

White Paper on retail payments for the near future

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Foreword

In recent years, there has been a progressive increase in the use of cashless payment instruments as a result of technological innovation, the entry of new market participants, regulatory measures to support the efficiency and security of the use of digital payments and, lastly, the impact of the COVID-19 pandemic on consumers' habits.

This White Paper provides an overview of the payments market in Italy and Europe , presenting the main solutions and roles of the various players in the payment industry (schemes and infrastructures); it makes reference to the principles and main contents of the Eurosystem's and the European Commission's retail payments strategies to achieve a secure, efficient, innovative, instant-oriented pan-European payment system aimed at ensuring the Union's strategic independence in the payments market; a possible model for a payment solution that would allow the objectives of the above-mentioned strategies is then set out.

The report is intended to contribute to the debate in order to facilitate a swift and realistic way of implementing and supporting the competitiveness of the European retail payments industry in terms of both digitalisation of traditional products and services and responding to the new challenges arising from technological development.

From this perspective, this White Paper is addressed to all European stakeholders — institutions, financial and technological providers, businesses and consumers — with the aim of developing a common view on the direction to be undertaken to overcome the challenges that still stalled the full implementation of the aforementioned strategies; references to the possibility of making use, with the necessary adaptations, of some of the initiatives already launched or in the process of being implemented are to be read solely from this point of view and do not prevent further solutions from being considered.

Scenario

The payments market: main trends

Contactless transactions, payment apps, virtual cards and digital wallets on smartphones: across the world, the payments ecosystem is moving thanks to digital development.

Eurosystem data¹ show that in Italy cash in 2019 remains the most widely used instrument at physical points of sale, although its use has decreased over time². In Italy, the use of cashless payment instruments — credit transfers, direct debits and especially card payments — has also been growing gradually in recent years, as a result of both rapid technological developments and regulatory actions to support efficiency and security.

More recent studies also show that the health emergency and government measures to contain the spread of the pandemic have intensified the use of electronic instruments in Italy compared with traditional tools³.

In Italy, the number of non-cash transactions per capita increased by 24 % in 2021, driven mainly by card transactions (33 %), which recorded the highest annual average growth among the main cashless instruments over the period 2018-21, driven mainly by the steady annual growth of contactless and online transactions (30 % and 11 % respectively). For credit transfers, the most widely used channels are “online” and “electronic” channels, which account for around 80 % of transactions.

With regard to the European context, some indicators have long pointed to Italy being among the most dynamic countries in increasing the use of digital instruments. For example, according to the latest data released by the ECB, the annual growth rate of electronic payments from 2015 to 2020 (+ 7 % on an annual basis) is higher than the European figure (+ 4 %); the share of electronic card transactions (60 %) is higher than the European average (50 %).

However, Italy remains the last euro area country in terms of the per capita number of non-cash transactions: 130 transactions per inhabitant in 2020 compared with 297 on average in the euro area. The gap is common to all areas of the country, but there are also large differences across Italian regions.

The heterogeneity across country areas in terms of the dissemination and use of non-cash instruments is also reflected in differences in the demand for cash. Analyses based on international comparisons and Italian data at province level show that differences in per capita income and in the degree of technological innovation play a central role in explaining the low use of non-cash instruments⁴. Cash is most widely used in central and south Italy, by women, young people and those with the lowest incomes; the self-employed, students and unemployed also tend to use cash more intensively. By contrast, people with higher levels of education, medium-high-income people, employees and pensioners make greater use of e-payment instruments.

The pandemic has partly contributed to reducing the cultural and technological gaps across regions. For example, one of the above-mentioned studies show that contactless technology (including mobile payments) and, more generally, payment cards at the physical point of sale have grown strongly, particularly in central and southern Italy, where they were less used before the pandemic than in the North. In the South, in particular, the propensity to use cards more than cash has also been observed for lower-value payments, as shown by the reduction in the average amount paid at the point of sale.

¹ “Report on the payment attitudes of consumers in Italy: results from ECB surveys”, Banca d’Italia (2022).

² On the basis of projections based on ECB survey data - Such (2016) e SPACE (2019) - the value of transactions settled in cash for the first time in 2021 may have been lower than that purchases using cards at the point of sale.

³ “The impact of the pandemic on the use of payment instruments in Italy”, Banca d’Italia (2021).

⁴ “Regional differences in retail payment habits in Italy”, Banca d’Italia (2020).

By contrast, online purchases increased more strongly in the North, the area most affected by the pandemic outbreak.

However, a transformation of the trade sector had long since started with the slowdown in traditional distribution sales and growth in e-commerce. With the pandemic, especially during the lockdown periods, it became clear that, despite the fall in turnover for several economic sectors, many companies registered new customers thanks to the integration of traditional and online sales channels (multichannels); but this was particularly done through large digital platforms that have further strengthened their position on the e-commerce market.

This evidence confirms that digital payment services are a key resource for both businesses and consumers, allowing them to continue their day-to-day business even in the event of adverse shocks. Policies to speed up the digital transformation of the economy and innovation in payment habits, by also closing regional differences, can make the economy more resilient and more competitive in terms of opportunities for consumers and businesses.

In this context, the project to build a true pan-European solution that can support the demand of citizens and businesses for digital services in Europe is therefore becoming increasingly strategic.

Digital payment solutions in Europe

In Europe, we are seeing a shift towards cashless payments, driven first of all by increased acceptance of especially cards and also mobile payments.

