Current situation of the payments ecosystem: Transition towards the "decoupled era"

"I thought we could have an incredibly efficient payments system that was more secure and had less friction than traditional methods".

A paraphrase of Elon Musk's ideas, referring to his original vision for X.com, which later merged with Confinity to form PayPal.

As mentioned above, we are currently moving towards the so-called "Decoupled Era", characterized by universal, instant and interoperable access to digital payments through open accounts and technologies and in a context where cash, transfers and traditional cards are no longer the central axis.

The current payments ecosystem:

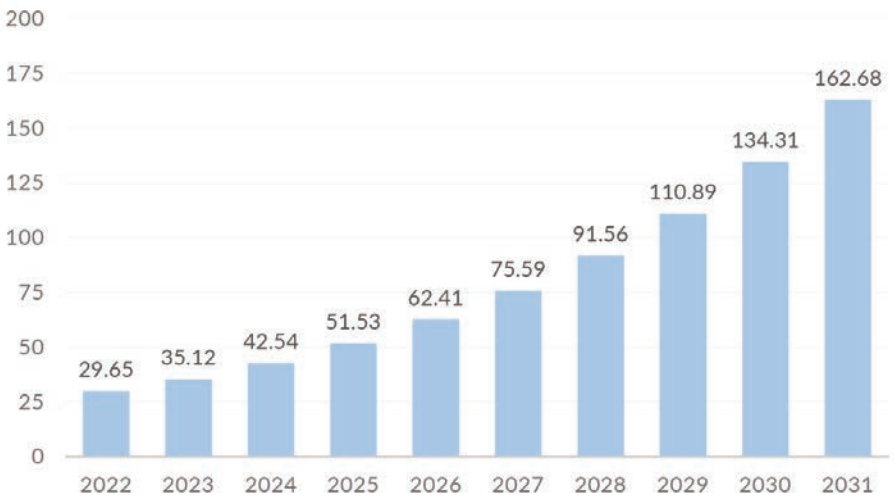
- Highly digitalized and constantly evolving, driven by changes in consumer behavior.
- Characterized by the coexistence of "tradition" and "innovation":
  - Seamless integration between traditional digital payment methods (such as wire transfers or credit and debit cards) and emerging solutions such as digital wallets, mobile payments (integrated or invisible), cryptocurrencies and Buy Now, Pay Later (BNPL) services.
  - Increasing competition between traditional players (banks) and new entrants (fintech and technology giants) fostered by regulation aimed at opening up the market while maintaining a balance between consumer protection and fostering innovation.
- Marked by a strong trend towards interoperability and decentralization:
  - Interoperability and instantaneous transactions (real-time payments).
  - Decentralization of financial services, enabling more agile, programmable and transparent structures.
- It is attractive and has growth potential.

A digitized and evolving payments ecosystem driven by changes in consumer behavior

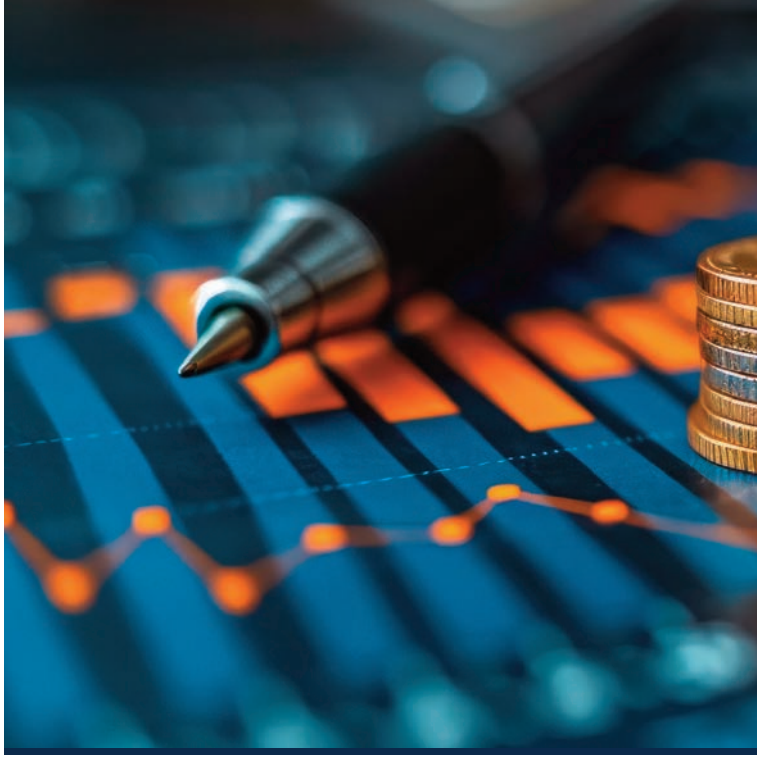
From a demand perspective, consumers are becoming increasingly sophisticated and digital, demanding dynamic payment solutions that adapt to their consumption styles. This trend is manifesting itself in all segments: retail, small and medium-sized enterprises, and large corporations. Digitalization is now a fundamental element in our daily lives, transforming the way we interact, work and entertain ourselves. The payments ecosystem cannot remain indifferent to this evolution, driven by advances in online banking and the development of mobile applications. These innovations have facilitated the transition from physical payment methods (cash, checks, physical cards) to digital payments, made over the Internet or through electronic devices - a shift confirmed by numerous studies:

