

SEPA and payments industry - challenges concerning standards and operations

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Key words: SEPA, payments, ISO 20022, infrastructure, interoperability

1.Introduction

The Single Euro Payments Area (SEPA)¹ is a payment-integration project of the European Union. SEPA is aiming to create an integrated euro payments market and to

harmonize the national and cross-border euro payment systems, making cross-border transactions as simple and cheap as national ones. The SEPA regulations is aiming to increase harmonization, through using of common payments formats and computer languages.

SEPA forms a key part of the European Commission's vision of a Single Market, which is intended to extend to all European Union (EU) Member States as well as

Norway, Iceland, Liechtenstein, as well as Switzerland and Monaco, but with a focus on the Eurozone.

Mostly financial institutions target to streamline their communication infrastructure and associated costs. They could use a common "language" for all financial communications, whatever the business domain, the communication network and the counterparty (other financial institutions, customers, market infrastructures).

The financial sector worldwide becomes more and more automated and complex. The main goal of using a common standard in the industry is facilitating interoperability among systems and infrastructures. In this view, standardizing messages across institutions and companies has never been more

important. The ISO 20022 provides interoperability and consistency to a highly complex industry, thereby reducing the risk of errors and speeding up processes.

Different standards and infrastructures have been currently used across Europe before the SEPA implementation.

"Developments in retail payments have also brought about a variety of technical standards for exchanging payments and different infrastructures for payment settlement. Many countries have central "automated clearing houses" (ACH) that settle national interbank payments. In the EU-15 alone there are 12 such central ACHs which settle between 100,000 payments (Greece) and 44 million payments (France) each day. In some countries, however, bilateral exchanges of payments between major clearing institutions in the banking industry are prevalent; in Germany, this system is supplemented by banking-group-specific <giro> networks and the Bundesbank's Retail Payment System (RPS) for banks and payments not accommodated anywhere else. On the whole, the cost and efficiency levels of payment execution in the different countries in Europe have undergone varying developments. Owing to the structure of the banking sector, in Germany the processing of payments is more decentralised. All the same, it is highly efficient. This is reflected inter alia by the fact that the vast majority of payments can be automatically processed straight through the entire payment chain." This was the level of payments infrastructures in Europe according to a Deutsche Bundesbank Report from 2005.

2.SEPA Regulations and implementation in Europe

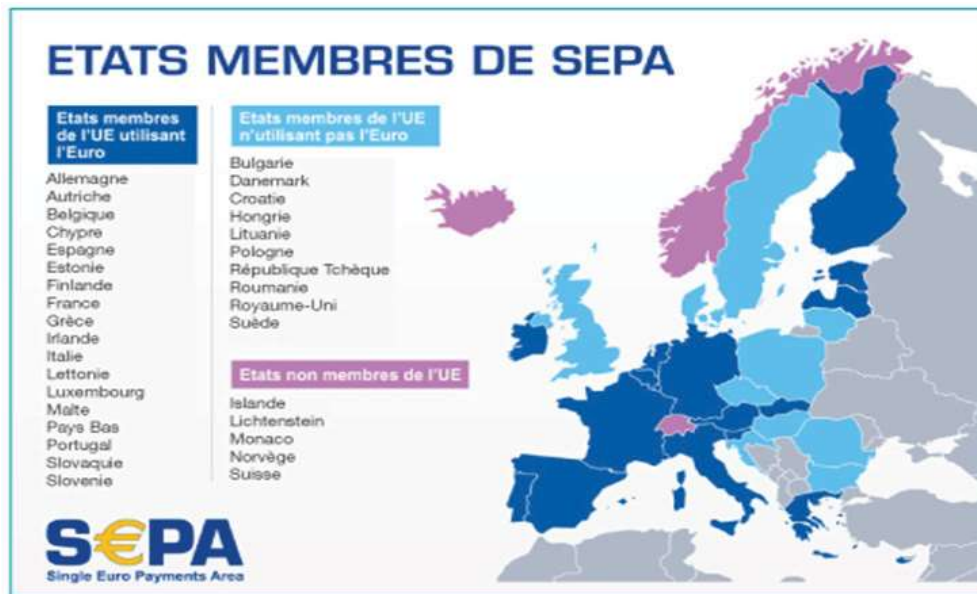
The goal of SEPA (Single Euro Payments Area) is to facilitate the emergence

¹ SEPA covers the 27 EU countries, the other three European Economic Area countries (Iceland, Liechtenstein and Norway) and Switzerland. SEPA is an initiative by the European banking sector with the European Payments Council as its decision making and coordinating body, see www.europeanpaymentscouncil.eu

of a competitive, intra-European market by making cross-border payments as easy as domestic transactions. With cross-border inter-operability for electronic payments, card transactions will increasingly replace cash and checks for all types of payments.

