

FEBRUARY 2023

EUROPEAN PAYMENT INFRASTRUCTURES UNDER RENOVATION

IMPACT ON FINANCIAL
INSTITUTIONS

GILLES UBAGHS
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IMPACT REPORT

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SUMMARY AND KEY FINDINGS

Major trends such as the move to instant (real-time) payments and regulatory initiatives to increase competition and reduce fragmentation are reshaping the European payments landscape. This Aite-Novarica Group report provides an overview of the major market infrastructure initiatives now underway for account-to-account (A2A) payments in the EU and individual European markets, and the implications of these changes for financial institutions (FIs) and other stakeholders in the near to medium term. Key findings from this report are as follows:

- European FIs are working hard to implement a significant number of large infrastructural projects, including the migration to new clearing and settlement platforms (T2, TIPS, P27) and the migration to ISO 20022 messaging standards.
- FIs' resources are already constrained. Still, they need to prepare for upcoming regulatory changes, such as the expected requirement to adhere to the SEPA instant payments (SCT Inst) scheme, new requirements resulting from the review of the second Payment Services Directive (leading to a "PSD3"), and regulatory initiatives to stimulate open banking and open finance.
- Given this increasingly dynamic and complex environment, banks and other FIs are strongly motivated to invest in payments modernization to compete for new business while reducing costs and maintaining compliance obligations.
- Payments modernization is a top priority, but qualified resources with payment expertise in-house are scarce, requiring FIs to look for outsourced solutions. FIs generally prefer to buy software solutions—cloud-based, Software-as-a-Service (SaaS) solutions, in particular—rather than develop them internally.

INTRODUCTION

The European payments market is in a state of unprecedented change. The digitalization of commerce continues to drive customer demand for payment solutions that are faster, more transparent, less risky, and cost-efficient. Instant payments are becoming the norm, facilitated by new settlement infrastructures such as the Target Instant Payments Settlement (TIPS) system. With the arrival of open banking, new payment models are emerging to compete with card payments as the dominant online payment method. These commercial drivers are underpinned by a constantly evolving regulatory regime mandating change and ongoing improvements with no end in sight. In the face of these developments, FIs need to modernize their payments infrastructures to stay compliant and create new customer value.

Bottomline commissioned this Aite-Novarica Group report to provide an overview of the major market infrastructure initiatives now underway for account-to-account (A2A) payments in the European Economic Area (EEA) and individual European markets (including the U.K.) and the implications of these changes for FIs and other stakeholders in the near to medium term. The analysis summarizes the current state of complex regulatory and technical infrastructure initiatives, including but not limited to areas such as the single euro payments area (SEPA), the Nordic P27 project, and open banking initiatives.¹

The study includes a discussion of pan-European initiatives such as SEPA instant payments, as well as regional/local initiatives in Austria, Belgium, France, Germany, Luxembourg, the Nordic countries, Switzerland (including Liechtenstein), and the U.K.

METHODOLOGY

To develop this research paper, Aite-Novarica Group used a combination of existing research and expertise, and analysis of data from Aite-Novarica Group data sets and reliable public sources, including the ECB, central banks, SWIFT, the Euro Banking Association (EBA), the European Payments Council (EPC), and other market infrastructures.

¹ This report is focused on A2A payments and does not cover card payments. The discussion is limited to market infrastructure developments i.e., industry initiatives serving the wider banking community.

Aite-Novarica Group also conducted qualitative interviews with European FIs, regulators, industry organizations, and the financial services technology community to gather or validate additional perspectives and source additional information.

MARKET OVERVIEW

Table A presents key payment trends in the European market.

TABLE A: PAYMENT TRENDS IN THE EUROPEAN MARKET

MARKET TRENDS	MARKET IMPLICATIONS
Customer requirements for real-time clearing and settlement of payments are growing.	Instant payments are becoming the new normal in Europe. TIPS and EBA RT1 allow for FIs to settle instant payments according to the SCT Inst scheme. UK Faster Payments continues to expand and will undergo further changes as part of the New Payments Architecture initiative. The P27 real-time initiative will bring a unified, multicountry system across the Nordic countries once it launches.
Open banking enables third-party providers to initiate payments from the customer's bank account.	Open (banking) payments are expected to take an increasing share of the European payments volume due to trends in client demand, the availability of real-time infrastructure, and regulatory support. ²
EU regulators continue to push for a single EU payments market.	More legislation can be expected to realize the objectives of EU regulators to create a single market for payments in Europe, increase competition, and foster innovation.

Source: Aite-Novarica Group

THE ARCHITECTURE OF EUROPEAN PAYMENTS INFRASTRUCTURE

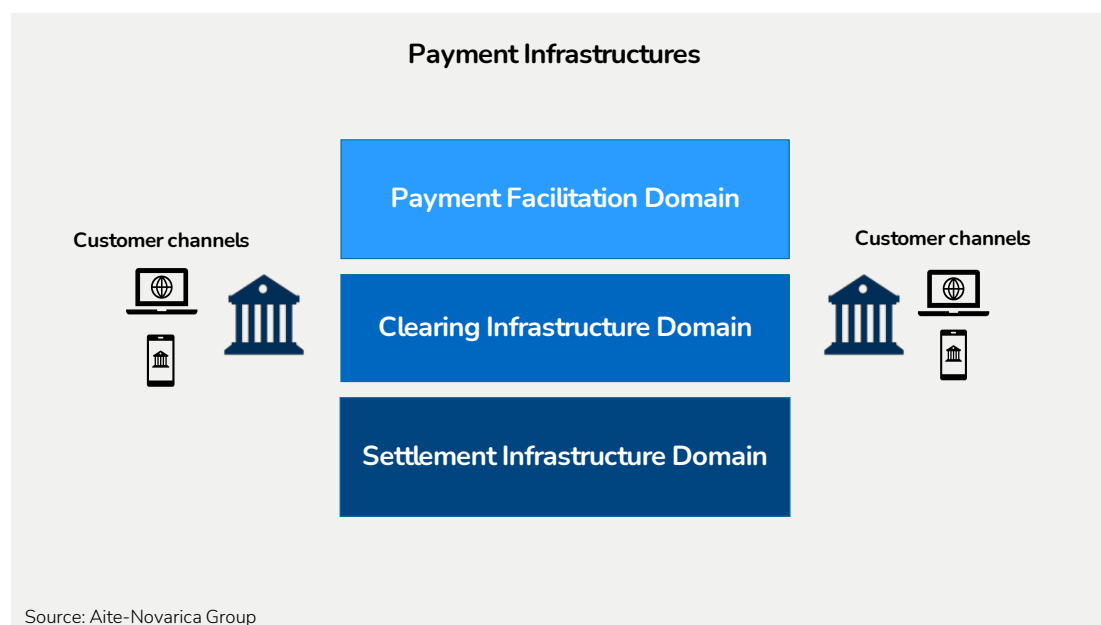
The European payments infrastructure is built on three pillars or domains (Figure 1):

- **Payment facilitation domain:** These are market infrastructures for facilitating payments, allowing consumers and businesses to initiate payments or collect funds more easily and securely. The actual payment is then made through the clearing and settlement infrastructure. Examples of infrastructures in this domain include EBA Request to Pay (R2P) and Nordic mobile wallets.

² See Aite-Novarica Group's report, [Open Banking, Open Finance, Open Economy: The New Identity of Finance](#), May 2022.

- **Clearing infrastructure domain:** These are market infrastructures (e.g., ACH) for the transmission, reconciliation, and, in some cases, confirmation of payments between participants before settlement. They can include the netting of payment orders and the establishment of final positions for settlement. Examples of infrastructures in this domain include STET Core, EBA Step2, Faster Payments (U.K.), and P27.
- **Settlement infrastructure domain:** These are market infrastructures (e.g., RTGS) for discharging participants' obligations through transferring funds in Central Bank money. Examples of infrastructures in this domain include Target2, Euro1, TIPS, and CHAPS.

FIGURE 1: SCHEMATIC VIEW OF PAYMENT INFRASTRUCTURES



The infrastructural changes in each domain are governed by rulebooks and standards developed and maintained by industry bodies such as the central banks, the EPC, and Pay.UK or by bank-owned companies such as SWIFT. The following sections describe expected infrastructural changes and their impact on banks and other payment service providers (PSPs).

PAN-EUROPEAN INITIATIVES

Regulation has been the key driver for payment initiatives in Europe. The EU's agenda is to create a single market to allow people, goods, services, and money to move around the EU as freely as they do within a single country. Payment services are seen as the "lubricating oil" to let this single market function smoothly.

The European Commission has been given a free hand to realize these ambitions for the single market for payment services. These conditions have led to a massive body of new legislation issued over the past 15 years, most notably the Payment Services Directive (PSD), published in 2007 and revised in 2015 (PSD2). This directive provides the legal basis for SEPA, breaking down the national barriers for processing cross-border euro payments.