- The global market for online payment platforms reached a value of US$29.65 billion in 2022 (see Figure 10).

Figure 10. Market size of global online payment platforms between 2022 and 2031(in billions of dollars).



Source: InsightAce Analytic, Statista.



- According to data from the Bank for International Settlements (BIS) for a sample of 26 countries[29], there has been a significant increase in the value of cashless payments. Notably, South Africa, Canada, and Turkey have experienced particularly strong growth, with increases of 52.6%, 26.8%, and 26.7%, respectively, in the volume of payments made with cards and electronic money in 2023 compared to 2022.

- Several organizations have expressed similar views:

  - **In the Eurozone,** according to data from the Banco de España, the use of non-cash payment methods increased by 18.6% in 2021[30] (197 billion euros).

  - **In the United States,** the value of digital payments, according to studies published by the FED[31] , grew at an annual rate of 9.5% between 2018 and 2021, reaching $128.51 trillion in 2021. This increase was more than twice the growth recorded between 2015 and 2018 and more than three times that of the 2000-2015 period.

  - **In South America,** according to data published by the Inter-American Development Bank (IDB) in its report "Accelerating Digital Payments in Latin America and the Caribbean"[32], digital payments became the preferred method of payment, growing by 18% in 2020.

  - **In Asia,** according to data from "The Asian Banker" (a company specializing in providing strategic intelligence, research and community platforms for the financial services industry in the Asian region), the regional digital payments market is projected to grow from $12.29 billion in 2023 to $22.97 billion in 2028, at a compound annual growth rate of 13.32 % .

This shift in consumers' cash usage habits raises questions about the potential disappearance of cash. In this context:

- The most recent studies suggest that cash and digital payments will continue to coexist in the future. By way of illustration, the European Central Bank's SPACE study[33] reveals that:

  - Cash was still the most used payment method at the point of sale in 2022 (59 % of transactions), although its use was already showing a downward trend compared to 2016 (79 %) and 2019 (72 %).

  - In terms of value, cards accounted for 46% of transactions in 2022, surpassing cash (42%). This marked a shift compared to previous years, when cards accounted for 39% of transactions in 2016 and 43% in 2019, trailing cash (54% and 47%, respectively).

  - Despite increasing digitalization, a significant number of Eurozone citizens continue to opt for cash, regardless of their sociodemographic profile.

  - According to a study by the European Central Bank, there is no direct correlation between access to digital services and a decrease in cash usage. This suggests that the persistence of consumer habits plays a fundamental role.

- In addition, cash continues to serve as a contingent asset, as a fully digital payments ecosystem would rely heavily on various external factors. Among the most relevant are the following:

  - Power supply, essential for the continuous operation of data centers, payment terminals, mobile devices and servers.

  - Internet connectivity, essential for data transmission, transaction validation and interoperability between systems.

  - Mobile communications networks, necessary both for the execution of mobile payments (e.g., via NFC, QR codes or applications) and for sending notifications and validation via two-factor authentication mechanisms, such as SMS.