Using different methods, we estimate card and other payment network scale economies for Europe. Cost reductions likely to induce greater replacement of small value cash transactions are also illustrated. (Bolt & Humphrey, 2007)

Figure 1. SEPA landscape in Europe



The creation of the single European market requires adequate payment processing mechanisms. Europe’s economic integration is having a decisive impact on developments in European payments. That motivated the European Commission to call for improvements to be made initially in the field of cross-border EU payments. European Commission studies dating back to the 1990s came to the conclusion that processing times and fees in this segment far exceeded national processing times and fees. The small percentage of cross-border EU payments in all banks’ payments was one of the reasons. According to Deutsche Bundesbank’s report

(2005) “in Germany, this percentage is still estimated to be only between 0.3% and 2% of all payments, depending on the banking group. This small percentage causes relatively high costs for the execution of cross-border payments via special procedures.”

Other authors, too, characterize the European banking industry as “fragmented” (Templeton and Bond, 1999). “It has consisted of a few large banks in each country operating mainly within their own borders. Multiple currencies, the lack of highly developed security markets, cross-border regulations, and traditions have all contributed to this industry structure. Corporate customers

have relied upon domestic banks for their foreign exchange needs and for much of their debt financing.”

Introduction of EURO and, then implementation of SEPA, led to some consequences:

a) the large operational cost of the transition to the new currency. Investment in technology has been and still will be extensive over the next few years (Templeton and Bond, 1999)

b) electronic payments systems must be altered and expanded to handle the expected increase in volume and to assure reachability and compliance with SEPA regulations. Thousands of software applications are being rewritten and staff are being retrained.

c) educate the banks’ customers.

The EU tried to improve the situation by adopting various regulations.

The legislation in force include:

- Regulation (EU) No 260/2012 – Technical and business requirements for credit transfers and direct debits in euro

- Regulation (EC) No 924/2009 – Cross-border payments in the Community

- Decision 2009/72/EC – Payment Systems Market Expert Group (PSMEG)

- Directive 2007/64/EC – Payment services in the internal market - on payment services in the internal market and on the application of Regulation (EC) No 924/2009 on cross-border payments in the Community.

- Regulation (EC) No 1781/2006 – Information on the payer accompanying transfers of funds

- Directive 2000/46/EC – Electronic money institutions

- Directive 2000/28/EC – Credit institutions

- Directive 98/26/EC – Settlement finality in payment and securities systems.

The Directive on Payment Services (PSD) provides the legal foundation for the creation of an EU-wide single market for payments. The PSD aims at establishing a modern and comprehensive set of rules applicable to all payment services in the European Union. The target is to make cross-border payments as easy, efficient and secure as ‘national’ payments within a Member State. The PSD also seeks to improve competition by opening up payment markets to new entrants, thus fostering greater efficiency and cost-reduction. At the same time the Directive provides the necessary legal platform for the Single Euro Payments Area.

The following regulations were repealed:

- Regulation (EC) No 2560/2001 – Cross-border payments in euro, commonly known as the pricing regulation. One of its provisions stipulates that charges for electronic cross-border payment transactions and credit transfers of up to Euro 50,000) within the EU must not exceed those for comparable domestic payments.

- Recommendation 97/489/EC – Transactions by electronic payment instruments

- Directive 97/5/EC – Cross-border credit transfers – Tried to regulate the cross-border credit transfers, in the hope of creating more transparency about the terms and conditions for the execution of payments.

The European Commission and the European Central Bank commented: “The introduction of the euro as the single currency of the euro area will only be completed when SEPA has become a reality, i.e. when consumers, businesses and governments are able to make cashless payments throughout the euro area from a single payment account

anywhere in the euro area using a single set of payment instruments as easily, efficiently and safely as they can make payments today in the domestic context.”

