



A Window of Opportunity to Implement ***Real-time Payments*** for EU Banks

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Introduction to Payments

The State of the Payments Sector

Payment Instruments & Methods, Payment Process

Real-time Payments (RTP)

RTP Regulations and Implementation in the Euro Area

Key Regulators & Industry Partners

SEPA Initiative

SEPA Payments Schemes & TARGET Services: Including SCT Inst & TIPS

RTP Implementation in Compliance with SCT Inst

RTP Impact

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Problem Statement

Why is it important to have faster and instant digital service solutions?

Problem:

- Need for contactless, fast payments due to Covid-19 pandemic
- Lack of trust due to 2008 financial crisis
- Data security concerns



RTP as Potential Solution

- Fast and convenient payments
- Transparent processing
- Compliant with EU payment regulations



Research Goals

Our two research goals and why we chose them

- 1) Examine the impact of real-time payments (RTP) on banking clients (individuals and businesses) and banks
- 2) Identify key factors for banks to consider when creating new value propositions for their clients using RTP

Introduction to Payments

Payment instruments and methods

Payment Instruments

- Cash: banknotes, coins
- Non-cash: credit transfer, direct debit, card, cheque
- Securities: equity, bond

Payment methods

- Visa, Mastercard
- iDeal
- Apple Pay, etc.



Real-time Payments (RTP)

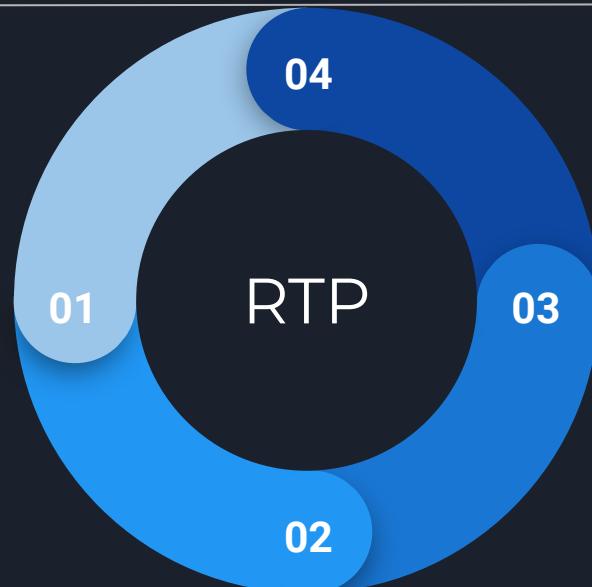
Benefits of using real-time payments

Convenient

As simple as a
Whatsapp message.

Secure

RTP regulations in
the euro area.



< 10 seconds

Instant transfer of
fund. Digital.

24/ 7/ 365

Around the clock
availability. Trust.

