The euro's effects on noncash retail payments

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A common European currency, while being a milestone for the European Union, was just the first step toward integrated euro payments markets. The Single Euro Payments Area (SEPA) was not born until 2014, when the migration of domestic formats and national infrastructures for credit transfers and direct debits to European technical standards and procedures was completed. While these changes have of course come at a cost for the financial industry, SEPA has definitely had an impact on the efficiency and speed of retail payments, but also on the security of transactions as well as on pricing. Some issues remain to be solved, e.g. SEPA for card transactions or IBAN discrimination. Nevertheless, SEPA migration has been a success – and, in turn, a stepping stone to further innovations, like instant payments.

The changeover to the euro 20 years ago has served as a strong catalyst for many other steps of financial market integration in Europe – such as the launch of TARGET, the Eurosystem's real-time large-value gross settlement system, also in 1999, and the migration to common standards and business rules for cashless retail payment instruments, in 2014, when the single euro payments area ("SEPA") was born.

This article describes the process of integrating European retail payments, including legislative initiatives, the impact of the retail payments infrastructure und the payments behavior of businesses and consumers.

1 The role of the Eurosystem in the area of payments

In the area of payments, the Eurosystem acts in different roles: It has an oversight function, it acts as a catalyst, and it operates infrastructures of its own.

In its oversight capacity, the Eurosystem sets out objectives for safety and efficiency and issues corresponding oversight regulations, standards, guidelines and recommendations. With a view to monitoring compliance and addressing market developments, it collects relevant information, assesses the information against the oversight objectives and adjusts the prevailing standards when necessary.

In its role as a catalyst, the Eurosystem engages in a number of initiatives aimed at promoting efficiency and innovation to achieve greater integration in financial markets in Europe, like SEPA.

In its operating function, the Eurosystem runs TARGET Services: These are a number of services which ensure the free flow of cash, securities and collateral across Europe and include TARGET2 (for settling payments), TARGET2Securities (T2S, for settling securities) and the recently launched TIPS (for settling instant payments). In this article we focus on the payments part of the European systems – on TARGET2 and TIPS.

Being an integral part of the Eurosystem, the Oesterreichische Nationalbank acts in those roles as well. Besides representing Austria in various committees and working groups of the Eurosystem, market groups and European legislators, the OeNB focuses also on the development and support of the domestic payments market, as policymaker, overseer and operator of the Austrian clearing services: Clearing Service Austria (CS.A) for domestic transactions and Clearing Service International (CS.I) for cross-border transactions in euro within the EU. Both are

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operated by Geldservice Austria (GSA), which is a subsidiary of the OeNB and Austria's largest commercial bank, ensuring the supply of cash for banks, savings banks, post offices and also for many commercial businesses. Since 2011, GSA has also been providing the clearing services for SEPA credit transfers and SEPA direct debits.

Box 1

TARGET2

TARGET2 *is the Real-Time Gross Settlement (RTGS) system owned and operated by the Eurosystem. TARGET2 uses central bank money to settle payments related to the Eurosystem's monetary policy operations as well as bank-to-bank and commercial transactions. Every five days, TARGET2 processes a value close to the entire amount of euro area GDP, which makes it one of the largest payment systems in the world. Apart from other central banks, more than 1,000 banks use TARGET2 to initiate transactions in euro, either on their own behalf or on behalf of their customers.*[2] *As the name implies, TARGET2 is already the second generation of the system; it replaced TARGET in 2007.*

2 Migration to SEPA

The Single Euro Payments Area (SEPA) created a pan-European market for cashless retail payments in euro – mainly for credit transfers and direct debit. Migration to SEPA of the previous national retail payment systems was a staggered process, which started in 2008. SEPA can be seen as a natural progression from the introduction of euro and a further step in realizing the full potential of the Single Market for Europe.

SEPA replaced a multitude of national retail payment systems, which had originally been created by individual banks and banking communities to meet national requirements for handling payments in national currencies and used proprietary national standards for credit transfers and direct debits. These national payment networks operated with no or little cross-border interoperability in a fragmented retail payments market. Austrian banks, for instance, used the so-called EDIFACT standard[3] as well as national account identifiers and national bank identifiers for domestic payments. Conducting cross-border transactions required other technical formats and additional processing channels (like pan-European clearing houses), thus leading to higher costs and processing times.

The underlying idea of SEPA was to remove this fragmentation, create interoperability between payment systems by using international (ISO XML) standards, benefit end users and lead to more competition on a European level.