SEPA DEVELOPMENTS

SEPA is the banking industry's self-regulatory initiative to create common rules and standards for euro payments among banks and other regulated PSPs in the 36 SEPA countries.³ Its purpose is to make the SEPA area a virtual domestic market, removing the differences between national and cross-border payments. SEPA has not yet fully delivered on its ambitions as there are still some issues with the implementation. One example is "international bank account number (IBAN) discrimination," in which a company in one EU member state refuses to accept a SEPA IBAN for euro payments or direct debits from another member state (while such IBAN discrimination is not permitted under the SEPA rules). However, these issues will be solved over time, and SEPA has certainly succeeded in creating a functioning market for euro payments across the EU.

The European Payments Council (EPC) has developed rulebooks and standards for the interbank clearing of credit transfers (SEPA Credit Transfer – SCT), direct debits (SEPA Direct Debit – SDD), and instant payments (SCT Inst). The EPC is also developing and maintaining rulebooks and standards for the following services:⁴

³ "EPC List of SEPA Scheme Countries," EPC, February 2021, accessed June 13, 2022, <https://www.europeanpaymentscouncil.eu/document-library/other/epc-list-sepa-scheme-countries>.

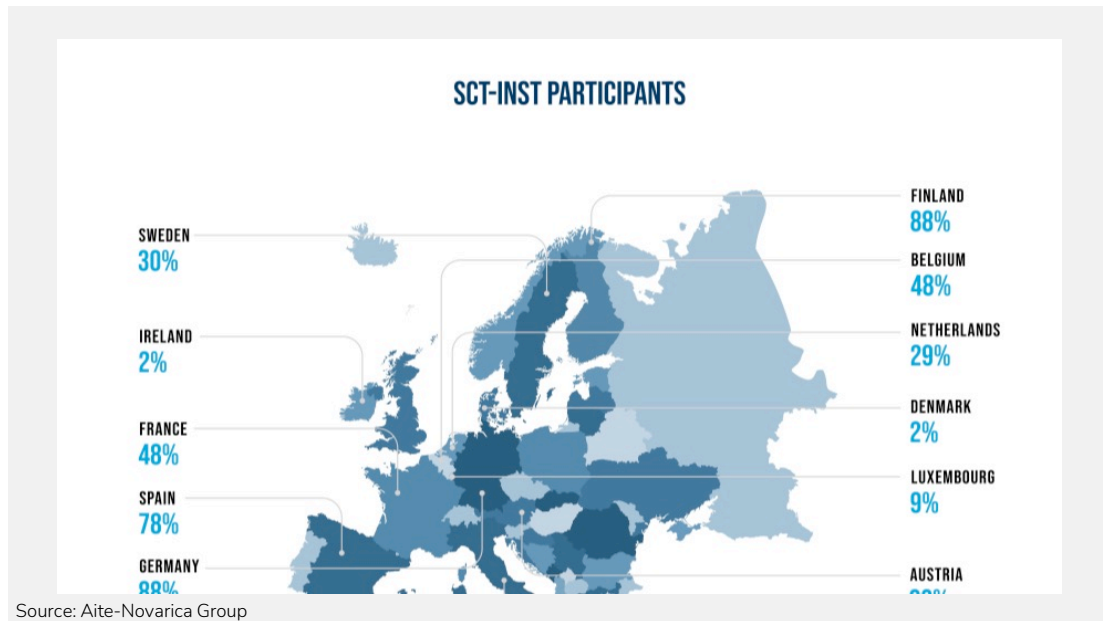
⁴ For further information, see "Contributing to the Future of Payments in Europe," EPC, accessed June 13, 2022, <https://www.europeanpaymentscouncil.eu/>.

- **SEPA Proxy Lookup (SPL):** This scheme covers mobile person-to-person payments whereby the mobile telephone number or email address is used as a proxy to an IBAN. It aims to facilitate interoperability between participating mobile payment solutions. Worldline currently operates the service.
- **SEPA Request to Pay (SRTP):** This scheme specifies how a payee (e.g., a merchant) can request payment from a payer (a consumer) online or in-person. The payer can then confirm or reject the request, provide alternate information if desired, and choose to pay immediately or on a future date. One example (compliant with SRTP) is the EBA R2P service.
- **SEPA Payment Account Access (SPAA):** PSD2 has enforced open banking via access to the bank account. This has leveled the playing field for third-party provider access to payment accounts held by banks for account information and payment initiation services, thereby enabling third-party providers to compete with banks. However, there has been limited central coordination for implementing PSD2, leading to a fragmented market, lack of common API standards, and varying quality of bank APIs. The EPC has published its SPAA scheme to improve harmonization, interoperability, and reachability across Europe for access to payment accounts to address these issues. PSD2 is a baseline requirement, but the SPAA scheme extends into premium payment APIs, i.e., APIs for which banks can charge the TPP. The SPAA scheme also aims to facilitate the move in Europe toward open finance beyond payments and an open economy beyond finance.⁵

Among the most significant SEPA payment developments in recent years has been the launch and rollout of SCT Inst for immediate payment capabilities across Europe. SCT Inst formally launched in late 2017 and has grown to reach a majority of residents in most EU countries. However, SCT Inst has not been a mandatory requirement from the regulator. Not all banks actively offer these services for both send and receive. Figure 2 highlights the participation rates (i.e., the number of banks offering SCT Inst divided by the number of banks offering regular SCT) in key European markets as of the end of 2021.

⁵ "SEPA Payment Account Access," European Payments Council, January 31, 2022, accessed February 6, 2023, <https://www.europeanpaymentscouncil.eu/what-we-do/other-schemes/sepa-payment-account-access>

FIGURE 2: SCT INST PARTICIPATION RATES, 2022



EURO PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURES

Payments in Europe can be cleared between banks bilaterally or through an ACH that complies with one of the SEPA payment schemes. There are many ACHs operational in Europe, managed by a central bank, bank-owned market infrastructures, or commercial processors:⁶

- **Central banks:** Banca d'Italia, Deutsche Bundesbank
- **Market infrastructures owned by banks:** EBA Clearing (e.g., STEP2-T, RT1), STET
- **Commercial processors:** Nexi, Worldline

The final net positions resulting from clearing are then settled via Target2 or TIPS.

Target2

Euro obligations among banks resulting from payments clearing are settled in Target2, the system governed by the Eurosystem (ECB and the central banks of the euro member states). The Eurosystem has launched a project to consolidate Target2 and

⁶ For a complete list, see "Clearing and Settlement Mechanisms," EPC, accessed June 13, 2022, <https://www.europeanpaymentscouncil.eu/what-we-do/sepa-payment-scheme-management/clearing-and-settlement-mechanisms>.

T2S, the system for securities settlement. The objective is to meet changing market demands by replacing Target2 with a new real-time gross settlement (RTGS) system called T2 and optimizing liquidity management across all Target services. The consolidated platform will launch in March 2023.

TIPS

The strong drive to support instant payments has led many countries/communities to develop instant payment clearing and settlement infrastructures. To avoid fragmentation, the ECB has developed the TIPS market infrastructure as an extension of Target2 to settle instant payments in euros across Europe and provide full reachability to participants. Since May 2022, TIPS has also settled instant payments in Swedish krona.

TIPS provides pan-European reachability for instant payments. Banks can reach TIPS directly, indirectly through a direct participant, or via a connection to an ACH. All European ACHs are connected to TIPS, so the ECB provides interoperability among these clearing systems.

When instant payments increasingly replace regular credit transfers, and more volume is cleared and settled over TIPS, it may become the default pan-European ACH.

EBA Clearing

EBA Clearing is the privately owned, European-wide operator of several critical clearing and settlement mechanisms (CSMs) that operate within the major SEPA payment instrument schemes. In many instances, EBA Clearing competes with the Central Bank and national domestic CSM platforms. EBA Clearing provides several value-added services to maintain an important foothold in European payments for the foreseeable future. Table B and Table C outline key metrics for EBA Clearings CSM services.

STEP2

STEP2 is EBA Clearing's pan-European CSM for processing mass euro payments, including SCT, SDD, and card clearing. Following the European push for instant payments and the launch of RT1 in 2017, the year 2018 saw EBA Clearing begin the development of continuous gross settlement (CGS) in the STEP2 system. CGS enables participants to use a real-time gross settlement mechanism, which provides for the continuous settlement of bulk euro payments. Participants can maintain a Central Bank

fund kept by the ECB in the Target2 technical account. CGS began to roll out in 2020, and the full migration to CGS in STEP2 was completed in July 2022.