At the same time, there is a paradigm shift in the development of instant payments, an area in which Europe has played a decisive role with the introduction of the SEPA Instant Credit Transfer (SCT Inst) scheme, which is bound to become the backbone for card, account-to-account, mobile and online payments.

Overview of solutions

Today, cards are the main electronic payment instrument used in Europe.

Their dissemination and use are based on infrastructures that have been created over decades, most often with proprietary technical standards and rules. The rights and obligations of consumers and payment service providers in relation to these instruments have been harmonised with the issuance of the first and second Payment Services Directive (PSD).

As noted above, in 2021 there was also a significant growth in payment cards in Italy, with some significant differences; debit cards are growing more strongly than prepaid cards, while credit cards continue to suffer from the decline in high-value consumption. For card transactions, the dominance of contactless technology, which has now surpassed contact transactions, should also be noted.

A further trend in the evolution of card usage is the tokenisation of cards in mobile wallets. XPAYs (Apple Pay, Google Pay, Samsung Pay, etc.): global mobile devices manufacturers that have developed proprietary digital wallets to host payment cards digitally by issuers.

Active since 2015 at the global level and since 2017 in Europe, these providers have grown threefold in Italy in 2021 (+ 112 % vs. 2020), moving from being a niche phenomenon to a concrete development frontier, accounting for around 86 % of mobile proximity payment transactions i.e. more than 7 billion euro ⁵.

⁵ Polimi Innovative Payments Observatory 2022.

In order to make the digitalisation of cards within mobile wallets available to end-customers, it is necessary to establish:

- an agreement between a payment scheme and a mobile wallet operator;
- the provision to issuers, by the reference payment scheme, of a tokenisation platform that allows cards to turn digital and the life-cycle management of tokens (which replaces the card PAN in the mobile wallet);
- an agreement between each Issuer and a mobile wallet operator.

With regard to mobile payments, there are further solutions — the so-called alternative payments solutions - which have followed different technical paradigms from the mobile wallets of Xpays.

These payment solutions (ALIPAY, WeChat Pay, BANCORMAT Pay, Satispay) started with the transfer of money between private individuals (P2P), providing customers with an app linked to a payment/current account, and subsequently offered the possibility to pay both in-store and online goods and/or services using QR Code technology.

The use of the QR Code has extended the possibility for merchants to accept payments even without using a POS and, on the consumer side, to be able to use an app independently of the brand/model of the device.

On the other hand, the establishment of an acceptance network to ensure the dissemination of these payment instruments often took time.

In 2021 in Italy, the volume of transactions of these payment instruments represented 14 % of the total mobile proximity payments.

International Card Schemes

The most relevant international schemes at the global level, such as UnionPay (China), MasterCard and Visa (US), dominate the global card payments market through the wide acceptance network, the flexibility of their solutions and the in-house handling of the fx exchange.

Card schemes allow simple and guaranteed payments between merchants, customers and their banks, operating international networks which are almost de facto global standards. More specifically, they define the rules for the routing of payment authorisation and settlement requests for physical point-of-sale and e-commerce transactions between merchants' acquirers and card issuers, as well as for ATM withdrawals or cashback transactions.

Visa operates a global technology platform with international procedures, systems and settlements that provide the necessary support for the smooth operation of payments with credit, debit and prepaid cards. The VisaNet infrastructure, with global coverage, is still highly performing today in terms of transaction-per-second (TPS), competing with the most important and well known last - generation DLT infrastructures.

Mastercard manages and regulates internationally the acceptance of cards issued for Mastercard credit and Mastercard debit schemes. In 2016 it launched its tokenisation platform, which can securely create a so-called “token” of the card's PAN, which can then be used within wallets and for card-on-file e-commerce.

UnionPay International, China UnionPay subsidiary, has extended its acceptance of its cards in more than 150 countries, with more than 40 million cards issued in more than 40 countries outside China and 26 million merchants worldwide.

Other schemes worth mentioning are American Express, Discover, Diners Club International and JCB, the most common credit card issuing scheme in Japan that has become a very well-known brand

at international level, serving around 31.9 million merchants with more than 190 countries and over 100 million cards.

However, to date, each scheme uses its own subset of technical specifications and protocols, often not interoperable, created and based over the years mainly on the EMVCo specifications for the card/terminal interface.

Critical aspects, such as the lack of competitive prices and technological dependencies, represent a geo-strategic risk.

Domestic schemes

In the context of continuous technological innovation and the spread of smartphones, it is now useful to group the domestic schemes into two macro-types: card payment schemes and mobile payment schemes. For card-based products, a domestic scheme is normally complemented by an international card scheme in over 95 % of the cases⁶ in Europe, in order to offer a comprehensive, versatile product for cardholders.

In Italy, the products of BANCOMAT[®] (withdrawals) and PagoBANCOMAT[®] (payments), which were launched in 1983 and 1995 respectively, have a good market penetration, mainly as a result of their massive spread on the Italian acceptance network and the competitiveness of scheme fees.

In France Cartes Bancaires, which was created in 1984 by the six banks which founded Carte Bleue⁷ together with Crédit Agricole and Crédit Mutuel, is based on the components and standards of international card schemes, although it is considered to be a domestic scheme.

In Germany Girocard was set up in 2007 by the German Banking Industry Committee (GBIC) (Die Deutsche Kreditwirtschaft / DK), previously known as the Central Credit Committee (Zentraler Kreditausschuss / ZKA). Cards with the logo “Girocard” or “Electronic Cash” are issued directly by German banks, using smartcard technology since the birth of the Chip&PIN version. A Girocard card is usually combined with multiple services, e.g. with a reloadable GeldKarte and the Maestro or VPAY function to use the card abroad, an international application thanks to which Girocard card leverages the internal technical architecture of its chip application.