[2] *https://www.ecb.europa.eu/paym/target/html/index.en.html.*

[3] *EDIFACT is an international message standard; it is an acronym for electronic data interchange for Administration, Commerce and Transport. https://www.gxs.co.uk/wp-content/uploads/tutorial_edifact.pdf.*

Box 2

SEPA standards

To enable frictionless end-to-end straight-through processing of SEPA transactions, the European Payments Council (EPC) developed payment schemes for SEPA credit transfers and SEPA direct debits.[4]

As a common technical standard, subsets of XML ISO 20022 were chosen. Bank-to-bank messages ("pacs") are mandatory for use, whereas customer-to-bank payment initialization messages ("pain") are not, but they are strongly recommended.

The most obvious change resulting from SEPA migration for consumer and enterprises was the implementation of international bank account numbers (IBAN) and business identifier codes (BIC) instead of the domestic account and bank identifiers. Following a phasing-in period, use of the new identifiers became mandatory for initiating credit transfers and direct debits on August 1, 2014. Since February 2016, the "IBAN only" rule has applied for credit transfers and direct debits within the euro area; i.e. it is no longer necessary to indicate the BIC for such transactions. The Austrian IBAN consists of 20 digits, containing the country code, two check digits[5] *and the national identifiers of the bank and the account.*

SEPA was a major undertaking not only with regard to the development and implementation of common technical standards and business procedures but also with regard to the establishment of a European legislative framework setting common rules for retail payment instruments, establishing the principle of the equality of charges between cross-border and national payments in euro and creating the conditions for more competition in the provision of payment services (see box 3). This legislative framework is being constantly updated to ensure more competition, transparency, safety, efficiency and innovation for the European retail payments market.

The roll-out of SEPA credit transfers (SCT) and SEPA direct debits (SDD) started in 2008 and 2009, respectively. Thus, seven or eight years after the euro had arrived in people's pockets, retail customers became able to make euro payments throughout Europe as easily, securely and efficiently as they did within their own countries – provided their payment service providers were already offering the new payment instruments at the time, because migration to the new system remained voluntary initially. In fact, adoption of SEPA schemes proceeded slowly because voluntary migration was perceived as expensive and risky for first movers (who would have to keep both systems running in parallel).

Therefore, additional EU legislation was enacted to set end dates for completing the migration of credit transfers and direct debits to the harmonized SEPA standards: ultimately, August 1, 2014, for euro area countries and on October 31, 2016, for non-euro area countries. SEPA covers all euro payments in the EU and applies to payments in euros in other European countries: Iceland, Norway, Switzerland, Liechtenstein, Monaco and San Marino.[6]

[4] *Credit transfer: A payment instrument allowing a payer to instruct the institution with which its account is held to transfer funds to a beneficiary. Direct debit: A payment instrument for the debiting of a payer's account whereby a payment transaction is initiated by the payee on the basis of authorization given by the payer (ECB glossary): https://www.ecb.europa.eu/home/glossary/html/glossc.en.html.*

[5] *https://www.iban.com/iban-checker.*

[6] *https://www.ecb.europa.eu/paym/retpaym/html/index.en.html.*

Figure 1

Timeline of the SEPA migration process

Adoption of Payment Service Directive 1	Launch of SEPA credit transfers	Launch of SEPA direct debits	SEPA migration end date for euro area countries[1]	Adoption of Payment Service Directive 2	SEPA migration end date for non-euro area countries
2007	2008	2009	2014	2015	2016

Source: Author's compilation.

[1] Subject to a waiver for niche products (less than 10% market share) and one-off direct debits at points of interaction until 2016.

Box 3

Legal acts relating to SEPA

Regulation (EC) No. 2560/2001 *of the European Parliament and of the Council of 19 December 2001 on cross-border payments: This regulation stipulates that the transactions charges for cross-border transactions in euro must be equal to those for domestic transactions.*

Directive 2007/64/EC *of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market* ***(Payment Services Directive 1 – PSD 1):*** *This directive is known as the legal framework for SEPA. It provides clarity with regard to the core rights and obligations of users and providers of payment services. It introduces a new type of payment service provider – payment institutions – and obliges payment service providers to process payments within certain time limits (execution time "D+1" has applied since January 1, 2012).*

Regulation (EC) No. 924/2009 *of the European Parliament and of the Council of 16 September 2009 on cross-border payments in the Community: Replaced Regulation (EC) No. 2560/2001 by including also the charges for cross-border SEPA direct debits.*