Key Regulators & Industry Partners

Play a key role in shaping the European payments regulatory landscape



CENTRAL BANK

19 out of 27
National Central Banks
using euro as official
currency



European
Payments Council

78

Members



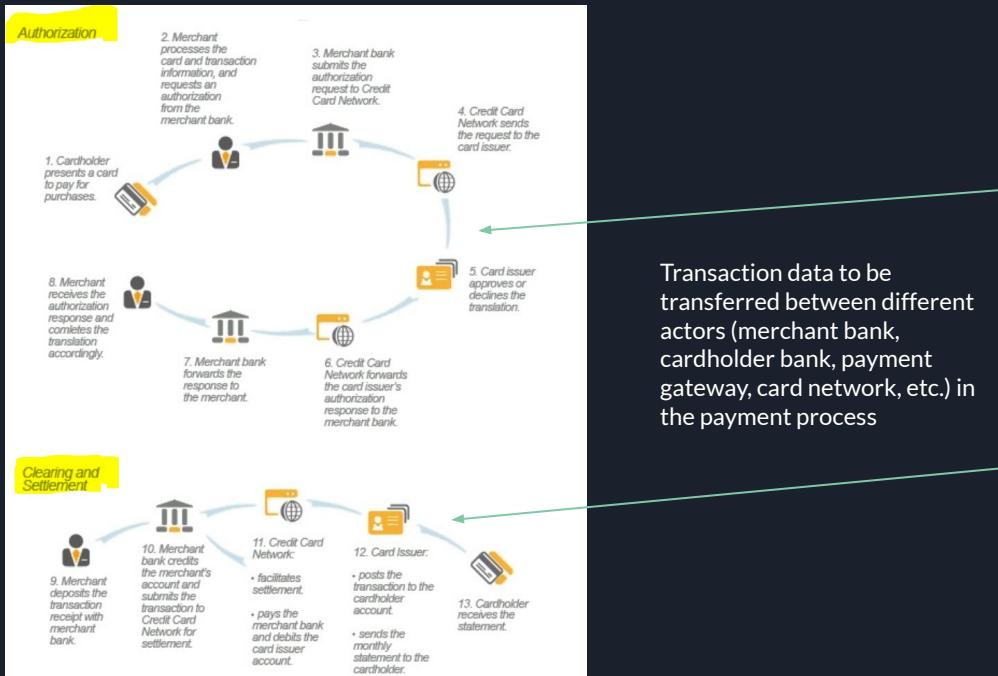
EURO BANKING ASSOCIATION

18+

Commercial Bank
members

Messaging Standards in Payments Processing

Messaging standards are the language for communicating transaction data



Transaction data to be transferred between different actors (merchant bank, cardholder bank, payment gateway, card network, etc.) in the payment process

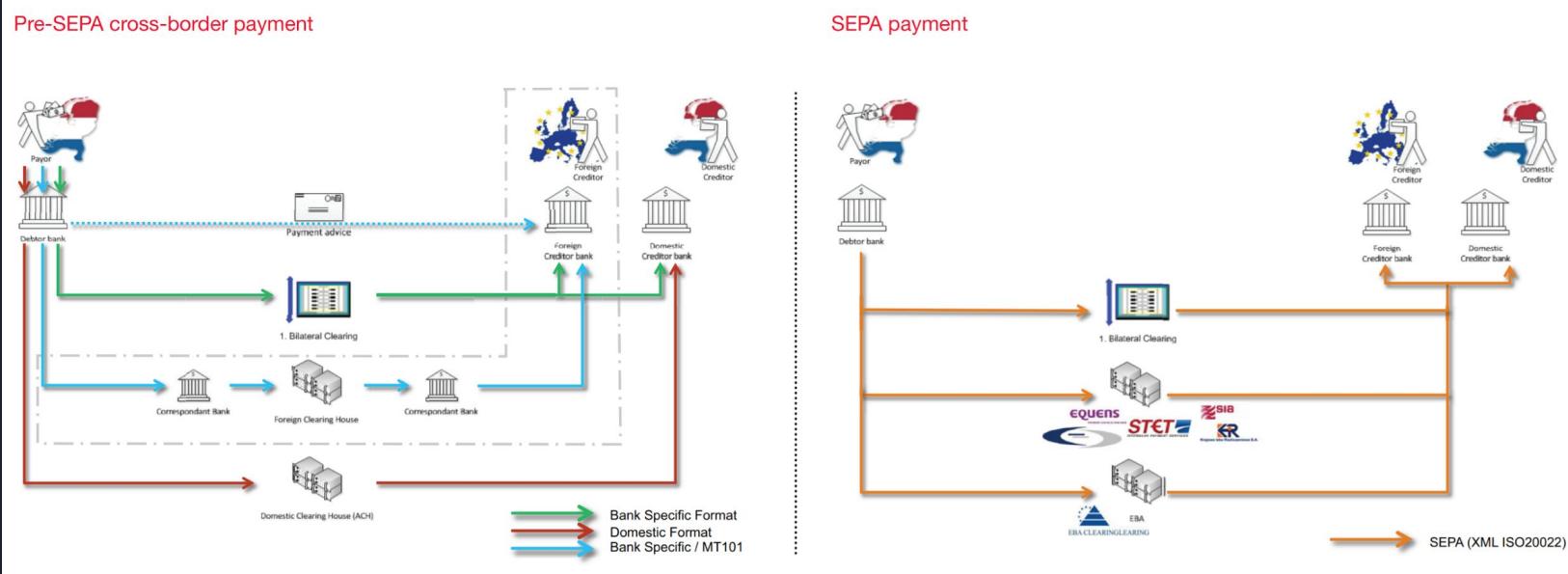
Example of transaction data in ISO 20022 messaging standards

```
<Cdtr>
<Nm>Cuba Libre Bar and Grill</Nm>
<PstlAdr>
<StrtNm>Ocean Drive</StrtNm>
<BldgNb>1234</BldgNb>
<PstCd>90099</PstCd>
<TwnNm>Los Angeles</TwnNm>
<CtrySubDvsn>CA</CtrySubDvsn>
<Ctry>US</Ctry>
```



Single Euro Payments Area (SEPA) Initiative

*Jointly introduced by the key regulators + industry partners;
Harmonises cross-border payments denominated in euro*



