in the last years, the Russian growth rate has moved sideways due to the Western countries sanctions and slump in the oil prices.

The E-commerce market is expected to reach its very promising potential, with a compounded annual growth rate of 9% until 2022 as Russian millennials overtake the leading consumer role.

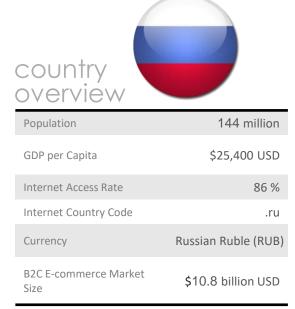
The most popular payment method in Russia are debit cards with 36% of all online transactions followed by E-wallets with 24%.

The most popular local payment E-wallets in Russia are:

• **Qiwi**, an E-wallet that claims 70 million unique users a month. Qiwi wallets can be topped up at one of 150,000 plus payment terminals, as well as with credit/debit cards, on their phone, or with a WebMoney account.

• WebMoney, a PayPal clone that allows customers to load the account using other available local payment methods.

• Yandex.Money, an E-wallet with top-up options including prepaid scratch cards, plastic cards, online banking and cash.



- QIWI
- WEBMONEY
- YANDEX MONEY
- PAYPAL
- MIR
- ROBOKASSA
- ALFACLICK



SWEDEN payment solutions

Sweden is home to 9.9 million people with current GDP per capita standing at \$53,442 USD.

63% of the total population (6.3 million people) made an online purchase and the number is expected to rise for an additional 900.000 by 2021. On average, the consumers spend \$1179 USD on online purchases yearly totaling E-commerce revenues for 2021 at \$7.5 billion USD.

The M-commerce market is expected to expand further due to the 78% smartphone penetration rate which is expected to reach 90% by 2021. However as of now, 87% of users pay via desktop as opposed to 13% using smartphones or tablets.

While credit cards (35%) remain the second common way to pay online, Sweden is the frontier of open invoice payments, a payment method that is expanding internationally and is the most popular payment method in the market after cards with 37% of usage rate.

Online banking through major banks such as Handelsbanken, SEB, and Nordea or E-wallets such as PayPal and Payson are the third most popular payment method with 20% of market share.

Another alternative payment solution used by Swedes is Mobiamo, a mobile payment solution for fast payments. There is also Klarna which allows customers to buy now and pay later. The most popular E-wallets are Paypal and Payson jointly used by 20% of Swedes to pay online.



	(2021)
Internet Access Rate	95 %
Internet Country Code	.se
Currency	Swedish krona (KR)
B2C E-commerce Market Size	\$7.5 billion USD (2021)



- SEPA
- KLARNA
- PAYPAL
- PAYSON
- SKRILL
- TRUSTLY
- MOBIAMO



SPAIN payment solutions

Spain is home to 48.1 million inhabitants with a total GDP of \$1.24 trillion USD. There are currently 24.77 million E-commerce shoppers in Spain who spent around \$800 USD per capita annually compared to \$12,383 USD per capita at point of sale locations.

This market has a lot of growth potential, especially in relation to cross-border business within the EU: 60% of Spaniards make purchases from international websites - 90% of which are within Europe. E-commerce is expected to grow at a 10% rate until 2022, while M-commerce growth is expected to double within the next few years.

The most popular payment method in Spain are cards, with over 85% of the population in possession of at least one debit or credit card. Debit and credit cards jointly accounted for 40% of online transactions this year. Using prepaid virtual cards for online purchases is also widely used payment solution.

The number of cards payments is expected to decrease in the next few years as alternative methods of payment such as bank transfers and E-wallets gain in popularity. E-wallets were used to pay for 19% of E-commerce with 42% od Spanish customers using PayPal when it comes to mobile payments. Pre-paid cards are the most popular card type, due in part to (perceived) better security and decreased costs. The most popular credit card is CartaSi (which is co-branded with MasterCard and/or Visa) whilst the most popular prepaid debit card is Postepay (co-branded with Visa).

country overview

Population	48.1 million
GDP per Capita	\$34,800 USD
Internet Access Rate	68.75 %
Internet Country Code	.es
Currency	euro (EUR)
B2C E-commerce Market Size	\$20.2 billion USD (2021)

- SEPA
- KLARNA
- PAYPAL
- SAFETYPAY
- NEOSURF
- MASTERPASS
- CARTASI
- POSTEPAY



SWITZERLAND payment solutions

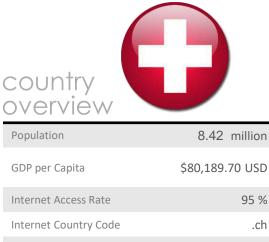
Switzerland's B2C revenues grew at 8.7% in the previous years, reaching 6.25 billion CHF in 2021. The tech savvy Swiss customer spends about €1,600 EUR online per year. While the fashion industry is a highly popular online industry in Germany, the Swiss tend to purchase other products such as electronic devices and food. Due to the high rate of internet usage (95%) the E-commerce market is estimated to showcase 10% growth in the next year.

Up to 25% of online orders in Switzerland are made by using smartphones, so it is important that stores that wish to sell in Switzerland optimize their shop to function well over an app or mobile version.

The most popular payment methods in Switzerland are card payments (48%), invoice billing (21%) and E-wallets (10%).

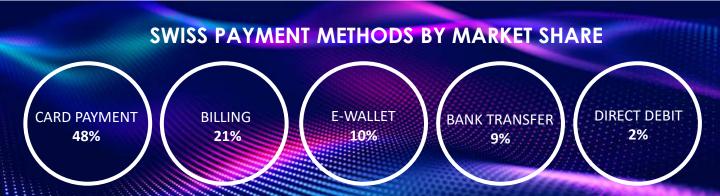
The above mentioned three payment methods must be integral part of the merchant payment offerings if they wish to sell in Switzerland, as they are incredibly popular and best choice for achieving an optimal conversion rate.

In addition to invoice purchases, bills are often paid at the bank counter. Pre-paying and paying on delivery are also common methods of payment. The Swiss loves paying by invoices. For services, paying by credit card is the most common method of payment, as services often require proof of payment before the service done.



	55 70
Internet Country Code	.ch
Currency	Swiss franc (CHF)
B2C E-commerce Market Size	6.25 billion CHF (2021)

- SEPA
- SOFORT
- KLARNA
- MASTERPASS
- EASYPAY SWISSCOM
- NEOSURF
- PAYPAL
- POST FINANCE



TURKEY payment solutions

Turkey hosts one of the quickest growing Ecommerce markets in the world with over 19.2 billion TRY spent on non-retail shopping and 23 billion TRY on retail transactions. In the next few years, a growth of 19% per year is expected as between 2020 and 2021 the market grew 37%.

In 2021, Turks spent \$141 USD per capita online and, by contrast, \$2,494 USD per capita at point of sale locations. A quarter of online shoppers already use mobile phones and M-commerce should triple by 2022.

Two thirds of the Turkish consumers use Visa and MasterCard as their choice for online shopping and card payments have reached 81% of total market share. In addition to physical cards, virtual cards are also very popular. In the future, online transfer, Ewallets and other digital payment methods are expected to pick up in adoption due to increased government censorship regulatives.

There are strict regulatory requirements within the Turkish market that may present barriers to entry for international merchants:

- Installments on credit card payments are popular but can only be offered by connecting to individual banks.
- Cross-border acquiring can lead to shopper surcharges and installments are only possible if connected to a domestic acquirer.
- 3D Secure is mandatory on debit cards and recurring payments are not supported for debit cards.



