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Analysis of payments industry: trends, opportunities and threats

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Abstract

This study is focused on digital payments and in particular on the payments chain.
The research objective is to map main and secondary actors and to understand how they interact within the chain, identifying future scenarios and providing strategic indications to the players of the industry.
The methodology adopted includes both quantitative and qualitative analysis. From a qualitative point of view, a Porter's five forces analysis is introduced for merchant acquiring, payment gateway and POS provider markets. In addition, a SWOT analysis is carried out in order to take into account both external and internal factors that are involved in the whole payments chain.
This study focuses also on M&A trends that are reshaping all the payments industry. The result is that big and minor entities are involved in these types of deals in order to stay alive or to gain market shares, exploiting new tends and new technologies.
From a quantitative point of view, several data and trends are reported, thanks to an accurate investigation of numerous previous studies and articles. The output is the mapping of all the main players of the industry, including both incumbents and new entrants. In the end of the study, an overview of three key players Nexi, Worldline and FIS is given.
Conclusions and future directions for further researches are also provided.

Keywords: payments chain, merchant acquiring, payment gateway, POS provider, SWOT, Porter's analysis, M&A trends.

Abstract in italiano

Questo studio è incentrato sui pagamenti digitali e in particolare sulla filiera dei pagamenti.

L'obiettivo della ricerca è mappare attori sia principali che secondari e capire come interagiscono all'interno della filiera, individuando scenari futuri e fornendo indicazioni strategiche agli attori del settore.

La metodologia adottata comprende sia l'analisi quantitativa che qualitativa. Da un punto di vista qualitativo, viene introdotta l'analisi delle cinque forze di Porter per i mercati del merchant acquiring, dei gateway di pagamento e dei fornitori di POS. Inoltre, viene eseguita un'analisi SWOT per tenere conto sia dei fattori esterni che interni coinvolti nell'intera filiera dei pagamenti.

Questo studio si concentra anche sulle tendenze di M&A che stanno rimodellando tutto il settore dei pagamenti. Il risultato è che enti grandi e piccoli sono coinvolti in questo tipo di operazioni per rimanere in vita o per guadagnare quote di mercato, sfruttando nuove tendenze e nuove tecnologie.

Da un punto di vista quantitativo vengono riportati diversi dati e tendenze, grazie ad un'accurata indagine di numerosi studi e articoli precedenti. L'output è la mappatura di tutti i principali attori del settore, inclusi sia gli incumbent che i nuovi entranti. Al termine dello studio, è presente una panoramica di tre attori chiave Nexi, Worldline e FIS.

Vengono inoltre fornite conclusioni e indicazioni future per ulteriori ricerche.

Parole chiave: filiera di pagamenti digitali, acquisizione mercantile, gateway di pagamento, fornitura POS, SWOT, analisi di Porter, tendenze M&A.

Executive summary

Introduction

This study is focused on digital payments world and in particular on payments chain and on all the actors involved in customer journey. In order to provide a complete overview of the payments chain, this research illustrates the roles of main and secondary actors and how they interact within the chain.

The recent Covid-19 emergency and the consequent digital revolution are included into the study for a better understanding of previous trends on a global scale.

In the first part of the introduction chapter customer journey for digital payments and two innovative payments hybrid methods are illustrated, in order to understand all the steps in which a customer is involved and how this path can easily change due to innovative payment methods. In the customer journey in digital payments, it is possible to distinguish between: card-present (CP) transactions are in-person, and card-not-present (CNP) transactions are not in-person. The first innovative payments hybrid method is "Pay by link payment" that is any link or button a person can click on within an internet browser, text message, email, app or social media in order to pay a specified amount of money online to a specified receiver. The second hybrid payment method is "MOTO" (Mail Order Telephone Order), a system that allows businesses to process and manage card transactions remotely from their customers, via telephone, letter, or email requests. In the second part of this chapter, the focus is on some industries, such as POS provider, cash register, payments for hotels and payments for Food and Beverage, providing for each industry some examples of players. In addition, entry barriers and regulation are introduced to understand how they affect the decisions of the players of the chain. The entry barriers had previously limited the access of new actors into the industry. Now, thanks to the introduction of new regulations, everything is changed; indeed PSD and PSD2 have pushed to widen the competitive arena with the aim of improving the level of service for the consumer. In particular, PSD2 obliges banks to open up to authorized external actors, so that they can increasingly offer new payment services based on access to accounts for end customers. Also the advent of Open API has undoubtedly enlarged the competitive scenario in the financial services sector, simultaneously encouraging collaboration between traditional players, such as banks, and third party players enabled by PSD2.

The main advantage for banks is the possibility to offer the customer value-added services and a different and more complete experience.

Research objective

The goal of this study is to identify future scenarios and to give strategic indications to the actors involved in the industry.

Previous researches have already analysed the payments chain and all the process involved in digital payments but the research objective of this study is identify the main industry trends through an analysis of the M&A deals and to map all the main and innovative actors who populate the industry worldwide, highlighting their strategies. This type of analysis, supported by tools like Porter's five forces scheme and SWOT, allow to get a clear picture of the whole payments sphere, detecting global trends and future moves. Only through this accurate analysis, it is possible to provide insights on payments industry and to share suggestions to the players who want enter in this industry or just stay in this world successfully avoiding to get out of it.

Research methodology

The methodology adopted in this study consists on both quantitative and qualitative analysis. From a qualitative point of view, a Porter's five forces analysis is introduced for merchant acquiring, payment gateway and POS provider markets, in order to give strategic insights and to evaluate the attractiveness of these industries. This analysis was the first step of the qualitative research, as it takes into consideration external factors. The result is that all the in-depth industries are not so attractive due to high or moderate competitive rivalry in the market. After this first step, a SWOT analysis is carried out in order to take into account both external and internal factors that are involved in the whole payments chain; in fact all the industries of the chain are put in the SWOT.

In addition, this study focuses also on M&A trends that are reshaping all the payments industry. The result is that big and minor entities are involved in these types of deals in order to stay alive or to gain market shares, exploiting new tends and new technologies. The analysis related to M&A deals is carried out for both geographical and sectors points of view. In the geographical analysis, 5 regions are considered: North America, Europe, Asia, Middle-Est and Africa (MEA) and Australia & New Zeland. In the analysis for sectors, payments acceptance, processing and alternative payments are the segments more interested by M&A deals, among more than ten segments introduced into the research. From a quantitative point of view, several data and trends are illustrated, thanks to an accurate investigation of numerous previous studies. This made possible to have greater clarity on the quantity of players present in the three industries of the payments chain, considered into the study. The output is the mapping of all the main players, including both incumbents and new entrants.

Results and conclusions

The research allowed to get a clear picture of the whole industry, detecting global trends and future moves. Only through this accurate analysis, it was possible to provide insights on payments industry and to share suggestions to the players who want to enter in this market or just stay in this world successfully avoiding to get out of it.

Starting from the first type of analysis, Porter's five forces scheme enabled to measure the attractiveness of merchant acquiring, payment gateway and POS provider industries. Starting from merchant acquiring, the conclusion is that this industry is not very attractive as the competitive rivalry in the market is high. This force is affected by high threat of new entrants and moderate threat of substitutes; also the bargaining power of buyers is high. Moving to payment gateway, the result is an industry with moderate attractiveness. In fact, threat of substitutes and threats of new entrants are both moderate due to new technological opportunities on one hand and due to high entry barriers and strict regulation on the other hand. The third industry analysed, through Porter's scheme, is POS provider that resulted not attractive at all as there is high competitive rivalry in the market. Only the bargaining power of suppliers is a moderate force due to the fact that new technological solutions are approaching new players into this industry.

In this study, SWOT pointed out all the opportunities on which the players of payments chain should leverage in order to gain market share, such as new partnerships, strategic M&A deals, innovative products, rapid digital transiction after Covid-19, Open API and vertical integration along the chain. Regarding the threats, it is possible to mention: new entrants providing services at lower prices, new technological trends, high competition, fraudsters, long time to build a payment network, hacking, geographical normative differences and different currencies. Regarding the internal analysis, strenghts and weaknesses can be core competencies of each player. Among strenghts, several factors were identified: existing core infrastructure, reliable ecosystem, global network, existing adapted solutions, variety of digital and technological solutions, large customer base, different targets, possibility to process high volume of payment and easy vertical integration. Regarding the weaknesses, the SWOT revealed: high dependencies on the connectivity, complex systems, processing fees, development and support organization, developed protection systems due to the Fraud and risk activities, regulations and compliance, difficulty to quickly innovate.

In the analysis of M&A deals conducted for the period 2018-2021, it emerged that the outbreak of Covid-19 partially affected the industry, because on one hand the deals value decreased significantly compared to 2019; but on the other hand the number of deals has remained at significant levels. The year 2021, that saw the rebirth after the pandemic, recorded growing numbers but still far from the pre-Covid era. In 2019, there was the largest number of M&A deals in the payments industry: 253 worldwide.

Regarding the analysis by segment (H1 2019- H1 2021), "Payment acceptance" and "Processing" are the most attractive sectors. Also the segment "Alternative payments" has collected significant deals in the last two years and in particular on H1 2021, semester during which 31% of the total deals were related to this category.

Regarding the analysis by region (H1 2019- H1 2021), North America and Europe have shown the biggest percentages of M&A deals. Asia was constantly the third region for number of deals during the whole period taken into the study. The data showed also an important trend for the South America. The last analysis related to M&A deals was conducted for the first four months of 2022 and the conclusion is an increase in deals for both capital invested and volume from January to April and this trend will probably continue in the other quarters of the year.

Overall, the trends emerged from this M&A research are several and they suggest also how the industry will move in the next future. One of these trends is related to market consolidation that pushed some players to conquer new geographic markets or to provide a fully service provision. Other trends are deals related to: open banking, withdrawal from underperforming market, BNPL investments, omnichannel experience, Gen Z and millennials or developing region as LATAM.

Overall, it is possible to see how numerous trends are reshaping the industry and are changing the equilibrium within the payments sphere. New players are entering in the market, thanks to technological distruption and new regulations. Incumbents are trying to empower themselves through innovation and several M&A deals. A player who wants to enter in this industry has the possibility to do it but the competition is increasingly fierce and makes the market less attractive. Nowadays, the actors, who want to stay alive and beat the competition, are obliged to follow specific strategies that consist in investing in new technologies, integrating vertically within payments chain, offering new services, guaranteeing an omnichannel experience and exploring new geographical opportunities.

Contents

1. Introduction

Nowadays Fintech tools are influencing more and more not just the world of finance but also our daily life and our habits. In addition, the social distancing, forced by the outbreak of Covid-19, has accelerated a rapid evolution of technologies applied to the finance world. Fintech tools are technologies with the goal of improving and automating financial services. They are adopted by banks of course, but also by companies, business owners and consumers in order to handle, in an easier and efficient way, operations, processes and lives. These tools rely on specific software and algorithms enhancing the performances of computers and smartphones.

The first Fintech tools were introduced in the 21st Century, and now this category includes several instruments such us blockchain technology, cryptocurrency, smart contracts, insurtech, regtech, robo-advisors, cybersecurity, and digital payment. In this research, the focus is on the latter.

Among all the mentioned Fintech tools, this study is going to focus on digital payments and in particular on payments chain, analysing the main players of the industry and how they interact with each other.

In order to have a complete overview of the payments chain is fundamental to understand the roles of main and secondary actors and how they interact within the chain.

After a first analysis of the whole payments chain, the study subsequently focused on three main parts of the chain, more affected by the events of recent years: merchant acquiring, payment gateway and POS provider.

The recent Covid-19 emergency and the digital revolution are included into the study for a better understanding of previous trends, on a global scale.

The goal of this study is to identify future scenarios and to give strategic indications to the actors involved in the industry.

Previous researches have already analysed the payments chain and all the process involved in digital payments but the research objective of this study is to map all the main and innovative actors who populate the industry worldwide, highlighting their strategies, such as M&A deals. This type of analysis, plus tools like Porter's five forces scheme and SWOT, allow to get a clear picture of the whole situation, detecting global trends and future moves. Only through this accurate analysis, it is possible to provide insights on payments industry and to share suggestions to the players who want enter in this industry or just stay in this world successfully avoiding to get out of it.

The first part of introduction chapter illustrates the customer journey for digital payments and two innovative payments hybrid methods: pay by link and MOTO payments. This section is useful in order to understand all the steps in which a customer is involved and how this path can easily change due to innovative innovative payment methods.

Going ahead, the second part of this chapter will focus on some industries, such as POS provider, cash register, payments for hotels and payments for Food and Beverage, providing for each industry some examples of players. At the end, entry barriers and regulation are introduced to understand how they affect the decisions of the players of the chain.

1.1 Customer Journey

Previously, the digital payments market was driven by technological innovation of traditional financial institutions. Then the OTTs (Over The Top), as Paypal, Amazon, Apple, Alibaba and the FinTech, entered in the sector, triggering a true disruptive innovation on the customer experience.

In particular, regarding the customer journey in digital payments, it is possible to distinguish between: card-present (CP) transactions are in-person, and card-not-present (CNP) transactions are not in-person.

A card-present (CP) transaction occurs when payment details are captured in-person for a product or service. This can include cards that are physically swiped via a card reader machine or tapped or dipped via a card reader. One of the many Pros of these type of transactions is that the processing costs are much lower than CNP transactions. Since CP transactions require a higher level of security to complete transactions, payment processors classify them as having lower fraud risks and chargebacks. Indeed, for merchants that want to save money and reduce card fraud, this transaction type is an excellent payment method to offer.

Among the Cons to bear for CP transactions, business owners need specific card-processing equipment to accept debit and credit cards. Such equipment may include card, contactless, and EMV readers, which are an added expense that must be maintained and updated as payment technology changes. Regarding some examples of CP transactions, here listed some situations: the customer's card is swiped into a card reader device via the magnetic card strip or the customer's card is inserted into a card reader device via the EMV chip or the customer's mobile wallet (electronic data) is captured via a contactless POS.

A card-not-present (CNP) transaction typically occurs when the cardholder and credit card are not physically present during a purchase. Customers usually manually enter card information for CNP transactions rather than capturing the card details through a secure card machine. This usually includes remote methods, such as via phone, mail, fax, or online. One of the main benefits of accepting CNP transactions is that it may be more convenient for customers. This is especially true during the global pandemic when customer shopping habits have shifted towards more remote purchases due to lockdowns, physical stores closing, and global supply chain shortages. Card-not-present transactions can also help boost sales as customers have the freedom to choose how to pay: in-person or remotely. But it is necessary to list some negative aspects of CNP transactions; in fact a primary disadvantage is that CNP transactions have a higher fraud risk than CP transactions because merchants cannot easily verify that a card belongs to the customer making a purchase. Without security measures to verify the customer, it is difficult for merchants to know whether they have received a legitimate or fraudulent transaction. Since fraud risks are high, payment processors and card brands will charge higher processing fees to prepare for potential card fraud and chargebacks, hence the economic aspect is another disadvantage of CNP transactions. When the customer enters its card details via an online payment system or when sends them via mail or fax to a business or when shares card information over the phone, these situations are involving a CNP transaction.

Overall, CP transactions should be preferred as they are more secure. In these transactions, both the card and the cardholder are physically present validating the authenticity of the transaction. They can be considered better option due to: *Cost*

Savings (the issuer charges a lower fee to the merchant than in a CNP transaction); *Security* (when customers give their credit/debit card information over the phone or email, there’s always a chance of those details being compromised or handled in an unsecure manner); *Better Customer Experience* (better engagement with the customer while delivering your product or service); *Upselling Opportunities* (opportunity to upsell additional products or services while collecting payments).

On the other hand, the two key types of fraud, that card-not-present merchants face, are credit card fraud and chargeback fraud.

A credit card fraud happens when criminals can use stolen credit cards or card numbers to make purchases that the cardholder did not authorize

The Chargeback fraud, also known as friendly fraud, is another risk involved in CNP transactions. This occurs when a customer orders and receives a product or service from a merchant, but then a problem with the transaction is reported (IQUII, 2018).

There are some important actions to adopt in order to reduce the risks of CNP transactions; for instance merchants can require customers to verify their identities, asking for the card’s CVV, a 3-digit security code on the back. Additionally, merchants can request customers to provide their billing ZIP code, photo ID, and email address.

In many emerging customer journeys, the act of paying is no longer an isolated event, a separate workflow, a discrete experience, or an afterthought; in fact the payment experience becomes part of broader customer journey. New payment methods require less action from the consumer while enabling a more integrated, seamless, and frictionless commerce experience. Payment-adjacent financial services, for example credits, are being weaved into the ‘customer fronting brand’ experience via Banking-as-a-Service (BaaS). They are being offered at the exact point in time and at the exact place when the consumer needs it.

Despite this payment revolution the fact is the physical payment card has never been more widely used than today. RBR forecasts the global card purchase volume to almost double between 2021 and 2026 (from USD 41 to 75 trillion USD). Nowadays, it is possible to see the future of a payment industry and how new payment methods will flourish (IQUII, 2018).

1.2 New hybrid payment models

In this section, an explanation of new hybrid payment methods is provided.

The first one is payment link model. This payment way is any link or button a person can click on within an internet browser, text message, email, app or social media in order to pay a specified amount of money online to a specified receiver.

Here below, some examples of payment link:

1. One-time link sent over SMS, email, chat message, social media or other means to allow the recipient to enter payment details in a browser. Can be time-limited, but also valid for an unlimited time until the payment is made. An open, fixed link for multiple payments/recipients is also possible but less common.
2. Email invoice link. The invoices allow to specify recipient details such as name, address, VAT and company details. Moreover, invoicing systems tend to send reminder emails if the payment is past the due date.
3. 'Buy button' placed on an ecommerce website, which would take the buyer to a typical online shop checkout page.

All of these examples have in common that clicking a link or button, would take the buyer to a payment page where to enter card details and other essential information, then submit the payment which is processed over the internet. The merchant will typically receive a confirmation of the transaction or be able to view it in the merchant portal of the payment system.

The main advantage about payment links is the lack of need for the merchant to specify recipient and other details. There is simply the need to create a link with a specific amount, perhaps itemised with purchase details, and then the payer can follow through with the payment in their own time. Because there is no due date as with invoices, a payment link gives more freedom to 'take it or leave it', while invoices are a commitment to pay a bill.

Going ahead with new models, MOTO (Mail Order Telephone Order) are systems that allow businesses to process and manage card transactions remotely from their customers, via telephone, letter, or email requests. MOTO payments are processed on

a web-based payment system, which works very much like an online card machine, as it will contact the customer's bank to check funds are available before authorisation.
Many businesses can benefit from a MOTO payment system, including online retailers and takeaway food outlets. MOTO payment systems are low-cost and fast and simple to set up, benefiting businesses everywhere in an increasingly contactless payment landscape.
A MOTO payment is a virtual transaction that works in the same way as if the customer were paying via an online card machine. The MOTO system contacts the bank of the customer to ensure funds are available before authorising the payment.
MOTO systems are particularly useful for businesses that take orders over the telephone or by email, such as takeaway food services and online retailers.
The ability to process payments remotely can bring several benefits to entrepreneurs and small business owners: Convenience is the first advantage as customers are provided with a fast, secure and convenient way to pay for goods or services without having to physically present a payment card. In addition, this process is also simple: indeed a MOTO payment system is easy to set-up and use. The retailer can access the virtual terminal from any internet-enabled device from anywhere with an online connection. The Efficiency is another strength: streamlining payment processing systems leaves business owners with more time to focus on other aspects of the business.
Multi-user access is another important benefit as virtual terminals can be set up for multi-user access, allowing authorised employees to access the MOTO system and take payments from multiple locations 24/7. MOTO system allows also to reach more customers offering payments by card over the telephone, by email or in writing allows businesses to broaden their customer base and reach a wider audience. Saving details is another important benefit to mention; in fact once a customer has made a MOTO transaction, the system securely saves card details for next time. This speeds up the payment process later, increasing convenience for the customer and retailer. In addition, the integrated payment processing system allows for payments in multiple tenders, including eGift cards, and customers can also split the cost of any transaction quickly, easily and without hassle, hence split payments are allowed. To conclude, each payment

is authorised by the customer’s bank before being processed to check the funds are available and retailers receive funds in a fast time frame.
Business owners can set up a virtual terminal in minutes, with no initial cost and no monthly fees. In order to summarize how it works, here below the steps in order to set these types of payments:

1. Retailer logs into virtual terminal online via a laptop, tablet, mobile or computer.
2. The customer’s name, address, email address and card details are keyed in.
3. The transaction is submitted to the customer’s bank for authorisation.
4. Once approved, confirmation is received, and the customer will receive a receipt via email.
5. Much like payments processed via a credit card reader, the retailer will usually receive payment into its account within a few working days.