Other examples of domestic schemes are the following: RuPay in India, Troy in Turkey, Elo and Hipercard in Brazil, Bancontact in Belgium, Multibanco in Portugal and Interac in Canada.

After the demise of Europay (the current acronym EMV represents Europay, Mastercard and Visa), the need for a European alternative to the International Cards Schemes became increasingly apparent between 2008 and 2010. This led to some attempts by major European banks, which took place, for example, in the Falkensteiner Circle, the Monnet Project and the Euro Alliance of Payment Schemes (EAPS). However, all initiatives to create a European card scheme solution failed and were therefore abandoned. Specifically, the Monnet project failed because of the lack of a common set of rules and because of reservations on the future viability of the business model. The EAPS initiative, which at that time took advantage of the subset of the European Interoperability Protocols (i.e. Berlin Group), limited itself to bilateral arrangements between its members, that over time were not renewed.

With regard to payment schemes offering mobile payment solutions, in Italy the market is polarised on two products: BANCOMAT Pay[®] and Satispay[®]. Other solutions are present in Germany and

⁶ PaySys Consultancy.

⁷ BNP, CCF, Crédit du Nord, CIC, Crédit Lyonnais and Société Générale

⁸This is an Electronic Money Institution which, although authorised and regulated by the CSSF, operates mainly in Italy.

Austria with BlueCode, in Switzerland with Twint, but above all in Sweden with Swish, which has so far been the most popular solution, far more used than the PAN-Nordic cards in the Scandinavian region. Swish was launched in 2012 by six major Swedish banks in cooperation with Bankgirot and the Swedish Central Bank, and in April 2021 had as many as 7.9 million active users (total Swedish population: 10.2 million). BIZUM in Spain, an instant mobile payment system owned by 23 Spanish banks also deserves mentioning.

The domestic schemes represent local assets which, in many cases, have been able to respond precisely to the needs of the respective markets and have managed to gain important market shares. They are evolving both technologically and in terms of product offering, thanks to substantial investments by local companies (often financial institutions) supporting them. They are a local alternative to the international schemes, allowing greater competition in the market, benefiting in particular merchants.

In this vein, the European Mobile Payment Systems Association (EMPSA) has been established. It aims to foster collaboration between domestic schemes and allow different m-payment systems to be used at the European level. The basic paradigm of EMPSA is interoperability by maintaining the domestic systems, thanks to a central HUB (known as the “EMPSA Bridge”) to which the Schemes must connect in order to be automatically linked to each other, and to entrusting the routing of payment information between schemes directly to the EMPSA Bridge.

European schemes

As it is known, SEPA has been created as a market self-regulatory initiative, inspired, promoted and supported by the European Commission, under the oversight and guidance of the Eurosystem, led by the European banking industry and implemented by an ad hoc body — the European Payments Council (EPC). The full realisation of SEPA has been achieved by means of regulatory action (Regulation 260/2012⁹) requiring national credit transfer and direct debit schemes to migrate to European payment schemes.

The EPC — established in 2002 — is a non-profit association, comprising 76 members that are payment service providers or associations thereof. Its aim is to promote and support the development, harmonisation and integration of European payment services, primarily supporting competitiveness and innovation. The primary task of the EPC is to manage the SEPA schemes and it is responsible for their maintenance and development. The EPC has defined the SEPA Credit Transfer (SCT) scheme and the SEPA Direct Debit Core and B2B schemes that started in January 2008 and November 2009 respectively. In 2017 the SEPA Instant Credit Transfer (SCT Inst) scheme was launched, which allows transfers of funds up to an amount of EUR 100,000 in a maximum of 10 seconds on a 24/7/365 basis.

The EPC also fosters harmonisation in areas where it is not yet complete (e.g. mobile payments, e-invoicing, security), also via the creation of payment-related schemes, such as SEPA Request To Pay, SEPA Proxy Look-up Service, which will be discussed below, and represents payment service providers for all matters related to payments in a holistic and strategic vision.

The SEPA payment schemes are implemented according to a principle of independence and separation from the infrastructures, i.e., the Clearing and Settlement Mechanisms (CSMS) that allow payment transactions to be cleared and settled. There are many such infrastructures, that clear and settle payments in line with the principles set by the EPC. They are the so called SEPA-compliant CSMS and their list is published on the EPC website. With the launch of the SCT Inst scheme, some

⁹ Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No 924/2009.

of them operate in real time in full interoperability with the TARGET Instant Payment Settlement (TIPS) platform set up by the European Central Bank (ECB).

More recently, the EPC has focused on new initiatives to respond to evolving market needs. In this area, the EPC has been building on analyses carried out by the Euro Retail Payments Board (ERPB)¹⁰ to establish a pan-European e-invoicing ecosystem creating the SEPA Request-to-Pay (SRTP) scheme. This scheme has been available since November 2020 and has been applicable to a variety of contexts and use cases. It enables payees to request the initiation of the payment for a specific transaction (commercial or otherwise) from their debtors via a secure network that allows them to submit all the information needed to execute the payment via a SEPA (instant) credit transfer. Thus, SRTP is a messaging functionality, not a payment instrument, which can therefore be seen as a complement to the payment flow because it supports the end-to-end process, and lies between an underlying commercial transaction and the related payment.