Population	79.4 million
GDP per Capita	\$20,400 USD
Internet Access Rate	46.6% %
Internet Country Code	.tr
Currency	Turkish Lira (TRY)
B2C E-commerce Market Size	\$2.9 billion USD (2021)

country

- PAYPAL
- SKRILL
- IYZICO
- IPARA
- PAYU
- FASTPAY



UNITED KINGDOM payment solutions

The United Kingdom represents one of the leading E-commerce markets in Europe. There are currently 45.4 million E-commerce users in the UK making both exports and imports generated from online purchases increasingly important stimulator of economic growth. The compounded annual growth rate is expected to be of 9% until the end of 2021. E-commerce is expected to double within the next few years as the 9th richest country per capita continues to spent. Although in brick-and-mortar stores the British prefer to pay with cash - this is likely to change; since the introduction of contactless payments with cards, there has been a dramatic increase in card usage which as of now stands at 50%.

Two widely used E-wallets have surfaced in the market:

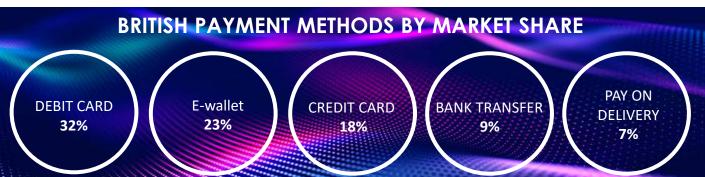
• **Pay by Bank App** was founded in 2020 by 4 of the biggest banks in the UK; Bank of Scotland, Barclays, Halifax, and Lloyds Bank. The app offers a trusted online payment solution to customers of those banks (Business Review Europe, 2020).

• Yoyo Wallet, on the other hand, does not limit itself to customers of specific banks; anyone can join. It is already active in 4 countries and recently closed a deal with coffee house chain Caffè Nero and Uber for integration into the Yoyo Wallet app and received a major investment of 12 million GBP from retail giant Metro Group. Currently, Yoyo Wallet is used by 400,000 people, and is accepted by 1,700 merchants (Business Insider, 2021).



Population	66.02 million
GDP per Capita	\$41,200 USD
Internet Access Rate	89.9%
Internet Country Code	.uk
Currency	British Pound (GBP)
B2C E-commerce Market Size	\$96.5 billion USD (2021)

- SEPA
- PAYPAL
- MASTERPASS
- YOYO WALLET
- PAY BY BANK APP
- ALLOPASS
- AMAZON PAY



ALTERNATIVE **PAYMENT** METHODS

North America

North America is home to 223 million consumers who made at least one online purchase in 2021 – a number covering 85% of the population.

US and Canada mostly choose credit cards as their preferred payment method with 74% making an online transaction via card in 2021. Around 38% of the customers choose to use digital banking application such as PayPal (The Market Leader) and Alipay or Gift Cards.

Americas are quite forward thinking when it comes to M-commerce as 28% of the online shoppers used smartphone to make online purchase or transaction.

Mobile online purchases have been growing steadily in North America at a rate of 10% in the past five years and are expected to continue to grow at a similar pace.

REVENUE IN THE E-COMMERCE MARKET AMOUNTED TO \$552,610 MILLION USD IN 2022.

Latin America

What will it take to make Latin America more financially inclusive place? The longstanding question remains unanswered as the continent is home to more than 210 million unbanked citizens creating stark contrast to its neighbor North America.

Cash remains king in the region, with about two-thirds of consumers in Latin America preferring cash over credit, according to recent estimates. That creates a huge pressure point for any company hoping to win market share via digital channels in Latin America.

THERE ARE OVER 210 MILLION UNBANKED ADULTS IN LATIN AMERICA AND THE CARIBBEAN.

However, there are also positive signs that put an optimistic spin on the future for digital payments in Latin America — coming from local players in the Latin American economy. For instance, PagSeguro — a Brazil-based provider of digital payment services, provides devices that enable "micro" merchants to accept debit and credit cards. The company has launched its initial public offering (IPO) in January, 2022 raising approximately \$2.3 billion USD.

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sales@brightman-group.com

and find out which payment methods are most suitable for your industry.

CANADA payment solutions

Internet usage in Canada is very high at 88%, although the E-commerce market is still relatively small. In 2021, Canadians spent \$1,344 USD per capita online, compared to \$18,727 USD per capita at brick-and-mortar shops. This should change within the next few years, as online shopping is expected to rise on an average of 10% per year.

The M-commerce market is expected to grow even more – forecasted to triple in about seven years. Between 2018 and 2020, weekly or daily shoppingthrough a smartphone have doubled. Nevertheless,only a third of Canadiansmartphone owners usethem to shop online.

The largest share of transactions at 64% are made through credit cards - Visa and MasterCard are used the most. Following card transactions, E-wallets (16%) and bank transfers (9%) are commonly used.

Many payment gateways process credit card payments in Canada. Here are some examples:

- Calgary-based Helcim offers an all-in-one merchant platform to Canadian and American businesses.
- Moneris Solutions offers point of sale and online solutions to process debit and credit card payments. Gift and loyalty programs can also be put in place with this processor.
- Square is well-suited for small businesses, charging no monthly fees for businesses processing less than 250 000 USD.





Population	36.71 million
GDP per Capita	\$45,600 USD
Internet Access Rate	88 %
Internet Country Code	.ca
Currency	Canadian Dollar (CAD)
B2C E-commerce Market Size	\$1.8 billion USD (2021)

- PAYPAL
- NEOSURF
- OPENBUCKS
- TICKET PREMIUM
- INTERAC ONLINE
- APPLE PAY
- GOOGLE PAY
- ANDROID PAY



UNITED STATES payment solutions

The American market is one of the biggest Ecommerce market in the world - what's even more impressive is that a yearly growth of 9% until 2022 is expected. In 2021, Americans spent \$2,271 USD per capita online and, in contrast, \$24,248 USD per capita at physical stores.

In 2022, online sales of physical goods reached \$504.6 billion USD dollars and are projected to surpass \$700.5 billion USD in 2022. Apparel and accessories retail e-commerce in the USA is projected to generate over \$138.7 billion USD in revenue by 2022. The United States rank behind several countries in terms of e-commerce sales as percentage of total retail sales, as almost a fifth of China's retail sales occurred via the internet, compared to only 8.1% in the USA.

Cards, as a payment system, dominate the market with 52% usage rate. Most Americans own either a Visa or a Mastercard. 32% of the online transactions are made via credit card while 20% are made via debit card.

In the coming years, card transactions will gradually lose its popularity in favor of alternative payment method such as E-wallets. They were used to pay for 20% of E-commerce and 3% of POS transactions in 2021. At point of sales, only 16% of transactions were paid in cash. For example, E-wallets like PayPal, Android Pay, Samsung Pay and Apple Pay are becoming very popular.



country overview

Population	321.3 million
GDP per Capita	\$55,800 USD
Internet Access Rate	76.18 %
Internet Country Code	.US
Currency	United States Dollar (USD)
B2C E-commerce Market Size	\$504.6 billion USD (2022)

- PAYPAL
- GOOGLE PAY
- APPLE PAY
- ANDROID PAY
- OPENBUCKS
- MASTERPASS



ARGENTINA payment solutions

Argentina has a population of 43.4 million with an Internet penetration of 81% as well as a smartphone penetration of 57%. The country's GDP per capita is higher and income distribution more equal than among its neighbors. Argentina's middle class is therefore large and has a good e-commerce purchasing power. Its consumers are tech-savvy, and the country's past instability has made them eager to get what they want. In comparison with the rest of Latin America, Argentina is producing a massive amount of startups.

Argentina used to have a low credit card penetration rate. However, credit cards are now the most frequently used payment method at 27% market share. The giants Visa and MasterCard respectively control 59% and 23% of the card market, while local credit card schemes account for 8% of the market. This is why merchants should also consider offering the Argentinean cards Tarjeta Naranja (5%) and Cabal (2%). Much like Brazil, many credit cards in the country are domestic, which are not enabled for international purchases.

It is important to note that payment by instalments are very popular, with 7-12 month instalments plans being preferred. Other popular alternative payment providers in Argentina are Rapipago, Pagofacil and Cobro Express.