RT1

RT1 is EBA Clearing's pan-European real-time gross settlement system for executing SEPA Instant Credit Transfers (SCT Inst). It is available 24/7 and processes payments in a few seconds end-to-end. RT1 is fully compatible with ISO 20022 messaging standards and provides a single interface for transactions settling in RT1 and TIPS. Connection for settlement in TIPS is available through a dedicated cash account in TIPS or across RT1 and TIPS via the AS technical account.⁷

In December 2021, EBA Clearing completed the migration of the RT1 technical account from Target2 to TIPS, giving users a single interface for handling transactions and improved liquidity management capabilities. As of June 2022, 2,271 European PSPs were reachable via RT1 for SCT Inst transactions.

EBA Clearing reports it has no major development plans for 2023 for RT1. Instead, it will focus on CGS and SWIFT modernization plans already in place, aside from broader rulebook rollouts.

Euro1

EBA Clearing is operating (among other clearing systems) the EURO1 large-value net settlement system. The EURO1 system processes high-priority and urgent domestic and cross-border transactions, primarily of large amounts. EURO1 is a net settlement infrastructure with immediate finality for all processed payments. The final net positions resulting from EURO1 are settled via Target2.

TABLE B: EBA CLEARING TRANSACTIONS BY VALUE (EURO BILLIONS)

CSM	2017	2018	2019	2020	2021
EURO1	€50,699	€51,579	€52,612	€49,542	€46,442
STEP1	€317	€357	€366	€409	€227

⁷ "Instant RT1 Payments," EBA, accessed June 28, 2022, <https://www.ebaclearing.eu/services/rt1/overview>.

CSM	2017	2018	2019	2020	2021
STEP2 SCT	€12,507	€13,524	€14,290	€14,837	€17,742
STEP2 SDD CORE	€1,252	€1,318	€1,336	€1,346	€1,500
STEP2 SDD B2B	€723	€759	€796	€744	€813
STEP2 CC	€107	€122	€135	€138	€144
RT1	€0.09	€6	€44	€126	€281

Source: EBA Clearing ⁸

TABLE C: EBA CLEARING TRANSACTIONS BY VOLUME (MILLIONS)

CSM	2017	2018	2019	2020	2021
EURO1	50.5	50.1	50.5	44.3	44.1
STEP1	2.5	2.5	2.3	1.9	1.2
STEP2 SCT	4,430	4,660	4,680	4,940	5,640
STEP2 SDD CORE	6,570	6,810	6,730	7,270	7,950
STEP2 SDD B2B	85.2	86.4	89.1	84.9	90
STEP2 CC	1,740	2,130	2,520	2,890	3,040
RT1	0.1	9.7	82.9	243.1	428.9

⁸ "Reference Documents," EBA, accessed June 28, 2022, <https://www.ebaclearing.eu/about-eba-clearing/at-a-glance/reference-documents/>.

Source: EBA Clearing⁹

SWIFT

SWIFT provides bank connectivity to many market infrastructures in Europe. May 2023 marks the start of the migration of SWIFT messages to the new ISO 20022 MX format for cross-border payments and reporting (CBPR+), with a coexistence period with the legacy MT message format until November 2025.

EXPECTED CHANGES AND IMPACT ON BANKS AND OTHER FIS

This section specifies the expected changes for banks and other FIS for euro payments in each domain, starting with the payment facilitation domain (Table D).

TABLE D: DEVELOPMENTS IN THE PAYMENT FACILITATION DOMAIN

INITIATIVE	WHAT IS CHANGING	IMPACT
SWIFT migration to ISO 20022	November 2022 marks the start of migration to ISO 20022 (MX) for cross-border payments and reporting (CBPR+), with a coexistence period with MT messages until November 2025.	All SWIFT members must prepare for migration to SWIFT MX (and parallel support of MT).

⁹ "Reference Documents," EBA, accessed June 28, 2022.

INITIATIVE	WHAT IS CHANGING	IMPACT
Revision of the Payment Services Directive (“PSD3”)	The European Commission has mandated the European Banking Authority to review PSD2 regarding the impact and application of the directive and any suggestions for possible improvements and amendments. The organization has recently delivered its review. ¹⁰	All PSPs should prepare for further legislation of payment services in the EU and budget for mandatory investments to stay compliant. The new legislation will take a few years to be enforced, but the impact can be substantial. For instance, the European Banking Authority wants to address the expansion from access to payment account data to access to other types of financial data.
New or adapted SEPA rulebooks	The next version of the rulebook for SRTP is expected by the end of November 2022. The new SPAA rulebook consultation is running until September 2022.	FIs should decide if they want to adhere to these rulebooks and budget for investments in the required infrastructure.

Source: Aite-Novarica Group

Table E describes the changes and resulting impact in the clearing and settlement domains for euro payments.¹¹

¹⁰ “EBA Replies to European Commission’s Call for Advice on the Review of the Payment Services Directive,” European Banking Authority, June 2022, accessed June 26, 2022, <https://www.eba.europa.eu/eba-replies-european-commission%E2%80%99s-call-advice-%C2%A0-review-payment-services-directive>.

¹¹ See also the consultation on the open finance framework initiated by the European Commission, “Targeted Consultation on Open Finance Framework and Data Sharing in the Financial Sector,” European Commission, May 2022, accessed June 26, 2022, https://ec.europa.eu/info/consultations/finance-2022-open-finance_en.

TABLE E: DEVELOPMENTS IN THE CLEARING AND SETTLEMENT DOMAINS

INITIATIVE	WHAT IS CHANGING	IMPACT
European Commission's instant payments regulation proposal	<p>The European Commission has presented a legislative initiative (regulation) on instant payments to reach full reachability for SCT Inst and accelerate the rollout of instant payments in the EU.</p> <p>Four main aspects of the proposal:</p> <ol style="list-style-type: none"> 1) Making instant payments universally available in euros within six months after said proposal is approved. 2) Making these payments more affordable, mandating that instant payment pricing stays in line with non-instant transfers. 3) Implementing an obligation similar to the U.K.'s confirmation of payee, which requires PSPs to match the international bank account number (IBAN) and the name of the beneficiary. 4) Requiring PSPs to verify their clients against the EU sanctions list at least on a daily basis. Aspects 3 and 4 aim at replacing the traditional sanctions screening of each individual transaction, which is a process generating too many rejections for instant payments. 	<p>Adherence to SCT Inst will become mandatory. All banks in the EU should prepare to allow their customers to send and receive instant payments.</p> <p>As it stands, the timeline mandates that PSPs must be ready to receive instant payments six months after the legislation is passed. Being able to send instant payments will be enforced a year after ratification.</p>

INITIATIVE	WHAT IS CHANGING	IMPACT
Launch of the new T2 settlement platform by the Eurosystem	The Eurosystem has launched a project to replace Target2 with a new real-time RTGS system called T2 and optimize liquidity management across all Target services. The new consolidated platform will be launched in March 2023.	All Target2 banks must migrate to the new T2 platform by March 2023.
Migration of EURO1 to ISO 20022	EBA Clearing and its technology partner SWIFT kicked off the ISO 20022 migration project in 2018. The EURO1 ISO 20022 migration deadline is March 2023.	All EURO1 banks must support ISO 20022 by March 2023.

Source: Aite-Novarica Group

PAYMENT INFRASTRUCTURE IN KEY EUROPEAN MARKETS

The European-wide payment initiatives and rollout milestones affect all of Europe (except the U.K.). Still, each country maintains its distinct payments infrastructure environment and level of progress with broader European payment initiatives. For many banks and FIs, particularly those active across multiple European markets, this can add further complexity due to their need to adhere to European-wide initiatives while dealing with the local payments context of each market. The following sections highlight some dynamics and existing infrastructure across key European markets.

PAYMENT INFRASTRUCTURE DEVELOPMENT IN AUSTRIA

Austria has a well-developed and advanced electronic payments market that holds a high level of usage of newer payment initiatives such as mobile wallets and payments directly from bank accounts. It adheres strictly to broader SEPA payment initiatives across its two primary clearing and settlement systems, Clearing Services (CS) and ASTI.

CS Austria (CS.A) is operated and managed by PSA AT, a consortium payments organization owned by the banks that provide various payment processing services (including cards) and Austria's A2A electronic banking payment service EPS. Since 2021, PSA has been responsible for processing ACH transactions and providing connections for payments to international accounts. As such, the CS service is split between two systems. CS.A acts as a retail payments hub in line with standardized SEPA processes and message formats. The other component, CS International (CS.I), processes payments across the SEPA area and coordinates with organizations at the EU level. PSA enables full TIPS connectivity to its participating banks.

In 2018, Austria replaced its HOAM.AT RTGS infrastructure with the ISO 20022-compliant ASTI platform. ASTI operates as the Austrian component of the Target2 infrastructure and is managed directly by the Oesterreichische Nationalbank.

Table F summarizes key payment clearing and settlement infrastructure in Austria.