SEPA Instant Credit Transfer (SCT Inst) & TIPS

4 SEPA payment schemes, including SCT Inst
SCT Inst as regulatory framework for RTP; TIPS as technical implementation of SCT Inst

SCT Inst Payment Scheme Composition



Rulebook

Business rules, obligations, and technical standards for payment processing



Implementation Guidelines

Technical translations of the rulebook into ISO 20022 payment messages enabling SEPA transactions



Payment Scheme Mgmt. Rules

Periodically updated by the EPC to reflect new market developments

TIPS Key Features

Availability

24/7/365

Execution Time

< 10 seconds

Processing Fee

€0.002/ transaction

Key Actors in Payment Processing

Banks, Automated Clearing Houses (ACHs), Payments-as-a-Service (PaaS) Providers



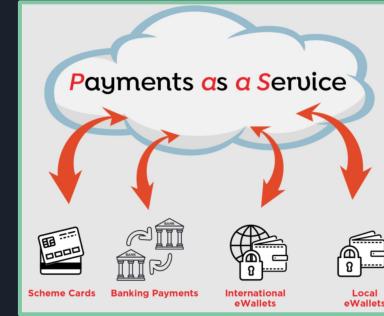
Banks

Receive and process RTP requests from clients (individuals and businesses)



ACHs

Perform the clearing phase of payments processing on behalf of multiple banks

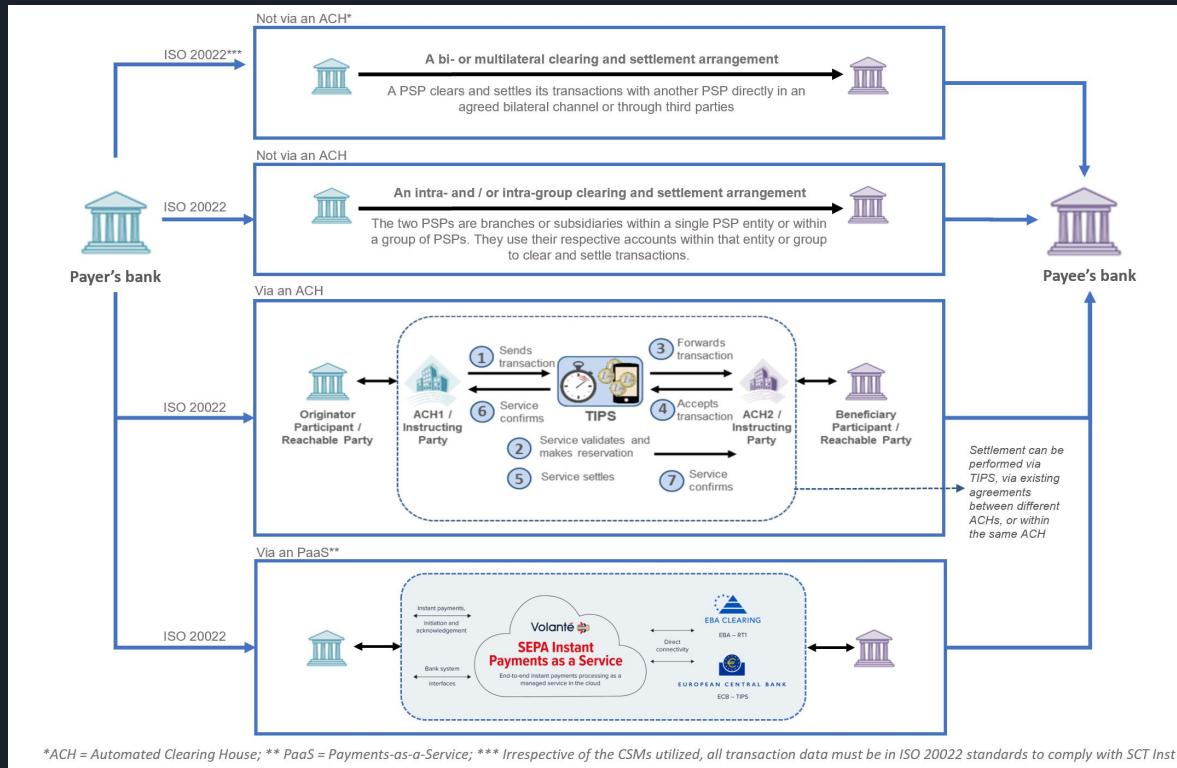


PaaS Providers

Connect with bank's core infrastructure via APIs to execute payments without requiring bank to set up connections with different payments systems