  - Data center infrastructure, which in many cases is hosted in cloud computing environments, and on whose availability the operational continuity of the system depends.

  - DNS services and digital certificates, essential for domain name resolution, SSL/TLS validation and secure operation of application programming interfaces (APIs) and web services.

[29] *Retail payments, currency and related indicators publication table:* BIS,CPMI_CT8B,1.0.
[30] Payment statistics: 2021 (bde.es).
[31] Federal Reserve Board - Federal Reserve Payments Study (FRPS).
[32] IDB Lab, and World Economic Forum (2022). Accelerating digital payments in Latin America and the Caribbean. https://doi.org/10.18235/0004256
[33] European Central Bank, *"Study on payment attitudes of consumers in the euro area (SPACE)"*, 2022.

A payments ecosystem where "tradition" and "innovation" live side by side

Seamless integration between traditional digital payment methods and emerging solutions

In the current context, the payments ecosystem is evolving towards a hybrid architecture in which traditional digital methods - such as bank cards, wire transfers or point-of-sale (POS) payments - coexist and complement each other with emerging solutions, such as digital wallets, account-to-account (A2A) payments, mobile payments, cryptocurrencies or Buy Now, Pay Later (BNPL) deferred payments.

This seamless integration allows users to move seamlessly between different payment methods, according to their convenience, context or need, while merchants and financial providers incorporate technologies that facilitate interoperability, security and transaction efficiency. Thus, the system no longer revolves around a single dominant payment method, but is moving towards a multichannel, adaptable and inclusive experience, where digital becomes the standard, without completely displacing more established infrastructures.

For a better understanding, the following is a brief description of the most relevant emerging solutions:

- Digital wallets (wallets or electronic wallets): Mobile apps that allow users to store money, which can be recharged in cash or through other payment methods, without the need for a bank account. Some examples of digital wallets include: PayPal Cash (recharge in associated stores); Mercado Pago (recharge in kiosks) or RappiPay Cash (recharge in physical points).

Main types of invisible payments.

- Background Payments - Uber or Lyft when requesting a ride: The payment is processed automatically, without the user having to take any explicit action at the time of the transaction.
- Subscription or Membership Payments - Netflix or Spotify: User gives initial consent and payments are made automatically at set intervals.
- Biometric Identification Based Payments - Apple Pay and Samsung Pay with Face ID or Fingerprint: The user authorizes and makes the payment using biometric data such as fingerprint, facial recognition or retina scan.
- IoT (Internet of Things) Payments - Smart refrigerators that automatically order food replenishment or vehicles that automatically pay tolls, fuel or parking: Connected devices that perform automatic ordering and payment without direct human intervention.
- Contextual Payments - Urban mobility apps that detect available parking spaces and pay for you: The system detects user context (location, activity, history) to make or suggest automatic or one-click payments.
- Invisible Payments in Autonomous Commerce - Amazon GO where the customer enters, takes products and leaves and the system detects what they take and automatically bills their account: Stores that eliminate the traditional act of paying at checkout.
- Virtual Assistant Based Payments - Alexa or Google Assistant ordering products or services after a voice command: Use of voice assistants or chatbots to make purchases and payments automatically.

- Account to account (A2A) payments: These facilitate the direct transfer of funds between accounts (typically virtual), without the need for bank intermediaries. According to the World Payments Report 2023, A2A payments are the preferred method for P2P (person-to-person) transactions for 45% of users.

- Mobile payments (embedded or invisible): Payments initiated directly from a phone or similar device with embedded technologies, allowing the payment process to become a seamless part of the experience rather than a separate transaction:

  - Integrated payments: Refers to the seamless incorporation of the payment function within platforms or applications, eliminating the need to change environments.

  - Invisible payments: Transactions where the act of paying is performed in such an integrated and automated way that the user barely perceives that he or she is paying, thus almost completely eliminating friction in the shopping experience.

- Cryptocurrencies: Virtual assets that function as a medium of exchange, unit of account and store of value, lacking physical support. There are three types of digital currencies:

  - Cryptocurrencies: Private and blockchain-based, with their value directly tied to the fluctuation of supply and demand. The most well-known are Bitcoin and Ethereum, which together account for approximately 75% of the cryptocurrency market.