TABLE F: KEY PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURE IN AUSTRIA, 2016 VS. 2020

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (EURO BILLIONS)		PARTICIPANTS	MANAGING AUTHORITY
		2016	2020	2016	2020		
CS	Retail clearing	634.6	712.8	€807.7	€1,126.5	75 (63 direct)	PSA AT
ASTI and Target2-AT	Settlement	1.8	1.9	€10,828.5	€7,598	80	Oesterreichische Nationalbank

Source: PSA, ECB, Aite-Novarica Group

What Is Happening Now in Austria

Austria will likely be at the forefront of further payment modernization initiatives, given that it already has centralized, modernized payments between provider PSA and the ISO 20022-compliant ASTI RTGS system.

The developments on a European/SEPA level apply to Austria as a euro country (see Table D and Table E). Initiatives specific to Austria follow:

- Domestically, PSA is focusing on enhancing its e-payments capabilities, including cross-border capabilities. This includes the recently announced interoperability of Austria's EPS service with Germany's Giropay service, enabling cross-border electronic banking e-payments online.

PAYMENT INFRASTRUCTURE DEVELOPMENTS IN BELGIUM

Belgium's central place in the EU puts it at the heart of SEPA initiatives in Europe, which its payments infrastructure reflects. The country's per-capita transaction rates are not as high as Luxembourg's, particularly in Target2 transactions. Nonetheless, Belgium remains a critical financial center for financial services. The oversight of Belgium's CSM infrastructure is more complex than in many other markets.

Two primary platforms make up Belgium's payments infrastructure. Target2, the previous Recours LVTS platform, is managed by the National Bank of Belgium. The

Centre for Exchange and Clearing (CEC), a consortium of Belgium's major banks, manages most of the country's domestic transactions.

In 2013, the CEC moved to a new platform managed by STET in France. All CEC transactions—including SEPA-SCT, SCT Inst, SDD Core, SDD B2B, and card and check transactions—are administered by STET in a separate instance of its CORE platform known as CORE.BE, and STETS IP CSM for SCT Inst transactions. The CEC's contract with STET is set to run until 2024 and is likely to be renewed. The CEC is also responsible for transfer of financial information, which enables easier consumer bank switching.

The National Bank of Belgium also acts as the lead overseer of SWIFT. It works in conjunction with other banks from the G10 and G20 due to SWIFT being headquartered within the country. As lead overseer, the National Bank of Belgium performs daily follow-up and monitoring of SWIFT activities and coordinates and organizes oversight meetings.

Table G summarizes key payment clearing and settlement infrastructure in Belgium.

TABLE G: KEY PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURE IN BELGIUM, 2016 VS. 2020

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (EURO BILLIONS)		PARTICIPANTS	MANAGING AUTHORITY
		2016	2020	2016	2020		
CEC (Core.BE)	Retail Clearing	1,378.1	1,396.9	€920.6	€1,198.7	46 (14 direct)	CEC
Target2-BE	Settlement	2.2	3.0	€16,957.9	€26,892.9	76 (1 direct)	National Bank of Belgium

Source: CEC, National Bank of Belgium, ECB, Aite-Novarica Group

What Is Happening Now in Belgium

The developments on a European/SEPA level apply to Belgium as a euro country (see Table D and Table E). Initiatives specific to Belgium follow:

- In 2020, the CEC launched STETs SWIP (single window for instant payments) in Belgium, enabling connectivity to RT1, which was in use by two member banks of the CEC as of the end of 2021.
- In 2020, the Mastercard Clearing Management System was designated a systemically important payment system, bringing it under the oversight of the ECB and the National Bank of Belgium.
- The CEC launched TIPS connectivity in November 2021. Six banks used the service at the end of 2021, and five more are set to launch in 2022.

PAYMENT INFRASTRUCTURE DEVELOPMENTS IN LUXEMBOURG

Despite its small population and geography, Luxembourg remains an epicenter of financial services activity for the eurozone. It oversees significant payment volume that far outweighs the volume of other countries per capita. The Banque Central du Luxembourg oversees clearing and settlement systems in Luxembourg and manages Target2-LU.

Luxembourg does not hold a domestic retail clearing and settlement mechanism system. Instead, it relies on various European-wide CSMs to process these transactions. Luxembourg's many FIs use Switzerland's SIX payments to clear and settle all card transactions, STEP2 for credit transfers among many institutions, SWIFT and EURO1 for cross-border transactions, and RT1 for SCT Inst.

With one of the world's highest standards of living, the overall payments landscape in Luxembourg is advanced and driven by a high volume of electronic transactions and modern payment mechanisms. Luxembourg's leading banks offer the Digicash mobile payment app, which over 25% of the population is thought to use.¹²

Table H summarizes key payment clearing and settlement infrastructure in Luxembourg.

¹² "Luxembourg," BNP Paribas, accessed June 17, 2022, <https://cashmanagement.bnpparibas.com/currency/luxembourg>.

TABLE H: KEY PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURE IN LUXEMBOURG, 2016 VS. 2020

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (EURO BILLIONS)		PARTICIPANTS	MANAGING AUTHORITY
		2016	2020	2016	2020		
Target2-LU	Settlement	1.5	1.9	€8,885	€15,447	74 (50 direct)	Banque Central du Luxembourg

Source: Banque Central du Luxembourg, ECB, Aite-Novarica Group

What Is Happening Now in Luxembourg

The developments on a European/SEPA level apply to Luxembourg as a euro country (see Table D and Table E). Initiatives specific to Luxembourg follow:

- The Banque Centrale Du Luxembourg's governing council decided in July 2020 to implement two measures regarding TIPS compliance. First, PSPs reachable in Target2 that are participants in the SCT Inst scheme must be reachable in TIPS by 2021. Second, all CSMs offering instant payment services should migrate their technical accounts from Target2 to TIPS.

PAYMENT INFRASTRUCTURE DEVELOPMENTS IN FRANCE

France is the second largest payments market in Europe. The Banque de France is responsible for overseeing its payments system. In line with its critical position in the European economy and EU institutions, France has been deeply involved in developing SEPA regulations and standards, the eurozone Target2 RTGS system, and the Target TIPS infrastructure.

France operates two primary retail payment systems, the Core(FR) and SEPA(EU) systems, both of which settle using the Target2 FR infrastructure. Core(FR) and SEPA(EU) are operated by Systemes Technologies d'Echanges et de Traitement. SEPA(EU) was launched in 2016 to process SEPA direct debits, incorporating SDD Core and SDD B2B, with SEPA credit transfers migrating to the platform in 2018. SEPA(EU) is intended to serve as a pan-European CSM offering, processing SEPA and non-SEPA

schemes and card clearing. Over time, Core SCT and SDD processing will move to the SEPA(EU) platform.

Despite being distinctive systems, CORE(FR) and SEPA(EU) hold the same governance structure and operate on the same technical platform. Other key clearing and settlement systems that French banks use include the EURO1, STEP2-T, and RT1 systems, operated by EBA Clearing. The large French banks are participants in both STET and EBA.

Table I summarizes key payment clearing and settlement infrastructure in France.

TABLE I: KEY PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURE IN FRANCE, 2016 VS. 2020

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (EURO BILLIONS)		PARTICIPANTS	MANAGING AUTHORITY
		2016	2020	2016	2020		
CORE(FR)	Retail Clearing	14,432	12,598	€5,513	€5,021	356 (10 direct)	STET
SEPA(EU)	Retail Clearing	192.2	2,619	€120.5	€1,128	356 (10 direct)	STET
Target2-FR	Settlement	8.0	10.7	€74,535	€99,661	301 (132 direct)	Banque de France

Source: Banque De France, ECB, Aite-Novarica Group

What Is Happening Now in France

The developments on a European/SEPA level apply to France as a euro country (see Table D and Table E). Initiatives specific to France follow:

- The European Payment Initiative (EPI) was initially designed to develop a new payment scheme to compete with the card networks based on instant payment rails. However, the project's scope was recently changed to focus on developing a

European digital wallet.¹³ The EPI initiative is now mainly driven by the French banks.

- Recent developments in France include the launch of the SRTP rulebook, introduced in 2021, and new services deployed from STET to implement these capabilities. 2021 also saw the launch of STET's SWIP capabilities to connect to TIPS. SWIP provides a means for pan-European interoperability between European clearing and settlement mechanisms within the SEPA region. It is in line with the broader migration of European CSMs from Target2 to the TIPS system for instant payments.
- Upcoming changes to the French clearing and settlement systems infrastructure include implementing EPC 2023 rulebooks for SCT, SCT Inst, SDD Core, and SDD B2B, and further changes to the rulebooks for the SEPA Proxy Lookup scheme and SRTP.