Regulation (EU) No. 260/2012 *of the European Parliament and of the Council establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No. 924/2009* ***(SEPA Regulation):*** *This regulation set February 1, 2014 (later August 1, 2014) as the deadline for replacing national credit transfers and direct debits with SEPA credit transfers and SEPA direct debits for euro area countries, and October 31, 2016, for non-euro area EU Member States. The regulation also requires the use of certain common standards and technical requirements, such as the use of international bank account numbers* ***(IBAN)*** *and the financial services messaging standard* ***ISO 20022 XML*** *for all credit transfers and direct debits in euro in the EU.*

Directive 2014/92/EU *on the comparability of fees related to payment accounts, payment account switching and access to payment accounts with basic features* ***(Payment Account Directive – PAD):*** *This directive provides EU citizens with a right to a basic payment account irrespective of their place of residence or financial situation. It also improved the transparency of bank account fees and set uniform rules for switching a bank account from one bank to another.*

Directive (EU) 2015/2366 *of the European Parliament and of the Council on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No. 1093/2010, and repealing Directive 82007/64/EC* ***(Payment Services Directive 2 – PSD2):*** *This directive sought to improve the existing rules of the Payment Services Directive, so that it also covered third-party providers of payment services (e.g. payment initiation services and account information services). Further proposed changes were aimed at further strengthening consumer protection in the context of payments, e.g. reduced liability for non-authorized payments or unconditional refund right for SEPA direct debits.*

Regulation (EU) 2015/751 *of the European Parliament and of the Council on interchange fees for card-based payment transactions* ***(Interchange Fee Regulation):*** *This regulation applies to card transactions for which both payment service providers are established within the EU. It introduced a cap on interchange fees for consumer debit and credit cards and removed a number of business rules that had restricted pan-European issuing, acquiring and processing in the cards market.*

3 Impact of SEPA on the efficiency of payments

3.1 Fees and charges for payment services

One of the objectives of SEPA was to make European payments more efficient, i.e. to lead to faster payments and lower costs and charges for payment service providers, businesses and consumers. This effect has since been evaluated repeatedly, for instance by PWC (2014) and by the European Commission (2013). In the assessment of the Payment Services Directive 1 made by the European Commission, a comparison of the level of fees and charges in 2012 with those reported in previous studies showed that, in general, fees for domestic and cross-border credit transfers have decreased. In the case of debit card-based withdrawals at ATMs, fees in the euro area have remained stable with a slight decrease in average prices although there were differences across Member States. For over-the-counter transfers, fees were higher in 2012 than in 2005 in some countries – which may be attributable to the fact that the manual handling of payments and cash (payment service providers have been trying to scale back) is more expensive than fully automated processing.

Non-euro area EU Member States, while covered by Regulation 924/2009 (see box 3), did not benefit from the effects of that regulation because in these Member States domestic payments in euro are expensive or are not possible. As a consequence, end users in non-euro area EU Member States pay high fees whenever euro payments cross the border of their country or when people pay abroad. For this reason, Regulation 924/2009 was reviewed in 2018 and has been amended in 2019 to include all currencies of the EU.

The Payment Services Directive 2, which was incorporated into national law by January 13, 2018, provides the legal foundation for the further development of an integrated European market for cashless payments. It takes into account innovative payment services like Internet and mobile payments. The directive also opened up the market to third-party providers offering account information services and payment initiation services.

The Payment Services Directive 2 has since been complemented by the Interchange Fee Regulation, which puts a cap on interchange fees charged between banks for card-based transactions. This should decrease the costs for merchants when accepting consumer debit and credit cards and therefore could lead to an increased acceptance of cards.

3.2 Speed

The Payment Services Directive 1 introduced a maximum time limit for the processing of credit transfers in euro in the EU in order to improve the efficiency of payments. Since 2012 all credit transfers initiated by the payer and denominated in euro or the currency of a Member State outside the euro area are subject to a maximum one-day execution time. For all other payments, like for example direct debits and card payments, in the absence of an explicit agreement between the payment service provider and the payer setting a longer execution time, the same one-day execution time applies. The agreed periods could be extended by an additional business day in the case of paper-based payment orders. In line with the Payment Services Directive 2, Member States may establish rules specifying an execution time shorter than one business day.