  - Stablecoins: Private digital currencies linked to stable assets, which helps mitigate volatility. Their value fluctuates in line with the asset they are tied to. Examples include:

    - USDC (USD Coin) - Linked to USD and backed by cash reserves and short-term US Treasury bonds. It is designed to maintain an exact parity of 1 USDC = 1USD.

    - EUROC (Euro Coin) - Linked to EUR and backed by euro reserves held in regulated banks . It is also designed to maintain an exact parity of 1EUROC = 1EUR.

    - PAXG (Paxos Gold) - Linked to gold, each PAXG token is backed by one troy ounce of physical gold stored in professional vaults in London (Brink's).

  - Central Bank Digital Currencies (CBDCs): Public, digital forms of money issued electronically by a central bank.

  - Buy Now, Pay Later (BNPL) deferred payments: Financing model, generally offered by Fintechs, that allows payments to be split or deferred at physical or online points of sale without the need to make a formal credit application.

Increasing competition between traditional and new players as a result of regulation aimed at market opening and consumer protection

The current state of the payment services industry is also shaped by its regulatory framework. Over the last decade, Open Finance has emerged as the new regulatory paradigm that currently governs the payments industry.

Although Open Finance models cover broader areas than just payments, it was in this sector that the regulatory focus was first placed, particularly with the introduction of PSD2 in Europe, a pioneering standard that set the stage for broader reforms. By December 2024, sixty jurisdictions had approved regulations related to Open Finance, and ten more were in the process of approval[34] (see figure 12).

The Open Finance regulations aim to address two main objectives:

- Promote more open models of competition and participation in the market. In this sense, regulations can be divided into two broad categories, depending on their level of interventionism:

  - Mandatory models, such as the one established in the European PSD2 or in the Mexican Fintech Law, where a mandatory regime for accessing customers' bank accounts is imposed. All financial institutions are required to participate in this scheme.

  - Voluntary models, such as those developed in Japan and Singapore, where collaboration and data transfer between financial institutions is based on voluntary agreements.

[34] CCAF (2024), The Global State of Open Banking and Open Finance, Cambridge: Cambridge Centre for Alternative Finance, Cambridge Judge Business School, University of Cambridge.

Cryptocurrencies: Origin, operation, advantages and disadvantages.

Origin:

On October 31, 2008, with the publication of "Bitcoin: A Peer-to-Peer Electronic Cash System"[1] by Satoshi Nakamoto, the concept of digital currency or cryptocurrency emerged for the first time.

Operation:

Cryptocurrencies operate on the basis of blockchain technology, which allows transactions to be carried out directly between two parties without the need for intermediaries through the use of cryptography and a decentralized network of computers to validate and record transactions. The operation can be illustrated as shown in Figure 11.

Advantages:

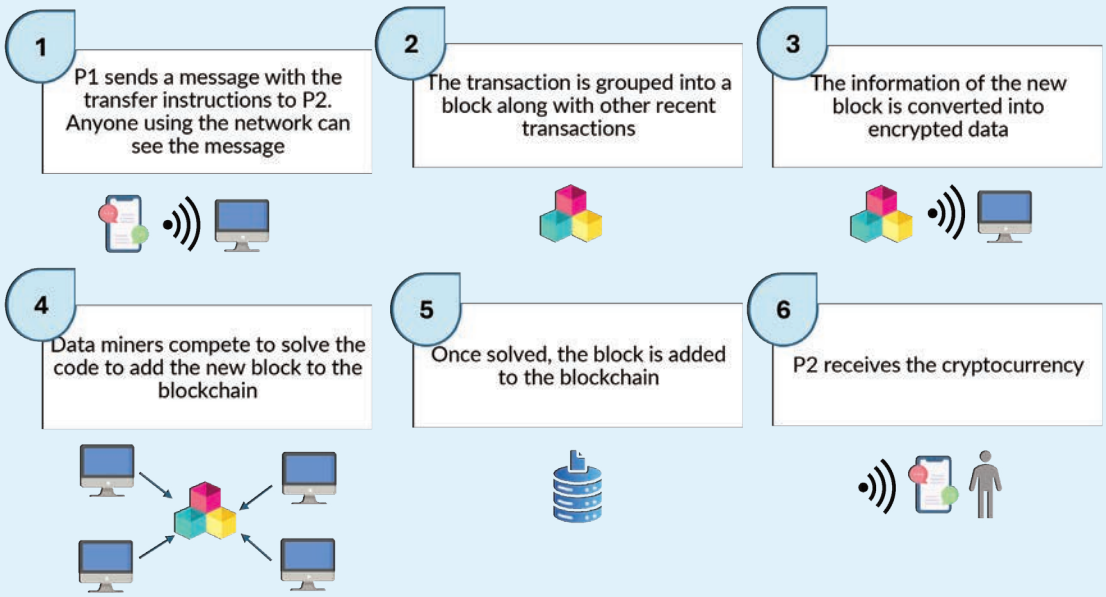
- Settlement speed.
- Reduced costs, especially in the case of cross-border fund transfers, since currency conversion needs are eliminated.
- Multiplatform operability.
- 24/7 availability.
- Facilitator of financial inclusion in unbanked areas by requiring only Internet access.
- No restrictions on amount or volume.
- High efficiency through tokenization and smart contracts.