The SRTP scheme can be seen as an enabler for the implementation of digital payment solutions throughout the SEPA area.

The EPC has also developed a scheme — available since December 2018 — which allows for the exchange of data needed to initiate pan-European payments using proxies/alias solutions from which the IBAN identifying the beneficiary's account can be retrieved (SEPA Proxy Look-up).

In addition, the EPC — also supported by the ERPB — is working on initiatives aimed at harmonising and standardising the modalities of information exchange for the initiation of payments through QR Codes¹¹ and other technologies (Bluetooth and Near Field Communication - NFC).

Finally, there is an additional category of payment solutions at European level, namely Online Banking Electronic Payments - OBEPs comprising, for example, iDEAL, EPS, Giro pay and MYBANK based on EPC Schemes. Exploiting the SCT's potential and the innovations introduced by the PSD2 in the field of open banking, some market participants have added to the SCT the typical features of card payment schemes (i.e. payment guarantee for merchants, reimbursements for consumers, etc.), making it possible for payment service providers to offer new account-based products to their customers (consumers and merchants).

The digital euro

Research and public debate on digital currencies have intensified strongly over the last five years. Central banks around the world (90 % of the total, according to the latest Bank for International Settlements (BIS) report) are analyzing, studying or testing the possible issuance of a central bank digital currency (CBDC).

Since July 2021 this issue has been very topical in the European Union, since, following the publication of the “Report on a digital euro” in October 2020, the ECB decided in July 2021 to launch the investigation phase for the digital euro that could lead to the possible issuance of the central bank digital currency for the euro area.

Following a first wave of extensive experimentation conducted by the Eurosystem, no major technical obstacles have been identified with respect to the possible architectures of the digital euro¹².

¹⁰The Euro Retail Payments Board (ERPB) is a high-level strategic body in charge of promoting the integration, innovation and competitiveness of retail payments in euro. It is composed of representatives of the supply and demand sides of the payments market and is chaired by the ECB.

¹¹ The final version of the document “Standardisation of QR-codes for MSCTs” was published on the EPC website on 17 June 2022 and will be submitted to ISO for approval by way of a “fast track” procedure.

¹² See Digital euro experimentation scope and key learnings
<https://www.ecb.europa.eu/pub/pdf/other/ecb.digitaleuroscopekeylearnings202107~564d89045e.en.pdf>

The investigation phase was approved on 14 July 2021, started in October 2021 and is expected to last for 24 months. Should this phase turn out to be positive it will be followed by the actual implementation phase, which to date is estimated to be 36 months long. The aim of this initiative is the digital euro, which is defined as a central bank liability made available in digital form for retail payments. In this respect, the initiative falls within the framework of the Retail CBDCs, in contrast to the wholesale CBDC initiatives, which provide access to this instrument to institutional actors only.

The investigation phase will also have to assess the possible market impact of the digital euro. This is why the Eurosystem has set up a number of fora to ensure an appropriate dialogue with the market: a Market Advisory Group (MAG) has been set up, which provides advice and supports assessments with individual input from participants; the dialogue within the Euro Retail Payments Board (ERPB), as an institutional forum bringing together all stakeholders in the euro retail payments market, chaired by the ECB, is active; further discussion rounds, including at national level, can be activated as issues evolve. In order to ensure the right legislative environment for a possible ECB decision, the European Commission and the other co-legislators are carrying out wide-ranging work to assess the regulatory needs for the digital euro.

The investigation phase shall also be used to assess the relevant aspects that may have an impact on the banking sector, such as funding and treasury management, in order to identify possible solutions.

Its spread could have an impact on banks' funding, for example, and thus on the provision of credit. These aspects would be related to the extent to which the use of digital euro could expand over the coming years. Appropriate measures to avoid risks of disintermediation and undesirable effects are being investigated.

If the digital euro were to be issued, it would complement cash (and not replace it), as a response to the increasing digitalisation and willingness of European citizens to use electronic payments. Depending on the features that will be identified, as well as the user experience that it will provide, the digital euro will also have an impact on existing digital payment instruments, such as payment cards and credit transfers, partly replacing them. In this sense, the digital euro could redefine the equilibria of the current ecosystem built around digital payments and the providers of digital payments, such as banks, payment and e-money institutions and payment schemes.

Looking ahead, if the digital euro were to be issued, it could benefit from market initiatives aimed at enhancing interoperability (see below) which could also be exploited to support its use.

The Eurosystem's and the European Commission's retail payment strategies

The pace and extent of technological change in the retail sector led the European Commission and the Eurosystem to develop their own strategies for steering retail payment developments within a harmonised and well-defined framework. Both strategies, which work in combination, aim to create an innovative, safe and inclusive European retail payments ecosystem that can also promote a competitive European payments industry in response to rapid technological, regulatory and business changes.

The European Commission's retail payment strategy, released in September 2020, focuses on four principles: (I) increasingly digital and instant payment solutions with a pan-European reach; 2) innovative and competitive retail payment markets; 3) efficient and interoperable retail payment systems; 4) efficient international payments, including remittances. It is part of a package that includes the Digital finance strategy and two regulatory proposals on digital operational resilience and Crypto-assets¹³. In this context, a number of actions are planned to ensure that European citizens and businesses benefit from a wide and diverse range of high-quality payment solutions, supported by safe, efficient and accessible infrastructures, in a competitive and innovative market.