Four RTP Implementation Options

Most suitable implementation option depends on client needs, bank's business model & technical infrastructure





RTP Implementation Options Comparison

Option	Definition	Advantages	Disadvantages
Via bi- or multilateral clearing and settlement agreement	Example: If Rabobank and ING have an agreement to process all payments going between Rabobank and ING, when such a transaction is initiated, it will be processed in-house by Rabobank and ING without involving an ACH or PaaS.	Minimal technical infrastructure required. Potential payment processing cost saving.	Not common in practice due to the lack of scalability
Via intra- and/or intra-group clearing and settlement agreement	Example: As Postbank is a subsidiary of Deutsche Bank, it is likely that payments going between Postbank and Deutsche will be processed in-house by Postbank and Deutsche without involving an ACH or PaaS.	Minimal technical infrastructure required. Potential processing cost saving.	Not common in practice due to the lack of scalability
Via ACH	<p>ACHs perform the clearing phase of the payment process.</p> <p>Banks have multiple options for ACHs depending on the types of payments they wish to process:</p> <ul style="list-style-type: none">• Pan-European: RT1, etc.• Regional RTP infrastructure: equensWorldline, Eurogiro, etc.• Domestic ACH: Iberpay (Spain), etc. <p>For ACHs which are part of TIPS, they can facilitate the settlement process on the behalf of the payer's and payee's bank within the TIPS system.</p> <p>For ACHs which are not part of TIPS, they must have an existing agreement to facilitate settlement.</p>	The reachability depends on specific ACHs. Different ACHs have different price schedules, providing flexibility for the banks in terms of choosing the ACH that best serves their needs.	Require up-front cost to set up connection with the ACH
Via PaaS	<p>Provides direct connectivity to different CSMs without requiring banks to set up the connection on their own. Additionally, PaaS service providers will continue to expand the number of CSMs to expand the reachability of their service.</p> <p>Examples: Volantee, Finastra</p>	No up-front cost to set up connectivity with different CSMs. Processing fee is on transaction-basis. Instant connection to multiple RTP networks. Provide value-added services such as AML and sanctions screening, ledger reconciliation.	Processing fee might get too high for high volume transactions.

RTP Impact

Stakeholder Analysis: Banking Clients & Banks

Impact on Banking Clients:

- Individuals
- Small and medium-sized businesses
- Corporate clients



Impact on Banks:

- Unlocking working capital
- Liquidity management
- Anti money laundering

Impact on Individuals

Enhanced payments experience for individuals with personal banking needs

- ❑ **Speed:** Peer-to-peer, e-commerce transactions

- ❑ **Security:** more control over your money and more trust in the financial services industry



Impact on Businesses

Different levels of impact for small and medium-sized businesses vs. corporate clients

82%

Small businesses fail due to poor cash flow management



Cash Flow Management

Access revenue in real-time vs. 1-5 days for card payments vs. 1-7 batch processing

Liquidity

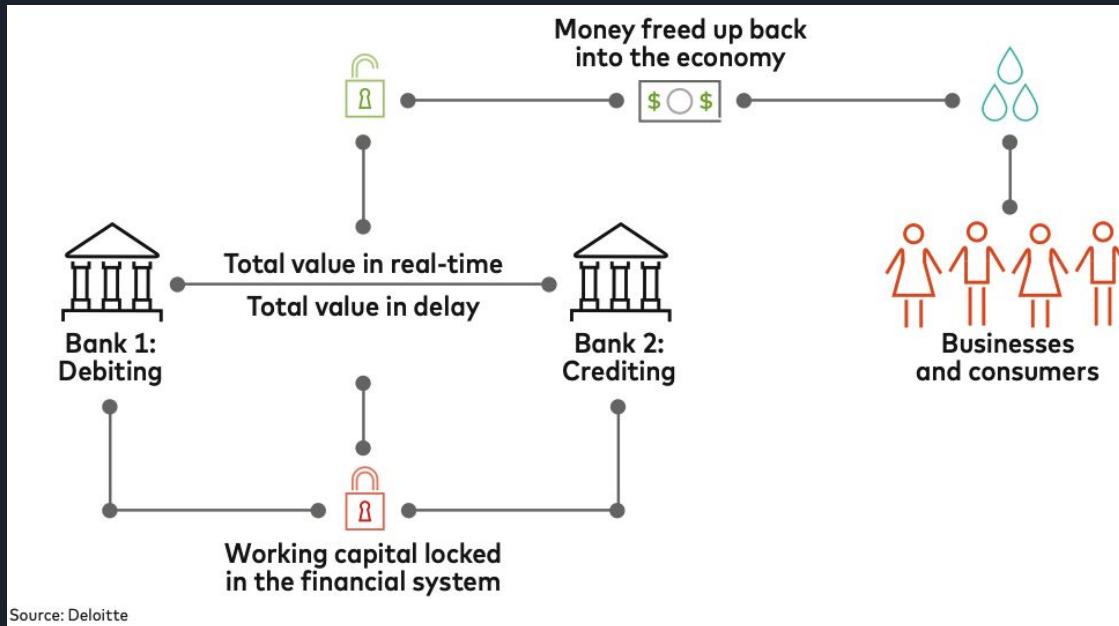
Better meet loan and other financial obligations