In 2021, 22% of all Argentinian E-commerce transactions were paid by using E-wallets. In comparison they were were used in 4% of point of sale transactions.

country overview



Population	43.4 million
GDP per Capita	\$14,401.97 USD (2021)
Internet Access Rate	75 %
Internet Country Code	.ar
Currency	Argentinian Peso (ARS)
B2C E-commerce Market Size	\$2.9 billion USD

- RAPIPAGO
- PAGOFACIL
- PAYPAL
- TARJETA NARANJA
- NATIVA
- CABAL
- COBRO EXPRESS



BRAZIL payment solutions

Latin America's largest economy and most developed E-commerce market - Brazil holds a huge potential for merchants wishing to go international. While the political and economic climate in the past years was rather uncertain, the Brazilian market is booming.

Despite a relatively low internet usage at 55.6%, Brazil makes up 60% of all online purchases in South America. Brazil's 203 million citizens and technological advancements are pushing the Ecommerce market to grow further each year, at an expected growth rate of 6% until 2022. In 2021, Brazilians spent \$116 USD per capita online and \$3,746 USD per capita at point of sale locations.

A large part of the internet transactions in Brazil are made with cards, 60% through credit cards, 2% through debit card and 1% through prepaid cards. Cross-border payments are still only available through a limited number of card providers. In fact, only 20% of Brazilian credit cards are enabled for international use. Boleto Bancário, which also supports offline payments, is a very popular method of payment in Brazil and will grow even further with the emergence of M-commerce. In addition 15% of transactions are made through Post Pay.

Other popular payment methods in Brazil are the "co-branded cards" such as HIPERCARD. In addition, Brazilian consumers use E-wallets in 13% of all online transactions and the two most popular choices are PayPal and Mercado Pago.

Population	209.3 million
GDP per Capita	\$9,821.41 USD (2021)
Internet Access Rate	55.6 %
Internet Country Code	.br
Currency	Brazilian real (BRL)
B2C E-commerce Market Size	\$18.86 billion USD (2021)

country overview

- MERCADO PAGO
- HIPERCARD
- PAYPAL
- BOLETO BANCÁRIO
- PAGSEGURO
- ELO
- POSTPAY
- AURA



CHILE payment solutions

Chile has population of 18.05 million – relatively small market compared to Latin American giants Brazil and Mexico. However, Chile's E-commerce sector is stronger than its local counterparts due to Chile's disproportionate 9% share of Latin America's E-commerce market, despite holding only 2% of the region's population.

The Chilean E-commerce market is already worth more than \$3.7 billion USD and expected to grow at a rate of 35% in 2022, reaching \$5 billion USD by the end of this year.

Chilean mobile E-commerce has a long way to go. 45% of Chileans own a smartphone, but only 15% make online purchases via mobile compared to 85% usage rate of desktop computers.

The most used online method of payments in Chile are E-wallets at 58% usage rate in online transactions. Credit cards are the second most common and popular ways for consumers to make purchases online with 28% of the market share. Multinational financial corporations like Visa, MasterCard, Maestro, American Express and Discover are the market leaders when it comes to payments. Popular alternative payment card solution is Redcompra which is used for processing bank or debit card transactions with a 4-digit PIN rather than verifying an ID card or capturing a signature. Webpay Plus is a payment solution in Chile that allows shoppers to pay online with their credit card.



- REDCOMPRA
- WEBPAY PLUS
- PAYPAL
- MULTICAJA
- SERVIPAG



MEXICO payment solutions

The Mexican E-commerce market is a promising one. In 2021, Mexicans spent \$125 USD per capita online, compared to \$3,283 USD at point of sale locations. In the following four years, the market is expected to grow at a compounded annual growth rate of 13%. Cross-border transactions are generally made with the US.

Mexico has the second largest Latin American Ecommerce market (Brazil is #1) and nearly half of its online shoppers have made purchases from mobile devices.

Cash payment in Mexico is especially important, as many Mexicans do not have bank accounts. In 2021, 76% of brick-and-mortar purchases were paid cash. Card payments make up over half of transactions, with 30% of transactions made through credit cards and 24% over debit cards, while charge debit cards took up 15%. Visa holds 60% of the card market, as MasterCard comes in second with 33%, followed by American Express with 5%.

E-wallets were used to pay for 14% of E-commerce and 3% of POS transactions in 2021. Other alternative methods include bank transfers (7%) and payments in businesses - these methods are expected to take off in the next few years.

Through the largest telephone company in Mexico, "Teléfonos de Mexico" (Telmex), prepaid cards have gained popularity for online transactions.



GDP per Capita	\$17,500 USD
Internet Access Rate	49.2%
Internet Country Code	.mx
Currency	Mexican Peso (MXN)
B2C E-commerce Market Size	\$3.1 billion USD

- TODITOCASH
- TELMEX
- PAYPAL
- OXXO
- BBVA BANCOMER
- SAFETYPAY
- 7-ELEVEN



AUSTRALIA payment solutions

Australia holds one of the biggest E-commerce markets in Asia and the Pacific. In 2021, Australians spent \$1,169 USD per capita online. In comparison, they spent \$24,535 USD per capita at point of sale.

Australians most often shop on international websites. Today however, there is a growing number of local providers in E-commerce. The M-commerce market is expected to more than double in the next four years.

Credit card payments through VISA, MasterCard and American Express take up 37% of the market share as the most popular payment method. The cards are typically used with a loyalty program.

Another common method of payment is through E-wallets such as PayPal. Mobile wallets were used to pay for 18% of Australian E-commerce transactions in 2021, and 2% of point of sale transactions. Bank transfers come in third at 17% market share followed by debit card payments with at 12%. Post Pay came in last with 4% of all online transactions.

In addition, the money transfer method POLI, the billing type BPAY and pay-on-delivery solutions are highly in demand.



country overview

Population	24.6 million
GDP per Capita	\$65,400 USD
Internet Access Rate	87 %
Internet Country Code	.au
Currency	Australian Dollar (AUS)
B2C E-commerce Market Size	\$17.8 billion USD

- POLI
- BPAY
- PAYPAL
- MASTERPASS
- OPTIMAL PAYMENTS
- SKRILL



ALTERNATIVE **PAYMENT** METHODS

Asia-Pacific

Market Overview

Over 50% of all the online shopping for retail goods and services in the world takes place in the Asia-Pacific region, whose regional leaders, China, Japan, and South Korea are also among the global leaders in B2C Ecommerce.

The main frontiers for the next 5 years are about to emerge from South and Southeast Asia, such as India, Indonesia, Thailand, Vietnam and the Philippines as they grow their retail offer and increase the purchasing power of their customers.

Mobile wallets are increasingly used for payments in-store at POS terminals, while China is a leader in mobile payment adoption since the introduction of AliPay and WeChat Pay payment interface. In India, where it is expected that in a decade over one-third of retail payments will be electronic – the increased governmental deregulation of electronic money is working in support of Ecommerce growth. The Asia Pacific E-commerce market sat at staggering at \$1.4 trillion USD in 2021, up from \$535 billion USD in 2017, achieving a growth rate of 27% between 2017 and 2021. This is much higher than Europe and North America which respective growth in E-commerce was 14% and 13% during the same time period.

OVER 50% OF GLOBAL ONLINE RETAIL SALES STEMS FROM ASIA-PACIFIC REGION.



CHINA payment solutions

China is a home to 1.4 billion people in the world with an E-commerce market size of \$403 billion USD in 2021. The Chinese online retail market will be worth \$713 billion USD by 2022 surpassing the size of the US market by more than double. M-commerce is expected to quadruple itself in the next four years. In 2021, Chinese spent \$787 USD per capita online and \$10,911 USD at point of sale locations.

The alternative payment solutions providers in China are currently the E-commerce market leaders offering easy-to-use E-commerce platforms usually in the form of E-wallets, which were used for 65% of all online transactions. A majority (70%) of shoppers in the market have completed a purchase using their smartphone. Most notable and wide-used E-wallets are Alipay and WeChat Pay.

The three favorite payment methods are China UnionPay, Alipay, and Tenpay.