1.3 EFTPOS

Electronic funds transfer at point of sale is an electronic payment system involving electronic funds transfers based on the use of payment cards, such as debit or credit cards, at payment terminals located at points of sale. EFTPOS technology was developed during the 1980s (Wikipedia).
It refers to the process of accepting credit and debit cards on a card payment machine, where cardholder funds are withdrawn from the cardholder and are deposited in the merchant’s account for a product sold or a service rendered.
The communication process involved is between the cardholder’s issuing bank, the card schemes (Visa, Mastercard etc.) and also with the merchant’s financial services provider. In any case, EFTPOS machines can handle both debit and credit card transactions and the process is done with card-present transactions or face-to-face at checkout.
EFTPOS machines allow to:

- Takes payments from customers
- Transfer funds from the customer's bank account into your merchant bank account using an EFTPOS network and merchant facility provided by a bank

- Can be used to take payment wherever you do business using connectivity methods like mobile EFTPOS
- Can be hired or bought outright depending on what plan suits your business best

Traditionally eftpos terminals have been an expensive investment, especially for small businesses, but that is rapidly changing. Banks and traditional providers often charge rental fees, ongoing subscription rates and have additional costs for accepting corporate and international cards.

There are different typology of EFTPOS. For example Commbank provides merchant solutions designed for businesses of all types and sizes and those that are looking for convenient and secure ways of accepting card payments.

Regarding the main companies that provide POS to business, here below a list of some of them:

- Ingenico that is a France-based company, whose business is to provide the technology involved in secure electronic transactions. Its traditional business is based on the manufacture of point of sale (POS) payment terminals, but it also includes complete payment software and related services, also software for merchants. Ingenico offers a full range of payment terminals. The offer covers every application need and area of use, such as: fixed installations, mobile payment stations, integrated systems at the tills, self-service systems, m-Payment solutions.

- Verifone is an American multinational corporation headquartered in Coral Springs, Florida, that provides technology for electronic payment transactions and value-added services at the point-of-sale. Verifone sells merchant-operated, consumer-facing and self-service payment systems to the financial, retail, hospitality, petroleum, government and healthcare industries. The company's products consist of POS electronic payment devices that run its own operating systems, security and encryption software, and certified payment software, and that are designed for both consumer-facing and unattended environments.

Its products process a range of payment types, including signature and personal identification number (PIN)-based debit cards, credit cards, contactless/radio frequency identification cards, smart cards, prepaid gift and other stored-value cards, electronic bill payment, check authorization and conversion, signature capture and Electronic Benefit Transfer (EBT).

- Worldline is a French multinational payment and transactional services company founded in 1974 (Wikipedia).

It is the European leader in the payments and transactional services industry and #4 player worldwide with over 20,000 employees in more than 50 countries.

Services offered by Worldline in the areas of Merchant Services; Terminals, Solutions & Services; Financial Services and Mobility & e-Transactional Services include domestic and cross-border commercial acquiring, both in-store and online, highly-secure payment transaction processing, a broad portfolio of payment terminals as well as e-ticketing and digital services in the industrial environment.

Regarding typology of terminals, it offers: 1) Payment at the check-out, a unique user experience and virtually unlimited possibilities for custom applications; 2) Payment on the move using WiFi, Bluetooth and 3G to meet all communication needs; 3) Self-check-out to deliver terminals with high-tech design and an easy-to-use interface in a robust housing.

At the end of October 2020, Worldline acquired Ingenico to become a single global player in digital payments.

- Castles is one of the top 5 manufacturers of payment devices in the world. Since its inception in 1993, Castles has provided state-of-the-art payment solutions for vending, financial, retail, hospitality and transportation sectors (Wikipedia).

Castles provides customers with an innovative range of products that make payments seamless, simple and secure. The company is headquartered in Taipei, Taiwan.

Castles has grown rapidly over the years and continues to maintain a global footprint. Customers and partners benefit from the company’s cutting-edge payment solutions and outstanding customer service and engineering support.

The list of EFTPOS providers is longer than the one above that includes just global market leaders. Indeed, there are a few modern terminal providers offering simplified pricing with pay-as-you-go fees and no commitment.

- Square was the first company in the world to release a card reader for mobile phones. Since its arrival in Australia, Square champions affordable EFTPOS for small business without contractual lock-in, hidden fees or complicated terms. Square Reader works in conjunction with a free Point of Sale (POS) app on a mobile phone or tablet connected to 3G, 4G or WiFi. The app has a wealth of features for most face-to-face merchants, e.g. product library, tipping, taxes, employee accounts and a customer library. It offers also a mobile EFTPOS machine called Square Terminal, which only works through a secured WiFi connection.

- Zeller is a bit different from Square, because it includes an online account to receive transactions the same day. This account is linked to a business Mastercard.

The touchscreen card terminal has a built-in receipt printer. Its large display shows a simple checkout where to enter a transaction amount, add a tip or surcharge, then accept the card. Customers can enter their PIN on the on-screen PIN pad. But so far, Zeller does not integrate with POS systems.

The Zeller EFTPOS machine accepts Visa, Mastercard, eftpos, American Express and JCB cards via chip, swipe and tap. It also accepts Apple Pay, Google Pay and Samsung Pay transactions.

The terminal works independently through WiFi and the battery can last a whole day from a full charge.

- More Payments has partnered with Till Payments to provide a range of payment solutions for small businesses. This includes the rental of EFTPOS terminals without contractual commitment. Transaction fees are based on a monthly turnover, revenue and business sector. The total rate includes the card scheme's variable rates and More Payments' merchant service charge.

More Payments accepts Visa, Mastercard, eftpos and UnionPay – good for merchants serving tourists with international cards. A Buy Now Pay Later option is also available: Afterpay. The card reader works in conjunction with a mobile app on a phone or tablet, but features are quite basic and the software rarely updated which is a concern.

- Tyro offers a countertop and portable EFTPOS machine for rental. There's no contractual lock-in or setup fee. It is possible to accept American Express, JCB and Diners Club. Tyro EFTPOS machines, manufactured by Worldline, are hard-wearing and look professional on a countertop or outside, though they look quite outdated compared to most terminals offered today.

POS stands for 'Point of Sale' and POS system is the system or software used to ring up and tender sales, but it can also double as a hub to manage everything including sales, inventory, loyalty and reporting.
Not to be confused with the EFTPOS terminal, the POS system is usually comprised of different software and hardware components depending on the businesses needs. The POS system might include:

- A monitor, tablet or iPad
- Barcode scanner (commonly used in retail)
- Receipt printer
- Cash Drawer
- POS software

It's quite common for businesses to ring up a sale on a POS and then manually process the purchase on an EFTPOS terminal as well. However this double-handling increases the risk of keying errors and slows down the sales process. Something all businesses should consider is integrating their EFTPOS terminal with their POS system.

An integrated POS system is when it is possible to connect a computer or a POS system with an EFTPOS machine. This helps to streamline payments and business processes. Payment data can move seamlessly from your POS system to your EFTPOS machine and back. It not only reduces the administrative and manual tasks around payments, but it may give your customers a better experience.
The integration between POS software and EFTPOS facilities, permits to process debit or credit payments quickly and easily. This reduces costly mistakes and saves your business time.
Indeed, integration can speed up the time it takes to process a sale. When your systems talk to each other, you can avoid time-consuming steps like manually entering data and duplicating tasks.

By integrating systems, it is possible to reduce the number of steps required to finalise a payment. Another benefit of POS integration is avoiding costly keying errors due to manual entry. It removes the risk of having to issue refunds or lose hard-earned dollars when the amount keyed into the EFTPOS machine is incorrect.
Integration has also the advantage of reducing the need for multiple bank reconciliations. With integration, the sale amount on the POS should match the sale amount on the EFTPOS machine, making end of day reconciliation a breeze (Bendigo Bank, 2022).
For many businesses, having access to correct and up-to-the-minute information is vital when making business decisions. The data from an integrated POS allows to understand purchasing trends across your day. This may help to make decisions about inventory, staffing and even opening hours. And real-time data allows also to track the business on the go or plan strategically for the future.
Integrated POS can also open the door to a range of extra EFTPOS features tailored to fit the needs of specific industries. For example, in hospitality, the POS software allows the staff to place orders and manage tables. An integrated EFTPOS machine will pull the sale amount automatically from the POS when it’s time for customers to pay. Some integrated Practice Management Systems in medical practices allow to manage all costs associated with the appointment. It is possible in this way to give clients Medicare and Private Health rebate calculations when they pay. That means clients don’t need to pay for the entire service and then manually make a claim using their receipt. Instead, it can be automatically factored in and processed at the counter.
To conclude, a two-way POS to EFTPOS integration means that whenever a customer swipes, waves or inserts their card and completes a transaction, your POS will automatically pick this up and reflect the sale without need for manual input. In turn, if you enter a sale on your POS and your customer wishes to pay via card, with the push of a button your EFTPOS terminal will light up, ready to take payment. It's automated, streamlined and simple.

In this way, Amount Exchange or “Scambio importo” is a feature that allows to send the transaction amount directly to the POS, without having to type the amount manually, avoiding possible errors. For example, in the case of a compatible Ingenico POS, it is possible to configure it to communicate directly with the application when closing the payment. To complete the procedure, a special "POS" button is created, through which the amount entered in the cashier is sent directly to the Ingenico POS, which remain waiting for the credit card or debit card to close the transaction. The application will display a message waiting for the successful transaction with the POS. Once the payment is completed on the Ingenico POS, the sale is closed automatically and the POS receipt is also present on the document issued by the Fiscal Printer (Tilby, 2022).

1.4 Cash register

A cash register, sometimes called a till or automated money handling system, is a mechanical or electronic device for registering and calculating transactions at a point of sale. It is usually attached to a drawer for storing cash and other valuables. A modern cash register is usually attached to a printer that can print out receipts for record-keeping purposes. The cash register dates back to 1879 when it was invented by James Ritty, a saloon owner from Ohio.

The typical cash register of the mid-20th century, through a system of keys, levers, and gears often electrically driven, indicated the amount of a transaction at the top of the register, where it could be seen by both customer and salesperson; it also kept separate totals of sales by various classifications, printed and issued a receipt on cash sales or overprinted a record of the transaction on a docket for charge sales, and kept an audit strip within the register. Some types of machines automatically made change. Frequently, special counters in the register showed the number of customers and the number of transactions of different kinds (Wikipedia).

Within a few years the combined electronic revolution and the increasing ubiquity of the digital computer in business operations had caused major manufacturers to convert from the mechanical cash register to an electronically operated device that performed the same functions, often driven by, and sometimes feeding information into, a computer, enabling instant credit checks, recording of transactions, and inventory control entries. Computer-driven cash registers often are equipped with an optical scanning device that can read printed or coded price information and product descriptions and record and print them on the customer’s receipt.

Electronic cash registers (ECRs) offer several benefits to businesses such as tracking customers' transactions, maintaining databases of goods and speeding checkout times.

ECRs are easy to use and help in accurately tracking transactions. Some ECRs are available for a low cost and yet have improvised functions such as checking product prices, recording sales, calculating bills and change, and printing customer receipts. The register includes a software that keeps track of transactions, which is relatively lower in cost compared with POS systems with ECRs offered by companies.

The fundamental difference between a cash register and a POS is that cash registers are built to manage sales and sales alone; POS systems on the other hand act as the nerve centre of a business, integrating those sales in a way that helps to understand things like the most popular products of a business.

The ECR market is dominated by many players such as Toshiba, Sharp, CASIO, and Dell. The competition in the market is intense as the key players have a strong foothold in the market. Vendors are trying to upgrade their technologies to remain competitive in the market.

The key players of the market are: Toshiba Corporation (Japan); Casio Computer Co (Japan); Dell Inc (US); Hewlett Packard (US); Forbes Technosys (India); Olivetti S.P.A (Italy); Citaq Co Ltd (Germany); Fujitsu Ltd (Japan); Posiflex Technology Pvt. Ltd (Taiwan).

The top five ECR market vendors are:

- Toshiba is one of the top 100 world's largest companies. Toshiba owns a range of Toshiba TEC ECRs. All the products offer quality, reliability, and low cost of ownership. The devices are used across a wide variety of retail and food service environments. They are designed for small-scale general retail and hospitality environments.
- Sharp mainly manufactures and sells telecommunication equipment, electric and electronic application equipment, and electronic components. The company offers a wide range of products that include electronic components. Sharp offers various ECR models that help in reducing operator errors.
- CASIO is a multinational consumer and commercial electronics manufacturing company. It offers products such as cash registers and handheld terminals. The company offers ECRs that include SE-G1, SE-S700, PCR-T273, PCR-T500, SE-S10, and SE-S400. Its ECRs have LCD displays, different back-light colors, printers, and compact flash cards for data backup and recovery.

- Dell develops, sells, repairs, and supports computers with related products and services. In 2003, Dell entered the ECR market targeting the retail segment. The company entered the ECR market with its new products as low-cost alternatives to expensive POS systems. Its products connected retail desktops, servers, storage, and networked products.
- Olivetti manufactures various products that include printers, calculators, POS touchscreens, cash registers, and retail printers. It also provides services to its customers. In the retail segment, the company offers POS touchscreens, cash registers, and retail printers.

Among the cash register manufacturers present on the Italian market, it is important to mention: AP. Esse, Custom, DICASHNET, Diebold Nixdorf, Ditronetwork, DTR Italu, E.D.it., Emotiq, Epson Italia, Italretail, OK Cash, Olivetti, RCH Italia, Toshiba, VDS.
According to a recent report published by Technavio, Global Electronic Cash Register market size is estimated to increase at CAGR of almost 6%, growing by USD 4.48 bn billion during the forecast period 2022-2027.
The electronic cash register market is fragmented and the vendors are deploying growth strategies such as focusing on offering cloud-based solutions to retailers and merchants to compete in the market. To make the most of the opportunities and recover from post-pandemic impact, market vendors should focus more on the growth prospects in the fast-growing segments, while maintaining their positions in the slow-growing segments. The retail segment held the largest electronic cash register market share during the forecast period. The rising preference for fast and easy checkouts among consumers is compelling supermarkets to integrate ECRs, which will drive the electronic cash register market growth. APAC will be the leading region with 59% of the market's growth during the forecast period. China, India and Japan are the key markets for electronic cash register market in APAC. Market growth in this region will be faster than the growth of the market in all other regions. The rapid growth of the retail sector will facilitate the electronic cash register market growth in APAC over the forecast period (Technavio, Electronic Cash Register Market Report 2022).

Overall, it is possible to see how two main drivers the increasing demand for mobile applications and the growing popularity of e-commerce and online-shopping are reshaping this industry and they will affect the decisions of all the actors involved.
Indeed, the growth of the global Electronic cash register market is majorly driven by increasing number of technical innovations and overall digital transformation in numerous industries throughout the world. The growth of economies through digitalization is one of the significant factors that are driving big giants to invest highly in digital transformation to change their business models in order to get value-producing opportunities and stay ahead of their competitors along with improving the consistency and quality of their services. From artificial intelligence, augmented reality and virtual reality to internet of things, the growing number of internet-connected devices around the world are contributing to the growth of the global Electronic cash register market.

1.5 Payments for hotel industry

For hotel industry, the main goal of a terminal should be to expedite the check-in timing and processes. A payment terminal should help to provide a fully connected experience by integrating with the hotel payment processing tool. The more automated the processes are, the more it is possible to focus on offering the best guest experience possible.
This industry is affected in particular by three trends. The first one is related to guest journey. The guests themselves have changed, and their expectations are different. They now insist upon a certain degree of high-tech and low-touch options. Guests want the freedom to pay with their favourite options, on their own devices, and to only be asked once.
An integrated payments platform allows the guests to pay with maximum convenience and minimal touch, while giving hoteliers key insights. High-tech, low-touch options can enhance the guest experience; for example, by using a payments platform that supports card tokenization, returning guests can check and pay with greater easiness and quickness.
The second trend is the research for non-room revenues, promoting hotel rooms as co-working spaces, daycations, staycations, culinary experiences, or just vouchers and gift

cards, increasing the variety of initiatives and diversifying the revenues. But such efforts will require different payment environments and the need for a flexible payments infrastructure. To conclude, a single payments platform that can sit across the entire payments chain, is the key to guarantee different solutions and to collect important data for the diversification.

The third trend is related, on one hand, to the increase of automation and to the human labor shortages, on the other hand. High-tech and low-touch options such as contactless check-ins can play an important role in this context. Having payments platform that accommodates this switch will be essential. Because hotels will make different choices regarding the level of automation that best fits their needs, payment platforms must be flexible enough to support multiple variations ("Three trends in hospitality payments", Oracle blogs 2022).

1.6 Payments for Food and beverage industry

Food and beverage is the other industry evolving from a digital payment point of view and probably is one of the industry most interested by new entrants and new solutions. The recent pandemic affected the habits of consumers in particular during lockdown periods, reshaping the way how they interact with food and beverage brands. Of course, the consumer adoption of digital channels accelerated in response to the emergency.

For example, after the first lockdown, many consumers were still reluctant to go out to bars and restaurants. They preferred to use technology as a means of maintaining a safe distance and payment terminals were a big cause of fear for customers who expected to pay using contactless methods to avoid touching anything. In fact, contactless payments have become more popular, guaranteeing a simple tapping card on a terminal to complete the payment. To follow this trend, some players of food and beverage industry, such as Domino's Pizza, introduced self-service kiosks for customers to place orders without going to the counter.

In addition, like many food delivery brands, Domino's Pizza saw the huge increase in delivery requests when the pandemic hit. To deliver hot pizza fast, sellers had to ensure both driver and customer safety, for example placing pizzas in front of the door and also stopping the cutting pizzas in store.

During Covid-19 pandemic, even small-scale players, in Food and beverage industry, increased their online business, sharing menus and taking orders via Instagram or setting up local WhatsApp groups. Consequently, consumers got used to these digital interactions, giving more flexibility and letting them order however they wanted. For instance, the Joe & The Juice app offered a new dimension to the experience for customers, letting them the freedom of ordering from wherever suits them and the possibility to collect loyalty points directly via their payment method ("5 ways food and beverage industry changed", Adyen 2022).

An important deal, strictly related to this industry, is that one of SumUp, an English fintech operating in the digital payments sector, that in 2021 announced the acquisition of Tiller, one of the well-known digital services in Europe for merchants and restaurateurs. The goal of the acquisition is to work in perfect synergy to support Italian restaurateurs and the rest of Europe. Following the measures adopted at national level to combat the Covid-19 emergency, Italian restaurateurs have had to reinvent themselves, adopt delivery and take away formulas or seek new original methods to maintain the relationship with customers and ensure the continuity of their business. In this context, the acquisition of Tiller, one of the main players in Italy, France and Spain, provided SumUp with even more innovative solutions to support a strategic sector for the whole country such as catering.

The acquisition also represents the most recent of a series of strategic agreements concluded by SumUp with the aim of strengthening its product portfolio (Efanews, 2021).

Here below some players that are offering new solutions for food and beverage market:

GloriaFood is an online ordering & food delivery platform that helps restaurant owners streamline point-of-sale operations and manage orders, table reservations, promotional activities & more. Users can select multiple delivery locations, define minimum order amounts & set zone-based delivery fees.

Simphony, by Oracle MICROS, is a cloud-based POS system designed to synchronize front-of-house, back-office, and kitchen operations. The platform helps restaurants manage processes related to takeout and delivery orders, menus and pricing, customer loyalty programs, online payments, and more.

Openbravo Commerce Cloud is a cloud-based omnichannel retail platform for middle-size and large retail and restaurant chains selling online and offline.

CAKE, from Sysco, designed it's CAKE POS to meet the unique needs of restaurants.