3.3 Security

The Payment Services Directive 2 set rules for improved security in electronic payments: "The security of electronic payments is fundamental in order to ensure the protection of users and the development of a sound environment for e-commerce. All payment services offered electronically should be carried out in a secure manner, adopting technologies able to guarantee the safe authentication of the user and to reduce, to the maximum extent possible, the risk of fraud."[7]

As outlined in the corresponding regulatory technical standards of the European Banking Authority (EBA RTS),[8] the "strong customer authentication" generated by the Payment Services Directive 2 is based on two or more of three kinds of elements that are independent of one another.[9] The requirements of strong customer authentication apply to payments initiated by the payer, regardless of whether the payer is a natural person or a legal entity. The authorization must also include elements that dynamically link the transaction to a specific amount and a specific payee.

Alongside this authentication, the Payment Services Directive 2 requires payment service providers to have in place security measures to protect the confidentiality and the integrity of payment service users' personalized security credentials when payer access their payment accounts online, initiate an electronic payment transaction and/or carries out any action through a remote channel.

The Payment Services Directive 2 also introduced a liability shift: Providers who fail to authenticate a transaction appropriately will now be held liable for any resulting breaches. In cases where the payer's payment service provider does not require strong customer authentication, the payer will not be required to bear any financial losses unless the payer has acted fraudulently. In cases where the payee – or the payee's payment service provider – fails to accept strong customer authentication, it will be required to refund the financial loss caused to the payer's payment service provider.

3.4 Costs of SEPA migration

Implementing ISO 20022 XML – which was one of the technical requirements for payment service providers, companies and public administrations under Regulation (EU) No. 260/2012, with a view to bringing efficiency gains due to more and international standardization – of course came at a cost for banks and companies. Unfortunately, hardly any concrete figures have become available on this point. Therefore, most documents (including the recently published SEPA Impact Assessment of the Eurosystem[10]) refer to a cost and benefit analysis made by Europe Economics (2016) for seven EU Member States[11] covering migration costs, indirect costs, benefits and the implementation process.

[7] *Payment Services Directive 2, recital 95.*

[8] *Commission Delegated Regulation (EU) 2018/389 supplementing Directive (EU) 2015/2366 of the European Parliament and of the Council with regard to regulatory technical standards for strong customer authentication and common and secure open standards of communication.*

[9] *Categorized as knowledge, possession or inherence. See for instance https://www.adyen.com/blog/psd2-understanding-strong-customer-authentication.*

[10] *https://www.ecb.europa.eu/pub/pdf/other/ecb.sepamigration201902~4bbd0e41b8.en.pdf?8216d874fd2371e7007e9ee151d02df7.*

[11] *Five euro area countries (Belgium, Finland, France, Ireland and the Netherlands) and two non-euro area countries (Denmark and the U.K.)*

In terms of benefits, a report of the European Commission highlights the improved efficiency of financial transactions due to lower transaction fees for cross-border transactions in the euro area and due to information being passed in full and without alteration. These benefits are available to large corporates and small and medium-sized enterprises, allowing them to fully exploit the Single Market opportunities.[12] There was also evidence of improved liquidity management and of an increase in competition at all levels of the value chain.

4 Challenges remaining to be solved

The SEPA Impact Report from the European Commission to the European Parliament and the Council[13] concludes that the SEPA Regulation has been applied correctly across the EU. Some issues that persist have been addressed by Member States and their resolution will be monitored in the future.

4.1 IBAN discrimination

"IBAN discrimination" means the practice of accepting payments only when made from an account located in a country specified by the payee. Companies and institutions within the SEPA area are obliged by law to accept payments from any account identified by the IBAN of any EU Member State. This includes credit transfers as well as direct debits. Article 9 of the SEPA Regulation says that a payer (in the case of a credit transfer) or the payee (when initiating a direct debit) shall not specify the Member State in which that payment account is to be located, because this could restrict competition on the payments market.

Currently there are still cases where companies allow their customers to pay only from accounts in specific countries. Cases of IBAN discrimination are closely monitored by the relevant national authorities (such as the Financial Market Authority in Austria) and the European Commission.