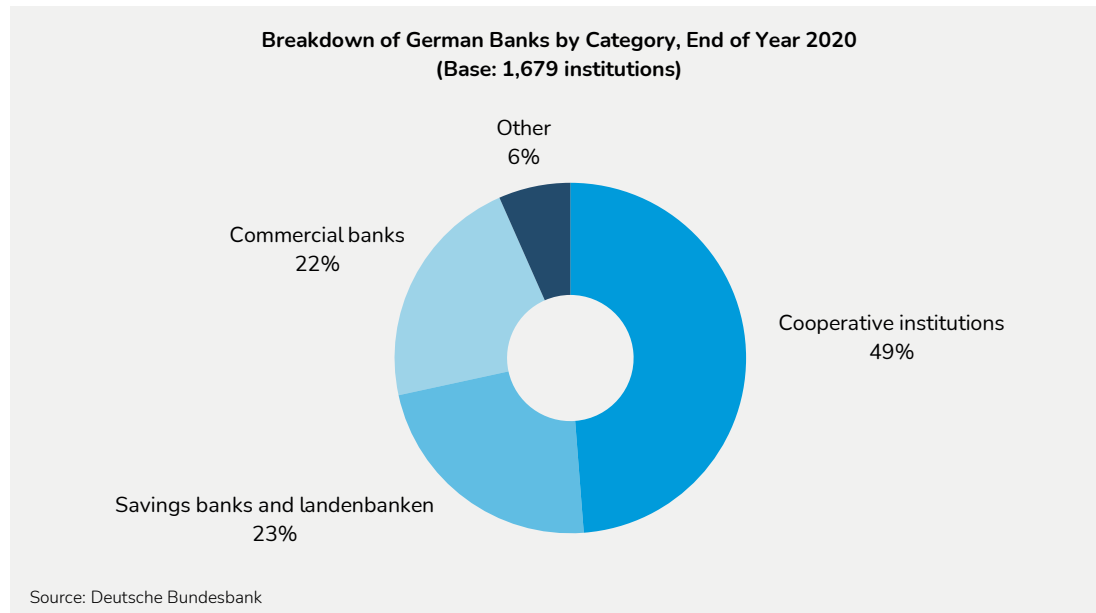
PAYMENT INFRASTRUCTURE DEVELOPMENTS IN GERMANY

The German banking sector holds a special position in Europe as it has yet to go through such a comprehensive consolidation process as in other countries. In 2020, the total number of credit institutions in Germany still stood at 1,679 compared to 2,093 institutions in 2010.¹⁴ The sector is divided into three main groups: commercial banks, savings banks, and cooperative banks (Figure 3).

¹³ "EPI Abandons Plan for Visa and Mastercard Rival as Member Banks Quit," Finextra, March 2022, accessed June 15, 2022, <https://www.finextra.com/newsarticle/39907/epi-abandons-plan-for-visa-and-mastercard-rival-as-member-banks-quit>.

¹⁴ "Bank Office Report 2020," Deutsche Bundesbank, June 2021, accessed June 26, 2022, <https://www.bundesbank.de/resource/blob/623012/4e62983a8010d54b2168e051bde2430b/mL/bankstellenbericht-2020-data.pdf>.

FIGURE 3: SECTORAL DISTRIBUTION IN GERMANY BY CATEGORY OF BANKS



The three remaining large German banks (offering services to the public) headquartered in the country are Deutsche Bank (publicly traded), DZ Bank (owned by the cooperative banks), and Commerzbank (publicly traded).

There isn't a privately owned or operated ACH/CSM based in Germany. SEPA credit transfers and direct debits are cleared through three different channels:

- **Clearing via the Retail Payment System (RPS) operated by the Deutsche Bundesbank:** FIs may participate directly or indirectly via a direct participant in the RPS on an open and nondiscriminatory basis. To facilitate the processing of SEPA payments to and from other SEPA countries, the Bundesbank maintains several bilateral cooperative agreements with other European SEPA clearing houses and is connected to EBA Clearing's STEP2-T Clearing System.
- **Clearing via EBA Clearing (STEP2-T):** Large commercial banks clear through EBA Clearing. The savings and cooperative banks are also connected to EBA Clearing to clear and settle SEPA transactions with banks outside their domestic clearing arrangements.
- **Bilateral clearing ("Garagenclearing"):** This clearing is within the savings and cooperative banking groups or between the two groups through their clearing banks (Landesbanken and DZ Bank, respectively).

For instant payments, German banks are using EBA Clearing's RT1 platform. Participants are Deutsche Bank, DZ Bank, Commerzbank, the German cooperative sector (connected via DZ Bank), and the German savings banks sector (connected via the Landesbanken).

Table J summarizes key payment clearing and settlement infrastructure in Germany.

TABLE J: KEY PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURE IN GERMANY, 2016 VS. 2020

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (EURO BILLIONS)		PARTICI- PANTS	MANAGING AUTHORITY
		2016	2020	2016	2020		
RPS	Retail Clearing	4,274.5	6,148.9	€3,086.9	€3,724.3	189 (189 direct)	Deutsche Bundesbank
Target2- Bundes- bank	Settlement	44.5	48.8	€201,111	€221,006.2	979 (857 direct)	Deutsche Bundesbank

Source: Deutsche Bundesbank, ECB, Aite-Novarica Group

What Is Happening Now in Germany

The developments on a European/SEPA level apply to Germany as a euro country (see Table D and Table E). Initiatives specific to Germany follow:

- It is unclear how current clearing and settlement arrangements will evolve. German banks may decide to clear and settle a larger part of their instant payments volume directly via TIPS rather than going through RT1. The cooperative and savings banks groups may reconsider the bilateral clearing model when it becomes clear that the cost advantage is diminishing due to falling ACH pricing.

PAYMENT INFRASTRUCTURE DEVELOPMENTS IN THE NORDIC COUNTRIES

The Nordic region (Denmark, Finland, Norway, and Sweden) is one of the most advanced digital markets. These countries are heading toward a cashless society. In Sweden, the percentage of the population paying cash for their last purchase fell from 39% to 9% between 2010 and 2020. The mobile wallet Swish is used more often than cash.¹⁵

Online shopping is also very popular in the region. According to Eurostat, 92% of the Norwegian population made purchases online in 2021, topping the European list, ahead of Denmark (91%), the Netherlands (89%), and Sweden (87%).

To meet the changing needs of an increasingly cashless society, the Riksbank is piloting a digital currency (the e-krona), a “central bank digital currency.” One of this pilot project’s aims is to protect the Swedish krona against the rise of decentralized cryptocurrencies.

In June 2019, the Nordic banks announced the P27 Nordic Payments Platform. They plan to build the world’s most advanced, innovative, and efficient payments system. It is the first system to enable real-time payments with different currencies (Danish, Norwegian, and Swedish crowns and euros). Participants will be able to send and receive funds in the Nordic market while saving costs and gaining greater security.

P27 provides a common set of rails upon which common services such as bill payments can be offered. It also offers a gateway to access other ISO 20022 services, such as TIPS, and allows its users and owners to offer networked services for themselves and create a foundation for future cross-border connections.

Table K summarizes key payment clearing and settlement infrastructure in the Nordic countries.

¹⁵ “The Payment Behaviour of the Swedish Population,” Riksbank, accessed June 26, 2022, <https://www.riksbank.se/en-gb/statistics/statistics-on-payments-banknotes-and-coins/payment-patterns>.

TABLE K: KEY PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURE IN THE NORDIC COUNTRIES,
2016 VS. 2020

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (EURO BILLIONS)		PARTICI- PANTS	MANAGING AUTHORITY
		2016	2020	2016	2020		
Kronos DKK and Kronos 2 (Denmark)	Settlement	1.3	1.7	€96,351.90	€93,671.30	88 (direct)	Danmarks Nationalbank
The Intradag Clearing (Denmark)	Retail	203	221.4	€4,630.10	€5,457.60	77 (52 direct)	Danmarks Nationalbank
The Sumclearing DKK (Denmark)	Retail	1,998	2,315.50	€2,033.30	€2,258.30	77 (52 direct)	Danmarks Nationalbank
Target2 (Denmark)	Settlement	0.1	0.2	€4,107.70	€2,539	61 (27 direct)	Danmarks Nationalbank
Straksclearing (Denmark)	Retail	115.5	402.4	€189.6	€389.4	71 (46 direct)	Danmarks Nationalbank
ARPP (Finland)	Retail	N/A	5.1	N/A	€0.3	2 (2 direct)	Bank of Finland
BoF-RTGS and Target2-FI (Finland)	Settlement	0.4	0.7	€10,811.90	€10,840	29 (26 direct)	Bank of Finland
POPS (Finland)	Settlement	0.4	0.3	€217	€165.2	10 (8 direct)	Bank of Finland
Bankgirot (Sweden)	Clearing	991.7	1,180	€10,655.20	€12,914.80	26 (26 direct)	Bankgiro-centralen
Dataclearing (Sweden)	Retail	144.2	170.6	€3,302.40	€4,461.80	34 (34 direct)	Bankgiro-centralen