SpotOn Restaurant is a cloud-based point of sale (POS) solution designed to help small to medium businesses in the hospitality industry streamline online payments, tableside orders, and fraud protection.

GOFRUGAL Restaurant Software helps to manage restaurant billing, keeps accurate track of your inventory ensuring it's always fresh & lets you maintain taste consistency with recipe management and integrate online ordering.

MYR POS is a point of sale solution which helps fast-food restaurants and cafes streamline their operations. With applications for food trucks, bakeries, bars, pizzerias, ice cream parlours, franchises, salad bars, and more, MYR POS supports efficient, quick-service order management.

Lightspeed Restaurant is a cloud-based point of sale (POS) system for restaurants. The platform offers features including sales tracking, contactless payment processing, customizable floor plans, employee management, and more. Lightspeed Restaurant also offers add-ons for delivery and eCommerce.

CHK PLZ is a contactless payment and ordering solution built for the future of the hospitality industry. The platform is your one-stop-shop for any dine-in or dine-out needs thanks to their online ordering and delivery, digital menus and touchless QR code payment solutions.

Poster POS is a cloud-based tablet Point of Sale application which enables cafes & restaurants to manage menus, orders & supplies quickly & efficiently.

Brigade POS is a web-based point-of-sale solution for restaurants to manage their front desk & floor operations, menu, staff, billing activities, and more.

Ovvi is a point of sale software designed to help eateries, liquor, grocery or convenience stores, and businesses in the retail industry manage tickets, table layouts, refunds, online ordering, inventory, employees, and more on a centralized platform.

Microworks Prism POS is a point of sale solution designed to help restaurants streamline and automate inventory control, gift cards, loyalty programs, and delivery management operations on a unified dashboard. The application provides dining and table service module, which allows professionals to prepare custom table layouts for facilities and track status on guests, table, server, food and beverage in real-time.

1.7 Entry barriers & regulation

The entry barriers had previously limited the access of new actors into the industry. Now, thanks to the introduction of new regulations, everything is changed; indeed PSD and PSD2 have pushed to widen the competitive arena with the aim of improving the level of service for the consumer. In particular, PSD2 obliges banks to open up to authorized external actors (startups, technological operators, merchants and other banks) so that they can increasingly offer new payment services based on access to accounts for end customers.

The PSD2 legislator has recognized and disciplined Fintech service models based on third-party access to customer accounts. PSD2 also allows payment services on the bank account to be provided to different lenders (TPP) from the one where the account is rooted (ASPSP). This phenomenon is only a variation of the new conformation of payment services, unavoidably linked to the growing rigor of the rules governing the exercise of banking and financial activities. In fact, the tightening of capital requirements and the consequent contraction of the profitability margin met with the availability of new technologies and, according to some authors, the concurrence of these circumstances would have triggered a centrifugal force of banking, financial, and payment services to new subjects, creating new market opportunities, new needs for customer protection and control of new risk factors. The variety of innovative business lines creates added value in the ecosystem of payment services but also makes incredibly complex to ensure the customer security.

In recent years, there has been an accelerated shift to consumers using digital payment channels, with global FinTech and payments-processing companies, like Fiserv, FIS and Global Payments +TSYS, becoming the definition of scale players in the payments industry.

In response to increased competition, more stringent regulations and the need to reduce costs, some banks have outsourced their core payments platform technology and operations to these non traditional payment providers. But, while some banks may have outsourced the transaction-focused share of the payments business, banks and scaled merchant acquirers are, in fact, best positioned to thrive as the payments industry enters a stage that moves beyond the transaction itself.

As commerce continues to evolve, rapidly moving from in-person, point-of-sale purchasing to virtual, electronic online transactions, this shift in consumer purchasing/transactions undersco res the need for banks and acquirers to update and differentiate their merchant services.

Banks and acquirers can accomplish this distinction by developing and implementing a comprehensive payments strategy, transforming payments from a simple financial transaction, to a data-fueled commerce engine that bolsters sustainability and drives growth.

Today, payment leaders are adopting this commerce proposition, expanding across the commerce value chain and they often use data as the link between their strategy and commerce-related services. For example, to aid customer decision-making, Afterpay provides product and retailer recommendations to its customers based on transaction data, while PayPal Honey helps price-sensitive consumers find deals while providing PayPal with extensive price sensitivity data and consumer insights through a browser plug-in. And to assist airline and travel services providers in bolstering customer loyalty, JP Morgan Chase acquired exLoyalty, which is integrated with its co-branded card proposition.

In addition, GlobalPayments was an early adopter of the commerce proposition when it acquired ActiveNetworks to help events and clubs manage both participants and events, and Mastercard embraced the commerce proposition when it acquired APT to provide merchants with insights into locations, consumers and shopping trends.

In response to the requirements of consumer safety, the European Union established the already mentioned “Revised Payment Services Directive” also known as “PSD2”, Directive (EU) 2015/2366, relating to payment services in the internal market and which repeals the previous PSD Directive 2007/64 / EC.

Among the main benefits pursued with the PSD2 can be counted (PwC Italy, Pillola di PSD2, 2017):

• Greater consumer protection

• Development of new payment solutions
• Regulation of new market players
• Uniform fees for card payments in line with the MIF
• Increase in the level of competition within the industry
• Overcoming differences between the disciplines of European States
• General increase in efficiency through the infrastructure standardization

Concerning security and consumer protection, the PSD2 introduced more rigid verification for payments in “card-not-present” mode, named “Strong customer authentication” (SCA). It requires users to provide two or more information from these factor classes:
• A knowledge factor (something you know, such as a password)
• A possession factor (something you have, such as a payment card)
• An inherent factor (something you are, such as a fingerprint scan)

An important aspect of PSD2 regulation is related to the Open API. On high abstraction level, an Application Programming Interface or “API” is a sets of requirements that govern how one application can talk to another (Readwrite, "What APIs Are And Why They’re Important," 2013). It represents a channel through which an external application can access data stored in the source application database. When the channel is made public it offers business opportunities to create specific applications referring to a unique underlying dataset. This definition helps to understand the importance of this "openness", but it is not enough. It is fundamental to add the regulatory PSD2, in fact, according to the directive, banks have to render these Application Programming Interfaces (API) "Open", hence accessible also to external actors. The obligation concerns the sharing of certain data: with the PSD2 banks are obliged to expose account information and the possibility of making payments via API (Osservatori.net, 2020).
As a response to this regulatory need, the APIs could represent the basis for building an interface not for compliance purposes only, but also to enable future developments related to the proposition of value-added services on the market.

Indeed, the advent of the Open API has undoubtedly enlarged the competitive scenario in the financial services sector, simultaneously encouraging collaboration between traditional players, such as banks, and third party players enabled by PSD2.
The main advantage for banks is the possibility to offer the customer value-added services and a different and more complete experience. BBVA, a well-known Spanish bank, is perhaps the best example of this at a European level. The banking giant in 2019 made its API Market, a store open to external developers, with the possibility of accessing account information and the possibility of initializing payments and money transfers. In Italy, the majority of banks have decided to face the Open API challenge with an ecosystem approach, with the CBI Globe consortium initiative or with open platforms such as Fabrick.
The Open API also facilitates the use of instant payments. Thanks to the combination of Open API and Instant Payment, for example, the International Air Transport Association (IATA) has successfully tested an online payment service - IATA Pay - for the purchase of airline tickets from airline websites via account current, with economic and financial advantages for the companies themselves.
The Open API opens a door to build innovative services. In this scenario, new players are emerging, such as API providers, who deal with connecting companies that do not have licenses to banking APIs through "License as a service" services.

The figures of PISPs (Payment Initiation Service Providers) and AISPs (Account Information Service Providers) have increased their importance, closely related to the types of services rendered mandatory by PSD2. API providers further expand the audience of actors who will be able to take advantage of this opportunity without the need to acquire an ad hoc license, which can also be difficult to obtain.
The API Providers, which in this new context of "Open Finance" have seen various barriers to entry collapse, are mostly young startups, but closely followed by the same companies in the financial world that have no intention of giving up their presidency.
In addition to these players, the big web players (Big Tech such as Google, Facebook and Zalando) or NewCo born from companies already consolidated from other sectors are knocking on their doors, therefore the possibilities of growth are becoming richer and richer (Osservatori.net, 2020).

2. Literature review

This chapter will provide an overview of all the main and secondary actors that populate the chain of digital payments.

The chain of payments is typically comprised of five main parties: the customer, the merchant, the issuer, the acquirer, and the card network. There are also other actors that will be introduced later on. From an article of Switchpayments in 2021 and from previous reports, it was possible to get an overview of the payments industry participants.

2.1 Main actors

Here below a short description of each main player:

Customer

Customers are the end-users who initiate the payment with the merchant. They are commonly referred to cardholders if they're paying with credit or debit cards. The cardholder doesn't really own the card and is only authorized to use it. The card remains the property of the financial institution that issued it. Generally, the cardholder is a client of the issuing financial institution and has an account directly linked to the payment card. Within this chain, customers get the convenience of having an electronic means of paying for goods and services online and offline, with the possibility of entering into multiple rewards and cashback programs.

Merchant

The Merchant, often also called "The Acceptor," is the vendor to the consumer. The Merchant sells goods or services to the cardholder and accepts card payments. Typical examples are restaurants, hotels and shops equipped with POS payment terminals (Ingenico, Verifone, Telpo, or Vax machines, for instance). In addition, the Merchant could be an ATM and represent a fully automated machine. The primary role of the merchant is indeed to "accept" payment cards. To accept card payments, businesses must open a merchant account — an account established with the acquirer to settle the funds. By being part of this chain, merchants can attract and retain customers with a fast and efficient buying experience. Merchants are the customers of this payments chain, as they are interested in receiving payments from the cardholder and need to buy the service from the acquiring bank.

Issuer

An issuing bank, or issuer, is the financial institution that issues cards to customers, provides them with credit or debit accounts, and makes payments on their behalf. Issuers manage payments' authentication, meaning they receive the transaction information from the acquiring bank and respond by approving or declining the transaction. For approvals, issuers must check in advance to ensure that the transaction information is valid, that the card used belongs to a trusted cardholder, and that the customer has enough funds or credit to perform the transaction. After that, the issuer sends a response code back through the appropriate network to the acquiring bank. The payment card issued by the Issuer may be of three different types:

1. Credit card
2. Debit card
3. Prepaid card

Examples of such card payment networks include Visa, Mastercard, Europay, JCB, American Express, and Discover. They can also be private, closed-loop payment networks like a domestic scheme. The issuer bank is responsible for manufacturing the payment card and the management of the associated cryptography. Usually, this is done with card integrator companies.

Acquirer

An acquiring bank, also known simply as an acquirer, is the bank or financial institution that provides merchants with the means to accept card payments. The acquiring bank captures the transaction information and routes it through the appropriate card network to the cardholder's issuing bank for approval, usually through a third-party acquirer processor, a stakeholder covered in the next section. After collecting the payment, the acquirer settles the amount in the merchant account typically within two business days. The amount includes gross sales minus refunds, reversals, disputes, interchange fees, card scheme fees, and acquirer fees. The acquirer can be a third-party system that is not directly the bank where the merchant has an account. In general, the Acquirer will provide hardware and software to the Merchant and allow the Merchant to process transactions. The Acquirer must manage the final return codes (return authorization codes or not) from a transaction.

The Acquirer will be responsible for authorizing the Merchant to deliver a good or service.

Card Network

For every card swipe, chip-and-pin, contactless, or CNP (card-not-present) payment, there's a card network involved — often referenced as a card brand. The card network provides the means for making card transactions possible, and in exchange, acquirers and issuers must pay a license fee — card scheme fee. Card networks pass information and settle funds between the acquirer and the issuer. Besides, they set the standards by which acquirers and issuers should communicate and define the rules for disputes which standardizes procedures for how issuers and acquirers handle disputes.

A card scheme is a group of entities linked to a card network that agree to follow their set conditions for transacting funds. A card scheme is composed of the cardholder, merchant, acquirer, and issuer. In three-party schemes, the issuer and the acquirer are the same entity. Because of that, there are no fees charged between issuers and acquirers. Examples of card networks that work within three-party schemes are American Express, Discover, and Diners Club.

In four-party schemes, the card network works with multiple and independent entities on the acquiring and issuing side (e.g., issuing banks, acquirer banks, acquirer processors, etc.). This is the case of Visa and Mastercard. Their strategy is to reach as many stakeholders as possible to participate in their network, making room for innovative companies to join, increasing competition and fragmentation within the industry.

2.2 Other actors

The payment chain became more complex. In reality, there's a clear number of intermediaries who participate in the payment journey from the moment the customer swipes a card on the terminal until the funds are settled on the merchant account.

Acquirer Processors

Acquirer processors provide the technical capabilities to communicate authorization and settlement messages between the acquirer and the card networks. They handle the technical side of the acquiring business and they don't assume financial liability for the process, as they are not involved in fund management. Liability and risk lie on the acquirer. Nonetheless, it's important to point out that, in some cases, the acquiring bank and acquirer processor are a single entity (e.g., Adyen, Elavon).

Payment Service Providers

A payment service provider (PSP) is a payment institution that offers to merchants connections with multiple acquirers and payment methods like credit cards, direct debit, bank transfers, and other value-added services like split-payments anti-fraud. They provide a merchant account and the technology to ensure that businesses can collect and manage their payments seamlessly, including payment gateways, back-offices, plugins, and anti-fraud systems.

PSPs' most prominent value-added feature is their ability to streamline the onboarding process—serving as distributors for acquirers—and to offer a definitive solution for payments. This means merchants can create one merchant account only and still get access to multiple payment schemes and a centralized reconciliation process.

Payment Gateways

A payment gateway represents a technical layer that collects payment credentials on the merchants' client-side and securely forwards them to the relevant payment service provider (PSP) or acquirer. The majority of gateway companies also offer other value-added services like fraud management or smart routing.

Independent Sales Organizations

An Independent Sales Organization (ISO), also called a Merchant Service Provider (MSP), is a third-party sales organization that acts as a distribution channel for acquiring banks, payment service providers, or payment processors. ISO's promote and resell credit and debit card services from these institutions to merchants. ISO's don't own a payment institution or an acquiring license.

Security Providers

With the exponential growth of e-commerce and fraud, keeping payments secure has become a priority for merchants. Payment security providers develop and offer to merchants the technology to decrease risk exposure during merchant's transactions, keep card payments safe, and secure them from fraudsters. Security providers' technology generally includes big data analytics and artificial intelligence.

Digital Wallets

A digital wallet, also referred to as an e-wallet, allows an individual to make electronic transactions. It is a software-based system that securely stores users' payment information and passwords for numerous payment methods and websites. E-wallets can be used for purchasing items online or buy items at a store using smartphones. The money can be deposited in the digital wallet before any transactions, or an individual's bank account can be linked to the digital wallet. Digital wallets bring customers the added convenience of making payments without carrying cards.

Terminal Manufacturers and Vendors

POS (point-of-sale) terminals — the devices and technology used to process in-store electronic payments — are developed by terminal manufacturers and distributed by terminal vendors. In some cases, the terminal vendor can be a separate entity from the terminal manufacturer. For example, Adyen distributes POS devices developed by Verifone, a terminal manufacturer. When it comes to the POS hardware and software, different entities can be responsible for developing each. At Switch, we have developed a POS terminal software, the Switch Terminal Application, while certified terminal manufacturers build the available physical devices.

2.3 Explanation of payment model

The payment model is like a chain that involves several actors as illustrated previously. This is a very complex mechanism involving clearing and settlement processes.

Of course, the starting point is the Cardholder's action of buying something from the Merchant using a payment card. This triggers an authentication flow from the Merchant to the Acquirer bank and then from the Acquirer bank to the Issuer bank through a vast network of switches, gateways, and servers managed by the relevant card scheme network.

The authorization flow will ultimately result in a positive or negative result. When a positive authorization is received, the Merchant will generally deliver the goods or services.

Things would be pretty straightforward if the payment industry relied only on a couple of stakeholders and if these were easily identified as separated entities.

Besides all these actors listed above, many others have been joining the payments environment as the industry and technology keep evolving. The complexity of this industry is also given by player like Adyen that is, for example, a payment service provider but also works as an acquirer processor and owns an acquiring license. In addition, Adyen uses its own payment gateway and sells POS terminals which also makes it a terminal vendors.

Even the number of acquisitions, among payments' industry players, contributes to its complexity. For example, Visa acquired Payworks to strengthen tokenization capabilities beyond Visa card-based payments. On the other hand, Stripe acquired Touchtech to prepare for European regulations on strong customer authentication (SCA).

3. Research methodology

The research methodology of this study consists on the adoption of a quantitative and a qualitative analysis. From a qualitative point of view, a Porter's five forces analysis is carried out for merchant acquiring, payment gateway and POS provider markets, to provide strategic insights and to evaluate the attractiveness of these industries. This analysis is the first step of the research in order to focus firstly on external factors. Porter introduced his five forces framework in 1979 to understand an industry's attractiveness and now has become one of the most popular business strategy tools.

His framework revolutionized the way managers and entrepreneurs analyse their industry's competitive environment by examining specific forces.

Here as follow, the five forces included into the analysis: the threat of new entrants, the bargaining power of buyers, the bargaining power of suppliers, the threat of substitutes and the competitive rivalry among existing players (Porter, 1979). The first four forces determine the fifth force, competitive rivalry, which can have different intensity depending on the number and strength of competitors. The strength of each of the forces negatively impacts profitability.

After this first step, the qualitative research is strengthened by a SWOT in order to take into account both external and internal factors that are involved in the whole payments chain. SWOT analysis has become a key tool used by businesses for strategic planning, helping the management of key information. Scholars have conducted SWOT research for over six decades. Overall, it is a tool to minimize weaknesses, to look for market opportunities, to plan against threats and to identify strengths. In particular nowadays, this tool has gained success as a management tool for analysis; indeed in 2003 Backman and Butler affirmed how SWOT analysis increases the productivity of any business.

Moving on the quantitative analysis, several data and trends are reported, through the investigation of numerous previous studies. This analysis allowed to gain greater clarity on the quantity of players present in the three industries of the payments chain, included into the study. Firstly, an investigation of the whole industry was fundamental in order to identify all the main and new actors to include in the analysis and this was possible looking at several reports and previous market data. Afterwards, an accurate research for each player was carried out going through the company websites understanding their strategies and their activities. The output is the mapping of all the main players.

This study focus also on M&A trends that are reshaping all the payments industry. The study of M&A deals is performed from a geographical and a segmentation point of view, considering a period of time of two years, from H1 2019 to H1 2021. In the geographical analysis, five regions are considered: North America, Europe, Asia, Middle-Est and Africa (MEA) and Australia & New Zeland. The analysis for segments takes into consideration payments acceptance, processing, issuing, alternative payments, couponing & Loyalty, money transfer, security, data analytics, ATM and other segments. Regarding the methodology, the analysis for M&A trends is performed looking at several reports of mainly consulting firms and unifying the collected data.

The quantitative investigation has been made also for the first part of the current year, to give an overview of M&A deals and trends for the first four months of 2022, always looking at recent data and reports.

Here below, Figure 1 schematizes the research methodology adopted in this study.