Disadvantages:

- Very complex usage and environment:
  - Oversupply. According to CoinGecko[2] , an independent cryptocurrency data aggregation platform, there are more than 10,000 active cryptocurrencies, each with its own operating scheme.
  - Very high level of price volatility.
  - Steep learning curve.
  - Technical complexity for average users.
- Security and fraud risks.
- Operational risks due to errors in wallets or networks.

[1]https://bitcoin.org/files/bitcoin-paper/bitcoin_es.pdf.
[2]https://www.coingecko.com/es/publications/reports.

Figure 11. How do cryptocurrency transactions work?



Among the advantages argued in favor of the mandatory model are:

- Increased competition by lowering barriers to entry for new players.
- Promotion of innovation, fostering more efficient and competitive markets.
- Cost reduction and improvements in the quality of payment services.

However, there are also disadvantages associated with the mandatory model, including regulatory asymmetry: it facilitates the entry of entities subject to lower levels of supervision and regulatory burden, to the detriment of traditional financial institutions, which must shoulder greater obligations and additional costs – costs that, in many cases, cannot be monetized.

Strike a balance between regulation and innovation. In the face of rapid technological change, it's crucial to provide a regulatory framework that protects consumer rights without imposing an excessive burden that stifles innovation and hampers technological advancement.

In this regard, it should be noted that one of the main risks that PSD2 sought to mitigate was that associated with the loss of control over data by customers and financial institutions. Techniques such as screen scraping - data extraction from electronic banking platforms using the customer's banking credentials - prevented financial institutions from knowing who accessed the data and what information was shared. At the same time, customers lacked effective control over the access to and destination of their data, exposing them to significant security risks.

The solution driven by the Open Finance model has been to encourage financial institutions to adopt application programming interfaces (APIs). These interfaces enable third parties to access customer bank account information under controlled conditions, ensuring that:

- Financial institutions maintain control over what information is shared and with whom.
- Access to information is always granted with the explicit consent of the client.

A payments ecosystem with a strong trend towards interoperability and decentralization