One of the main lines of action promoted by the European Commission is to support the use of instant payments (as "new normal"), based on the pan-European SCT Inst scheme and related support infrastructures, and for improving cross-border payments. The Commission is therefore continuing its monitoring of payment service providers's adherence to the SCT Inst scheme and is considering the possibility of adopting a legislative initiative that would require adherence to the scheme, taking into account issues such as consumer protection, costs for PSPs, fees for users.

The Eurosystem's strategy, which was approved in November 2019 and was revised in October 2020, is based on three key elements: (I) the widespread take-up of instant payments; (II) development of a pan-European payment solution; and (iii) the possible introduction of a digital euro. Focusing mainly on physical and virtual point-of-sale payment solutions (e.g. shops and e-commerce), the strategy was then extended to also cover all other types of retail payments, using a so-called "holistic" approach.

With regard to the first element, in order to make instant payments accessible to all citizens and businesses, not only at the national level but across Europe, it is necessary for more PSPs to join the SCT Inst scheme and to ensure a pan-European take-up of the service. The Eurosystem has therefore taken significant measures to ensure reach for instant payments at the pan-European level via TIPS. In this respect, the migration of the technical accounts of the CSMs handling instant payments to TIPS has recently been successfully completed.

The Eurosystem also supports efforts to find retail payment solutions that meet five key objectives: (I) pan-European reach; (II) ease of use and cost-efficiency; (III) security and protection; (IV) European governance; (v) global acceptance.

The Eurosystem's strategy also includes ongoing reflections on the possible issuance by the European Central Bank of a digital currency in euro for retail transactions, with a view to supporting a digital

¹³ The European Commission's proposal for a regulation on *crypto-assets* (MiCAR) aims for the first time to introduce uniform regulation at the European level for the issuance or public offer of crypto-assets that are not classified as products or services already regulated by existing European law and for crypto-asset service providers. These services may be provided either by already supervised entities (banks, investment firms, operators of trading venues and asset managers) or by new entities specifically authorised under the new Regulation (the "Crypto-asset service providers" (CASP)). In general, the Regulation provides for the application to all crypto-asset service providers of prudential and organisational requirements similar to those for traditional intermediaries, as well as specific behavioural obligations vis-à-vis their customers. Additional requirements are in place for the provision of specific services, such as the custody and administration of crypto-assets on behalf of third parties or the operation of crypto-asset trading platforms.

substitute for cash, enhancing digital innovation in payments, supporting financial inclusion and strengthening the international role of the euro (see the digital euro section).

The array of initiatives taken by institutions in the field of retail payments, also include and work on a possible review of: (I) the PSD2, which was launched by the European Commission at the end of 2021, and in which a number of issues already partly highlighted in the above-mentioned Eurosystem and Commission strategies will be addressed; and (ii) e-IDAS Regulation (Regulation on electronic identification and trust services for electronic transactions in the internal market), which aims to facilitate the dissemination of digital identity in the field of payments (including cross-border payments).

As mentioned above, the European Commission and the Eurosystem, as catalysts, promote the adoption of private solutions to achieve the objectives of their strategies. On the other hand, in order for these solutions to be successful, they will need to be able to overcome the main criticalities that characterise other market initiatives, either already in place or in the process of being implemented. In particular, it would be key to set up a pan-European solution with shared and balanced governance between all promoters and with a price structure that is competitive with respect to current market solutions and that incentivises its use; in addition, particular attention should be paid to the investments already made by market players with a view to optimising these investments.

Basic principles of a possible solution

Based on the evolution of the card and digital payments industry in Europe over recent years, the basic principles for an EU-wide solution in line with the European strategy, summarised in the previous paragraph, can be based on the following factors.

- a. *Optimisation of domestic schemes*
- b. *Use of European assets and standards*
- c. *Viability of the business model*
- d. *Inclusiveness, interest alignment and gradual path*
- e. *Compatibility with a possible issuance of a digital euro*

a. *Optimisation of domestic schemes*

During the pandemic, there has been an exponential increase in digital payments, especially online payments, which have been mainly intercepted by international schemes (VISA/Mastercard) or Big Techs and fintech companies active in the e-commerce space.

European domestic card schemes have only partially benefited from this growth, especially with regard to cross-border transactions because:

- have been developed over time using different business approaches
- have different technical standards and are not interoperable across borders
- have different digital development plans and levels of maturity

On the other hand, it should be borne in mind that such schemes:

- are often “national champions” in terms of market shares and acceptance, although they have suffered competition from the international card schemes in recent years.
- represent assets with a value of hundred million euros
- are a key partner of the local ecosystem (banks, technical infrastructures, terminal operators, processors, etc.)
- are highly skilled in payments and able to meet local needs
- manage brands recognised by customers, benefiting from a high degree of trust and recognition, built over decades of operation
- generally, have lower costs than international competitors¹⁴, which are also reflected in lower fees for end customers (consumers and merchants)

The creation of a European card scheme can therefore be based on the optimisation of these assets, defining a process in which these market participants are called upon to contribute, both in terms of expertise and in terms of value.

b. *Use of European assets and standards*

Over the years, Europe has already shown to be able to build excellent market infrastructures and standards and to implement complex project initiatives through dedicated scheme management structures, balanced and effective cooperation and *governance* models, and the definition of shared and sustainable frameworks and timelines for all market participants. The implementation

¹⁴ European Commission, Report on the impact of IFR

https://ec.europa.eu/competition/sectors/financial_services/IFR_report_card_payment.pdf

of a fully European solution could benefit from existing pan-European initiatives (e.g., the SCT Inst, SRTP and SPL schemes mentioned above).

c. Viability of the business model

A *business* model for the *retail* payments market is sustainable if it can repay:

- the investments in technological infrastructures and the measures to take into account ongoing innovation;
- the payment service providers;
- the management structure of the scheme.