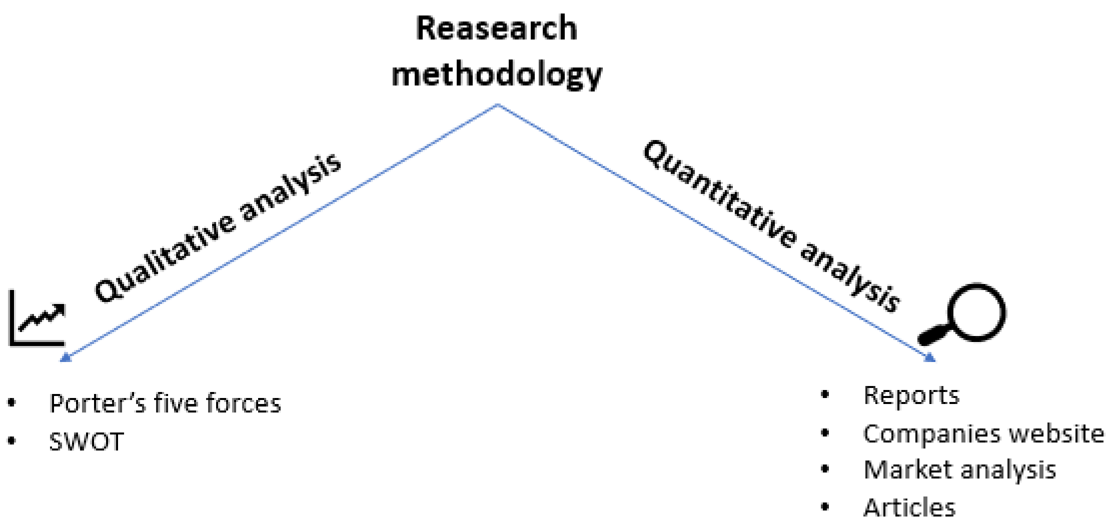

Figure 1

4. Analysis of payments chain

4.1 Future trends of Payment industry

Before going to deepen the single industries of payments chain, it is important to highlight the new general trends and future trends that will continue to reshape this industry and will change the balance of the market.

The pandemic reinforced major shifts in payments behaviour: declining cash usage, migration from in-store to online commerce, adoption of instant payments. These shifts create new opportunities for payments players; however, it is unclear which are permanent and which are likely to revert—at least partially—to prior trajectories as economies reopen. Nonetheless, the long-term dynamics seem clear. There is the possibility that cash usage to rebound to some extent in 2021, due to a partial return to past behaviours, fewer lockdowns, and a broader economic recovery, but evidence indicates that roughly two-thirds of the decrease is permanent (McKinsey, 2021).

The reduction in cash demand is leading to increase unit servicing costs for its distribution and collection, prompting banks to review ATM footprints and rethink their cash cycle management. One response has been growth in ATM sharing between network banks and greater outsourcing of ATM servicing to specialized cash-in-transit (CIT) players—first observed in Northern Europe and now in Latin America (for example, a joint venture between Euronet and Prosegur Cash with the goal of providing comprehensive ATM outsourcing services).

Retailers, particularly digital commerce marketplaces, have elevated their competitive position, moving from traditional credit-card and consumer-finance solutions to pursue deepened customer engagement leveraging payment solutions. For example, MercadoLibre, Latin America's largest e-commerce player, owns the online payments network MercadoPago, and has built an ecosystem encompassing marketplace, payments, shipping, software-as-a-service, and advertising. The enhanced customer experience, as well as revenue and valuations generated by retailers, have challenged banks to up their game in order to preserve their market position. One example is the collective launch of mobile payments platform Modo by more than 35 Argentine financial institutions in December 2020, offering a solution for account-to-account money transfers and in-store QR payments. Real-time payments are playing an increasingly important role in the global payments ecosystem, with the number of such transactions soaring by 41 percent in 2020 alone, often in support of contactless/wallets and e-commerce (Mckinsey, 2021).

The introduction of applications capitalizing on instant payments infrastructure in recent years (PhonePe and GooglePay in India, PayNow in Singapore) has given added impetus to growth. Regional solutions are also staking out ground between global networks (such as Visa and Mastercard) and incumbent domestic schemes. For example, the European Payments Initiative (EPI) is building a unified pan-European payments solution leveraging the Single Euro Payments Area (SEPA) Instant Credit Transfer (SCT Inst) scheme for point of sale as well as online usage.

Payments providers are competing to offer customized solutions like QR code, "tap to pay," and link-based payments (processes initiated by merchants sharing a URL) that make the payment experience seamless, pleasant, and increasingly contactless. Simplification in the merchant on boarding process can also help in attracting more sellers, reducing cost, and elevating the merchant experience. For example, Mastercard in India launched Soft POS, a multiform-factor white-label solution for banks and payments facilitators that enables a smartphone to function as a merchant acceptance device. Other examples include value-added services like virtual shops and solutions that record and store credit transactions. Network-based marketing enables SMEs to reach a larger pool of customers. Social-media platforms have embedded payment features, enabling SMEs to execute sales through networks such as Instagram. Venmo's social commerce platform helps build SME brand awareness as users can see, like, and comment on each other's purchases—a useful feature for street vendors and small-business owners who often lack funds to invest in marketing and promotions.

As payments become integrated into broader customer journeys, the sector's boundaries have naturally expanded. The payments industry now encompasses the end-to-end money-movement process, including the services and platforms enabling this commerce journey. For example, while payments as traditionally defined comprise only 5 to 7 percent of a typical merchant's software and services spending, payments providers with solid reputations for execution and innovation are well positioned to deliver solutions addressing needs constituting 40 percent of such expenses. Such opportunities help explain why less than one-third of Square's revenue would be strictly categorized as payments. Similarly, within five years, 40 percent of merchant acquirer revenues are going to stem from different activities not strictly related to the payment processing (Mckinsey, 2021).

Here below some areas that offer attractive natural extensions for existing and future actors:

1. **Payments and banking-adjacent software, infrastructure, and services.** The largest shares of payments revenue are related to the endpoints of the chain, where direct interaction with payers is central. Even as the payment "pipes" and underlying technology face potential commoditization, opportunities abound in the rapidly evolving payments-as-a-service space, through which traditional players provide the transactional and compliance backbone that enables partners to deliver adjacent services through reimagined front ends. Most examples to date have centered on consumerfacing solutions, but potential remains on the commercial side as well. Other important and less commoditized value-added items include digital identity, risk solutions, charge-back mitigation, and KYC-as-a-service.
2. **Commerce, sales, and trade enablement.** Non-bank market entrants often derive their value from related services, driving down payments pricing in the process. Banks must consider similar approaches to avoid being disadvantaged. Solutions focused on automating the on boarding process, increasing the stickiness of users, and improving the seller experience should find a ready market. Examples include affiliate marketing, loyalty solutions, e-invoicing platforms, and B2B trade directories.
3. **Balance-sheet-based offerings.** Banks are similarly well equipped to introduce new solutions based on emerging payment methods such as instant payment and "buy now pay later" (BNPL) models, or to integrate new solutions and technologies into existing value propositions. Financing and deposit models with significant regulatory requirements or higher risk profiles (including credit cards, BNPL, supply chain and SMB financing) are among the promising areas.

In order to conclude the first part of this chapter, other recent trends are listed below:

Cryptocurrency permeates payments industry

In 2021, the payments industry started to get closer to the cryptocurrency world. Throughout the year, there were several M&A activities in this direction, including PayPal Holdings Inc. acquiring Curv Inc. and Nuvei acquiring SimplexCC Ltd., as well as new partnerships, cryptocurrency feature launches, significant funding rounds and dedicated cryptocurrency teams built out within incumbents. In 2022, cryptocurrency will be an unmistakable theme across the payments industry. Payments companies will inject more capital into the cryptocurrency, indeed any payments company that has not begun to take this market seriously by the end of the year is likely to be at a significant disadvantage (S&P Global Market Intelligence, 2022).

Banks go big on BNPL

Recently, there is an intersection between BNPL (buy now- pay later) and banking, where BNPL is gaining an important role among financial services. BNPL providers such as Klarna Bank AB (publ) and Square are enhancing their value propositions by layering on banking services such as checking accounts and debit cards, putting pressure on traditional financial institutions.

Banks taking advantage of the BNPL movement early on have primarily been working on the back end of financing instalment loans, such as Cross River Bank financing Affirm, or targeting existing cardholders post-purchase, as with Citi Flex Pay and JPMorgan Chase's My Chase Plan. This is expected to change as more banks opt to defend their turf and develop their own BNPL financing strategies. For example, Barclays PLC announced in April that it plans to launch its own white-label BNPL financing option for merchants in partnership with Amount Inc. Citizens Financial Group Inc. has taken another approach by partnering with Jifiti.com Inc. to offer BNPL under the Citizens Pay brand at checkout. The Goldman Sachs Group Inc. has taken the M&A route, acquiring GreenSky Inc. for $2.2 billion in September (S&P Global Market Intelligence, 2022).

SaaS platform payments opportunity heats up

Large SaaS platforms such as Shopify Inc. and MINDBODY Inc. have evolved into operating systems for their customers and are now leveraging their trusted positions into financial services. They are starting by embedding payment processing into their software to accomplish three key business objectives: enhance the user experience, increase customer stickiness and capture a new revenue stream. Some are beginning to take this another step further by offering merchants adjacent financial products like loans and payment cards — a trend we expect will pick up momentum in 2022. SaaS platforms have already become a meaningful small-business payment acquisition channel. Stripe Inc. has been at the forefront of this trend in recent years, offering SaaS platforms the option of a flexible, hybrid deployment model and a suite of banking-as-a-service capabilities to boot and also many legacy processors participated in this trend (S&P Global Market Intelligence, 2022).

There will be a new scenario with fresh opportunities for incumbents and new entrants alike to participate in emerging adjacent revenue streams, further brightening the future picture. These benefits will not flow evenly to all, however. Players electing not to adapt their strategies— whether by choice, inaction, or lack of investment capacity—are likely to endure below-peer growth and risk being displaced on key customer experiences.

4.1.1 Worldline & Ingenico – Case study

This case study involves Worldline and Ingenico and it is significant in order to testify how the trends post-Covid are reshaping the market and the strategies of each actor.

Two years after it acquired the big point-of-sale technology company Ingenico S.A., the French processing giant Worldline S.A. has launched negotiations to sell the business to the asset-management firm Apollo Global Management Inc. (Digitaltransactions, 2021).

Worldline's board of directors made the decision in October 2021 to begin the process of divesting in TSS (Worldline's Terminals, Solutions, and Services division).

Worldline's terminal business is Europe's No. 1 provider of point-of-sale terminals technology, based on terminals shipped in 2019, according to Nilson Report. Recently, the company disclosed its intention to hire more than 5000 staff as part of a new strategic plan to accelerate its geographical expansion as well as its investment in technology.

The Worldline unit set to be acquired by Apollo, has been restructuring to focus primarily on providing cloud-based payment services that generate recurring revenue. Worldline launched a strategic review of the business, including a possible sale, suggesting that the hardware-terminal business might need new management and funding to accelerate its move to a software-as-a-service business model (Wall street Journal, 2021).

Equipment prices are facing an increased competition from Asian rivals including Newland Payment Technology Co. and Pax Global Technology Ltd.

In addition, the pandemic has hurt the performance of the terminals business, which was Worldline's slowest-growing division in the second quarter of last year.

In 2020, Worldline generated revenues of €4.8 billion, but the terminal business has been hit by Covid-19 pandemic (Digitaltransactions, 2021).

Hence, overall it is possible to affirm that the increase in equipment prices and in competition from Asian rivals, in addition to the losses due to the covid, have led Worldline to change its strategy, divesting in TSS (Worldline's Terminals, Solutions, and Services division) and selling its Ingenico business.

4.2. Porter's five forces analysis

4.2.1 Merchant acquiring

Merchant acquiring is the first industry, within the payments chain, that deserves a depth analysis in order to understand how the Porter's five forces act.

Globally, merchant acquiring has evolved over the past decade from a legacy processing and hardware business to a full-stack software and merchant services solution.

One of the COVID-19 pandemic's most visible impacts on financial services has been the dramatic acceleration in shifts toward e-commerce and digital payments.

This shift to digital is driving up merchants' payments-acceptance costs, which are expected to rise by an incremental $8 billion to $15 billion, as commerce migrates to these higher-cost channels (Merchant acquiring: The rise of merchant services, Mckinsey Global Payments Report 2020).

The consolidation in merchant acquiring over the past several years has enabled acquirers to build scale across regions and to enhance their suite of capabilities to stay competitive in the face of next-generation merchant-services platforms, such as Adyen, Checkout.com and Stripe.

Several trends are reshaping this industry, affecting the stategic decisions of each player.

One of these trends is the high investment by larger merchants in order to enter into a platform business. In fact, most of large merchants are facing this shift into e-commerce, which has created more payments digitization needs at the point of sale, including contactless payments, enhanced authorization, fraud and chargeback mitigation solutions, financing at point of sale, sub-merchant onboarding, and payments remittances.

In these years, the actors of the industry are also investing in SME channels in emerging geographies to capture share. Acquirers are assessing their strategic posture to address this trend.

Directing investments into digital ISVs are always more common among acquirers. Indeed, with traditional processing revenues under pressure due to the recent pandemic, acquirers are focusing their investments on integrations with digital ISVs and creating payments-adjacent offerings where they provide value-added service such asPOS financing.

Another trend is the differentiation of solutions on data in order to enable enhanced authentication, fraud, and chargeback use cases.

Acquirers are also including in their portfolios alternative payment methods due to evolving regulation, ongoing innovation and retailer interest.

The last trend to point out is the aggregation of devices, interfaces, payment means, and channels by acquirers in order to guarantee the best customer experience.

To conclude, nowadays merchants are rethinking their acceptance and payments needs and journeys post COVID-19, hence the acquirers are orienting themselves in order to innovate around these needs and journeys with the goal of gaining market shares and beating the competition (Merchant acquiring: The rise of merchant services, Mckinsey Global Payments Report 2020).

Porter's five forces analysis of this sector will be illustrated below in order to understand the level of attractiveness and possible future scenarios.

Competitive Rivalry in the Market

According to Porter’s five forces analysis, the competitive rivalry in the market is influenced by all the other forces: competition in the industry, potential of new entrants into the industry, power of suppliers, power of customers and threat of substitute products (Porter, 2008).

The merchant acquiring industry is becoming always more competitive. The big banks and big entities are facing the competition of new start-ups and new actors who are gaining important portions of market share. Indeed, in particular during Covid-19 emergency, e-commerce transactions had a constantly growth as merchants collectively began the transition to online commerce and the result was that new entities grew much more than incumbents. In addition, the normative PSD2 is allowing new players, such as merchants nad insurances, to manage some services originally provided by acquirers. Hence, overall the competitive rivalry in the market is high.

Threat of Substitutes

The internal rivalry and the entry barriers are the factors that mostly defines the power of threat of substitutes within an industry (Porter, 2005). Several factors have led to a constant growth of the merchant acquirer industry and the potentials for the future are significative. As illustrated previously, the increased volume of transactions in e-commerce makes this industry a target for new players. Different actors like utilities, insurances and merchant itself could exploit the benefits of SPD2 regulation becoming the substitutes of acquiring industry's entities. Despite all these factors, the entry barriers, as in particular the need of IT platforms and financial capitals, remain strict for new actors of other industries. So, overall the threat of substitutes is moderate.

Threat of New Entrants

In 2008, Porter has identified number and balance of competitors, degree of difference between products, growth rate of an industry and level of fixed costs, as the most important factors affecting the threat of new entrants. For a long period, this industry was consolidated among scale players, but the integration of payments and software, rapid digitization of small and medium-size businesses (SMBs) and emergence of powerful disruptors have changed this arena that now is strongly contested by incumbents and new players such as independent software vendors (ISVs), fintechs, and innovative merchant acquirers. Contrary to the actors coming from other industries, here the new entrants are mostly new technological companies and new start-ups who face less issues with entry barriers. Indeed, they can already rely on established IT platforms and can collect investments among several venture capitals interested to invest in this profitable market. Overall, the threat of new entrants is high.

Bargaining Power of Buyers

The main factors that affect buyers' ability are buyers' concentration, switching cost and available substitutes (Porter, 2008). The buyers of this industry are numerous and in different segments. A merchant can rely on one acquirer or can adopt a multi-acquirer solution, increasing the bargaining power. Merchants and other entities have low switching costs and thanks to the new regulation they can manage some services independently. As a result, the bargaining power of buyers is high.

Bargaining Power of Supplier

The bargaining power of suppliers is touched by several factors, as number of suppliers relative to buyers, dependence of a supplier's sale on a particular buyer, switching cost, availability of suppliers and possibility of forward integration by suppliers (Porter, 2008). In the merchant acquiring industry, suppliers have low bargaining power. The majority of suppliers are specialist software or hardware providers and they have to comply with strict standard to ensure payment security and integrity. In addition, in this industry it is possible to choose from different suppliers and new software and hardware are constantly entering in the market due to alternative payment, hence there are not established suppliers. Therefore, suppliers have low bargaining power.

The table below summarizes the Porter's five forces analysis of merchant acquiring industry. Overall, this industry is not very attractive as the competitive rivalry in the market is high. This forces is affected by high threat of new entrants and moderate threat of substitutes. Also the bargaining power of buyers is high.

Merchant acquiring		
Forces	**Structural determinants**	**Intensity**
Competitive Rivalry in the Market	• High competition • New start-up players • Low switching costs • New substitutes • PSD2 normative	**High**
Threat of Substitutes	• Low switching costs • Companies from other industries • PSD2 normative • High entry barriers • High growth rate	**Moderate**
Threat of New Entrants	• Low Barriers to entry • New start-up players • Low switching cost • High growth rate	**High**
Bargaining Power of Buyers	• Low switching costs • Low buyers' concentration • PSD2 normative	**High**
Bargaining Power of Supplier	• Low suppliers' concentration • Strict regulation • New hardware and new software	**Low**

Table 1

4.2.2 Payment gateway

The global payment gateway market size was valued at USD 22.09 billion in 2021 and is expected to expand at a compound annual growth rate (CAGR) of 22.1% from 2022 to 2030 (Grand view Research, 2021).

Also Global Market Insights Inc stated that payment gateway market is set to grow from its current market value of more than USD 20 billion to over USD 60 billion.

Companies are increasingly seeking payment gateways that provide secure internet transactions and help prevent credit or debit card scams and other fraudulent activities. Reliable payment gateways encrypt sensitive information such as bank account details and debit or credit numbers to ensure that the information is transferred securely from the customer to the issuing bank. Moreover, they eliminate the shopping from physical stores and the wait in long queues, as consumers can efficiently complete the entire transaction online, enjoying a seamless shopping experience.

Hnece, the market growth can be attributed to the increasing demand for mobile-based payments across the globe. Rising e-commerce sales and growing internet penetration globally are other significant factors that are anticipated to contribute to the growth of the market for payment gateway. Additionally, the shift in merchant and consumer preference to digital channels for enabling online money transfers is projected to propel the growth of the market in the forthcoming years.

Growing proclivity towards online shopping and accelerating demand for secure digital payments and mobile payment technology has created a massive demand for efficient payment gateway solutions among various businesses. Ongoing penetration of smartphones and internet in conjunction with the emergence of online banking apps and digital payments is further fueling the demand for payment gateway systems. The rising demand for these solutions is positively influencing the business space for payment gateway market.

Security of the online transaction has been a major challenge faced by the businesses as well as the customers. In this regard, payment gateways are gaining a wide prominence as they offer high security to the businesses for performing online transactions.

Here below some of the major trends that are strongly influencing the payment gateways business space:

1) New advanced solutions by market players

Shifting consumer preference for digital payments has prompted the market participants to develop offerings meeting consumer demand in order to gain a competitive advantage in the industry. Citing, for instance, in 2021, renowned payment technology firm Splitit announcing the availability of a new service, Splitit Plus, that will allow merchants to provide payment instalments to their customers in just few minutes.

2) Demand for local bank integrated payment gateway

Growing digitalization across banks is the major factor which is augmenting the demand for local bank integrated payment gateway. This payment gateway directs customers to banks while performing a financial transaction wherein the users can add their financial credentials. This payment solution is fast and easy to setup which has impelled its adoption in SMEs. Considering the high product usability, local bank integrated payment gateway segment is anticipated to record a robust CAGR of over 15% through 2027 (Payments Journal, 2022).

3) Rising popularity across SMEs

SMEs are showing great interest in deploying digital payment solutions to avoid long queues of customers. Besides, digital payments are faster than the conventional methods of payment which enables these enterprises to offer an improved customer experience. These payment techniques also help SMEs in reducing the risks like thefts, arising from physical security breach on their premises (Payments Journal, 2022).

4) Growing adoption in media and entertainment sector

Even media and entertainment industry has emerged as a lucrative segment for payment gateway market. This is majorly due to a considerable rise in the adoption of advanced technologies, such as AI and IoT in this sector. The entertainment industry is trying to improve the customer experience by providing digital payment services at cinema and parks, for example.