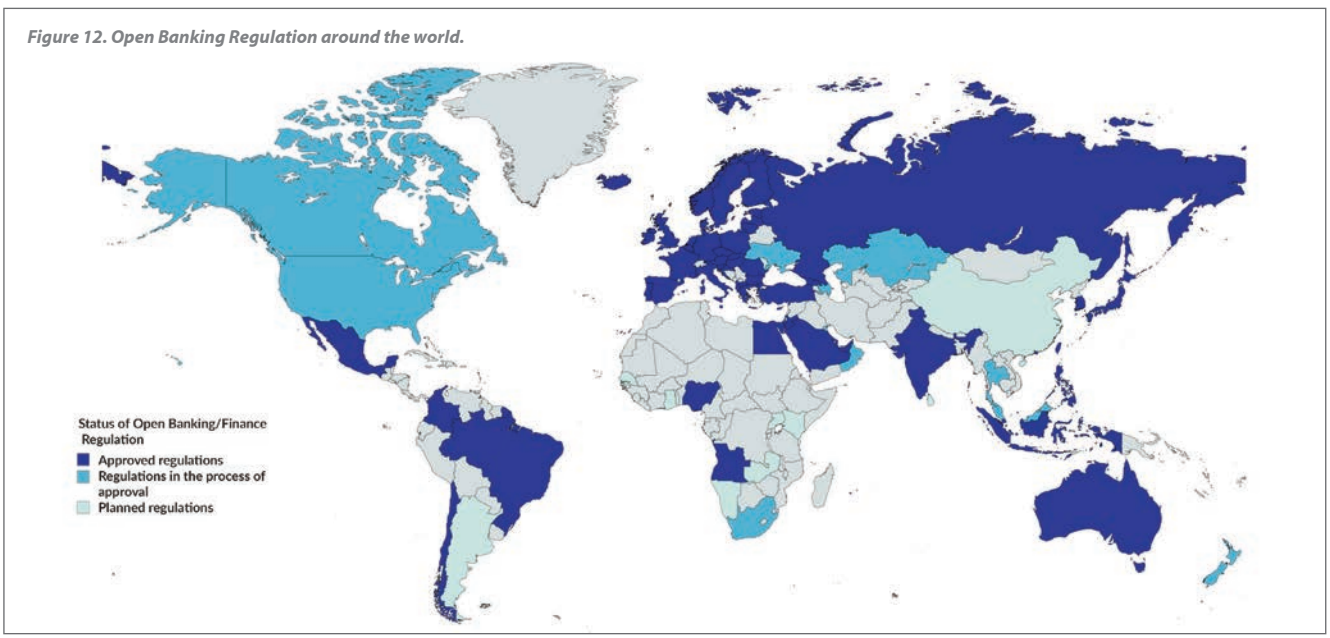
Interoperability and instantaneity of transactions (real-time payments)

The speed and 24/7 availability of e-commerce in a digital environment has driven an accelerated evolution of the payments industry towards digitalization. However, mere digitalization is not the only customer requirement; transaction immediacy has become a core demand, guiding the industry into the era of instant payments.

Since 2012, when Sweden's six major private banks launched Swish Pay[35] – a mobile platform that connects the user's phone number with their bank account to facilitate real-time transactions – numerous countries have developed their own national instant payment systems, such as:

[35]Data Reportal (2021).

Figure 12. Open Banking Regulation around the world.



Differences between Buy Now Pay Later (BNPL) and traditional installment payment.

Although both allow a payment to be spread over time, they have important differences in structure, access, cost and customer experience:

Feature	Buy Now, Pay Later (BNPL)	Traditional Installment Payments
Who offers it	Fintechs or payment platforms (e.g. Klarna, Afterpay, Affirm, Zip, Mercado Pago in LatAm).	Banks, traditional finance companies or credit card issuers.
Contracting Process		
Access	Immediate & integrated into the checkout process of the online or physical store.	Requires signing a credit or loan agreement with a bank or finance company.
Credit evaluation	Rapid assessment through real-time scoring algorithms based on internal history of past purchases and payments, behavioral data and identity and device verification with dynamic limits that adjust as the user's payment behavior history becomes available.	Formal evaluation: credit history, proof of income, risk analysis.
Documentation	Usually just an email, phone and payment method is required.	Requires more extensive documentation (ID, income, financial).
Terms of Payment		
Duration	Short term (typically repaid in 4 to 6 installments or within 30-90 days).	Medium or long term (spread over several months to years).
Cancellation flexibility	As easy as signing up, processed digitally in just a few steps.	Less flexible: requires renegotiation or formal cancellation.
Amount	Focused on small to medium sized purchases (from $50 to $2,000 typically).	It is normally used for higher amounts (appliances, cars, mortgages).
Financial cost		
Interest	Most plans offer 0% interest to the customer, with the cost typically borne by the retailer and included as part of their sales margin.	Normally with explicit interest rates from the beginning of the contract.
Penalties	Moderate late fees.	Normal penalties and impact on credit history.
User experience		
Speed	Fast, seamless, designed not to interrupt the shopping experience.	Slow, requires formal procedures.
Integration	Integrated into e-commerce checkout, apps, or directly at physical points of sale.	It is arranged separately, often not at the same point of purchase.