Investment in technological infrastructures can be reduced by assessing:

- the reuse of existing clearing and settlement infrastructures;
- the setting up of an interoperability model between domestic schemes, reusing and not disposing of what is already available and functioning;
- the adoption of a *digital first* model, before integrating the traditional infrastructure (*i.e.*, payment cards) using a multi-rail approach.

In particular, the remuneration model must be competitive with respect to current market solutions (e.g., cards) and, at the same time, must equally distribute value along the payment chain (*i.e.*, 4 party model).

This remuneration model also appears necessary to ensure:

- on the consumer side, all “exceptions” that a payment transaction may involve (*i.e.*, reject, reimbursement, repayment, return of goods, right of rethinking, etc.), as well as their being free of charge for the consumer;
- on the merchant side, the so-called *payment guarantee*, and compliance with the time frames for crediting the amounts laid down in the relevant legislation.

Finally, from a cost perspective, it is worth noting that the initiation channel of transactions also has to be taken into account. For example, an instant credit transfer initiated from the home banking is different from an order on an e-commerce, or an in-shop transaction initiated by smartphone from a QR Code: business models, operating costs and underlying schemes are completely different and even if they were using the same settlement infrastructure, they should still be governed by diversified pricing models.

d. Inclusiveness, interest alignment and gradual path

The setting up of a single pan-European solution must start with a fully-fledged assessment of the starting point of each individual country involved taking into account, for example, whether there is a domestic scheme or not. This requires envisaging different implementation paths for each individual country, on the basis of the need for some countries to interface their domestic schemes to the new solution, while others will need to develop the solution from scratch or enter into a partnership with other Member States.

Once the *target* solution has been identified, in order to facilitate implementation and minimise investments, the following should be considered:

- building a roadmap that favours the gradual adoption of use cases, giving priority to those with a smaller impact on the adaptation of the infrastructure (e.g. *e-commerce* digital solution) and also taking into account the use cases involving providers offering the payment initiation services and account information services regulated by PSD2;
- the active involvement of domestic schemes in the adoption and coordination of this implementation roadmap, with a long-term perspective of optimisation of these domestic assets and not of a mandatory write-off;
- the need for a path that could favour convergence of those countries where there is no domestic scheme and/or that have recently invested in multi-country initiatives.

Once several countries have agreed the target solution for the EU, an appropriate governance for the management of the solution should be set, having regard to inclusiveness and truly European spirit, optimising the existing assets.

e. Compatibility with a possible issuance of a digital euro

Finally, also taking into consideration that in the coming years the project of the digital euro will be shaped in a more definite manner, in order to optimise the contribution of the private sector to that project, as well as, minimise investments as mentioned above, possible synergies between the digital solution for payments in the EU and a possible digital euro will have to be duly identified, through a close and frank dialogue with the Eurosystem and in full support of the innovations that the digital euro will introduce.

Use cases covered

The development of a pan-European solution will need to be capable of capturing the different use cases and different user segments and therefore covering transactions between individuals (P2P) and between private and business or public administrations (P2B, P2G) with the aim of supporting the efficiency and security of the use of digital payments. See **Box 1** for an example of possible use cases.

What is needed to create a pan-European solution

The above suggests a *digital first* approach, in which building on existing digital solutions, without wasting national assets and brands characterised by a high degree of loyalty, cross-border interoperability takes place in accordance with a “federative” approach, allowing payers and merchants belonging to the same “pack” to complete payment transactions.

A concrete example in the above direction can be the solution proposed by the European Mobile Payment Systems Association (EMPSA), which has developed a process and technical framework able to interlink, through a single European hub, all existing digital payment solutions without requiring any changes to the existing systems and protocols of connected domestic schemes; in mid-June 2022 the association has 15 members¹⁵ covering 16 countries, with more than 90 million “multicurrency” users.

This approach requires ways to also include European countries that do not currently have an autonomous domestic scheme. From this perspective, the recent announcement by EPI¹⁶ of the creation of a digital instant payment solution could be a possible means of integration to ensure genuine pan-European reach.

In the future, although at a later stage, the possibility of extending the federative approach to the use of physical cards is not ruled out by the “digital first” solution; in this case, however, it should be taken into account the need to intervene on the payment acceptance side (i.e., physical and virtual POSs), on the issuance side and on the authorisation, processing (routing, clearing & settlement) and settlement of transactions (**see Box 2**). An assessment of the impact in terms of time of development/dissemination and costs is also required.

The path to be followed for the setting up of a pan-European project using an open “digital first” solution, therefore, requires that the following steps in the process be completed in operational terms [**see Box 3 for an example**].

a. Identification of technical standards

In order to ensure that very different local schemes can be interlinked, it is necessary to identify some key elements of standardisation (**see Box 3, a**).

b. Scheme and business rules for managing the entire payment life cycle, not only the monetary transfer

Standardisation of technical interoperability solutions is not in itself adequate and sufficient to ensure interoperability: it is necessary to establish a minimum value proposition for the product/service and to provide for their management in terms of scheme and business rules (**see Box 3, b**).

c. Lean but robust pan-European organisation

¹⁵ Swish (Sweden), Vipps (Norvegia), Mobilepay (Denmark and Finland), Blink (Poland), Bancontact/Payconiq (Belgium, Netherlands and Luxembourg), Twint (Switzerland), MB Way (Portugal), Bancomat Pay and Plick (Italy), Bluecode (Germany and Austria), Bamcard (Bosnia & Herzegovina), Bankart (Slovenia), Borica (Bulgaria), iDeal (the Netherlands), Bizum (Spain).