5) Increasing digitization in Banking, financial services and insurance industry in Europe

Payment gateway market is observing a significant growth in Europe and is estimated to record an appreciable valuation of over USD 15 billion by 2027. The major factor that is positively influencing the progression of regional market is the expanding digitalization across the financial sector. Several major banks in the continent are now deploying different digital solutions for enhancing the banking experience for their customers. In addition, rising number of internet banking users is further favoring the market growth.

6) Impact of Covid-19

The COVID-19 pandemic has positively impacted market growth. This can be attributed to the growing consumer preference for e-commerce, digital payments, quick payments, and cash displacement trend. The e-commerce space has grown significantly during the pandemic.

Moreover, the dependency of individuals on mobile and internet services has increased during the pandemic as it connects them with payment gateways and other online platforms.

Rising penetration of internet and smartphones coupled with shifting consumer inclination towards digital payment solutions has favored the adoption of payment gateways over the recent years. With the ongoing technological advancements in these payment solutions, their demand will further increase in the coming years which in turn will enhance the business outlook.

Some of the leading global payment gateway market players are: PayPal Holdings, Inc.; Stripe; Visa Inc.; Amazon.com; FIS(Worldpay); MASTERCARD; PayUBitPay; FISERV, INC.(BluePay) and JPMorgan Chase & Co.

All the trends involved in the Payment gateway industry were pointed out and studied in-depth, so now it is possible to carried out a Porter analysis of this industry in order to highlight current and future scenarios.

Competitive Rivalry in the Market

The industry is oligopolistic in its competitive nature, where large services providers operate. The primary actors are giants such as Visa and Mastercard and Paypal. In the financial year 2020, PayPal earned $17.5 billion and a profit of $2.5 billion (Forbes, 2021). Visa reported revenue of $21.4 billion and made a profit of $10.7 billion, with a yield to income ratio of 52.6%, and the company is at 137th rank in Fortune 500 global companies (Fortune, 2021). Mastercard is ranked 191 in Fortune 500 index; the company made a profit of $6.4 billion and revenue of $15.3 billion (Fortune, 2021). The industry maintains its oligopolistic state regarding market share, but new players are invading the industry, hence the competition remains moderate. In addition, competitive rivalry among market leaders is moderate, due to the fact that the majority of participants, in the payment gateway industry, is focused on improving platform efficiency, business expansion, and product innovation.

Threat of Substitutes

The threat of substitutes is high. There is plenty of potentials for the payment gateway industry to grow. The sector has the potential and the data-intensive nature has made it the primary target industry for technology companies. Total transaction value is expected to show an annual growth rate as illustrated before. The increased volume of transactions in e-commerce and the excessive amounts of available data make this industry a target for data-driven companies. The digital age has bought more customers to the platforms than expected, which has resulted in the growth of the digital ecosystem. Despite this, entry barriers are high, as the need of IT infrastructure or financial capital. In addition, there is a strict regulation. Therefore, the threat of substitutes is moderate.

Threat of New Entrants

The threat of new entrants is moderate in the payment gateway industry. In fact, on one hand, this industry has barriers to entry, such as regulation and stringent compliance with anti-money laundering laws. Strict rules also impact innovation and discourage growth (Van & Veenstra, 2018). The other obstacle is a high capital requirement even if startups can now overcome this obstacle by getting financed by venture capital firms.

On the other hand, the growth of the industry and its potential make it a good choice for investment in new firms. In addition, the development of the digital landscape has also been accelerated by the global pandemic, which forced consumers and companies to conduct business through digital platforms. It has resulted in more companies breaking into the sphere. The threat of new players breaking into the globe is moderate.

Bargaining Power of Buyers

The bargaining power of buyers depends on the nature of the industry and on the value buyers bring to the company. Other factors that affect buyers' ability are buyers' concentration, switching cost and available substitutes (Porter, 2008). The primary buyers for the payment gateway companies are banks, merchants with private cards, credit unions and governments. The banks and credit unions hold high bargaining power as they bring many customers and increase the volume of the transactions. Buyer's concentration and low switching cost can increase the buyer's power to negotiate better terms (Porter, 2008). As a result, the bargaining power of buyers is high.

Bargaining Power of Supplier

The bargaining power of suppliers consists of the state of the industry. In the payment gateway industry, suppliers have low bargaining power. The major suppliers are the specialist software providers responsible for providing software's for the payment companies. They have to comply with strict standard to ensure payment security and integrity. The company can choose from an available pool of vendors and additionally, new entrants have existing in-house development capabilities reducing their reliance on outside contractors. Therefore, suppliers have low bargaining power. Indeed, in the payment gateway market, there are a lot of options and payment gateways are in great demand from a variety of countries in order to reduce transaction complexity. Therefore, suppliers have low bargaining power.

The table below summarizes the Porter's five forces analysis of payment gateway industry. Overall, this industry has moderate attractiveness. In fact, threat of substitutes and threats of new entrants are both moderate due to new technological opportunities, on one hand and due to high entry barriers and strict regulation, on the other hand. The bargaining power of buyers is the only strong force of the industry.

Payment gateway		
Forces	**Structural determinants**	**Intensity**
Competitive Rivalry in the Market	• High concentration • New start-up players • Low switching costs • Moderate product differentiation • High entry barriers	**Moderate**
Threat of Substitutes	• Low switching costs • Moderate product differentiation • Several technology companies in the market • High entry barriers • Strict regulation	**Moderate**
Threat of New Entrants	• Barriers to entry (regulation and stringent compliance with anti-money laundering laws) • High capital requirement • Development of digital landscape • New start-up players	**Moderate**
Bargaining Power of Buyers	• Low switching costs • Moderate product differentiation • High buyers' concentration	**High**
Bargaining Power of Supplier	• Good pool of vendors • Strict standard to ensure payment security and integrity • In-house development capabilities	**Low**

Table 2

4.2.3 POS Provider

The industry of POS providers plays another important role within the payments chain. Also in this case it is important to point out the last trend that are reshaping this industry and all the actors involved in. The global point of sale software market share is estimated to reach $10,294.9 million by 2028, rising from $4,536.3 million in 2020, at a CAGR of 11.1% (Researchdive, 2021).

The point of sale software market growth is anticipated to increase by the rise in the usage of cashless transactions. As a result of demanding corporate operating environments, there has been an increase in the demand for trustworthy and cost-effective POS software with extensive functionality and analytics.

POS systems, on the other hand, are vulnerable to device failures, skimming, phishing, and software network issues. Hackers can quickly get access to the infrastructure and obtain critical documents such as company account data and customer credit card information. Devices must be secured as well, even if the network is well-protected. Data theft and hacking have become increasingly common as more intricate technologies are installed and organizational systems become more linked.

Here below the most significant trends of this industry:

1) Covid-19 impact

The coronavirus outbreak in 2019 has positively affected the point of sale software industry worldwide. The POS market share is expected to rise in the next future due to increased worries about handling cash transactions as a result of fear of contracting the COVID-19. Both businesses and consumers are opting for cashless payment solutions to limit the spread of virus and infection. Furthermore, the coronavirus pandemic had a beneficial impact on the worldwide point of sale software market trends research and development operations in 2020.

2) Alternative POS system

In the traditional retail environment, transactions happen at one location: the checkout counter. But with modern POS systems, there are less contact points at the counter or even at the store. For example, Mobile POS (mPOS) systems let take orders at trade shows or off-site locations and syncronize with the main store.

In addition, with the advent of social distancing and isolation, mPOS and online sales allows customers to order for delivery, or order and pick up in-stor, everything from restaurant meals to luxury items and even cars. Many retailers are focusing more and more on additional customer delivery and pickup options and this trend is expected to continue in whole 2022 as customers grow accustomed to the convenience.

There are expected to be 85.6 million mPOS users in only US by 2025. In addition, the average mobile transaction value is expected to increase from just $7,000 in 2020 to $11,755 in 2025 (Statista, 2021).

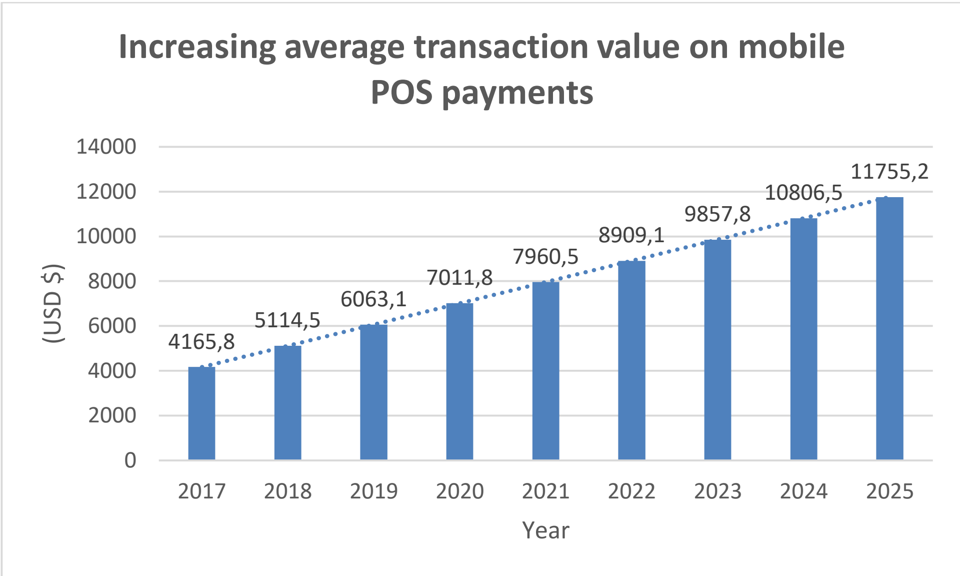

Figure 2

3) Omnichannel Experiences

Omnichannel experiences mean merging in-person, mobile, ecommerce, and social sales, with a holistic view of the customer relationship on any channel at any time. It isn't a new trend by any means, but POS technologies continue to empower retailers to create a more seamless customer experience across all touchpoints (Genesys.com).

In the wake of COVID-19, 46% of retail executives plan to invest more in omnichannel retailing as compared to their pre-pandemic sales strategy. Luckily, POS technology makes it possible for small businesses to accommodate these complex buying behaviours, letting them compete with the bigger budgets of larger companies. Square

POS and Shopify POS, for example, allow shoppers to start a basket online and complete their order in-store and vice versa.

4) Alternative Payment methods

The shift from cash to digital payments is a consolidated trend of these last years. In fact, cash now accounts for just 12% of POS transactions.

New payment options will expand the adoption of POS:

- Mobile/contactless payments: Digital/mobile wallets are becoming increasingly popular. While they accounted for only 6% of POS transactions in 2019, that number is expected to climb to 15.5% by 2024. These payment options include Google Wallet, Apple Pay, PayPal, Venmo, CashApp, and other apps and services. (Statista, 2021)
- Buy Now Pay Later (BNPL): Credit cards compete with BNPL services like Klarna, Clearpay, and Laybuy, which lets consumers purchase and pay in instalments, often with no interest. As reported by Euronews, Juniper Research predicts that by 2026, BNPL services will quadruple to $995 billion.
- Instalment payments: Even without BNPL services, it is possible to use a POS with instalment payment options. This is particularly ideal for consumers who don't have traditional credit options, so offering these payment plans can improve conversions, average order size and retention rate.
- Saved payments: For returning customers, the POS can be used to securely store their payment information for a more seamless checkout experience—encouraging repeat purchases and increasing customer satisfaction.
- Bill splitting: Especially handy in the restaurant environment, bill splitting gives customers the option to pay for a single ticket with multiple payment methods.

4) Personalized In-store Shopping Experiences

A survey by Experian indicates that 60% of US customers remain loyal to companies that offer a personalized experience.

The POS industry is addressing these challenges, as it makes personalization easier and more accessible to small businesses at scale. In fact, Reportlinker.com predicts the global personalization software market to grow from $620.57 million in 2020 to over $1.7 billion by the end of 2025.

Customers are willing to share data in order to get the personalized recommendations and number of benefits.

POS software captures valuable information with every transaction, so it allows to build customer profiles that help to learn more about your clientele.

5) Rise of POS Data Analytics

Most consumers are willing to save purchase history, preferences, and personal details if it means the checkout experience is easier and they get relevant offers. But POS data is valuable for more than just getting to know customers and their communication preferences. The POS can also reveal information about business' staff, products, store layout, foot traffic, and returns rate, as well as other metrics.

POS systems track which inventory is selling and which items are less popular with your customers. Likewise, POS data provides insight into seasonal trends and makes it possible to increase margins based on pricing data. This makes it easier for businesses to optimize retail data analytics and drive sales.

6) Upgraded POS Hardware

POS industry trends are also seeing developments in business-friendly hardware like tablets and smartphones, barcode scanners, receipt printers, and cash drawers. Retailers are moving away from the traditional cash register and toward more mobile, flexible, and advanced registers.

Among the Key Players in the Global Point of Sale Software Market, it is important to mention: NCR Corporation; Revel Systems; Oracle; Agilysys Inc.; Clover Network Inc.; Diebold Nixdorf Incorporated; Epicor Software Corporation; Ingenico Group; Intuit Inc. and SAP SE.

In the last years, the industry is affected by new actors that are completely reshaping this market. For example Viva Wallet and My POS are introducing a new payment experience, allowing to accept payments directly through a mobile app and avoiding in this way the usage of a POS system.

Considering all the trends and factors analysed previously, now it is possible to introduce a 5 Porter analysis of this industry:

Competitive Rivalry in the Market

There is a significant presence of key players who are creating massive rivalry in the local as well as international market. Also, robust spending on research, business expansion, and strategic tie-ups are some of the main factors rising competitive rivalry among the companies. Hence, the competitive rivalry in the market is high.

Threat of Substitutes

Despite high entry barriers, there are many alternative products for POS systems and in particular these new products are increasing in the post-Covid era, thus, the threat of substitutes is high.

Threat of New Entrants

As it was illustrated before, in the modern world, new entrants may face multiple new barriers, like legal and government policies but there will be new opportunities given by new technologies. In addition, the presence of new solutions for POS software and POS hardware allow new actors to enter in this sphere. Hence, the threat of the new entrants is high.

Bargaining Power of Buyers

Buyers will have high bargaining power, significantly because of several players operating in the point of sales software market.

Bargaining Power of Suppliers

Point of sales software market contains high concentration of distributors and suppliers and hence, the distributors and supplier control is expected to be high. Despite this, new suppliers recently are available for the players of the industry as they are providing new hardware and new software, such as Smart POS. Overall, these factors lead to a moderate bargaining power of suppliers.

The table below summarizes the Porter's five forces analysis of POS provider industry. Overall, this industry is not attractive at all as there is high competitive rivalry in the market. Only the bargaining power of suppliers is a moderate force due to the fact that new technological solutions are approaching new players into this industry.

POS provider		
Forces	**Structural determinants**	**Intensity**
Competitive Rivalry in the Market	• High concentration • New start-up players • Low switching costs • High product differentiation • New technological solutions	**High**
Threat of Substitutes	• Low switching costs • High product differentiation • New players from different industries • New products after Covid-19	**High**
Threat of New Entrants	• Entry barriers (regulation) • No geographical barriers • High capital requirement • New start-up players • New technologies available	**High**
Bargaining Power of Buyers	• Low switching costs • High product differentiation • New solutions • Omnichannel experience	**High**
Bargaining Power of Supplier	• New hardware • High concentration of distributors • High supplier control	**Moderate**

Table 3

4.3 Payments chain & SWOT analysis

The scheme below aims to point out the actors, both main and secondary, analysed and involved in the payments chain and how they place themselves within it.

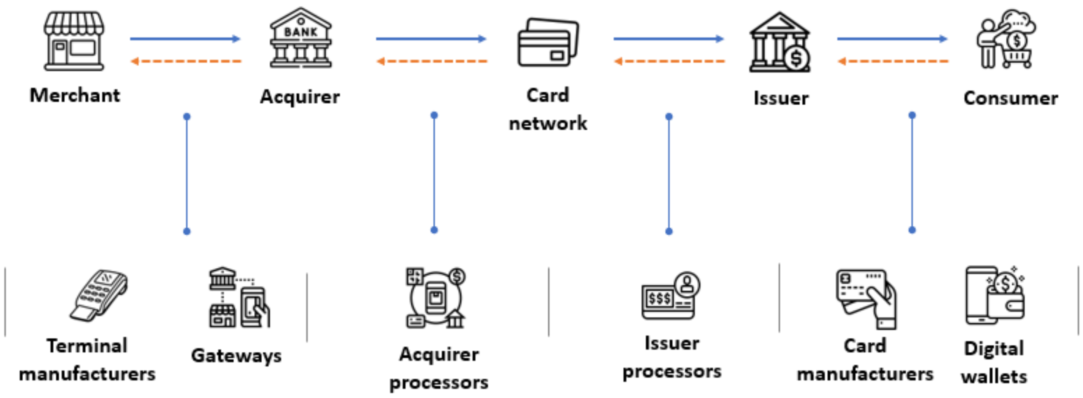

Figure 3

As illustrated above, there are the main actors of the chain, merchant, acquirer, card network, issuer and consumer that interact through authentication and authorization. If authentication and authorization operations have negative result, the flow goes back. Between main actors, there are secondary players involved in the chain, such as terminal manufacturers, payment gateways, acquirer and issuer processors, card manufacturers and digital wallets.

Many others have been joining the industry, beyond the actors listed above, as the industry and technology keep evolving and opening new spaces. In such a fragmented environment, more intermediaries along the way are finding their roles.

Going in depth in the study of the payments chain, a SWOT analysis is useful in order to identify strategic management information. Indeed, it provides an understanding of core competencies of the business units within the organization and also of the organization itself (Orndoff, Keith, 2002). In the case of this study, it provides insights on the industries of the whole payments chain. It provides a clear overview investigating internal factors, as strengths and weaknesses and external factors, as threats and opportunities.

SWOT ANALYSIS	
STRENGTHS • Exisitng core infrastructure • Reliable ecosystem • Global network • Existing adapted solutions • Variety of digital and technological solutions • Large Customer Base • Different targets • High volume of Payment that can be processed per second • Easy vertical integration	**WEAKNESSES** • High dependencies on the connectivity • Complex systems • Processing fees • High investment • Development and support organization • Protection systems due to the Fraud and risk activities • Regulations and compliance • Not able to quickly innovate
OPPORTUNITIES • New Partnerships • Strategic M&A deals • Innovative products • Rapid digital transiction after Covid-19 • New services to offer • Open API • Verical integration along the chain • Connectivity among different industries • Sharing data	**THREATS** • New entrants providing services at lower prices • Other Financing models (e.g. direct private payments) • New entities/players in the market • New technological trends and opportunities • High Competition • Fraudsters • Long time to build a payment network • Hacking • Geographical normative differences • Different currencies

Table 4

Overall, SWOT analysis pointed out all the opportunities on which the players of payments chain should leverage in order to gain market share and to take on a competitive position in the market. On the contrary, threats are all the external factors that could lead these actors to leave the industry. Regarding the internal analysis, strenghts and weaknesses can be core competencies of each player. The first are resources of the organisation that help to achieve the objectives and in the case of actors of payments chain, these goals consist in remaining in the industry or in increasing the network with vertical integration. The second are weaknesses, hence limitations or defects in the organisation that will keep it from achieving the objectives and in the payments chain weaknesses can lead players to miss new customers' needs and to exit from the market.

4.4. M&A Deals in payment industry

Starting the M&A analysis of the payments industry, it is useful to summarize some data of M&A deals in order to point out some important trend and to understand how the industry has reacted to Covid-19 pandemic.

4.4.1 Overview M&A deals 2018-2021

In fact, the bar chart below highlights the M&A deals in payments industry covering a period of time of 4 years, from 2018 to 2021. As illustrated, the outbreak of Covid-19 partially affected the industry, because on one hand the deals value decreased significantly compared to 2019, year before the recent pandemic; but on the other hand the number of deals has remained at significant levels. The year 2021, that saw the rebirth after the pandemic, recorded growing numbers but still far from the pre-Covid era. In 2019, there was the largest number of M&A deals in the payments industry: 253 worldwide (Dealogic, 2019). The year 2019 registered also the biggest amount of money related to M&A deals, reaching a value of $140.9 bn, according to Dealogic.