- Blik in Poland (2015).
- Bizum in Spain (2016).
- Paylib in France (2016).
- UPI in India (2016).
- Pix in Brazil (2020).
- Dimo in Mexico (2024).

However, it was not until about five years ago that the world's main financial regulators began to promote initiatives to establish cross-border instant payment systems using the SWIFT network. These include:

- Europe: One-Leg-Out Instant Credit Transfer (OCT Inst)[36], launched by the European Payment Council (EPC) in November 2023, enables payments in euros to be sent and received instantly 24 hours a day. From October 2025, it will include end-to-end traceability of payments.

- North America: FedNow Service, launched in July 2023 by the U.S. Federal Reserve, offers continuous availability, immediate funds transfer, irrevocability of transactions and data enrichment[37].

- South America: Pix, from the Central Bank of Brazil, is moving forward in the development of offline and international payments, with the goal of enabling instant cross-border payments by 2025[38].

- Asia: India's Unified Payments Interface (UPI) initially launched in 2016, has evolved into a robust instant payments system and has established agreements for instant cross-border transactions with France, UAE and Singapore.

A real-time payment (RTP) process does not differ in its main stages from other payment processes (see Figure 13), but it must be completed within seconds – posing significant challenges:

- Technology: The infrastructure must support real-time communications, which requires the implementation of APIs and the modernization of legacy systems.

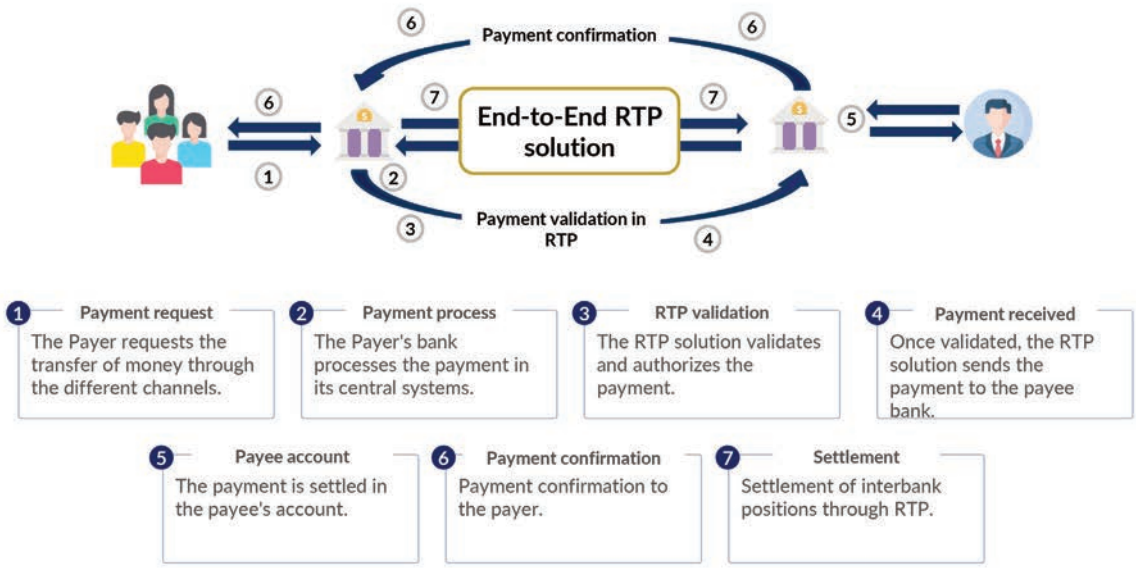
- Liquidity management: It is essential to ensure the immediate availability of funds in clearing houses and correspondent banks, while avoiding both excessive liquidity immobilization and overdraft costs.

- Irrevocability: RTP transactions cannot be reversed; any disputes must be handled through coordination between the involved entities and, if necessary, by initiating a new reverse transaction.

Therefore, it is essential to update the control frameworks of payment service providers, transitioning from preventive control models to proactive control schemes (see figure 13).

[36]https://www.europeanpaymentscouncil.eu/what-we-do/epc-payment-schemes/one-leg-out-instant-credit-transfer.
[37]About the FedNow Service (frbservices.org).
[38]Pix Statistics.

Figure 13. RTP process schematic.