¹⁶ <https://www.epicompany.eu/>

The need to manage both a technological component and a scheme dimension requires a stable organisation dedicated to the creation of a new pan-European payment solution, going beyond the design dimension, as well as one or more infrastructures for the settlement of transactions (see **Box 3, c**).

d. Commitment on the issuing and acquiring side

In order to make the initiative a success, it is essential that the full commitment of the different providers and stakeholders in the payment chain be attained, both in terms of the dissemination of payment instruments (e.g., Cards, App) and the necessary implementations for customer onboarding (see **Box, 3.d**)

Box 1 — Example of use cases

P2P

Two sub-cases are identified for the transfers of funds between private individuals, depending on whether or not the beneficiary is registered to the service:

- i. Real time Customer2Customer*
- ii. T+ 1 Customer2notCustomer (SEPA AREA)*

In the case *i.* above, the functionality allows users to exchange money in real time using the payee 's telephone number as a proxy. Once a contact from the telephone book is selected, or the phone number entered, the user enters the amount of the transfer and authorises the transaction with the SCA by inserting his/her *PIN/fingerprint/touchID* on his/her device.

The User can also send money to users who are not registered to the service provided that the telephone number is known (case *ii.* Above), again with an amount confirmed via the SCA with *PIN/fingerprint/touchID* on his /her device. In this case, the recipient, upon receipt of an SMS notification, must follow the instructions given to enter the IBAN on which to be credited.

P2B —Payments from user to merchants

The payment of goods and/or services includes two macro-subcases: e/m-commerce and in-store payments.

- i. E/m-commerce*

In accordance with the following procedures:

Customer Initiated Transaction

Customer Initiated Transaction with an SCA exemption

Merchant Initiated Transaction (recurrent direct debits)

The *e/m commerce* functionality makes it possible to make online purchases using the user's telephone number linked to his/her IBAN.

In the case of Customer Initiated Transactions (CIT), the user enters her/his phone number on the payment gateway, generating a payment request to his/her payment app. The user's payment app shows information about the merchant, store and transaction amount; the user authorises the transaction through SCA with the *PIN/fingerprint/touchID* on his/her device. Once SCA is successfully executed, the APP sends to the Issuer the request for authorisation for the payment.

In the case of CIT with an SCA exemption, the user makes payments to merchants that do not require an SCA to be performed in the payment app (one-click purchase), requesting authorisation directly to the Issuer. The Issuer always has the power to approve or decline the payment, with the addition of a soft decline that enables the merchant to resubmit the same payment by requesting the SCA to the user.

In the case of Merchant Initiated Transaction (MIT), the merchant requires SCA for the mandate (e-mandate) that the user is signing with the merchant (e.g., subscriptions, etc.) generating a token associated to the signed mandate. The user, having received a request for payment related to the mandate, confirms its willingness to proceed with the APP via *PIN/fingerprint/touchID* on its device and thus confirms the selected payment method. Whenever the merchant sends a payment request directly to the Issuer for that mandate, he/she is obliged to send the relevant token in order to enable the Issuer to verify its validity.

Box 1 — cont.

In store

Different methods and proxies are provided for:

1. *Merchant presented Dynamic QR-code (Customer scan)*
2. *“Send money” request from Static QR- Code*
3. *“Send money” request from geolocation*
4. *M.O.T.O with telephone number*
5. *Proxy/Loyalty Merchant scan*
6. *Bill Payment*

The in-store functionality enables the user to make payments at *POI* via his/her own APP.

In the dynamic QR-Code case, the merchant enters the amount and asks the platform to generate a token encapsulated in the QR-Code, which relates to his/her store for that specific amount. Once the user scans the QR-Code via the APP, the user recovers and checks location, store and amount of payment, confirming the transaction using the SCA with the *PIN/fingerprint/touchID* on his/her device; if the SCA is successfully executed, the APP sends to the *Issuer* the request for authorisation for the payment.

The in-store use case can also be performed by the user scanning the static QR-Code (case 2) on the merchant’s cashier desk, with the amount entered and confirmed by the user directly via her/his app; alternatively, (case 3) the user can search for the geolocalised merchant in her/his app, and then enter the amount and authorise the payment with SCA.

By contrast, the use case (No 4) Mail Order Telephone Order (*M.O.T.O.*) allows the user to provide her/his telephone number for instructions either by telephone or by post. Once the merchant has received the telephone number from the user, it generates a payment request to his/her APP to enable the user to confirm the payment via SCA with the *PIN/fingerprint/touchID* on his/her device.

The proxy/loyalty case (No 5) makes it possible for the user to associate her/his phone number with any loyalty programme provided by the merchant (e.g., supermarket fidelity cards). During the payment phase, the user receives a payment request on his/her app following identification through the loyalty programme; the request is then authorised via SCA by the user.

The case of using Bill Payment is a sub-case of the in-store one with dynamic QR-Code.

P2G

- i. *Customer Initiated Transaction (WEB)*
- ii. *Customer Initiated Transaction (APP)*
- iii. *Government Initiated Transaction*
- iv. *Bill Payment*

The P2G functionality enables the user to make payments at public administrations using his/her telephone number associated with his/her IBAN.