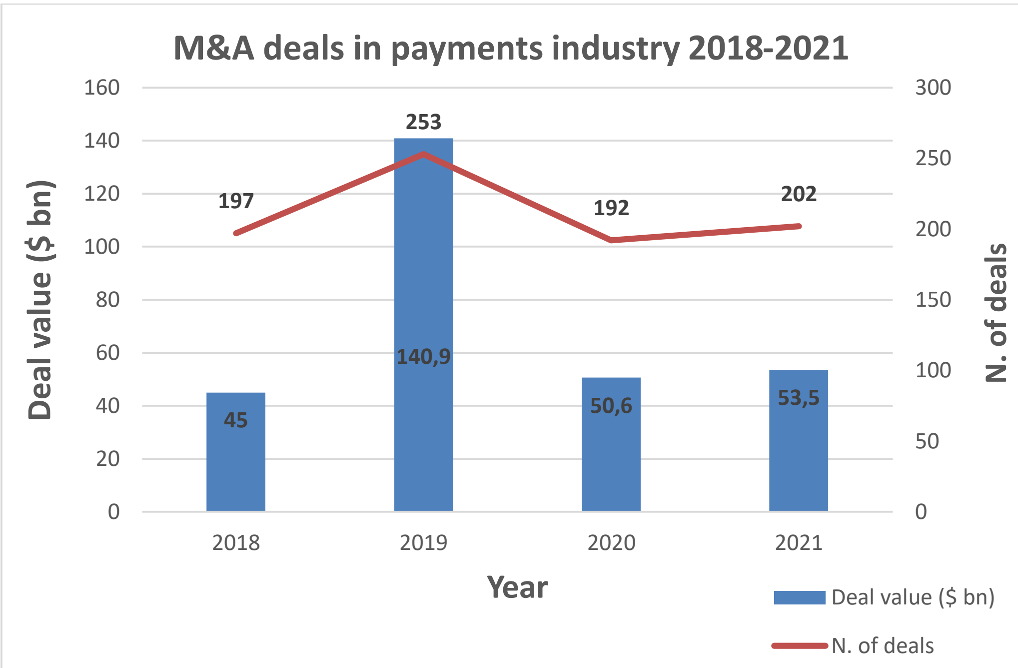

Figure 4

In fact, the year 2019 was subjected by large deals among payments companies, with Fiserv’s acquisition of First Data, Fidelity National Information Services’ acquisition of

Worldpay, and Global Payments' purchase of Total Systems Services. Certainly, the year 2020 was affected by the spread of Covid-19, but some important deals such as the Worldline and Ingenico merger and Italian payments processor Nexi's $9.2 billion deal for rival Nets, continued the trend of M&A in this arena. The acquisition activity remained alive as young fintechs raised up billions of dollars in venture capital, increasing their ambitions to grow and compete aggressively with incumbents. Digital new entrants were already joining the industry before the COVID-19, but the pandemic further stimulated an e-commerce evolution that contributed to the industry's expansion.

Within these years, several scope deals were registered, such as American Express's purchase of small business online lending platform Kabbage.

In addition to Square-Afterpay, one of the biggest deal involved PayU's acquisition of Indian payment gateway BillDesk for $4.7 billion with the goal of expanding into emerging markets. Also larger techs have pursued many acquisitions, and this trend was very common, such as Fiserv's $206 million purchase of Pineapple Payments and Stripe acquiring India's Recko.

Smaller payments fintechs selectively acquired to grow and to penetrate new markets. That was, for instance, the case with payments-as-a-service platform Rapyd's $100 million deal for Icelandic payment company Valitor (Bain & Company, Payments M&A 2022).

In an effort to increase focus on its global corporate, commercial, and wealth businesses, Citigroup has divested its retail banking business in 13 markets, most of them in Asia, providing a unique opportunity for local and regional banks to scale up their credit card business and gain share in the consumer space. National Australia Bank (NAB) took advantage of the opportunity by buying Citi's consumer business. Similarly, in the Philippines, UnionBank purchased Citi's consumer business to boost growth in its retail banking sector, while UOB Group acquired Citi's consumer banking franchises in Indonesia, Malaysia, Thailand, and Vietnam to increase its scale across Southeast Asia (Bain & Company, Payments M&A 2022).

Buy now-pay later businesses, restaurant-related fintechs and cybersecurity firms were all hot targets for payments acquisitions, in 2021.

Indeed, the worldwide BNPL trend was witnessed by San Francisco-based Square's mega acquisition of Afterpay, followed by the digital payment rival PayPal that in late 2021 has announced a $2.7 billion deal to buy the Tokyo-based BNPL company Paidy-

Another area of interest for acquirers, especially merchant service providers, was independent software vendors that provide payment tools.

In addition, cybersecurity businesses attracted buyers as fraud soared alongside e-commerce. For instance, global card network giant Mastercard affirmed its willingness to acquire identity verification company Ekata for $850 million to better secure transactions and prevent fraud. The card company announced another acquisition, buying a crypto security company called CipherTrace (Payments Dive, 2022).

Going ahead in the M&A deals, the analysis is now focused on the distribution of these deals among the segments of the industry.

The period of time, considered for this segment analysis, covers 5 semesters from H1 2019 to H1 2021. The second semester of 2021 was not included into the analysis due to lack of data.

The table below reports, in percentages, how the M&A deals are distributed within all the segments that are: payment acceptance, processing, issuing, alternative payments, couponing and loyalty, money transfer, security, data analytics, ATM, other.

Targets by segment M&A deals	**H1 2019**	**H2 2019**	**H1 2020**	**H2 2020**	**H1 2021**
Payment Acceptance	37%	37%	18%	22%	14%
Processing	18%	25%	39%	24%	32%
Issuing	6%	8%	4%	12%	7%
Alternative Payments	18%	24%	18%	25%	31%
Couponing & Loyalty	6%	0%	5%	2%	2%
Money Transfer	7%	6%	11%	8%	10%
Security	3%	0%	3%	4%	4%
Data analytics	3%	0%	2%	1%	0%
ATM	4%	1%	0%	3%	1%
Other	0%	0%	2%	0%	0%

Table 5

All the data in the table are graphed through the bar chart below for a better overview. "Payment acceptance" is the segment more attractive for the whole 2019; in fact during this year, it collected 37% of the total M&A deals in both H1 2019 and H2 2019. Contrary, for the other semesters, "Processing" is the service with the biggest percentage of M&A deals with 39% in H1 2020; 24% in H2 2020 and 32% in H1 2021. Also the segment "Alternative payments" has collected significant deals in the last two years and in particular on H1 2021, semester during which 31% of the total deals were related to this category.

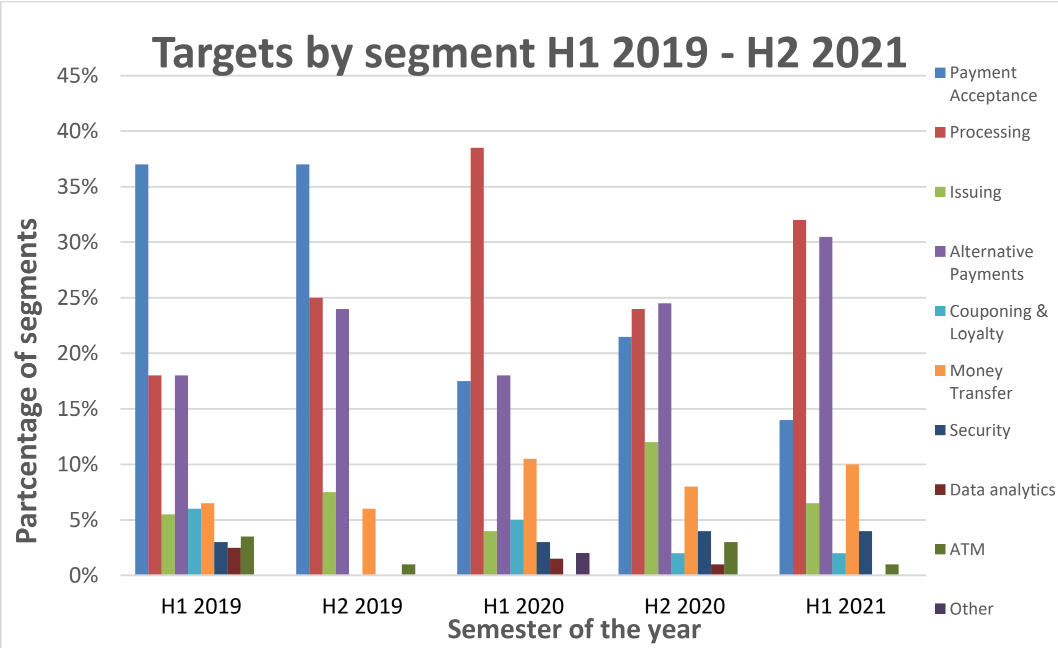

Figure 5

Now that segment analysis is completed, it is useful a further analysis related to M&A deals and their distribution by region. As before, also here there is a table that summarize how the deals were distributed worldwide, from H1 2019 to H1 2021. The regions taken into this study are divided as follow: North America, Europe, Asia, Middle-Est and Africa (MEA), South America and Australia-New Zeland.

Targets by region M&A deals	**H1 2019**	**H2 2019**	**H1 2020**	**H2 2020**	**H1 2021**
North America	43%	37%	28%	36%	38%
EU	26%	38%	42%	35%	25%
Asia	22%	18%	20%	9%	22%
MEA	5%	4%	8%	7%	7%
South America	2%	4%	2%	9%	6%
Australia & NZ	2%	1%	1%	6%	4%

Table 6

The bar chart below, provides a different view of all data gathered. North America has shown the biggest percentages of M&A deals in H1 2019 (43%), H2 2020 (36%) and in

H1 2021 (38%). Also Europe has collected important number of deals, and it was the first region in H2 2019 (38%) and in H1 2020 with a pick of 42% of the total M&A deals. Asia was constantly the third region for number of deals during the whole period taken into the study.

The data showed also an important trend for the South America. This region increased its number of deals increasing its percentages with a pick of 9% in H2 2020. In a more moderate way, Australia and NZ had a similar trend of growth in the last two semester considered.

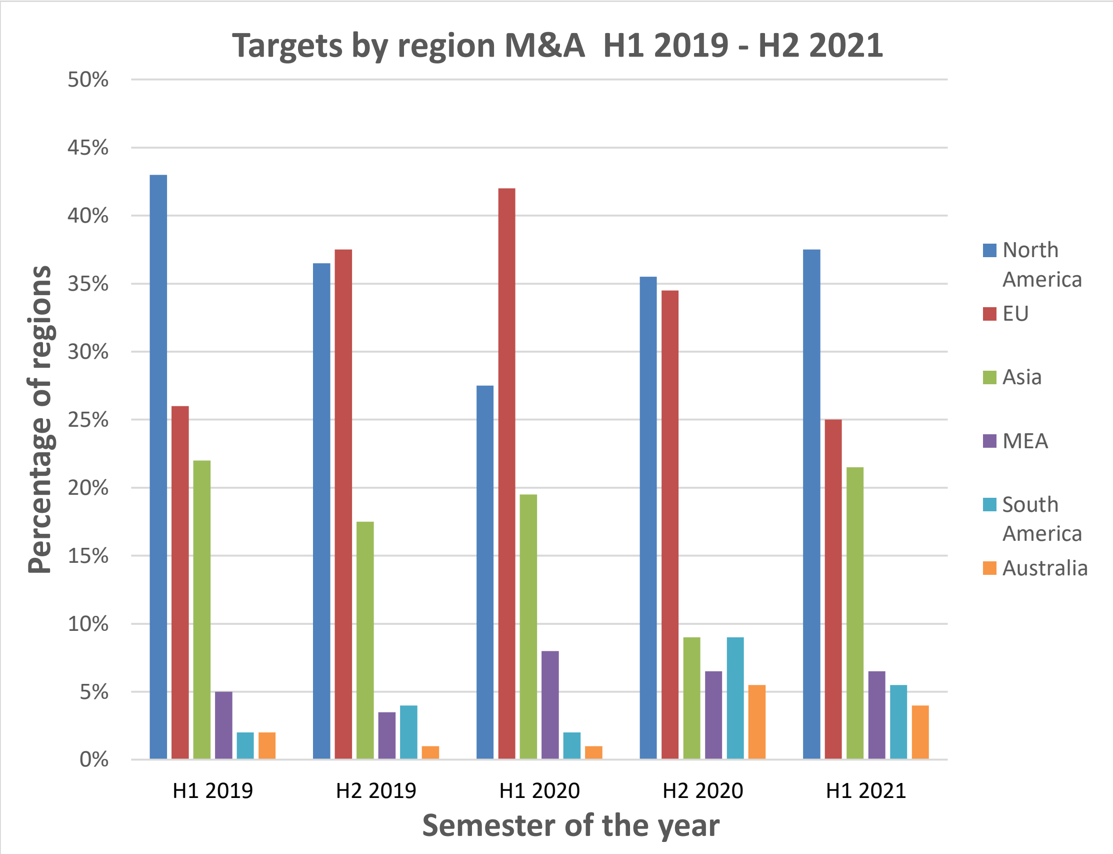

Figure 6

Overall, the consolidation of the payments sector is a global phenomenon. However, as highlighted above, some regions are more interested by these deals more than others. For example, North America and Europe are the most active regions for M&A deals in all semesters considered. On the contrary, there are significantly fewer transactions in Asia, which have remained at a constant level over the past years, except for H2 2020, semester during which this region suffered a drastic decline in deals, due to the recent pandemic (Global Data Report, 2019). As we will see at the end of this chapter, these general geographical trends are confirmed by the first quarter of 2022.

4.4.2 Overview M&A deals on the first four months 2022

According to Strawhecker Group, M&A activity, in the payments industry, is going to remain active and steady in 2022.

Indeed, the data, collected during the first four months of the current year, are aligned with Strawhecker'prevision.

Total payments industry M&A deals worth $528.7m in January 2022, led by Zip's $303.18m acquisition of Sezzle, according to GlobalData's deals database.

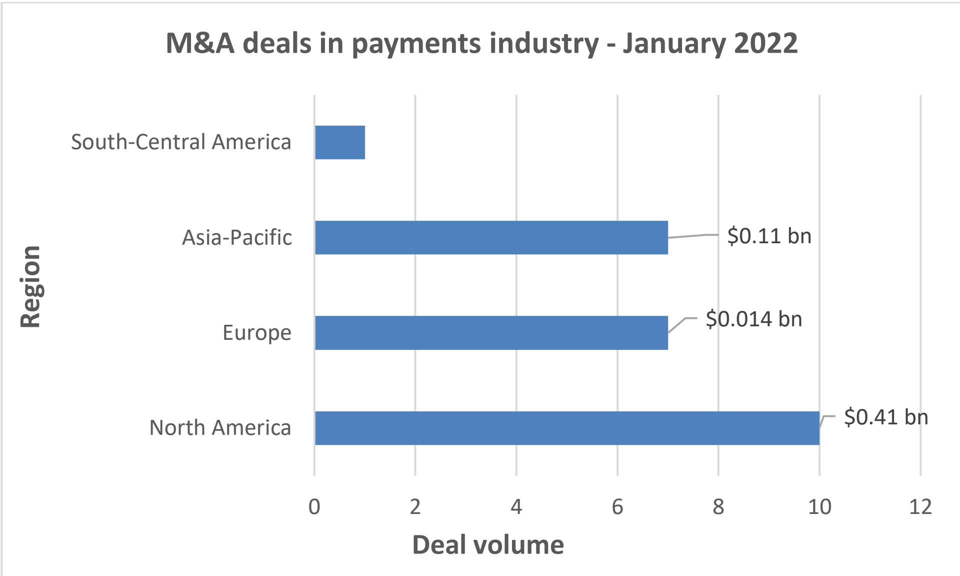

Figure 7

Comparing M&A deals value in different regions of the globe, North America has the top position, with total announced deals in this month worth $408.18m.

In terms of volumes, as illustrated in the bar chart above, North America emerged as the top region for payments industry M&A deals globally, followed by Asia-Pacific and then Europe.

The best country in terms of M&A deals activity in January 2022 was the US with eight deals, followed by the UK with three and Canada with two. (Payments industry M&A deals January 2022, Electronic payments international)

Moving in February 2022, total payments industry M&A deals worth $935.3m. PostePay's $788.31m acquisition of LIS Holding, according to GlobalData's deals database, was the most significant deal in the payment world.

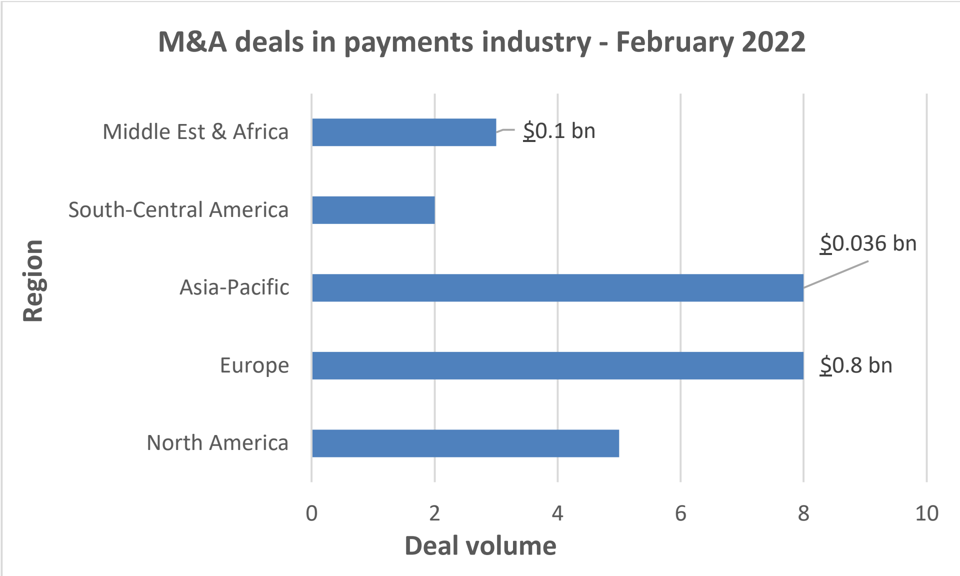

Figure 8

Comparing M&A deals value in different regions of the globe, instead of the previous month, here Europe held the top position, with total announced deals in this month worth $799.65m. At the country level, the Italy topped the list in terms of deal value at $788.31m.

In terms of volumes, Asia-Pacific and Europe are the top regions for payments industry M&A deals globally, followed by North America.

The top country for number of M&A deals was the US with four deals, followed by Romania with three and Australia with two (Payments industry M&A deals February 2022, Electronic payments international).

In March 2022, the total payments industry M&A deals amounted to $2.4bn and Shift4 Payments' $575m acquisition of Finaro was the most important deal, according to GlobalData's deals database.

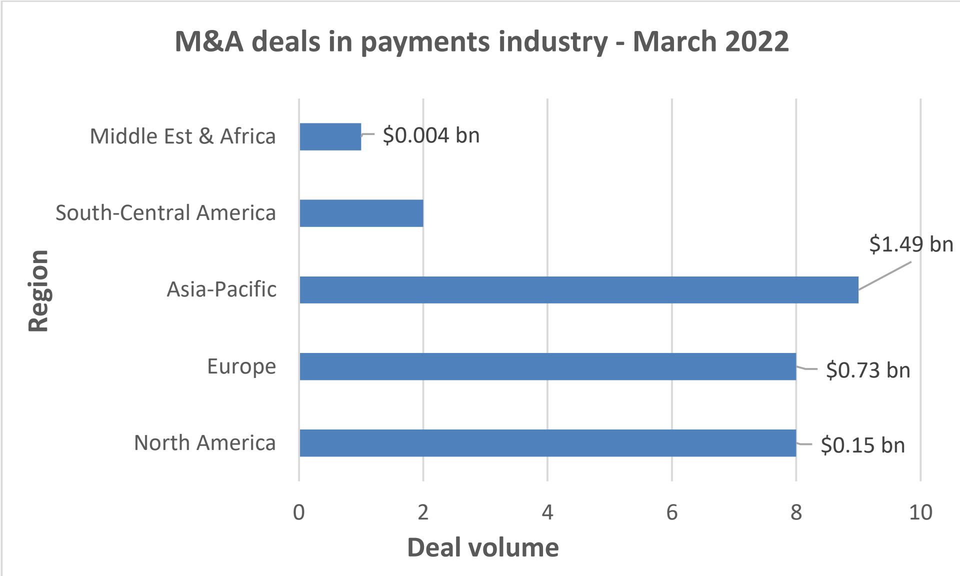

Figure 9

Comparing M&A deals value in different regions of the globe, Asia-Pacific held the top position, with total announced deals worth $1.49bn in March. At the country level, the China topped the list in terms of deal value at $1.32bn.