• UnionPay is the only interbank network in the market and the largest card scheme in the world by number of cards issued. Due to this, UnionPay is a vital part of the payments mix, and particularly important to reach shoppers who do not have an Alipay or Tenpay account.

• Alipay is the largest single payment platform in the market, with around 48% share and expected to gain even bigger slice of the fast-growing mobile pie. Its dominance is due to its web properties and association with biggest Chinese online retailer AliBaba.

 Tenpay is integrated with QQ, a mobile social platform that includes shopping, gaming and microblogging from their own webstores (such as WeChat).



Population	1.4 Billion
GDP per Capita	\$8,826.99 USD (2021)
Internet Access Rate	54.3 %
Internet Country Code	.cn
Currency	Renminbi (CNY)
B2C E-commerce Market Size	\$403 billion USD (2021)

The growing purchasing power of the middle class in China rose the numbers of Chinese tourists in the West, which stimulated higher demand for Chinese E-wallets acceptance with merchants that are active in tourism and online retail in Europe and America.

- ALIPAY
- WECHAT PAY
- TENPAY
- UNIONPAY
- LIAN LIAN PAY



HONG KONG payment solutions

The E-commerce market in Hong Kong is exponentially expanding with 4.15 million Ecommerce users in 2021. By 2021 additional 1.2 million customers are expected to be shopping online. Hong Kong's GDP per capita is currently \$46,193 USD and expected to reach \$54,008 USD by 2021. 74% of online shoppers in Hong Kong use desktop computer to make a purchase while 26% use tablets or smartphone.

Debit cards are expected to remain the most popular payment method at 32%, and China UnionPay is growing in popularity holding the third place - just after worldwide E-wallet PayPal. Ewallets were used for 23% of the online transactions in Hong Kong, followed by credit cards at 18%.

Alipay has launched its domestic wallet in Hong Kong, and we expect both Alipay and WeChat Pay to dominate the market in the near future. Moreover, Apple Pay can be used by holders of Visa, Mastercard and American Express cards issued by participating banks.

Another wide spread APM is MyCard Member Wallet a popular E-wallet, utilizing MyCard prepaid cards as currency, that allows users to purchase ingame items in Southeast Asia. MyCard is a payment gateway for over 1000 digital content providers and is one of the most convenient ways to pay for digital goods and services in Asia Pacific region. No local entity is required for cross-border transactions, and it is easy to accept payments in the domestic currency and settle in the same currency with no impact of currency conversion.



Population	7.392 million
GDP per Capita	(2021) \$46,193.61 USD (2021)
Internet Access Rate	79.2 %
Internet Country Code	.hk
Currency	Hong Kong Dollar (HK\$)
B2C E-commerce Market Size	\$3.71 billion USD (2021)

POPULAR ALTERNATIVE PAYMENT METHODS

- WECHAT PAY
- PAYPAL
- ALIPAY
- MYCARD
- OCTOPUS

DEBIT CARD E-WALLET CREDIT CARD BANK TRANSFER PAY ON 32% 0 0 18% 9% 9% 9%

INDIA payment solutions

With 1.3 billion residents India's internet usage sits at merely 45%, telling us a story of enormous growth potential in both E-commerce and Mcommerce. A growth rate of 21% is expected until 2022. Currently, the revenue of the E-commerce market is about \$44 billion USD, as Indians spent \$27 USD per capita online, compared to \$659 USD per capita at POS. The fashion industry makes up the largest part of the E-commerce market. Payment through E-wallet is the most common method of online payment in India, as it was chosen to settle 26% of E-commerce transactions and 6% of point of sale transactions in 2021.

Bank transfers take up the second place with 19% of payments. Card payments are used less, with 16% of online payments through credit cards and 12% of payments through debit card. Cash is still the widely preferred offline payment method, as 72% of POS transactions were paid for cash in India in 2021. The demonetization of Rs 500 and Rs 1000 currency notes has been working largely in the favor of digital wallet start-ups. The increasing number of digital wallets contributes to slowly moving India towards being a cashless country. Here are two of the better know Indian mobile payment platforms:

- BHIM (Bharat Interface for Money) allows users to pay and immediately transfer money by linking it to their bank account.
- Google Tez also operates on top of the UPI. It is phone number-based and takes the form of a chat app. The service can be used to pay both online and offline.



country overview

Population	1.3 Billion
GDP per Capita	\$6,200 USD
Internet Access Rate	20.1%
Internet Country Code	.in
Currency	Indian Rupee (INR)
B2C E-commerce Market Size	\$44 billion USD (2021)

The most widely used E-wallets in India are PayPal, ITZ Card and OxiCash.

- RUPAY
- PAYPAL
- MOLPAY
- ITZ CASH
- OXICASH
- CCAVENUE
- CITRUS PAY
- PAYU INDIA



JAPAN payment solutions

Japan is a home to 127 million people and an Ecommerce revenue of \$159 billion USD in 2021 – making it the fourth largest E-commerce market worldwide and the second largest in Asia.

Last year, Japanese spent \$1,200 USD per capita online, compared to \$14,500 USD at POS locations. A steady growth in E-commerce up to \$204 billion USD is expected until 2022 - a growth rate of 6%. This is facilitated by a very high Internet usage, with 91% of the population online. M-commerce grew by 29% in 2021 and is mainly slowed down by the low smartphone usage amongst old generations.

As with most of the developed countries credit cards are dominant when shopping online generating more than 56% of the transaction volume with Visa and Master card having 70% of the market share. Konbini (payment for online orders in small, neighborhood businesses) and cash payment are other popular methods of payment. The second and third preferred payment methods in Japan are the classic post payments with 20% and bank transfers with 13%.

E-wallets are gaining popularity in Japan although they were used for only 3% of all online transactions. The E-wallet Pay-easy is a wide-used local alternative similar to PayPal. This is a payment solution to purchase digital content over the Internet. Pay-easy focuses mainly on the optimization of online content in the field of music, software products, games, articles, icons, pictures or titles. Mobile Suica is another successful mobile payment platform in Japan.



country overview

Population	127 million
GDP per Capita	\$38,100 USD
Internet Access Rate	91%
Internet Country Code	.jp
Currency	Japanese Yen (JPY)
B2C E-commerce Market Size	\$159 billion USD (2021)

- JCB
- KONBINI
- PAY-EASY
- PAYPAL
- MOBILE SUICA



MALAYSIA payment solutions

The online retail market in Malaysia is going to double by 2022. Over two-thirds of the 31.62 million Malaysian people have access to the the internet. More than half the revenue of E-commerce is already earned through M-commerce. Which isn't surprising, as 89% of Malaysian Internet users access it through their smartphone, with 1.5 mobile contracts per capita.

The largest portion of this growth comes from within Asia, merchants although worldwide merchants are also gaining ground in the Malaysian market.

Malaysian consumers are predominantly shopping on international websites with more than 40% of purchases made in foreign country. As a result of the mobile banking popularity in Malaysia, shoppers are used to being redirected to their online banking environment when making a purchase, which is major drawback for recurring and one click Amazon style payments.

Credit cards (Visa, MasterCard, American Express) dominate the payment process with 45% and bank transfers are second with 20% of online purchases followed by debit cards at 11%. Local bank transfers and E-wallets such as Alipay and WeChat Pay will play a bigger role in the future.

Mobile wallets were used to settle 7% of Ecommerce transactions and 1% of POS transactions in 2021. Direct debits are also used, the most famous being Maybank2u and CIMB Clicks.



Population	31.62 million
GDP per Capita	\$9,944.90 USD (2021)
Internet Access Rate	68 %
Internet Country Code	.my
Currency	Malaysian ringgit (MYR)
B2C E-commerce Market Size	\$19.2 billion USD (2021)

country

- MOLPAY
- ALIPAY
- WECHAT PAY
- **MYCARD** •
- PAYPAL
- CHERRY CREDITS •
- **CIMB CLICKS**
- MAYBANK2U



SOUTH KOREA payment solutions

E-commerce revenue in South Korea has grown at a strong pace in the last years and reached staggering \$63 billion USD in 2022. A strong and steady 11% growth is expected reaching a volume of \$89 billion USD by 2023.