Box 4

SEPA for cards

Payment cards are the most widely used electronic payment instrument in Austria (and in the European Union too), accounting for 43% of all noncash transactions, followed by credit transfers (32%) and direct debits (25%).[14] They are also the fastest growing cashless payment instrument with an average yearly increase of approximately 7% per number of transactions in Austria (approximately 10% in Europe).[15]

The rapid growth has also been supported by the use of contactless cards. Contactless payments are faster and more convenient and so may provide an incentive to use electronic payments at the point of interaction. They seem to have the potential to replace a number of low value transactions usually done with cash. In Austria the number of near-field communication

[12] *European Commission staff working paper (SEC(2010) 1584 final) accompanying the proposal for Regulation (EU) No. 260/2012.*

[13] *Report from the Commission to the European Parliament and the Council on the application of Regulation (EU) No. 260/2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No. 924/2009, COM(2017) 683 final, 23 November 2017.*

[14] *ECB Statistical Data Warehouse; based on 2017 data.*

[15] *ECB Statistical Data Warehouse, number of transactions 2014–2017, payments by cards issued by resident payment service providers.*

(NFC) transactions with debit cards at points of interaction tripled from end 2016 until end 2018. By now more than 60% of all debit card transactions at physical points of interaction are contactless.[16]

With regard to credit transfers and direct debits, common schemes were set up that allow users to send and receive euro payments to/from any beneficiary in the SEPA countries. For card payments, another strategy has been chosen to allow existing schemes and their operators to adjust to a new set of technical and business standards and processes. The Eurosystem and the European Payments Council have supported the creation of "SEPA for cards" and some progress had been made – also with the support of the European regulators that enacted the Interchange Fee Regulation.

5 Has payments behavior changed in Europe and Austria?

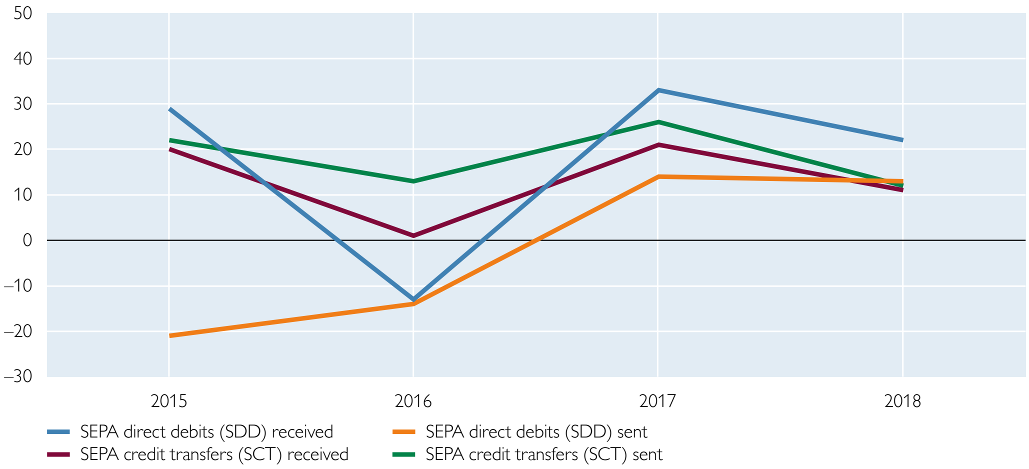
In 2016 the Eurosystem conducted a study about point-of-sale payments. These data show that most payments in the euro area and Austria continue to be made by cash.[17] Additional data from Austrian studies[18] confirm that payment behavior is changing slowly: The cash share is decreasing, whereas the share of payments by payment cards, credit transfers and direct debit has been increasing continually. That means electronic payments are getting more important, especially in a world that becomes more and more digital and international (e.g. e-commerce).

One of the indicators for the success of SEPA is the cross-border use of the SEPA credit transfer and direct debit schemes. The following chart shows the annual changes (in %) of cross-border SEPA credit transfers and direct debits processed by Austrian Clearingservice International (CS.I) in recent years.

Chart 1

Development of cross-border SEPA transactions

Annual change in %



Source: OeNB.

[16] *Statistics provided by Payment Service Austria; end of 2017.*

[17] *Esselink and Hernandez (2017).*

[18] *Rusu and Stix (2017).*

The increase in cross-border credit transfers confirms that the migration to the SEPA credit transfer scheme has been successful, having created new opportunities for end users of payment services sending and receiving credit transfers in the EU. The numbers confirm that this offer has been taken up.

Compared to credit transfers, no cross-border solutions for direct debits existed before the launch of the SEPA direct debit scheme. It could have been expected that there would be very few cross-border SEPA direct debits in the initial years after migration until the knowledge of the scheme and its capabilities became widespread. However, this appears not to be the case.

As the number of transactions sent by Austrian banks via CS.I have remained stable,[19] the number of SEPA direct debits received has increased steadily.