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (EURO BILLIONS)		PARTICIPANTS	MANAGING AUTHORITY
RIX (Sweden)	Settlement	4.5	5.9	€158,662	€128,162.80	38 (38 direct)	Riksbank

Source: ECB, Aite-Novarica Group

What Is Happening Now in the Nordic Countries

Almost all focus in the industry in the Nordic countries is on the ISO 20022 migration and the P27 developments:

- P27:** P27 is expected to go live for Swish (mobile) payments in Sweden in 2023. Then P27 will move on instant SEK payments by November 2024, acting as ACH toward TIPS in SEK. In Denmark, P27 will go live on Easter 2025 with instant DKK payments and in the autumn with DKK batch payments. There are also plans for services such as confirmation of payee, request to pay, and Nordic bill payment services. The planning for P27 in Finland is less clear; authorities there seek to secure daily payments in case of serious disruptions, which may affect the P27 rollout.¹⁶
- ISO 20022 migration:** Nordic banks will generally follow the migration of the local central banks' RTGS systems—Denmark (Easter 2025), Sweden (Q1 2025), Norway (Q1 2025), and Finland (March 2023). Nordic banks plan to support cross-border payments and reporting plus (CBPR+) when possible. The combination of P27 with ISO 20022 migrations is a huge project that will lock up resources in the Nordic countries for the next three to five years.
- SEK settlement set to migrate to T2:** The Swedish central bank (Riksbank) has decided to use the Eurosystem's T2 platform to settle large-value payments.¹⁷ This means that the Eurosystem will support the settlement of non-euro currencies.

¹⁶ "Authorities Seek to Secure Daily Payments in Case of Serious Disruptions," Ministry of Finance Finland, June 2022, accessed June 26, 2022, <https://vm.fi/en/-/authorities-seek-to-secure-daily-payments-in-case-of-serious-disruptions>.

¹⁷ "Study of the Riksbank's Future Settlement Service," Riksbank, September 2021, accessed June 26, 2022, <https://www.riksbank.se/en-gb/payments--cash/the-payment-system---rix/study-of-the-riksbanks-future-settlement-service/>.

PAYMENT INFRASTRUCTURE DEVELOPMENTS IN THE UNITED KINGDOM

Despite officially leaving the EU at the end of 2020, the U.K. remains a key player in European payments. The U.K. holds one of the world's most advanced and dynamic payment infrastructure systems and remains a hub of global payments activity. Though it no longer aligns with EU regulations such as SEPA and PSD2, the U.K. is in most instances further advanced than much of Europe and remains a leader in real-time payments and open banking.

The U.K. has a strong regulatory regime but frequently changes the regulatory bodies overseeing major clearing and settlements infrastructures. For instance, the U.K. is the only country with a regulator specifically for payments (the Payment Systems Regulator or PSR). Formal management and operational responsibility for the core infrastructures of BACS, CHAPS, and Faster Payments was handed to Pay.UK in 2018. Pay.UK is overseen by the PSR.

Table L summarizes key payment clearing and settlement infrastructure in the U.K.

TABLE L: KEY PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURE IN THE UNITED KINGDOM, 2016 VS. 2020

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (EURO BILLIONS)		PARTICIPANTS	MANAGING AUTHORITY
		2016	2020	2016	2020		
Bacs	Clearing	6.21	6.46	€4,776.5	€4,860.4	27 (direct)	Pay.UK
CHAPS	Clearing	0.39	0.45	€75,573.6	€91,908.3	36 (direct)	Pay.UK
Faster Payments	Settlement	1.43	2.85	€1,189.0	€2,100.6	35 (direct)	Pay.UK

Source: Pay.UK, Aite-Novarica Group

What Is Happening Now in the U.K.

While outside the realm of EU mandates and ECB-driven initiatives, the U.K. is undergoing multiple ongoing changes to its payments infrastructure:

- **New payments architecture (NPA):** The U.K. has had widespread immediate payment capabilities since 2008. It is now renovating this infrastructure. The NPA will be a smarter way to move money and allow the U.K. to maintain leadership in interbank retail payments. The NPA will address the challenges presented by the rapid evolution of technology and competition, ensuring the U.K. payment infrastructure is robust and resilient and maintains an end-user focus. The aim is also to provide an attractive platform for innovation via APIs.
- **Confirmation of Payee (CoP), phase two:** Since its launch in 2020, more than 35 payment providers have signed up and implemented CoP. More are expected to sign up in 2022. In 2021, nearly 500 million CoP checks were successfully performed, covering over 95% of the applicable Faster Payment volume. In 2021, Pay.UK launched a new phase of CoP to expand eligibility to all account-holding payment providers. In November 2022, Pay.UK announced an extension of the mandate to 50 new FIs, with an impact on a further 400. Deadlines vary between Q4 2023 and 2024.
- **Faster Payment System:** In April 2020, Pay.UK initiated an increase to the Faster Payment System transaction limit from 250,000 pounds to 1 million pounds in response to industry appetite. This change was implemented and completed in February 2022. The volume and value of payments processed to date demonstrate that the increase benefited banks, FIs, and end users. This increase will also help to develop parity with the transfer limits of other payment systems and provide PSPs with greater choice. According to Pay.UK, Faster Payments processed 341.4 million payments in May 2022, a 29% increase from the number processed in May 2021.¹⁸ The total value amounted to 273 billion pounds for the month, a 38% increase in value on May 2021's total.
- **Request to Pay:** The rules and standards for the Request to Pay framework were launched in 2020 in close collaboration with the industry. Request to Pay is an innovative and flexible way to settle bills between people, organizations, and

¹⁸ "Faster Payment System Statistics," Pay.U.K., accessed August 10, 2022, <https://newseventsinsights.wearepay.uk/data-and-insights/faster-payment-system-statistics/>.

businesses. It is a standard messaging service that allows billers to request a payment and gives end users different payment options (e.g., in full, in part, ask for more time, communicate with the biller, decline to pay) without changing their legal obligations. Technical and service providers are now part of the Request to Pay ecosystem, and more organizations are set to join the framework in 2023.

Bottomline and other trusted service providers continue to collaborate with consumers, banks, fintech firms, and utility companies to develop the service. This includes Interactive Advance Notification to support the Direct Debit experience.

- **ISO 20022:** Pay.UK and the NPA believe that transforming U.K. retail payments to operate on the ISO 20022 standard is a significant opportunity in terms of investment and modernization for the U.K. retail payment systems. It will undoubtedly enable benefits throughout the whole ecosystem through new data-driven services for payments, improved operational efficiency, and fraud prevention.

PAYMENT INFRASTRUCTURE DEVELOPMENTS IN SWITZERLAND AND LIECHTENSTEIN

Switzerland is a strong financial market with deep connections with the eurozone, though it is not part of the EU or the EEA. Switzerland has maintained autonomous payment schemes and network providers for decades to ensure independence and speed to market.

The Swiss Interbank Clearing (SIC) system was launched in 1987. It is the electronic central Swiss payment system, and participating FIs process their large-value payments (RTGS) and a part of their retail payments in Swiss francs. SIC operates on behalf of the Swiss National Bank (SNB) by SIX Interbank Clearing. SIC was one of the first RTGS in the world to adopt the ISO 20022 format in 2016, with its fourth-generation clearing platform called “SIC 4.” It is supported via the Finance IP network operated by SIC.

The shareholders in SIX Group are the big Swiss banks, foreign and correspondent banks in Switzerland, commercial and investment banks, cantonal banks, private banks, and regional and Raiffeisen banks. SNB considers the SIC payment system important for the stability of the Swiss financial system and is subject to SNB oversight.

The Swiss European Central Bank (SECB) was founded in 1998 to remain tightly connected with the eurozone. The business purposes of the SECB include providing a connection to the most important euro clearing systems and processing payment traffic in euros, primarily for banks and FIs from Switzerland and Liechtenstein.

SIC holds arguably the highest value of payment transactions relative to population size, driven by Switzerland's position in the global financial services market. The SIC system processes on average 163 billion francs in transactions per day, meaning that the system processes more in one week than the annual value of Swiss GDP.¹⁹

Aite-Novarica Group notes that SIC remains a major payments CSM for Liechtenstein, with much of Liechtenstein activity also processed in Frankfurt.

Table M summarizes key payment clearing and settlement infrastructure in Switzerland and Liechtenstein.