In terms of volumes, Asia-Pacific is the first region for payments industry M&A deals globally, followed by Europe and then North America.

The top country in terms of M&A deals activity in March 2022 was the US with seven deals, followed by the Uruguay with two and Japan with two (Payments industry M&A deals March 2022, Electronic payments international).

To sum up, total Payments industry M&A deals worth $2.8bn in April. Bolt Financial's $1.5bn acquisition of Wyre was the biggest investment in the payment world, according to GlobalData's deals database.

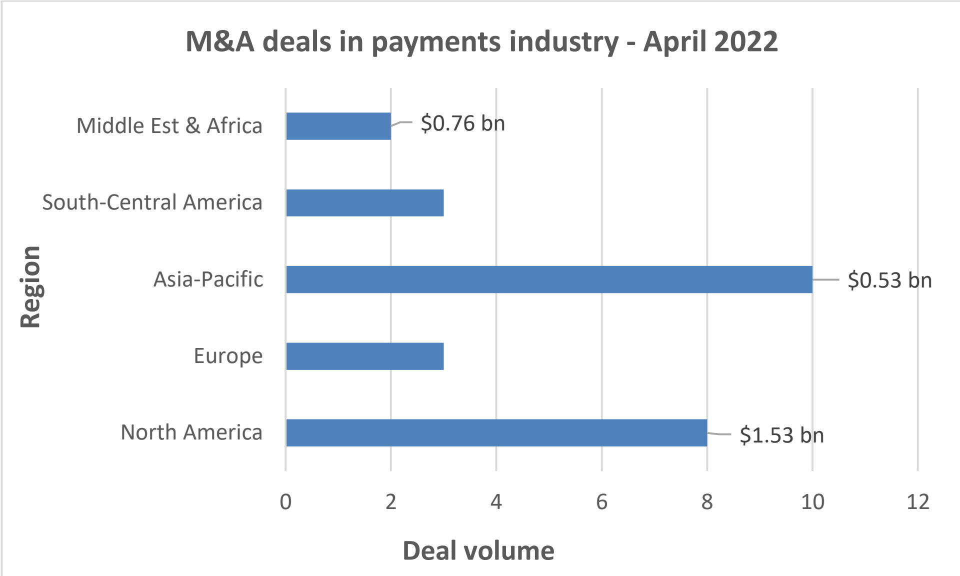

Figure 10

Comparing M&A deals value in different regions of the globe through the bar graph above, North America held the top position, with total announced deals in April worth $1.53bn. The US topped the list in terms of deal value at $1.5bn.

In terms of volumes, Asia-Pacific emerged as the first region for Payments industry M&A deals globally, followed by North America.

The best country in terms of M&A deals activity in April 2022 was the US with seven deals, followed by the Republic of Korea (South Korea) with two and Senegal with one (Payments industry M&A deals April 2022, Electronic payments international).

Overall, focusing on the whole first four month 2022, it is possible to see how the deals increased in both capital invested and volume from January to April and this trend will probably continue in the other quarters of the year.

The total amount of M&A deals in payments industry is equal to $6.67 bn in the first third 2022, with a total of 105 deals in all the regions.

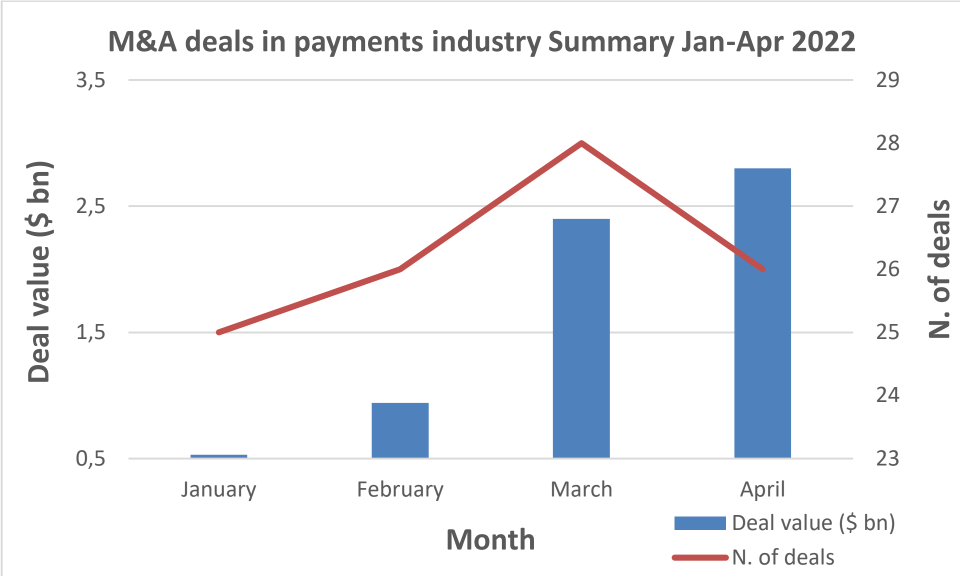

Figure 11

As summarized in the bar chart below, the capital invested, for M&A deals in the payments industry, constantly increased from January to April. The same happened with the number of deals that soared from 25 in February to 28 in March; there was just slighty decrease of them in April.

Going ahead in the analysis regarding M&A deals in payments industry, the table below highlights the top deals of the first four months of 2022, in descending order for amount of money invested.

Buyer	Acquisition	Comments
Bolt	wyre	Bolt Financial Inc., a payments-focused financial technology company, acquired a crypto-services startup Wyre Payments Inc., for **$1.5 bn**
Postepay	LIS	PostePay acquired Finthech company LIS Holding for **$788.31 m**
CLAL INSURANCE	MAX מבית לאומי קארד	Istraeli Clal insurance acquired credit card firm Max from US-based equity firm Warburg Pincus in a deal worth around **$765 m**
Shift4 PAYMENTS	finaro	Israeli fintech startup Finaro, a global payment provider, has been acquired by leading integrated payments and commerce technology company Shift4 for **$575 m**
zip	sezzle	The financial technology company Zip acquired the payment platform Sezzle with a deal worth **$303.18 m**
JOFFRE.CAPITA	coins.ph	Coins.ph, a crypto company based in Asia, was acquired by Joffre Capital, a technology-focused buyout fund in a deal worth **$200 m**

Asia-Pacific Strategic Investments Limited	CATAPULT Ventures	Asia-Pacific Strategic Investments has signed a non-binding agreement to acquire Catapult Ventures' MoneySmart business for **$161.7 m**
Hometown Financial Group	randolph BANCORP, INC.	Hometown Financial Group, Inc., the multi-bank holding company for bankESB, bankHometown and Abington Bank, acquired Randolph Bancorp, the bank holding company for Envision Bank, for a deal worth **$146.5 m**
LUNAR	Instabank	Nordic fintech and financial challenger Lunar acquired with a **$146 m** cash offer all shares of Norwegian digital bank Instabank
Advanced Mining	vBit	Advanced Mining Group, an Asian-based firm focused on bitcoin mining, has acquired VBit Technologies, a U.S.-based hosting hardware mining company, for **$105m**
Chola Enter a better life	Payswift SUCCESS. CREDITE	Cholamandalam Invest ment and FinanceLtd acquired 72.12% stake of fintech payment solutions provider Payswiff Technologies Private Ltd for **$60.62 m**

Table 7

Beyond all the benefits M&A deals can bring to companies in the payment world, it is important to point out some negative aspects which are consequences of these investments.
Firstly, deals, intended to provide a specific capability, have their own challenges. Because of the complexities involved with integrating diverse payment platforms, players may struggle to realize the intended benefits. Combining companies' infrastructures can create mismatch in functionality and operations. It can also make maintenance more expensive, boosting processing costs.
In addition, private equity (PE) investors showed a strong interest in payments industry M&A, and this trend increases the competitiveness for deals. For example, Advent International and Eurazeo, a French-based PE and venture capital firm, bought Planet, an international payments and transaction processing service provider.
To conclude, as deals in BNPL grow in number and as this business takes shape, regulatory for consumer protection concerns will continue to become a significant issue in markets around the world. Companies, eager to expand a geographical presence, need to be prepared to address possible regulatory problems that could compromise the success of the deal itself (Bain & Company, Payments M&A 2022).

4.4.3 Main Trends of M&A Deals in payments industry

Mergers and acquisitions are growing in quantity and money invested due to rapid changes of the global payments landscape. The M&A activity is driven by a variety of trends, including the spread of e-commerce, the global shift away from cash and the possibility of choosing between several payment options such as Buy Now - Pay Later, bank-based payments and e-wallets. In this turbulent environment, both incumbents and startups are making acquisitions and investments to gain competitive advantages.
Overall, the recent pandemic drove e-commerce to levels never seen before, hence payment and solution providers responded with turmoil M&A activities. According to White & Case, an international law firm, the last important M&A deals led to a market consolidation of the payments industry and this is the result of many actors' strategies in the arena. For instance, Mobile Pay, in the second half 2021, merged with other two Nordic mobile payments providers, Vipps and Pivo, with the ambition of creating

Europe's best and most comprehensive digital wallet, conquering the geographic Nordic market and exploiting economy of scale. Another example of market consolidation is given by Nomu Pay, a leading global payments platform, that completed two transactions to acquire Wirecard Payment Solutions Malaysia and Wirecard Payment Solutions Hong Kong. These two acquisitions are part of Nomu Pay's high-level strategy to create an unified payments company focused on high-growth customer segments in Asia-Pacific, the Middle East and Europe. The market consolidation is given also by other players with the goal of providing a fully integrated service. For example, Unzer, the optimal payment partner for merchants in Europe, completed the acquisition of acquirer Clearhaus and payment service provider QuickPay. The move rounds out Unzer's service offering and puts it in a position to offer the complete payments chain.

Another aspect to consider is the significant increase in payments regulation. The open banking, the harmonisation of business practices, rules and technical standards across Europe and worlwide, have influenced the activity of M&A in this industry. For instance, Visa has announced, in the beginning of 2022, its acquisition of Tink, an open banking platform that enables financial institutions, fintechs and merchants to build financial products and services and move money. Through a single API, Tink enables its customers to move money, access aggregated financial data, and use smart financial services such as risk insights and account verification.

White & Case law firm has identified also another trend related to M&A activities inpayments industry: a boost in expansion conservatism, due to a withdrawal from underperforming markets. This is the case of Paypal that, in 2021, planned to cut its activities of payments gateway and aggregator services for online merchants and brands in India (White & Case Financial Institutions M&A Report, 2021).

Differently, Worldline has announced the sale of its TSS (Terminals, Solutions & Services) activities, under Igienico, to Apollo Funds and this move is within a strategic vision review of TSS, aimed at supporting its ongoing transformation and further accelerating its development. Probably, Worldline has decided to divest in this market, focusing on others more profitable.

According to the Payers, that reports the latest global news and analyses on payments industry, among the numerous M&A deals and investments in the payments industry, most of them are related to the Buy Now, Pay Later sector, the A2A payments, and the unicorns that are gaining power within the payments chain.

In fact, the arena of payments, in the era post-Covid, is subject of numerous M&A deals due to some important trends. The first of these trends regards the Buy Now - Pay Later way of payment that is often in the center of several companies' strategy. For example Affirm acquired Returnly, a provider of digital return experiences for direct-to-consumer brands, that lets customers get the right item before returning the wrong one. This was a strategic move considering that returns have always been an issue for consumers when buying via pay later options. Another trend is related to the omnichannel experience and one example is the fintech provider Fiserv that has purchased, in 2021, the payment processing startup Pineapple Payments to enhance omnichannel technologies. The focus on Gen Z and millennials can be considered another factor that has influenced M&A deals in payments industry and this is the case of Block Inc., formerly Square.

Indeed, the US financial services and mobile payment company has acquired a majority stake in Tidal, the music streaming service in order to replicate the success of its Cash App in the music sector.

To conclude, several players in payments arena has started to see the potential of LATAM, entering or strengthening their presence in the region. In 2021, EVO Payments has closed an agreement to acquire Pago Fácil, an ecommerce payment gateway in Chile, seeking to enhance its acquiring services. Another company looking to scale in LATAM is Payafe that has announced the acquisition of SafetyPay, an A2A payments enabler, which operates primarily in LATAM, but also in Europe and the US.

Here below, the table summarizes all the M&A deals illustrated above:

Buyer	Target company	Comments	Trend
MobilePay™	vipps pivo	Mobile Pay merged with Vipps and Pivo, to create Europe's best and most comprehensive digital wallet	**Market Consolidation** – conquering geographic markets
unzer	Clearhaus Quickpay	Unzer acquired Clearhaus and QuickPay to offer the complete payments chain	**Market Consolidation** - fully service provision
NOMUPAY	wirecard	Nomu Pay acquired Wirecard solutions in Malaysia and Hong Kong to create an unified payments company focused in Asia-Pacific, the Middle East and Europe	**Market Consolidation** – expanding geographic reach

VISA	tink	Visa has announced acquired Tink, an open banking platform that enables financial institutions, fintechs and merchants to build financial products and services and move money	**Open banking –** increase in regulations
APOLLO | Funds	ingenico a Worldline brand	Worldline has announced the sale of its TSS activities, under Igienico, to Apollo Funds in order to focus on more profitable markets	**Withdrawal from Underperforming market -** expansion conservatism
affirm	returnly	Affirm acquired Returnly that lets customers get the right item before returning the wrong one, in	**Buy Now – Pay Later**

		a BNPL payment	
fiserv.	PINEAPPLE PAYMENTS	Fiserv that has purchased, the payment processing startup Pineapple Payments to enhance omnichannel technologies	**Omnichannel experience**
Square	TIDAL	Block, formely Square, has acquired a majority stake in Tidal, the music streaming service	**Focus on Gen Z and millennials**
EVO PAYMENTS INTERNATIONAL	PAGO Fácil	EVO Payments has closed an agreement to acquire Pago Fácil, an ecommerce payment gateway in Chile	**Focus on developing region -** LATAM

Table 8

To conclude this chapter, the figure below illustrates a timeline that highlights the most significative acquisitions among actors in the payments industry within the last year, from March 2021 to April 2022. Each deal is enclosed into a square, and the star, in the upper right corner of the square, indicates if the deal is related to acquiring market.

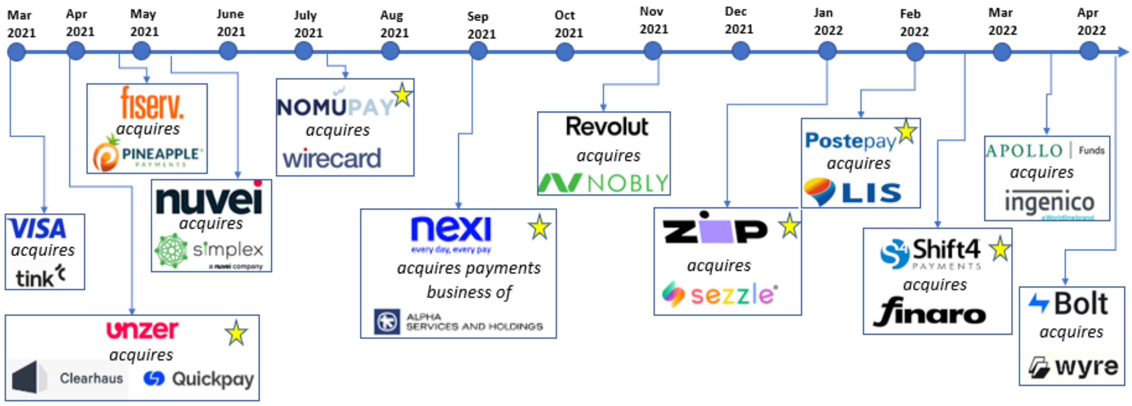

Figure 12

4.5 Mapping of Payment industry Players

Now, it is possible to list and map the actors present in the industry, assigning them one or more roles in the chain. In fact, as illustrated in the table below, there are some actors that play just one function in the payments chain while others are involved in many in two or more industries.

Company	Year of Founding	Service provider type						Regions covered	
		Acquirer	Acquirer Processor	Payment gateway	POS provider	Digital wallet	Issuing	Re	Gl
2C2P	2003	X	x	x			x	x	
Adyen	2006	X	x	x	x		x		x
Aevi	2015	X	x	x	x				x
Amadeus	1987		x	x					x
AsiaPay	2000			x				x	
Banking Circle	2013		x						x
Bexs Pay	1989	X	x	x				x	
BlueSnap	2022	X	x	x	x				x
Boa Compra	2004	X	x	x					x
BPC	1996		x	x		x	x		x
Braintree	2007	X	x	x	x		x		x
Buckzy	2018	X	x	x			x		x
Checkout	2012	X	x	x			x		x
Citizen	2017	X	x		x			x	
CoinqVest	2018	X	x	x					x
Computop	1997		x	x	x				x
ConnectPay	2018	X		x				x	
Coriunder	2016	X	x	x			x		x
Decta	2015	X	x	x	x				x
Digital River	1994	X	x	x					x
d-local	2016		x	x			x		x
Ecomm pay	2012	X	x	x	x				x
Elavon	2008	X	x	x	x				x

Global Payments	1996	X	x	x	x		x		x
Gr4vy	2020		x						x
Hobex	1991	X		x	x			x	
Hyper Pay	2014		x	x		x		x	
IXO Pay	2014		x	x					x
iZettle	2010	X		x	x				x
Komoju	2016			x				x	
Mastercard	1997	X	x	x			x		x
Mesh	2018		x					x	
myPOS	2014	X		x	x			x	
Netcetera	1996		x				x		x
Nexi	2017	X	x	x	x	x	x	x	
Nikulipe	2019		x	x				x	
Nium	2014		x				x		x
Nuvei	1993	X	x	x	x		x		x
Payabl.	2011	X	x	x				x	
PayPal	1998		x	x	x	x			x
Pay Retailers	2017	X	x	x			x	x	
ppro	2006		x						x
SIApay	1977	X	x	x	x		x	x	
Square	2009		x	x	x				x
Spreedly	2007		x	x					x
Stripe	2010	X	x	x	x		x		x
SumUp	2012	X		x	x				x
Thunes	2016	X	x	x					x
TrustPay	2009	X	x	x	x				x
Unlimint	2009	X	x	x					x
Vendo	2011	X	x	x					x
Venmo	2009			x				x	
Vialet	2017	X	x	x			x	x	
Viva Wallet	2010	X		x	x		x	x	
We payout	2019	X	x	x		x	x	x	
When Then	2020		x				x		x

WL Payments	2019			x			x	x	
WorldLine	2004	X	x	x	x		x		x
WorldPay	1997	X	x	x	x		x		x

*Re= Regional; *Gl= Global

Table 9

Hence, among all the actors listed in the table, some of the players are positioned in a precise spot within all the chain; while other of them are vertical integrated in the chain as play different roles in the payment process.

The three table below provide a visual representation of merchant acquirers, payment gateways and POS providers, categorizing them.