Growth in the M-commerce market is expected in the coming years as well, while purchases through desktops are expected to drop. South Koreans spent \$876 USD per capita online in 2021, compared to \$14,197 USD at brick-and-mortar locations. There are currently 30.5 million E-commerce users in South Korea and the expected new 1.33 million users are going to be shopping online by 2021. In under four years, these 31.83 million E-commerce users will spend an average of \$1023 USD online.

Debit and credit cards are the most widespread payment method, taking up 72% of the market in 2021, followed by E-wallets at 10%. E-wallets were also used to pay for 3% of POS transactions last year. Visa, MasterCard and American Express are the most widely used, especially in overseas business. Other popular credit cards include the local payment card brands BC Lord, Lotte Card, CashBee and T-Money.

Other payment methods are expected to grow in popularity, taking up market share from the card providers. For example 34% of online shoppers chose to use social media payment gateways while 29% enjoy using payment apps. Many enjoy using prepaid gift vouches such as the Culture Voucher.



country overview

Population	51.47 million
GDP per Capita	\$29,742.84 USD (2021)
Internet Access Rate	97 %
Internet Country Code	.kr
Currency	South Korean won (KRW)
B2C E-commerce Market Size	\$63 billion USD

- CASHBEE
- BC LORD
- LOTTE CARD
- T-MONEY
- TEENCASH
- PAYPAL
- SEOUL PAY



NEW ZEALAND payment solutions

New Zealand is a frontier economy in Oceania with a population of nearly 4.8 million Kiwis. Internet penetration is 92%, smartphone penetration is 53.5% and the number of online buyers is just under 2 million.

M-commerce is growing as 30% of Internet users have already made a purchase via their smartphone. In 2021, Kiwis spent \$855 USD per capita online and \$12,793 USD per capita at brick-and-mortar shops. The projected growth rate is expected to be 8% per year until 2022 and total E-commerce sales reached \$3.42 billion USD in 2021. 79% of Kiwis use Desktop to make online purchases while 16% use either smartphone or tablet.

Credit cards are one of the most common payment methods with 36% market share. Above all, the local card scheme Electronic Funds Transfer at Point Of Sale (EFTPOS) enjoy a strong popularity with 52% of the cards in circulation.

Other payment methods are POLi, Payment Express Account2Account, E-wallets (e.g. Masterpass or PayPal have 30% usage rate) and pay on delivery. Mobile wallets were used to pay for 19% of Ecommerce transactions and 2% of POS transactions in 2021.

Leading payment providers in New Zealand:

Payment Express, IP Payments, SecurePayTech.com, Paymark, MerchantWarrior, Flo2Cash Limited, Paymate, Eway and IntegraPay



country

Population	4.794 million
GDP per Capita	\$42,940.58 USD (2021)
Internet Access Rate	92 %
Internet Country Code	.nz
Currency	New Zealand dollar (NZ)
B2C E-commerce Market Size	\$3.42 billion USD (2021)

- PAYPAL
- **MASTERPASS**
- **POLI BANKING**
- MINT •
- PAYMENT EXPRESS
- ACCOUNT2ACCOUNT.



THAILAND payment solutions

The E-commerce in Thailand is experiencing rapid growth as smartphones pass 31% market penetration. By 2023 the annual growth rate is expected to be around 12%. This growth is also attributable to the growing use of credit and debit cards, which are becoming increasingly attractive in online payment.

M-commerce is also growing and Thailand holds the second place in the Asian Pacific region when it comes to mobile buyers. Thai customers are amongst the most likely to use social media to find products and sellers. In 2021, Thais spent \$358 USD per capita online and, in contrast, \$2,608 USD per capita at physical stores.

The most used payment method in Thailand is bank transfer at 28% followed by pay-on-delivery and Ewallets both at 20%. The E-wallet giant PayPal is taking up most of this portion of the market.

Alternative payment methods are gaining traction in the nation; 70% of its online population prefers to pay for digital purchases with mobile phones (direct carrier billing) or with prepaid cash cards. Visa is the most widely used credit card in Thailand and has a market share of 72%. Another widely used APM are QR codes.

Approximately 78% of the Thai population owns a bank account. The most famous banks are Bangkok Bank, Siam Commercial Bank, Krung Thai Bank and Kasikornbank.



Population	69.04 million
GDP per Capita	\$6,593.82 USD (2021)
Internet Access Rate	40.3 %
Internet Country Code	.th
Currency	Thai baht (THB)
B2C E-commerce Market Size	\$2 billion USD (2021)

country



- PAYPAL
- 123
- MPAY
- PAYSBUY
- **BIG**C
- TOT JUST PAY



3D Secure

The programme jointly developed by Visa and Mastercard to combat online credit card fraud. Cardholders introduce their pass word to verify their identity whenever they make an online purchase. E-merchants willing to offer this security service to their customers must be registered as a participating merchant in the programme. Only cardholders registered at Verify by Visa or Mastercard SecureCode can actually be requested to verify their data when purchasing online.

Access to Accounts (XS2A)

The term refers to access to payment accounts by third parties acting on behalf of the Payment Service User. European Banking Authority sets the basic requirements, defining how data from bank accounts is accessed for PSD2. It makes it mandatory for banks to set up access to bank account data via API, although there are multiple standards for APIs. This will enable consumers to log on to their bank accounts on a third-party provider's plat form without exposing their bank login data to them.

Acceptor

A merchant or other entity that accepts a payment instrument presented by a client in order to transfer funds to that merchant or other entity.

Account Information Service Provider (AISP)

An authorized entity that provides aggregation services related to payment accounts such as bank accounts. PSD2 allows AISPs authorized access to bank account data through an API. An example of a service an AISP could provide is personal financial management: a single platform where an account holder can login to view and manage multiple bank accounts from multiple providers. AISPs can be existing banking providers or third parties.

Alternative Payment Methods (APM)

All those payment solutions that are not cards running on global scheme networks such as Visa, Mastercard, or American Express.

Account Servicing Payment

Service Provider (ASPSP) The term means a Payment Service Provider (PSP) (bank or card issuer) that provides authorized access to bank account information. For PSD2 they are allowing API access to bank account data for AISPs and PISPs.

Automated Clearing House (ACH)

An electronic clearing system in which payment orders are ex changed amongst participants (primarily via electronic media) and handled by a data-processing center.

ACH Network

The Automated Clearing House (ACH) Network facilitates E-commerce, by serving as an efficient, reliable, and secure payments system. NACHA, led by member depository financial institutions and payments associations, fulfils this purpose by managing the

development, administration, and governance of the ACH Network, and by providing superior services and value to its members as the industry association responsible for ACH payments. The ACH Network connects the originating depository financial institutions with the receiving depository financial institutions.

Acquirer (card acquirer)

In point of sale (POS) transactions, the entity (usually a credit institution) to which the acceptor (usually a merchant) transmits the information necessary in order to process the card payment. In automated teller machine (ATM) transactions, the entity (usually a credit institution) which makes banknotes available to the cardholder (whether directly or via the use of third-party providers).

Arbitration

The process by which card companies determine whether an issuer or an acquirer has ultimate responsibility for a chargeback. Either member initiates his process after the re-presentment process is completed.

Acquiring scheme member

A licensed member of Mastercard and/or Visa who receives all bank card transactions from the merchant (the entity that sells goods or services in an online or physical environment, sometimes referred to as a retailer) or merchant aggregator (an entity that pools transactions from retailers to pass through for acceptance) and initiates that data into the scheme for settlement.

Anti-Money Laundering (AML)

A set of procedures, laws, or regulations designed to stop the practice of generating income through illegal actions. In most cases,

money launderers hide their actions through a series of steps that make it look like money coming from illegal or unethical sources was earned legitimately.

Authorization

The consent given by a participant (or a third party acting on behalf of that participant) in order to transfer funds or securities.