TABLE M: KEY PAYMENT CLEARING AND SETTLEMENT INFRASTRUCTURE IN SWITZERLAND, 2016 VS. 2020

SYSTEM	TYPE	TRANSACTIONS (MILLIONS)		TRANSACTIONS (CHF BILLIONS)		PARTICIPANTS	MANAGING AUTHORITY
		2017	2020	2017	2020		
SIC	Clearing Settlement	510.9	728.2	43,397	45,266	319	SIX Payments

Source: SNB, Aite-Novarica Group

What Is Happening Now in Switzerland and Liechtenstein

The developments of innovative payment methods align with customer expectations, updated security requirements, and new demands for liquidity management. These factors have motivated SIC to approach the SIC platform with a fifth generation of updates, including a new instant payments rail. This "SIC 5" migration has a clear roadmap and timeline:

- SIC protocol v5 migration will be done in waves from June 2022 to the end of October 2023.

¹⁹ "The Swiss Interbank Clearing (SIC) Payment System Report on the SIC System and Disclosure Report 2021," Swiss National Bank, May 2022, accessed August 10, 2022, https://www.snb.ch/en/mmr/reference/sicsystem_disclosure/source/sicsystem_disclosure.en.pdf.

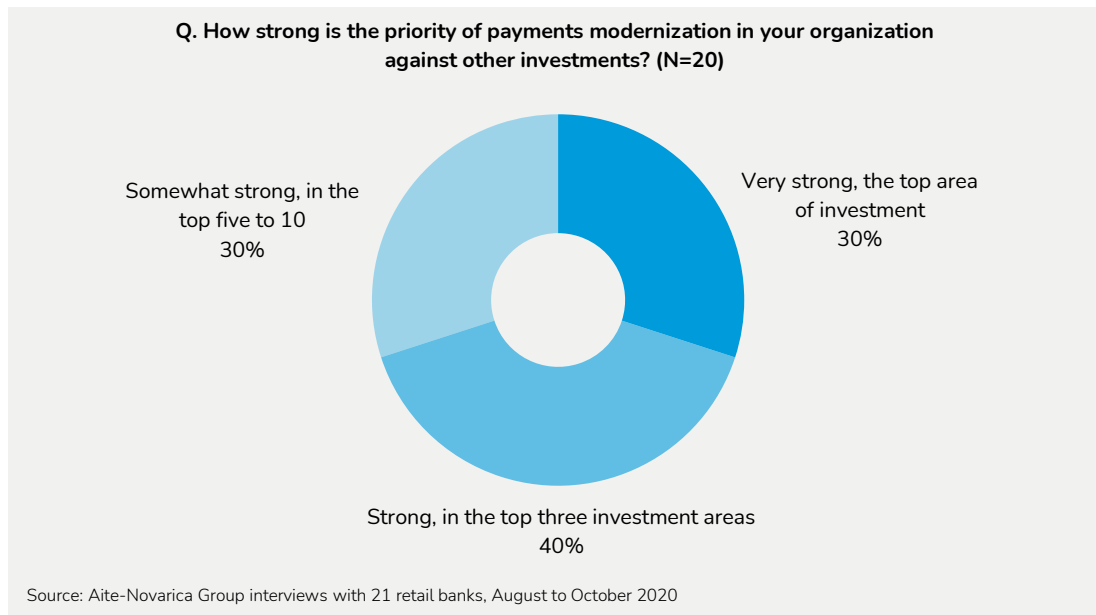
- SIC Instant Payment will be mandatory by August 2024 for banks processing more than 500,000 SIC messages annually.
- SIC Instant Payment will be mandatory for the rest of the marketplace by August 2026.

Separate from this SIC 5 migration, there is a new initiative to replace the current physical Finance IP network with more secure, flexible, and modular technology, i.e., the Swiss Secure Financial Network. Swiss Secure Financial Network technology is not yet mandatory, but the SNB and SIC are asking banks to adopt it soon. This technology can provide 24/7 availability, a key prerequisite for instant payments.

THE NEED FOR PAYMENT MODERNIZATION

Given the increasingly dynamic and complex environment outlined in the previous sections, banks and other FIs are strongly motivated to invest in payments modernization to compete for new business while reducing costs and maintaining compliance obligations. Aite-Novarica Group research²⁰ indicates that payments modernization is a top priority for banks (Figure 4).

FIGURE 4: IMPORTANCE OF PAYMENTS MODERNIZATION



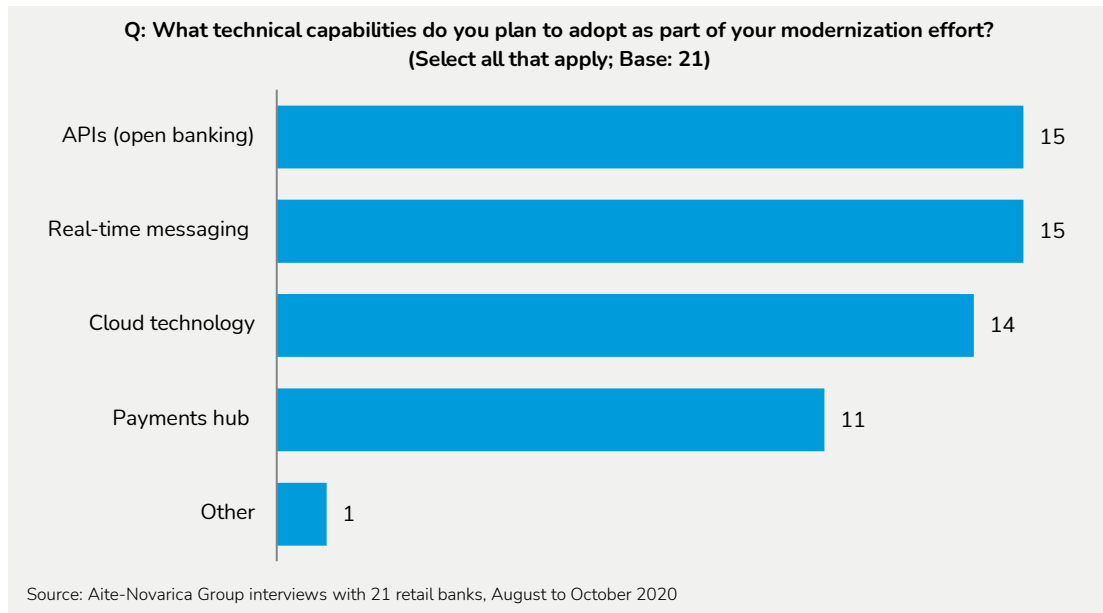
Payments modernization appears at least in the top five to 10 priorities for the retail banks interviewed for this study. For five banks, payments is the top investment area, and another eight see it as one of the top three investment areas.

KEY AREAS FOR PAYMENTS MODERNIZATION

Banks are modernizing payments infrastructure across several dimensions to upgrade legacy systems and develop new technical capabilities (Figure 5).

²⁰ See Aite-Novarica Group's report [Payments Modernization in Retail Banking](#), December 2020.

FIGURE 5: CAPABILITIES PRIORITIZED IN THE PAYMENT MODERNIZATION EFFORT



Banks are investing in the following capabilities with no clear priority among the different categories.

APIs (Open Banking)

The arrival of the API economy (i.e., the commercial exchange of business functions and capabilities using APIs) has greatly facilitated collaboration among different organizations. APIs enable banks and other financial services providers to share data and access third-party applications using common standards. Technology companies have developed API platforms to support banks with digital transformation. APIs are an integral part of the global open banking revolution expected to transform every business area of financial services, with payments seeing the greatest impact. Open banking will shift control over data to bank customers, increase competition, and change established bank business models.

Open API banking enables banks to distribute products flexibly through channels that third-party fintech partners provide, facilitating innovation and reducing time to market. Banks can also connect to open APIs of other financial services providers and integrate their products. These factors make API technology a strong driver for open banking.

APIs make banking programmable, opening opportunities for new entrants to innovate and compete with incumbent banks. At the same time, banks can create new value for customers and monetize the API economy.