Figure 13

Figure 14

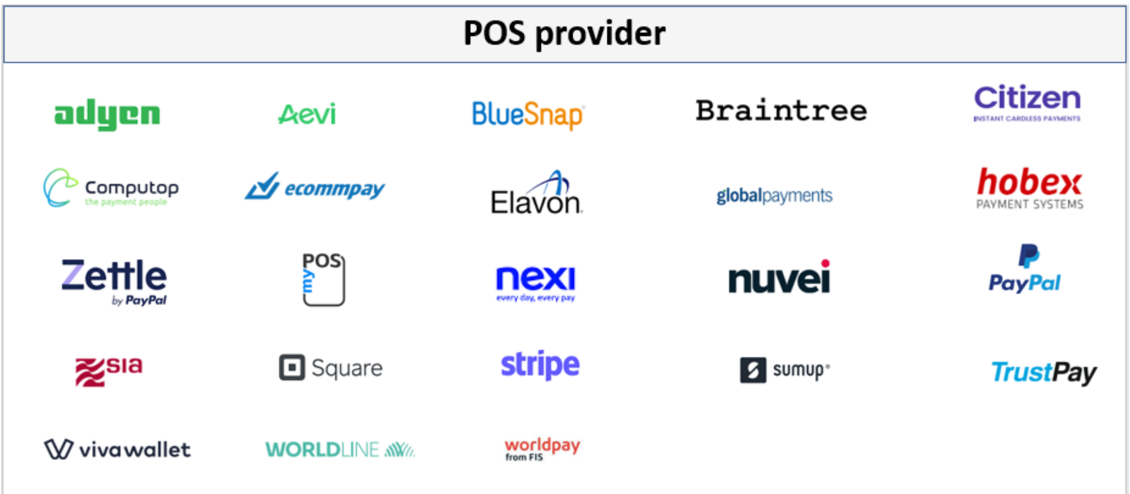

Figure 15

In order to have a better view of the whole payment industry, the chart below help to understand how the actors, already analysed above, position themselves in a map where on one hand the y-axis measures the level of internationalization and geographical development; while on the other hand the x-axis indicates the degree of diversification, calculated considering several target markets such as marketplacers, PSPs, Social Media, e-commerce, merchants, banks, financial institutions, governments, Payment Facilitators and e-wallets operators.

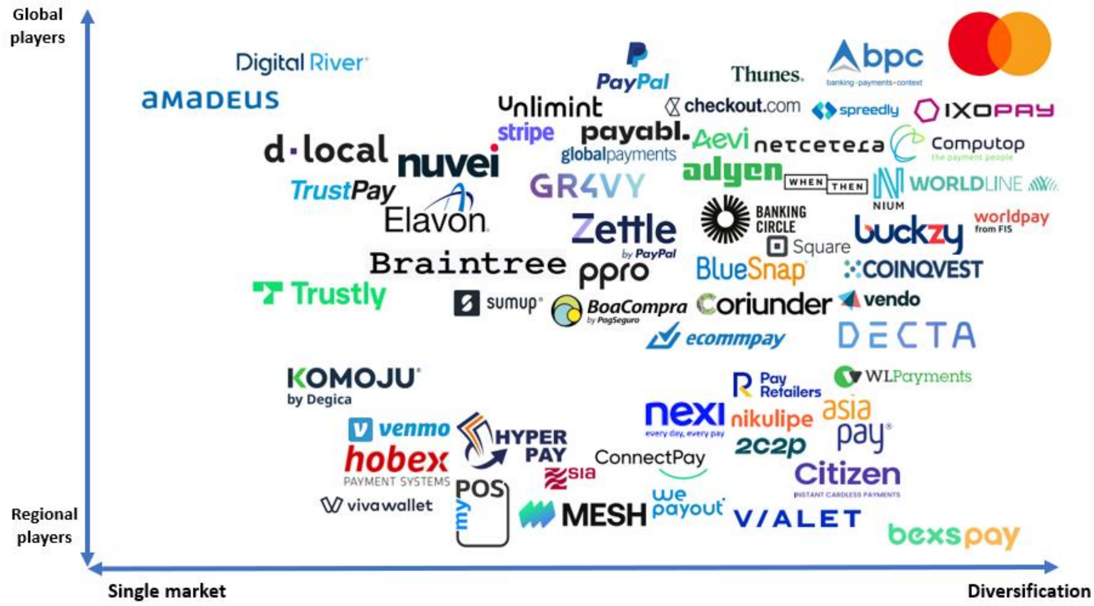

Figure 16

To summarize, most of the actors considered in the analysis are in the upper half of the graph, meaning that these players are present in a global scenario meeting the needs of several target markets, like Mastercard or Worldline. There are also some companies that are international but not diversified such as Amadeus that satisfies just travel merchants. To conclude, in the bottom part of the chart there are companies active just in a regional environment such as the Brazilian BexsPay Nexi or Asiapay.

4.5.1 Most relevant players – Overview

Nexi

Nexi SpA is an Italian company that offers services and infrastructures for digital payment for banks, companies, institutions and public administration.

Nexi manages, in various ways, approximately 41.3 million payment cards and 2.7 billion transactions each year and has approximately 890,000 affiliated points of sale, 1.4 million POS terminals , 446 billion euros transacted (2018 data), 13,500 ATMs throughout the country.

Since 16 April 2019, it has been listed on the Italian Stock Exchange where it is present in the FTSE MIB index (Wikipedia).

Here below key information regarding the company:

Revenues 2021: €2,27 bn (including the contribution of the Nets Group activities)

This value confirms the constant growth of the Italian company. Indeed, The Nexi Group revenues grew by 10.0% compared to 2020 income statement.

Number of employees 2021: 9,929

The Group's workforce increased significantly in 2021 as a result of the merger operations with Nets and SIA.

Geographical expansion: The Nexi Group is present in more than 25 countries within Europe with the headquarter based in Milan.

Business:

- Processing: Yes
- Acquiring online: Yes
- Acquiring offline: Yes
- Issuing: Yes (Credit card provider)
- POS Provider: Yes (Smart POS)
- Payment gateway: Yes
- Cash register: Yes (Nexi Smart POS cash register)

- Innovative Payments: Yes (Py-by-link)

Nexi Group has a large business embracing several target markets: consumers, retailers and merchants, medium and large enterprises, public sector, central institutions, banks and financial institutions.

Role in Italy:

In Italy, Nexi is the leader in the digital payment solutions market providing, together with Partner Banks, a wide range of payment and acceptance services that meet the daily needs of Consumers, Merchants, Companies and Public Institutions.

Merger & Acquisition:

The previous year was fundamental for Nexi's growth.

Indeed, the integration with Nets before (1 July) and with SIA after (31 December) led to the birth of one of the most important digital payments groups, The Nexi Group, with a strong international footprint.

- **Merger with Nets**

  On 1 July 2021, once obtained all the necessary authorizations, the merger of Nets into Nexi took full effect. The integration process with the Nets Group allows the Nexi Group to extend its presence in the international markets previously covered by the companies belonging to the Nets perimeter, thus becoming one of the leading companies in the digital payments sector, also in Europe. Through this merger, Nexi has the opportunity to welcome new distinctive skills, increasing the distribution network, expanding its range of services and achieving an expansion of its market space up to four times greater of the Italian one.

- **Merger with SIA**

  On 31 December 2021, the merger for the incorporation of SIA in Nexi has become effective.

  The merger with SIA allows the Nexi Group to guarantee more significant growth and greater resilience, diversifying the possible sources of revenues at a geographical level and at the business offer level. The Nexi Group will expand its offer on the e-money side with the creation of payment gateways. In addition, the Group will internalize the processing services and it will rely on the infrastructures and data centers available to the SIA Group.

- **Acquisition of merchant acquiring activities from Intesa Sanpaolo**
  On 27 October 2021, Nexi and ISP signed the deed of conferral of ex UBI Banca merchant acquiring activities in Nexi Payments.

Latest news:

- **Nexi, long-term strategic agreement with IntesaSanpaolo in Croatia**
  Nexi has reached an agreement with Privredna banka Zagreb and PBZ Card, a company incorporated under Croatian law indirectly controlled by Intesa San Paolo, for the acquisition of the merchant acquiring activities of PBZ Card in the Croatian market. The agreement also provides a long-term commercial partnership between Nets CEE, PBZ Card and PBZ Bank as part of marketing and distribution activities for Nexi products in the Croatian market. The closing of the transaction is expected by the end of 2022.
- **Nexi announced the sale of EDIGard**
  Nexi communicated that subsidiary Nets has announced the sale of EDIGard, the Norwegian-based billing solutions company, to AnaCap Financial Partners. The management has specified that this operation is in line with the strategic revision of the portfolio, after the completion of the mergers with Nets and SIA.
- **Nexi and Piteco sign a partnership**
  Nexi and Piteco (an Italian software house for management solutions related to corporate treasury and to financial planning) have announced a partnership that allows large corporates and SMEs to have a new digital payment solution. The service guarantees to companies an additional credit line, an automated and secure management of authorization flows, supporting a more rapid injection of liquidity into the supply chain.

Worldline

Wordline is a French payment and transaction services company founded in 1974 (Wikipedia). Worldline is the European leader in the payments and transactional services industry and the #4 player worldwide, being at the forefront of the digital revolution that is shaping new ways of paying, living, doing business and building relationships that pass on trust along the entire payments chain, enabling sustainable economic growth.

Here below key information regarding the company:

Revenues 2021: €3,7 bn

This value confirms the constant growth of the French company. Indeed, Worldline revenues grew by 6.8% compared to 2020 income statement.

Number of employees 2021: over 20,000

Geographical expansion: Worldline is present in more than 50 countries worldwide, with the headquarter based in France.

Business:

- Processing: Yes
- Acquiring online: Yes
- Acquiring offline: Yes
- Issuing: Yes
- POS Provider: Yes
- Payment gateway: Yes
- Cash register: Yes
- Innovative Payments: Yes

Worldline has a large business embracing several target markets: consumers, retailers and merchants, public sector, banks and financial institutions. In order to meet the needs of several markets in different countries, Worldline guarantees a first-line support close to the customers, thanks to local partners and distributors. Partners and distributors also install local and proprietary applications.

The list of Worldline's local partners is rich of companies (in brackets the countries served by each partner) : Verifone (Denmark, Finland, Norway, Sweden); Nixor

(Estonia, Latvia, Lithuania), Avera (Slovenia, Croatia, Serbia, Bosnia); 3cpayment (Europe, Middle East and USA); Aduno (Switzerland, Germany); EDPS (Greece); Tyro (Australia); Everilion (Spain); Poplatek (Finland); PBF group (Russia); Innocard (Switzerland); PMT solutions (Europe); Toshiba commerce (Europe); Sonic Boom (APAC); Tavan Bogd Group (Mongolia); Black Rock (Middle Est).

Role in Italy:

Regarding the role of Worldline in Italy, it is important to mention that the French company acquired the 80% of Axepta Italy, the merchant acquiring of BNL, in 2021. Axepta Italy is one of the largest Italian acquirers, with 200 million acquiring transactions per year, a 5% market share and a diversified and loyalised customer portfolio of around 37,000 merchants in this fast growing market. In a context where luxury and retail sectors are flourishing, and strengthened by our leading role in the travel and tourism sector, Italy offers ample growth opportunities for Worldline's rich portfolio of solutions.

Merger,Acquisition and latest news:

- **Commercial acquisition alliance with ANZ Bank in Australia**
  On 1st April 2022, Worldline announced the completion of the acquisition of a controlling stake in the commercial acquiring business of ANZ and the creation of a 51%-49% joint-venture controlled by Worldline to operate and develop commercial acquiring services in Australia with ANZ Bank, one of the largest banks in Asia-Pacific and Australia's 3rd largest acquirer with a 20% share of transaction volumes processed in Australia
- **Expanding in Greece**
  In December 2021, Worldline signed a strategic alliance in merchant services in Greece with Eurobank, one of the main acquirers in Greece with a market share of around 20%
- **Broadening business with Brazil**

At the beginning of 2022, Worldline announced a partnership with Bexs Pay to launch a cross-border remittance product for online payments from Brazil

- **Worldline accelerates Nordic expansion**

Since 2017, Worldline and the Swedish fintech company Froda have been partners.

In March 2022, they have announced that their joint financing service Worldline Growth Finance will soon be launched in its fourth Nordic market, Norway, with the ambition to develop the partnership further. The service is targeted towards small businesses who need a simple and fast way to finance their growth.

FIS Global

FIS is an American multinational corporation which offers a wide range of financial products and services. FIS is most known for its development of Financial Technology, or FinTech, and as of Q2 2020 it offers its solutions in three primary segments: Merchant Solutions, Banking Solutions, and Capital Market Solutions. FIS was ranked second in the FinTech Forward 2016 rankings. After finalizing FIS' most recent deal to acquire Worldpay for $35 billion in Q3 of 2019, FIS became the largest processing and payments company in the world (Wikipedia).

Revenues 2021: $13,9 bn

This value confirms the constant growth of the American company. Indeed, FIS revenues grew by 11% compared to 2020 income statement.

Number of employees 2021: over 65,000

Geographical expansion: FIS is present worldwide, with the primary market in North America. The headquarter is based in Florida, United States.

Business:

- Processing: Yes
- Acquiring online: Yes
- Acquiring offline: Yes
- Issuing: Yes
- POS Provider: Yes
- Payment gateway: Yes
- Cash register: Yes
- Innovative Payments: Yes

FIS Global has a huge business embracing several target markets: retailers and merchants, technology enterprises, restaurants, banks and financial institutions.

Role in Italy:

Thanks to the acquisition of Worldpay in 2019, FIS Global increased its presence in the Italian market. Indeed, Worldpay is a true global giant in the field of payment systems, processing approximately 110 million mobile, online and in-store transactions every day. Overall, it accepts more than 300 payment methods, including 126 currencies, for more than one million merchants globally. Worldpay has a signifcant presence in whole Europe, including Italy.

Merger,Acquisition and latest news:

Overall, FIS has made 9 acquisitions and 13 investment, including mergers. The company has spent over $ 52.71B for the acquisitions. FIS has invested in multiple sectors such as Banking Tech, Payments and Investment Tech.

- **FIS Acquisition of Payrix**

  On February 2022, Financial technology leader FIS Global announced it has enhanced its embedded payments strategy with the acquisition of Atlanta-based, Payrix. This acquisition aligns with FIS' strategy to expand its e-commerce offerings to companies of all sizes, and in any industry, by embedding payments capabilities within Software-as-a-Service (SaaS) platforms. This acquisition will also enable FIS to unlock the value of its broad solution portfolio by delivering embedded finance capabilities in addition to its e-commerce offerings to small- and medium- sized businesses

- **FIS Acquisition of Worldpay**

  As already mentioned, in 2019 FIS has announced the closing of its acquisition of global payments leader Worldpay, Inc., creating a global leader in technology and solutions for merchants, banks and capital markets. With a best-in-class portfolio of solutions for payments, banking and capital markets, FIS positioned itself to accelerate its growth and advance the way the world pays, banks and invests.

- **FIS partnership with Fireblocks**

  According to Bloomberg, in 2022 Payment giant FIS Global is forming a partnership with crypto custody firm Fireblocks Inc. that aims to alleviate concerns associated with security and regulations that institutional investors have as they seek to access the $2 trillion crypto market.

  Going forward, more than 6,000 capital markets clients of FIS will be able to move, store and issue digital assets through the Fireblocks platform.

5. Conclusions and Future directions

To conclude, this study provided interesting insights on payments industry identifying strategic and future trends for the actors involved in payments chain.

The research allowed to get a clear picture of the whole industry, detecting global trends and future moves. Only through this accurate analysis, it was possible to provide insights on payments industry and to share suggestions to the players who want to enter in this market or just stay in this world successfully avoiding to get out of it.

First of all, Porter's analysis enabled to measure the attractiveness of merchant acquiring, payment gateway and POS provider industries. Starting from merchant acquiring, the conclusion is that this industry is not very attractive as the competitive rivarly in the market is high. This force is affected by high threat of new entrants and moderate threat of substitutes; also the bargaining power of buyers is high. Moving to payment gateway, the result is an industry with moderate attractiveness. In fact, threat of substitutes and threats of new entrants are both moderate due to new technological opportunities on one hand and due to high entry barriers and strict regulation on the other hand. The bargaining power of buyers is the only strong force of the industry. The third industry analysed, through Porter's scheme, is POS provider that resulted not attractive at all as there is high competitive rivalry in the market. Only the bargaining power of suppliers is a moderate force due to the fact that new technological solutions are approaching new players into this industry.

Going ahead, the SWOT analysis helped to identify internal and external factors that affect the whole payments chain. In this study, SWOT pointed out all the opportunities on which the players of payments chain should leverage in order to gain market share, such as new partnerships, strategic M&A deals, innovative products, rapid digital transition after Covid-19, new services to offer, Open API and vertical integration along the chain. On the contrary, threats are all the external factors that could lead these actors to leave the industry and those ones identified in this study are: new entrants providing services at lower prices, new technological trends and opportunities, high competition, fraudsters, long time to build a payment network, hacking, geographical normative differences and different currencies. Regarding the internal analysis, strenghts and weaknesses can be core competencies of each player. The first are resources of the organisation that help to achieve the goals of actors of payments chain, such as: existing core infrastructure, reliable ecosystem, global network, existing adapted solutions, variety of digital and technological solutions, large customer base, different targets, possibility to process high volume of payment and easy vertical integration. Regarding the weaknesses, that are limitations or defects in the organisation that lead players of payments chain to miss new customers' needs and to exit from the market, several were identified: high dependencies on the connectivity, complex systems, processing fees, development and support organization, developed protection systems due to the Fraud and risk activities, regulations and compliance, difficulty to quickly innovate.

Also the study related to M&A deals has contributed to have a clearer overview of the global payments market. Classifying the typology of deals, it was possible not only to understand in which direction small and large players are moving, but also to anticipate future trends. In the analysis of M&A deals conducted for the period 2018-2021, it emerged that the outbreak of Covid-19 partially affected the industry, because on one hand the deals value decreased significantly compared to 2019, year before the recent pandemic; but on the other hand the number of deals has remained at significant levels. The year 2021, that saw the rebirth after the pandemic, recorded growing numbers but still far from the pre-Covid era. In 2019, there was the largest number of M&A deals in the payments industry: 253 worldwide.

Regarding the analysis by segment (H1 2019- H1 2021), "Payment acceptance" is the sector more attractive for the whole 2019; in fact during this year, it collected 37% of the total M&A deals in both H1 2019 and H2 2019. Contrary, for the other semesters, "Processing" is the service with the biggest percentage of M&A deals with 39% in H1 2020; 24% in H2 2020 and 32% in H1 2021. Also the segment "Alternative payments" has collected significant deals in the last two years and in particular on H1 2021, semester during which 31% of the total deals were related to this category.

Regarding the analysis by region (H1 2019- H1 2021), North America has showen the biggest percentages of M&A deals in H1 2019 (43%), H2 2020 (36%) and in H1 2021 (38%). Also Europe has collected important number of deals, and it was the first region in H2 2019 (38%) and in H1 2020 with a pick of 42% of the total M&A deals. Asia was constantly the third region for number of deals during the whole period taken into the study. The data showed also an important trend for the South America. This region increased its number of deals increasing its percentages with a pick of 9% in H2 2020.
The last analysis related to M&A deals was conducted for the first four months of 2022 and the conclusion is an increase in deals for both capital invested and volume from January to April and this trend will probably continue in the other quarters of the year.
The total amount of M&A deals in payments industry is equal to $6.67 bn in the first third 2022, with a total of 105 deals in all the regions.
Overall, the trends emerged from this M&A research are several and they suggest also how the industry will move in the next future. One of these trends is related to market consolidation that pushed some players to conquer new geographic markets or to provide a fully service provision. Other trends are deals related to: open banking, withdrawal from underperforming market, BNPL investments, omnichannel experience, Gen Z and millennials or developing region as LATAM.

Overall, it is possible to see how numerous trends are reshaping the industry and are changing the equilibrium within the payments sphere. New players are entering in the market, thanks to technological distruption and new regulations. Incumbents are trying to empower themselves through innovation and several M&A deals. A player who wants to enter in this industry has the possibility to do it but the competition is increasingly fierce and makes the market less attractive. Nowadays, the actors, who want to stay alive and beat the competition, are obliged to follow specific strategies that consist in investing in new technologies, integrating vertically within payments chain, offering new services, guaranteeing an omnichannel experience and exploring new geographical opportunities.

Fututre researches could implement this study going in depth with the analysis of the whole payments chain. It would be interesting to explore the world of all actors both main and secondary.

In addition, a future study, after the end of the current emergency of Covid-19, could be fundamental in order to summarize how the recent pandemic has shaped payments industry and to compare pre Covid-19 and after Covid-19 scenarios.

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