API (Application Programme Interface)

A set of programming techniques (web API, remote API, SDKs, libraries, frameworks, and more) that are available for software developers when they integrate with a particular service or application. In the payments industry, APIs are usually provided by the participants in the money flow (e.g. payment gateways, processors, service providers) to facilitate the money transferring process.

Bank Identification Numbers (BIN)

The first four to six digits on a credit card, which can be used to

identify the issuing bank that released the card. BINs are traditionally used by online merchants as a way to detect fraud by matching the geographic area where the cardholder is located to the geographic area identified in the Bank Identification Number.

Bill payment

A bank provided service that allows customers to receive and pay bills by means of a computer or a smartphone.

Back-end processor

A data processing company that partners with acquirers to provide

communication and processing systems that connect with the interchange systems for clearing and settlement services on behalf of those acquirers. (In some cases, the acquirer may act as its own back-end processor.)

Balance inquiry

A transaction used to determine the available balance on a card. Cardholders can typically conduct a balance inquiry online or by telephone via an IVR or via SMS text messaging services.

Some merchants may be able to use their electronic cash registers/point of sale terminals to conduct a balance inquiry on a network branded or closed loop card presented for payment. Such capability can reduce authorization declines when the amount of a purchase is greater than the available balance of the card. This is particularly relevant for cards that work on a balance rather than a credit limit, such as prepaid cards.

Bancontact

Mister Cash The domestic debit card scheme in Belgium, allowing consumers to pay in real-time and guarantee payment to (online) merchants and businesses. Bancontact payments are immediately debited from the consumer's bank account. The seller's account will be credited the next working day. Today, there are more Bancontact Mister Cash cards in circulation (15 million) than there are Belgian citizens (10.5 million).

Biometrics

The utilization of a computer user's unique physical characteristics such as fingerprints, voice, and retina to identify that user.

Bank-as-a-Platform

A strategy used to allow third parties to develop applications and services around the financial institutions via open APIs. Banks, as such, become fully fledged digital players, competing and collaborating for customer relevance in payment and information services.

Basel III

A comprehensive set of reform measures designed to improve the regulation, supervision, and risk management within the banking sector. The Basel Committee on Banking Supervision published the first version of Basel III in late 2009, giving banks approximately three years to comply with all requirements. Largely in response to the credit crisis, banks are required to maintain proper leverage ratios and meet certain capital requirements.

Batch load

The addition of funds to cards through processing a batch (or offline) file. This method is utilized for loading multiple cards from a single source. Typically, this occurs daily, weekly, or monthly. The ACH is often used for batch loads to certain types of cards such as payroll cards and government-funded cards.

Beacon

A small Bluetooth device used by vendors, merchants, banks, etc. to send information such as offers, promotions, coupons to the mobile devices of (potential) customers passing by in close proximity.

Big Data

Large data sets that may be analyzed computationally to reveal patterns, trends, and associations relating to human behavior and interactions. By developing predictive models based on both historical and real-time data, companies can identify suspected fraudulent claims in the early stages.

Blockchain

A public ledger of all transactions in the Bitcoin network made of all computers (nodes) participating and using the cryptocurrency protocol. A blockchain is a transaction database shared by all nodes participating in a system based on the Bitcoin protocol. A full copy of a currency's blockchain contains every transaction ever executed in the currency.

Card (payment card)

A device that can be used by its holder to pay for goods and services or to withdraw money.

Card acquirer (see acquirer)

Card issuer A financial institution that makes payment cards available to cardholders, authorizes transactions at point of sale (POS) terminals or automated teller machines (ATMs) and guarantees payment to the acquirer for transactions that are in conformity with the rules of the relevant scheme.

Card holder

A person to whom a payment card is issued and who is authorized to use that card.

Card not present (CNP) A card transaction in which a card is not physically presented to a merchant, such as over the internet.

Card scheme

A technical and commercial arrangement set up to serve one or more

brands of cards, which provides the organizational, legal, and operational framework necessary for the functioning of the services marketed by those brands (VISA, Mastercard, American Express, Diners, Discover, RuPay, UnionPay).

Card Security Code (CSC)

A security feature that ensures the cardholder has the physical card when making card not present transactions. There are generally two on a card, one on the mag stripe and valise when the card is read in a card present transaction, and one printed on the card and used in card not present transactions.

Chargeback

A return of funds to a consumer, initiated by the issuing bank of the instrument used by a consumer to settle a debt. Specifically, it is the reversal of a prior outbound transfer of funds from a consumer's bank account, line of credit, or credit card.

Collecting payment service provider

It is a technical intermediary between the seller's website and one or more payment schemes, which collects the funds for one or more payment methods. They take away the programming complexity for the online seller by only having to integrate with the collector's payment platform. The collector takes care of the data processing to the applicable payment method scheme. In addition, the collector collects the transaction funds for one or more payment methods and settles the amounts.

Cash on delivery

A payment method through which the payment (cash or by card) takes place when the goods are delivered.

Contextual commerce

An emerging trend in the payments and retail industries appeared as a result of the introduction of buying buttons by the social media

platforms (Facebook, Twitter, and Pinterest) to enable consumers to purchase products from digital outlets without having to leave the platform.

Credit card

A card that enables cardholders to make purchases and/or withdraw cash up to a prearranged credit limit. The credit granted may be either settled in full by the end of a specified period, or settled in part, with the balance taken as extended credit (on which interest is usually charged).

Credit institution

Any institution that is either (i) a business that receives deposits or other repayable funds from the public and grants credit for its own account, or (ii) a business or any other legal person, other than those under (i), which issues means of payment in the form of electronic money.

Cross-border payment

Or "international payment", is when a payment method issued in one country is used to make a purchase from a merchant based in another country.

Chip and PIN

A UK government-backed initiative to implement the EMV (short for Europay, Mastercard, and Visa) standard for smart payment cards. The name of this initiative stems from the presence of a semiconductor chip and associated circuitry in the smart card, which is used in tandem with a PIN (personal identification number). In use, the smart card is placed into a PIN pad terminal or a modified swipe-card reader, which accesses the chip in the card. The user enters a 4-digit PIN that is checked against the information stored on the card. If the entered PIN matches the stored value, the transaction is permitted to proceed.

Clearing

The process of transmitting, reconciling, and, in some cases, confirming transfer orders prior to settlement, potentially including the netting of orders and the establishment of final positions for settlement. Sometimes this term is also used (imprecisely) to cover settlement. For the clearing of futures and options, this term also refers to the daily balancing of profits and losses and the daily calculation of collateral requirements.

Clearing House

A common entity (or a common processing mechanism) through which participants agree to exchange transfer instructions for funds, securities, or other instruments. In some cases, a clearing house may act as a central counterparty for those participants, thereby taking on significant financial risks.

Contactless payments

Contactless payments are transactions that use chip-based techno logy and require no physical connection between the payment device (a card or mobile device) and the physical merchant terminal.

CVV

A unique check value encoded on the magnetic stripe and replicated in the chip of a card or the magnetic stripe of a Visa card to validate card information during the authorization process.

CVV2

A unique 3-digit check value generated using a secure cryptographic process that is indent - printed on the back of a Visa card or provided to a virtual account holder.

Cross-border E-commerce

International E-commerce, when consumers buy online from merchants located in other countries and jurisdictions. Online trade

between consumers and merchants, which share one common language and border or which make use of the same currency, are not always perceived as cross-border by consumers. EU neighbors that speak a common language, united by SEPA, are just one example.

Cross-channel

Implies merchants who interchangeably use multiple channels to market, sell, and interact with customers. For instance, when a customer uses the mobile app of a merchant platform to look at a product but does not complete the purchase, the merchant can use a cross-channel approach to remarket that product by serving up ads for it even when the customer is on another channel or plat form (say email or social media).