It can be concluded that this increase shows the success of the SEPA direct debit scheme in increasing competition. Pan-European companies have been able to consolidate their direct debit processing to one country and consumers have been starting to use a single payment account for all their direct directs. The increase in cross-border SEPA direct debits shows the value and importance of the migration to the SEPA direct debit scheme despite the fact that the migration to the SEPA direct debit scheme was considered as costly and complex by many stakeholders.

It must be noted that the cross-border use of both the SEPA credit transfer and direct debit scheme is still only a fraction of the transactions at the domestic level (6.5% and 1.2% of, respectively, credit transfers and direct debits[20]), but more and more euro payments are made between countries of the EU. SEPA migration has provided the foundation to facilitate an interoperable, efficient and competitive payment network in the EU.

6 Instant payments – The way to pay in the future?

The speed of retail payments has gained increasing importance with the latest improvements in the integration of retail payment markets, payment innovations and Internet access. Today retail payment services usually take up to one working day – in accordance with the Payment Services Directive 2. But consumers expect easier and faster services. With the spread of smartphones and e-commerce, the digitalization of the economy entails a general acceleration of payments. Customers shop on the Internet anywhere and at any time, including during evening hours, weekends and holidays – when most traditional electronic payments are not operational. At the same time, suppliers want the certainty of being paid as soon as they sell their goods and services.

As a response to growing consumer demand for instant payments – meaning credit transfers within 10 seconds – several European countries have developed their own national solutions for rapid payments, but usually these schemes stop at national borders, creating a fragmented European landscape – again. They would slow down the further harmonization of payments in Europe – one of the building blocks of the Single Market – at a time when harmonization of direct debits and credit transfers has finally been achieved. A challenge for the Eurosystem is to ensure that these national solutions do not (re)introduce fragmentation into the European retail payments market. Therefore, the EPC has created another SEPA

[19] *One large Austrian bank stopped using the CS.I system in mid-2015.*

[20] *SEPA credit transfers and direct debits sent via Clearingservices (domestic and cross-border).*

scheme for pan-European instant credit transfers (SCT inst),[21] which a large number of payment service providers across Europe are expected to use. With RT1 (developed by EBA Clearing[22]) and TIPS[23] (developed by the Eurosystem) two infrastructures for the processing of instant payments have already been made available.

Box 5

TARGET Instant Payment System (TIPS)

TIPS was developed as an extension of TARGET2, which already has an extensive network of participants across Europe. TIPS offers final and irrevocable settlement of instant SEPA credit transfers in euro, at any time of day and on any day of the year. Participating payment service providers can set aside part of their liquidity on a dedicated account opened with their respective central bank, from which instant payments can be settled. The TIPS service has been available since November 2018.

7 Conclusion and outlook

After the successful introduction of the euro, the European payment industry started the SEPA project as vision of an area in which consumers, companies and other actors are able to send and receive euro payments, whether domestic or cross-border, under the same conditions, rights and obligations. The European regulators as well as the Eurosystem have strongly supported this vision by providing the necessary legislative framework, an adequate governance structure and the appropriate infrastructure. A common euro retail payments market advances European integration, drives competition and innovation and brings better services for all end users. SEPA migration was completed in August 2014 and has proved to be a success.

But the SEPA project did not end with migration to SEPA credit transfer and direct debit standards. It is very much alive through initiatives like instant SEPA credit transfers ("SCT inst") or the SEPA Proxy Lookup service, a just recently started initiative aiming at interoperating peer-to-peer mobile payments solutions across the EU.[24] These projects are supported by the Euro Retail Payments Board (ERPB), chaired by the European Central Bank in its role as a catalyst. The Eurosystem continuously investigates ways to enhance its financial market infrastructure so that it continues to meet the needs of the market, stays ahead of cyber security challenges and keeps up with the latest technological developments.

Beside all European projects, it should be noted that smaller domestic solutions have proved to play an important role when it comes to innovation in payments. Usually they are tailor-made for the national market and fulfill national needs. If they are successful, they could have the potential to expand to other European markets. Otherwise interoperability between different national solutions has to be ensured to avoid fragmentation. Such attempts are fostered by the Eurosystem and national central banks.

[21] *https://www.europeanpaymentscouncil.eu/what-we-do/sepa-instant-credit-transfer.*

[22] *https://www.ebaclearing.eu/services/instant-payments/introduction/.*

[23] *https://www.ecb.europa.eu/paym/retpaym/instant/html/index.en.html.*

[24] *https://www.europeanpaymentscouncil.eu/what-we-do/other-schemes/sepa-proxy-lookup-scheme.*

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