Decentralization of financial services enables more agile, programmable and transparent structures

The term DeFi, short for "Decentralized Finance," refers to an ecosystem of financial applications built on blockchain infrastructures that operate without traditional intermediaries such as banks, brokers or centralized payment platforms. Instead of relying on centralized financial institutions, DeFi services are managed through smart contracts – automated programs capable of executing agreements according to agreed terms, without the need for third-party intervention.

Among the main examples of DeFi services, the following can be highlighted:

- Decentralized loans and credits: users can apply for or grant cryptocurrency loans without the intermediation of traditional financial institutions.
- Decentralized exchanges (DEX): platforms that allow the direct exchange of cryptocurrencies between users, eliminating the need for a central agent.
- Yield farming: strategy by which users contribute liquidity to DeFi protocols in exchange for rewards, optimizing the performance of their digital assets.
- Staking: the process of holding funds in cryptocurrency wallets to support the security and operability of blockchain networks, earning periodic rewards in exchange.

An attractive payments ecosystem with growth potential

As noted above, digitalization and the rise of e-commerce, along with advances in online banking and mobile applications, have facilitated the transition from physical to digital payment services.

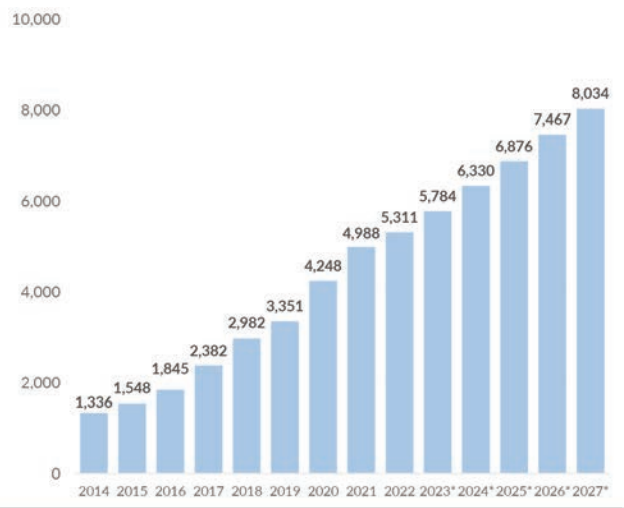
Considering the correlation between the growth of the e-commerce market and the digital payment services market – and given that global e-commerce sales reached $5.7 trillion in 2022, with forecasts projecting over $7.4 trillion in 2026 and $8 trillion in 2027, according to Statista data (see Figure 14) – the growth potential of the payment services market, and thus its attractiveness, is very high.

The attractiveness of the digital payments market is supported not only by its global growth but also by its expansion across different geographies and modalities. According to data from Worldpay (a subsidiary of Global Payments, a leading payments technology company headquartered in Atlanta, USA)[39]:

- It is estimated that digital payments will account for 74% of total transaction value by 2027, up 11% from 2023, with an estimated compound annual growth rate (CAGR) of 15% through 2027.
- At the same time, the value of e-commerce transactions paid through credit and debit cards is expected to decrease by 12% by 2027.

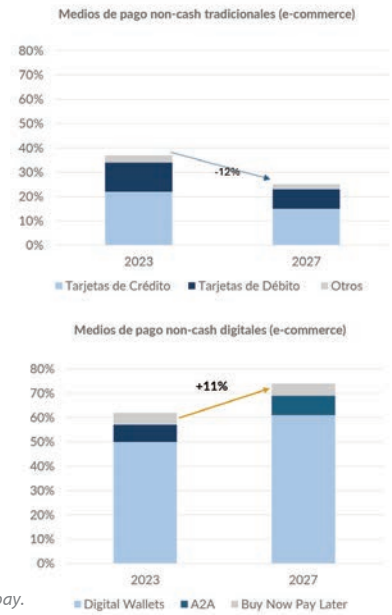
[39]Worldpay (2024). GPR 2024 9TH Edition: TheGlobalPaymentsReport2024.pdf.

Figure 14. Revenue from global e-commerce sales between 2014 and 2027 (in billions of dollars).



Source: Statista on data from eMarketer.

Figure 15. Forecasts of digital vs. traditional (non-cash) usage worldwide.



Source: Worldpay.