Decentralized e-money technology

Decentralized e-money technology implies storing and transferring through a peer-to-peer computer network that directly links users, much like a chat room. No single user controls the network. There is no centralized issuer of such products or a trusted third party that manages them. This means that they are independent of central banks, financial institutions and internet platforms. Decentralized emoney is not backed by any particular good or service and is not redeemable into national currencies.

Digital money

Electronic money or e-money is an evolving term that can have different meanings, but, in principle, involves the use of computer networks and digital stored value systems to store and transmit money. It may have official legal status or not.

Digital identity (e-ID)

A collection of identity attributes, an identity in an electronic form (e.g. electronic identity).

Digital Single Market

A market in which the free movement of goods, persons, services, and capital is ensured and where citizens, individuals, and businesses can seamlessly access and exercise online activities under conditions of fair competition and a high level of consumer and personal data protection, irrespective of their nationality or place of residence.

Digital wallet (E-wallet)

A digital tool (software or app) for consumers to store their payment methods. It stores credentials of e.g. debit cards, credit cards, and alternative payment methods. Some E-wallets also store loyalty programs.

Direct Carrier Billing

A payment method for purchasing items or services by charging the purchase to mobile phone account. At the time of checkout, the customer selects the mobile billing option on a smartphone and follows a two-factor authentication procedure. After the authentication, the consumer's mobile account is charged for the amount of the purchase, plus applicable taxes and, in some cases, a processing fee.

Direct debit

A payment instrument for the debiting of a payer's payment account whereby a payment transaction is initiated by the payee on the basis of authorization given by the payer.

Dispute transaction (card-based)

A dispute initiated by the cardholder. In the card bank industry, the dispute can be in the form of a chargeback.

Dunning

The process of insistent demands for the payment of a debt. In the business context, it refers to the collection processes, whereby a business communicates with customers who have failed to pay their bills.

Dynamic currency conversion (DCC)

Dynamic currency conversion refers to the situation whereby the shopper is offered a choice to pay in either the home currency of the merchant or the shopper's home currency. This offer is instantly generated by the PSP platform (often in conjunction with a DCC provider), as the DCC software recognizes the home currency of the shopper based upon the first six digits of the card, and results in a conversion wherein a mark-up has been included. If conversion can be applied depends on the fact whether the DCC provider supports currency conversion for a particular currency.

EBA CLEARING

A bank-owned provider of pan-European payment infrastructure solutions, established in June 1998 by 52 major European and international banks. Currently, EBA CLEARING counts 53 shareholder banks and has the mission to deliver market infrastructure solutions for the pan-European payments industry, to support its users' needs in line with user requirements.

e-Banking (online banking)

A banking methods in which the customer conducts transactions electronically via the Internet.

E-commerce

A way of doing real-time business transactions via telecommunications networks when the customer and the merchant are in different geographical places. Electronic commerce is a broad concept that includes virtual browsing of goods for sale, selection of goods to buy, and payment methods.

E-invoicing

Electronic invoicing is the exchange of the invoice document between a supplier and a buyer in an integrated electronic format. Traditionally, invoicing, like any heavily paper-based process, is manually intensive and is prone to human error resulting in increased costs and processing lifecycles for companies.

Electronic banking

A form of banking in which funds are transferred through an exchange of electronic signals between financial institutions rather than an exchange of cash, cheques, or other negotiable instruments.

Electronic payments

Payments that are initiated, processed, and received electronically.

Euro Banking Association (EBA)

Not to be confused with the European Banking Authority, the Euro

Banking Association is an industry forum for the European payments industry. Their role in PSD2 is to promote the interests of their members and help them to adapt to PSD2 in addition to sponsoring the Open Forum on Open Banking.

e-IDAS

The European regulation for the electronic identification and trust services for electronic transactions. Since its announcement in July of 2018, the intent of the eIDAS Regulation has been to facilitate secure and seamless electronic transactions throughout the European Union (EU) by providing a regulatory environment that would promote their use.

Electronic money

A monetary value, represented by a claim on the issuer, which is: 1) stored on an electronic device (e.g. a card or computer); 2) issued upon receipt of funds in an amount not less in value than the monetary value received; and 3) accepted as a means of payment by undertakings other than the issuer.

Electronic money institution (EMI)

A term used in EU legislation to designate credit institutions which are governed by a simplified regulatory regime because their activity is limited to the issuance of electronic money and the provision of financial and nonfinancial services closely related to the issuance of electronic money.

EMA (Electronic Money Association)

A European trade body representing electronic money issuers and other payment service providers. Members include electronic money institutions (ELMIs), payment institutions (PIs), banks, and payment schemes.

Encryption

The process of converting electronic information or signals into a form, called a cipher text, which cannot be easily understood by unauthorized people.

European Banking Authority

A regulatory agency of the EU headquartered in the UK. It concerns itself primarily with banking regulation, but has a mandate to develop technical standards for the security of Internet payments.

European Central Bank (ECB)

The central bank for Europe's single currency. The ECB's main task is to maintain the euro's purchasing power and price stability in the euro area.

Faster Payments

A UK banking initiative to reduce payment times between different banks' customer accounts from three working days using the long-established BACS system, to typically a few hours. Many other countries are now adopting a similar model.

Financial inclusion

The ability of an individual, household, or group to access appropriate financial services or products. Without this ability, people are often referred to as financially excluded.

Four-party payment scheme

A card scheme where the stakeholders involved are: 1) the issuer; 2) the acquirer; 3) the cardholder; and 4) the card acceptor. (In the case of automated teller machine (ATM) transactions, it is usually the acquirer that offers its services via the ATM.) By contrast, in a three-party card scheme, the issuer and the acquirer are always the same entity.

Fintech (Financial technology)

An economic industry in which companies use technology to make financial systems more efficient.

Identity theft

Happens when fraudsters access enough information about some one's identity (such as name, date of birth, current or previous addresses) to commit identity fraud. Identity theft can take place whether the fraud victim is alive or deceased.

Issuer/Issuing Bank

Financial institution that issues payment cards (credit, debit and prepaid cards) as a member bank of the card organizations and receives transactions from its cardholders from other member banks or merchants.

In-app payments

Payments made from within mobile applications in order to purchase dedicated content like digital money, services, or even products.

Installment payments

The payments whereby the cardholder is able to split a payment into smaller transactions spread over an agreed period of time.

Instant payments

According to the European Retail Payments Board (ERPB), instant payments are 'electronic retail payment solutions available 24/7/365 and resulting in the immediate or close to immediate interbank clearing of the transaction and crediting of the payee's account with confirmation to the payer (within seconds of payment initiation). This is irrespective of the underlying payment instrument used (credit transfer, direct debit or payment card) and of the underlying arrangements for clearing (whether bilateral interbank clearing or clearing via infrastructures) and settlement (e.g. with guarantees or in real time) that make this possible.

Interbank

A transaction or exchange operated between banks.

Interchange fee

When a consumer pays for a purchase using a credit or debit card, the organization that serves the merchant (known as the acquirer) pays a fee to the organization that issued the payment card to the shopper (known as the issuer). This "interchange fee" is then charged to the merchant and absorbed into the merchant commission rate or card acceptance fee.

Interchange Network

An electronic network maintained by the card companies that exchanges data related to the value of card sales and credits among issuers and acquirers.

International Bank Account Number (IBAN)

An International Organization for Standardization (ISO) technical code that is an expanded version of the basic bank account number (BBAN). Intended for use internationally, the IBAN uniquely identifies an individual account at a specific financial institution in a particular country. The IBAN also includes the bank identifier of the financial institution servicing that account.

operate only in their own respective systems.

Know your customer (KYC)

The term refers to due diligence activities that financial institutions and other regulated companies must perform to ascertain relevant information from their clients for the purpose of doing business with them.

Loyalty card

A brand-specific or retailer-labelled card that has cardholder bene fits tied to purchase amounts, usage, membership, or number of visits. Benefits typically include coupons or discounts for future services.

Machine learning

An artificial intelligence (AI) discipline geared toward the technological development of human knowledge. Machine learning allows computers to handle new situations via analysis, self-training,

observation, and experience.