These use cases replicate those described above for e-commerce: the payment request of the tax/bill is received in the user’s app; the user then confirms the payment with the *PIN/fingerprint/touchID* on his/her device.

Again, the use of Bill Payment is a sub-case of the e-commerce P2G.

Box 1 — cont.

Cash withdrawal

- i. *ATM withdrawal with Dynamic QR-code*
- ii. *Withdrawal from POS with Dynamic QR-code*

The functionality allows users to withdraw cash at ATMs using their app on which to choose the amount to be withdrawn, or in the case of use of POS withdrawals, by informing the merchant of the amount of the withdrawal.

After selecting the cardless withdrawal on the ATM's pinpad, the user will be required to manage the transaction completely via her/his APP.

Through their own APP, the user scans the dynamic QR code shown on the ATM screen, selects the amount and authorises the transaction. Once authorised, the ATM dispenses the banknotes.

The dynamic QR code shown on screen will provide:

- an ATM identifier
- an identification of the withdrawal transaction.

The APP will give the user the possibility to choose between predefined amounts and an amount defined by the user. If the amount to be withdrawn is not available, the transaction must be restarted.

Authorisation to the transaction will be completed by the user by entering his/her *PIN/fingerprint/touchID* on his/her device.

For POS withdrawals, however, the dynamic QR-Code generated by the merchant includes in the payment token the final withdrawal amount including any related service fees.

B2P & G2P (government repayments and subsidies)

The B2P functionality enables an end user to receive a transfer of money from a merchant in real time, using the phone number as a proxy for the account to be credited. The merchant, at *POI* or via the application provided by his/her Acquirer, enters the end user's telephone and fiscal code/tax number to verify that this combination is correct before making the transfer. If the association is confirmed by the scheme, the merchant can then enter the transfer amount to be made in real time, confirming he/she is willing to proceed with SCA authentication.

In the G2P case, it is the public administrator that proposes the transfer to the end user, e.g. generating real-time transfers of any tax credit earned by the citizen.

Box 2 — Example of the extension of the “digital first” model to the physical network

A pan-EU solution for the physical acceptance network (card-based proximity payments) requires standardisation at the European level of the kernels necessary for the management of card-terminal interactions for both contact and contactless transactions. While a market standard (EMV) exists for the contact interface, there is no single solution for the contactless interface, but a plethora of proprietary solutions.

With regard to the e-commerce acceptance network (card-based remote payments), standardisation should take place from both a technical and a user experience perspective: by leveraging on tokenisation platforms and solutions that allow the use of proxies in centralised /decentralised directories, it would be ensured, on the one hand, a widespread re-use of technology (tokenisation) largely employed for card-present payments, while on the other hand, the interoperability of directories would allow existing solutions to be maintained and up and running, as well as their ownership in terms of users’ data.

The adaptation of the acceptance network would lead to a necessary re-issuance of payment cards and related authorisation systems. Standardisation could also be achieved through the identification of a single application identifier (*AID*), to complement existing local *AIDs* with a dual purpose: guaranteeing the business continuity of current domestic schemes and, on the other hand, preparing for any other development.

Such activities, although costly, would also allow the processing of transactions initiated by card (i.e., with physical cards or card “data” for remote transactions), with the possibility of increasing volumes considerably in a short period of time.

Box 3 — Example of design of the “digital first” model for interoperability of national schemes

Identification of technical standards

- P2B transaction initiation mechanism (card present and card not present) via QR Code
- Initialisation of P2P money transfers using the customer’s mobile number as a proxy
- Routing of transaction to the party responsible for authorising the transaction, also via the already available SRTP scheme
- Settlement of transactions between issuer and acquirer of different card schemes using existing European instruments, such as the SCT Inst scheme.
- [...]

Scheme and business rules for managing the entire payment life cycle, not only the monetary transfer

Solutions that only govern the transfer of money between payer and payee do not cover the whole process around a payment transaction, which also require, for example, a common set of rules for the management of:

- fraud, disputes, reimbursements, complaints
- reporting of payments and large-scale repayments
- service fees
- brand (e.g., choice or not of a single brand)
- operational and business rules
- cross-border interchange fees
- [...]

Organisation/Governance and infrastructure

In addition to IT and product, dedicated resources should be provided for the management of relations with members, marketing and promotion of the solution, legal and compliance. A balanced governance that overcomes the risk of a solution focused on few characteristics and interests should be ensured. The robustness of the organisation should also be confirmed by adequate capital endowment by its shareholders.

Since the business case for such an initiative will only be a deficit in view of the low transaction volumes (partly due to a start-up situation, partly as it relates only to cross-border transactions), although the strategic value at the EU level remains unaffected and clear, it is necessary to assess from the outset funding based, for example, on a public-private hybrid model.

The pan-European, private sector infrastructure or an infrastructure directly operated by the Eurosystem (e.g., TIPS) must contribute, especially in the start-up phase, to:

- guarantee a full standardisation of the settlement at the European level, to support all players, including international players, wishing to operate in Europe;
- generate economies of scale and scope for the benefit of all stakeholders;
- provide an opportunity to harmonise market access conditions for new players, fostering competition.

Commitment on the issuing and acquiring side

Ensuring the creation of an economic model that can encourage participation of issuers and acquirers and support the investments necessary for the launch of the initiative:

- communication/contractualisation of customers;
- re-issuance of cards;
- adaptation of authorisation and processing systems;
- adaptation of the acceptance network;
- implementation of the new processes and procedures envisaged by the new model.