Just-in-time Operations

Faster payments remove uncertainty from production

Impact on Banks: Unlocking Working Capital

Additional working capital will be freed up from the system and become available to businesses and consumers in the form of loans



Impact on Banks: Liquidity Management

Liquidity impact is larger for small banks than for large banks

Increased cash flow fluctuation

More intra-day liquidity required

Higher interest costs



Impact on Banks: Anti Money Laundering

Difficulty tracing money laundering will increase due to real-time payments

Industry-wide cooperation

Leveraging AI technologies





Interview with Industry Practitioner

Interview with Jerry Pieters, Senior Manager at Ernst & Young Netherlands Advisory

Key takeaways:

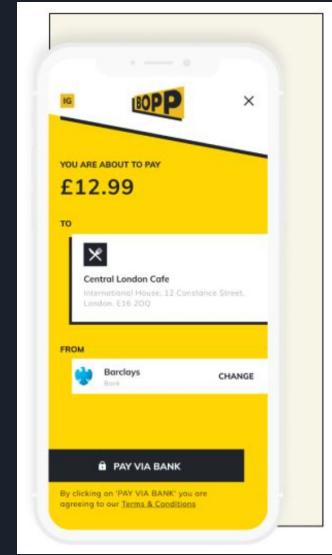
1. RTP adds more value to individuals + small businesses than for corporate clients due to the transaction limit (e.g. €100k)
2. Factors that influence RTP adoption go beyond customer segments and include cultural perceptions toward money + real-time culture
3. The biggest impact of RTP on banks is on Anti money laundering (AML) operations
4. PaaS is most suitable for small banks who would prefer to outsource their payment processing

RTP Success Stories

How banks can create new value propositions by leveraging RTP technology



Instant refunds of unused balance
for TfL's Oyster cards
via HSBC's RTP system



Customers authorize direct
payments to merchants via Bopp,
bypassing card networks



RTP Business Case

What factors do banks need to consider when creating new value propositions for their clients using RTP?

Problem ① <ul style="list-style-type: none">- Desire for instant fund transfer- Desire for payment transparency + trust- Desire for improved cash flow	Solution ② <ul style="list-style-type: none">- Transparent payment process- Efficient payments processing- Enhanced interoperability between payments systems	Unique value proposition ④ <ul style="list-style-type: none">- Instant domestic and cross-border transactions- Enhanced payment experience- Low processing fee- Improved cash flow for small and medium-sized businesses <p>Factors that influence adoption include:</p> <ul style="list-style-type: none">- Customer segments- Cultural perceptions toward money- Real-time culture	Unfair advantage ⑤ <ul style="list-style-type: none">- Differs by banks	Customer segments ⑦ <ul style="list-style-type: none">- Individuals- Small and medium-sized businesses- Corporate clients
Cost structure ⑧ <ul style="list-style-type: none">- Infrastructure upgrade + maintenance (if not using PaaS) or processing cost (if using PaaS)- Employee training cost on how to use the new RTP systems- Further investment in AML operations	Revenue streams ⑨ <ul style="list-style-type: none">- Processing fee charged to customers- Potential data mining using rich transaction data in ISO 20022 standards to better personalize banking services			



Conclusion

Answers to our research goals

- 1) Examine the impact of real-time payments (RTP) on banking clients (individuals and businesses) and banks

RTP Impact:

- Enhanced payment experience **for individuals**
- Improved cash flow + liquidity + JIT operations **for small businesses**
- Unlocking working capital + liquidity + AML impact **for banks**

- 2) Identify key factors for banks to consider to create new value propositions for their clients using RTP

RTP Business Model:

- Prioritize creating **new value propositions** tailored to different **customer segments** + cultural perceptions toward money
- Multiple mechanisms to implement RTP with **advantages/ disadvantages**

Thank you!