Real-Time Messaging

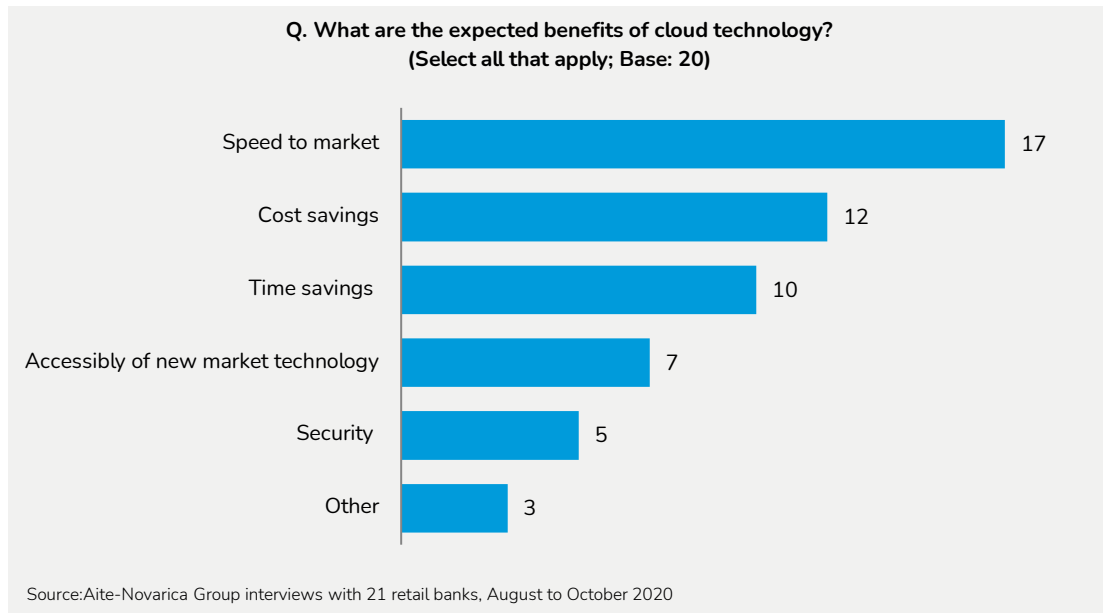
Real time is becoming the norm in banking for payments and any other interaction with the customer. As a result, banks are investing heavily in real-time messaging capabilities. Banks reported investment in real-time messaging and ISO 20022 architecture as one of the most important motivations for payments modernization.

Payments is very much at the center of real-time payment innovation. The global rollout of instant (near real-time) payment rails made new payment innovation use cases available. Instant payments have several advantages over card and ACH rails: Instant payments are immediate, irrevocable, and allow for the exchange of rich data important for business-to-business applications. Companies will benefit from new payment methods that leverage instant payment rails to provide faster liquidity, reduce risk, and lower payment costs. Nearly all banks that responded to the survey had already implemented real-time payments, and a minority already supported cross-border instant payments. Clearly, instant payments will be at the core of payment innovation.

Cloud Technology

Cloud and SaaS technologies enable banks to run a more cost-efficient operating model while providing the agility and modernity that legacy on-premises models lack. Bank respondents most often mentioned speed to market and cost savings as advantages that cloud banking can bring to an organization (Figure 6).

FIGURE 6: BENEFITS OF MOVING TO THE CLOUD



Cloud providers and vendors offer a choice of deployments (public, private, and hybrid cloud), so there are now many new options for banking infrastructure. Large banks prefer to host cloud applications in their data centers over hosting with a third party, though mixed models are common.

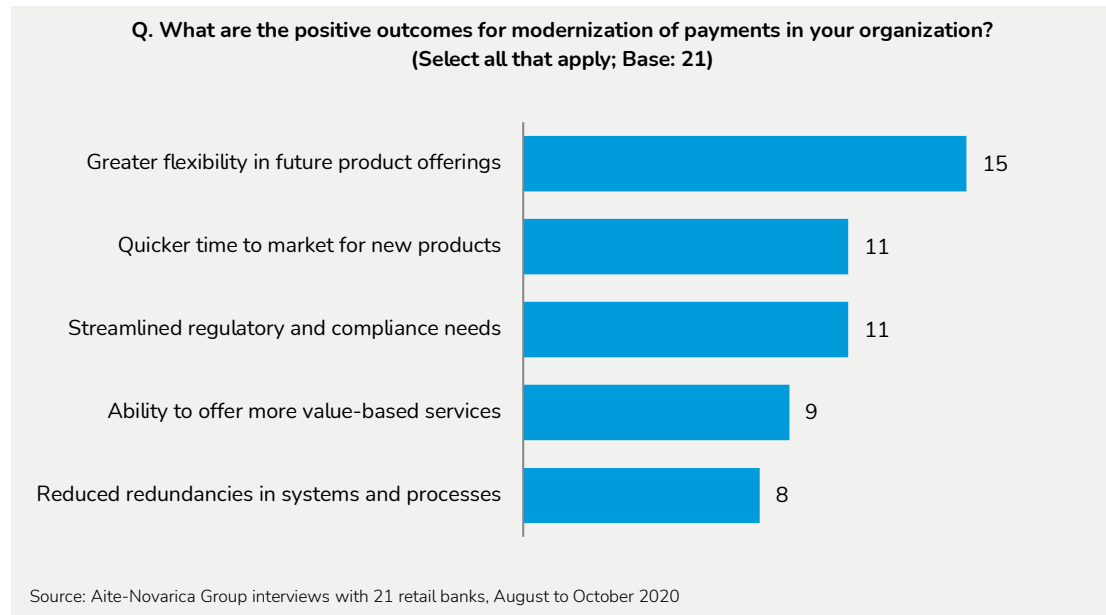
Payments Hub

Payments hubs are intended to reduce or eliminate redundant systems (such as operations, fraud prevention, and regulatory compliance) built into each separate payment system. Payment systems include legacy platforms for processing individual payment types, including credit transfers, direct debits and cards, and new and emerging payment types, such as instant payments and payments from nonbanks (e.g., PayPal). Payments hubs also provide value-added services, such as payments tracking and data and analytics about payers and recipients.

RESULTS OF PAYMENTS MODERNIZATION

FIs engaged in payments modernization projects see clear benefits (Figure 7).

FIGURE 7: BENEFITS OF PAYMENTS MODERNIZATION



FIs see greater flexibility in future product offerings as the most prominent benefit. Payments modernization also supports quicker time to market for new products, improved infrastructure for managing compliance and operational needs, and the ability to offer more value-added services.

BUY VS. BUILD

FIs generally prefer to buy software solutions (cloud-based solutions in particular) rather than develop them in-house. They are likely to develop or maintain mission-critical solutions in-house. However, respondents from FIs interviewed for this research indicate that qualified resources with payment expertise are very scarce, enforcing the need to look for outsourced solutions.

When purchasing a third-party processing platform, FIs apply the following key decision criteria:

- **Quality of the technology:** FIs require that a vendor's technology is secure, fast, and state of the art. Traditional legacy platform providers can offer robust and stable payment functionality, while newer entrants can deliver flexibility and the ability to implement new features/functionality quickly. In either case, the offering must be as stable and glitch-free as possible.

- **Geographic scope:** Commerce is global, and cross-border payments are increasingly important to consumers and businesses. Many FIs require a provider that can transcend borders and deliver functionality wherever clients are active.
- **Age of the platform:** Some core processing platforms available to FIs are 10 to 20 years old. While that helps ensure stability and reliability, technology has become increasingly sophisticated and cloud-based. FIs need a platform that allows them to compete effectively.
- **Stability and reputation of the company providing the platform:** Implementing a new payments software platform is complex and costly, and the relationship between the vendor and the FI client will be long term. The company offering the solution needs to be well regarded in the industry, stable, and in the business for the foreseeable future.
- **Flexibility and agility:** FI requirements are in constant transition. When coupled with the rate of change in the payments ecosystem, a vendor must be able to adapt quickly, support client-sourced changes, and deliver required new functionality as soon as demand is proven, and the solution is stable.

Interestingly, Aite-Novarica Group research indicated that price is not a primary decision factor.²¹

Technology vendors in the payments space should provide flexible, cloud-based solutions to banks to support their modernization journeys. Banks value partnerships over “buy vs. build” decisions, allowing vendors to establish longer-term relationships with their bank clients.

²¹ See Aite-Novarica Group’s report [Aite Matrix: Payment Processing Platforms](#), January 2021.

CONCLUSION

Fls:

- The European payments market continues to evolve and change with a growing number of payment rail options available. European Fls increasingly need to be able to connect to a variety of systems simultaneously.
- Despite the strong regulatory mandate of the ECB and the EU's appetite for SEPA harmonization, maintaining a competitive position remains a central plank of policy-making. As such, multiple systems will likely continue to exist simultaneously (e.g., TIPS, EBA's RT1), highlighting the need for connectivity.
- European payment infrastructure modernization is an ongoing process. Multiple developments are happening at once, such as request to pay and mandatory SCT Inst participation rates. As rulebooks and capabilities evolve, banks and payment providers will need to handle multiple, simultaneous modernization projects.
- Resourcing payments infrastructure modernization—and even operations—is becoming a significant challenge for many institutions, particularly as demand for these specialist skills and knowledge resources rises in all European markets at once. When possible, Fls and banks should rely on technology partners and service providers to help them resource these initiatives and manage ongoing challenges.

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Aite-Novarica Group is an advisory firm providing mission-critical insights on technology, regulations, strategy, and operations to hundreds of banks, insurers, payments providers, and investment firms as well as the technology and service providers that support them. Comprising former senior technology, strategy, and operations executives as well as experienced researchers and consultants, our experts provide actionable advice to our client base. The quality of our research, insights, and advice is driven by our core values: independence, objectivity, curiosity, and integrity.

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