Merchant

Term used for people and companies who have entered into an under taking in a contract with the acquirer to accept credit cards (VISA, MasterCard).

Merchant Acquirer

A member that has entered into an agreement with a merchant to accept deposits generated by bankcard transactions; also called the acquirer or acquiring bank.

Mobile payments

Also referred to as mobile money, mobile money transfer and mobile

wallet, mobile payments generally refer to payment ser vices operated under financial regulation and performed from or via a mobile device. Mobile payment is an alternative payment method. Instead of paying with cash, cheque, or credit cards, a consumer can use a mobile phone to pay for a wide range of services and digital or hard goods.

Mobile point of sale (m-POS)

A smartphone, tablet, or dedicated wireless device that performs the functions of a cash register or electronic point of sale.

MCS (merchant service charge)

A fee paid by the acceptor/merchant to the acquirer.

Monetization

The conversion of an asset into or establish something as money or legal tender. The term 'monetise' has different meanings depending on the context. It can refer to methods utilized to generate profit, while it can also literally mean the conversion of an asset into money. For example, the US Federal Reserve can monetise the nation's debt; this involves the process of purchasing debt (treasuries), which in turn increases the money supply. This essentially turns the debt into money (monetization).

National Automated Clearing House

Association (NACHA) A US national organization that establishes the standards, rules, and procedures for electronic payments.

National Retail Federation (NRF)

The world's largest retail trade association, with membership that encompasses all retail formats and distribution channels, including department, specialty, discount, catalogue, Internet, and independent stores as well as the industry's key trading partners of retail goods and services.

Nonbank financial institution

A financial institution that is generally nondepository (e.g. it does not accept deposits).

OAuth (Open Authorization)

An open standard for token-based authentication and authorization on the Internet. It allows an end user's account information to be used by third-party services, such as Facebook, without exposing the user's password. OAuth acts as an intermediary on behalf of the end user, providing the service with an access token that authorizes specific account information to be shared.

OBeP (Online Banking e-Payments)

The Online Banking e-Payments (OBeP) scheme is a type of payments network designed to facilitate online bank transfers. In an OBeP scheme, the consumer is authenticated in real-time by the consumer's financial institution. The availability of funds is validated in real-time and the consumer's financial institution provides the guarantee of the payment to the merchant in case the payment is made as a credit transfer (push payment): i.e. the consumer/buyer initiates the payment. The merchant receives a real-time guarantee so he can continue with the fulfilment process. The actual funds arrive later (D+1), according to the SEPA Credit Transfer Scheme.

Payment flow

The clockwise transfer of money in payment for the counter clock wise physical flow of goods and services. The payment flow is the monetary payment for goods and services received by the household sector from the business sector through product markets and the monetary payment for resource services obtained by the business sector from the household sector through factor markets.

Payment gateway A system that provides Ecommerce services to merchants for the authorization and clearing of transactions.

Payment Initiation

An electronic service facilitating payment by a third party from a customer's payment account via APIs or Open Banking.

Payment Initiation Service Provider (PISP)

A regulated entity that allows customers to initiate payments without the customer needing to directly access their bank account or use a debit or credit card. PSD2 allows PISPs authorized access to bank accounts through an API. Payment Initiation Services can be provided by existing retail banks, payment service providers or by third parties.

Payment method

A generic way in which a payment is carried out, for instance by PIN card, credit card, internet banking, COD, premium SMS. When a payment method is not generic but specific, it is called a payment product.

Peer-to-peer payments (P2P)

An online technology that allows customers to transfer funds from their bank account or credit card to another individual's account via the Internet or a mobile phone.

Phishing

A method of social engineering that allows criminals to gain access to sensitive information (like usernames or passwords). Very often, phishing is done by email. This email appears to come from a bank or other service provider. It usually says that because of some change in the system, the users need to reenter their usernames/ passwords to confirm them. The emails usually have a link to a page, which is similar to the one of the real bank.

Point of sale (POS)

Or checkout, is the location where a transaction occurs. A checkout refers to a POS terminal or, more generally, to the hardware and software used for checkouts; it is the equivalent of an electronic cash register.

Processor

A platform that acquires financial transactions from ATMs, POS terminals etc. The processor then sends these via a Switch/ Scheme to the issuer processor for authorization and settles the authorized transactions.

PSD (Payment Services Directive)

The Directive on payment services (PSD) provides the legal foundation for the creation of an EU-wide single market for payments. The PSD aims at establishing a modern and comprehensive set of rules applicable to all payment services in the EU. The target is to make cross border payments as easy, efficient, and secure as 'national' payments within a member state.

PSD2

On 24th July 2017, the European Commission adopted a proposal for a revised Directive 2007/64/EC on Payment Services (the PSD2). The main high-level objectives of the revision are to promote better integration, more innovation and more competition in the market for payment services within the EU.

Quick response code (QR code)

A type of 2D bar code that is used to provide easy access to information through a smartphone. There are static and dynamic codes.

Reconciliation

A procedure to verify that two sets of records issued by two different entities match.

Regulatory Technical Standard (RTS)

Provides the rules by which PSD2 will be implemented. The European Banking Authority is responsible for the development of the RTS to meet the objectives of PSD2 as defined by the European Commission.

Returns

Funds sent back by the payee to the payer following settlement of the original payment instruction. The term "return" is used in connection with both direct debits and credit transfers.

Risk management

The process concerned with the identification, measurement, control, and minimisation of security risks in information systems and payment systems to a level commensurate with the value of the assets protected. Good risk management in the merchant program requires meeting the challenges of reducing the exposure to risk and responding quickly when risk arises. Monitoring merchant activity with pre-set parameters allows the transactions to be rejected for examination before potentially incurring a loss.

SCT Scheme

The SCT scheme is an interbank payment scheme defining a common set of rules and standard procedures for credit transfers in euro.

Settlement

The completion of a transaction or of processing with the aim of discharging participants' obligations through the transfer of funds and/or securities. A settlement may be final or provisional.

Screen scraping

A programmatic means of processing web content to extract data. In the context of PSD2, this was the precursor to API access to accounts (XS2A) and relied on third parties holding some security credentials for their customers.

Single Euro Payments Area (SEPA)

The vision, directive, and goal of the European Commission, which means that citizens and companies within the EU are able to pay with a single set of payment instruments. This set is the combination of a bank account and instruments like money transfer, direct debit, and cards. SEPA signifies the end of international payments within Europe.

Settlement bank

A bank, including correspondent or intermediary banks, that is authorized to execute settlement of interchange on behalf of the member or the member's bank.

Spear phishing

An email that appears to be from an individual or business that the user knows. In fact, the respective email is from the same criminal hackers who want the user's credit card and bank account numbers, passwords, and the financial information on their PC.

Strong Customer Authentication (SCA)

A methodology by which PSD2 looks to secure payments. It aims to reduce payment fraud and is based on authenticating payment initiation using multiple factors that include inherence, possession, and knowledge.

Surcharge

In debit card usage, additional fees assessed to cardholders by merchants and ATM providers. Merchants are sometimes charged additional fees for nonqualified interchange transactions.

Tokenization

The process of substituting a sensitive data with an easily reversible benign substitute. In the payment card industry, tokenization is one means of protecting sensitive cardholder PII in order to comply with industry standards and government regulations.

TPP

Provide services which are based on access to payment accounts provided by a PSP who is not the 'account servicing' PSP (ASPSP), in the form of payment initiation services and/or account information services. AISPs and PISPs are examples of TPPs for PSD2.

Virtual card

Virtual credit cards are online cards that are not physically issued by the credit card provider. It is usually a free service provided by the original card issuer to their customers who want to perform an online payment with the help of their credit cards.

Virtual terminal

Internet-assisted user interface for payment acceptance (including via MOTO), which is used, for example, in call centers. It allows direct payment acceptance without signature by the paying party.

White label

A product or service that is purchased by a reseller who rebrands the product or service to give the impression that the new owner created it. White label products are often produced via mass production.