The SEPA Regulation entered into force on 31 March 2012. The main aim of the SEPA

Regulation is to ensure the migration of existing national euro payments to the

European payment schemes (SCT and SDD) so that consumers and businesses can make and receive cross-border euro payments across Europe as costless and easy as domestic payments.

Some end-dates have been set up, in this purpose: 1 February 2014 - in euro Member States and 31 October 2016 - in non-euro Member States, or one year after joining the Eurozone, if earlier).

The main institution in this complex project European Payments Council (EPC). New schemes have been created, defining the rules, practices and standards for payments: the SEPA Credit Transfer scheme (SCT), the SEPA Core Direct Debit scheme (SDD) and the SEPA Direct Debit Business-to-Business scheme (SDD B2B). The SCT and SDD Schemes are developed in close dialogue with the stakeholder community.

The Single Euro Payments Area payment schemes, as defined in the SEPA Credit Transfer (SCT) and SEPA Direct Debit (SDD) Rulebooks, contain “sets of rules and technical standards for the execution of SEPA payment transactions that have to be followed by adhering payment service providers.” The schemes are based on technical standards defined by standards bodies such as the International Organization for Standardization.

The general opinion of both banks and regulatory bodies is that an efficient and

integrated euro payments market will rely on payment scheme rules and technical standards that are adhered to by all European banks. This ensures the efficient straight-through processing of payments.

The SEPA Schemes have open access criteria in line with Article 28 of the Payment Services Directive (Directive 2007/64/EC of the European Parliament and of the Council of the EU of 13 November 2007 on payment services in the internal market). The SEPA payment schemes as defined in the SCT and SDD Rulebooks allow for flexibility and contain optional features enabling payment service providers to add features and enhance their core services. SEPA payment products and services offered to the customer are developed by individual payment service providers operating in the competitive environment.

There are some examples of rules and technical standards defined in a payment scheme:

- Currency of the funds (money) exchanged - SCT and SDD: euro.
- Format of the account identifier - SCT and SDD: International Bank Account Number (IBAN - ISO Standard 13616).
- Standard data formats used to exchange messages between banks - SCT and SDD: ISO 20022 message standards.
- Rules for ‘R’ transactions (refunds, returns and rejects) – each Rulebook contains detailing rules for exception handling.
- Number of characters carried with remittance information - in the SCT Scheme: 140 characters of remittance information are delivered without alterations from the payer to the payee.
- Timelines to be observed by payment service providers when executing a payment transaction.

In essence, a SEPA payment scheme can be compared to other frameworks, which prescribe standardized processes to be observed in network industries. Such standardization or integration initiatives enable the provision of services by service providers in a two-sided market across traditional boundaries (for example, national borders). Similar examples of standardization in network industries can be found in the areas of telecommunication, television or radio.

The SCT and SDD Schemes represent integration at a European level of the multiple sets of single national payment schemes existing today. Migration to a single set of SEPA payment schemes allows multiple payment service providers to offer a broad range of diversified payment services and products for euro credit transfers and euro direct debits throughout SEPA. As a result, customers benefit from increased competition and more choices in the payments market. But, in the same time, migration to the SEPA standards is a challenge for corporates, public administrations and government agencies, not only for banking institutions. Part of this challenge is represented by the implementation of ISO 20022 message standards. Of course, the benefits of standardization in communication channel formats are numerous. In the mature payments market, corporates and public administrations alike collaborate with financial institutions to achieve harmonization and standardization in the customer-to-bank space. A good example of such collaboration specifically with regard to the ISO 20022 message standards is the Common Global Implementation (CGI) initiative, a global industry forum which brings together representatives of both the demand and supply sides. The CGI has recently published

implementation guidelines covering payments, collections and reporting based on the ISO 20022 message standards. The CGI approach to ISO 20022 XML enables the user to benefit from a common business process to improve payment initiation and accounts receivable automation, including reliable transfer of the remittance advice or the remittance advice reference through the banking/PSP chain. In practice, this means that customers can take their cash management to the next level with help of a single global implementation.

3.The use of ISO 20022 XML format

ISO 20022 - Universal financial industry message scheme (which used to be also called "UNIFI") is the international standard that defines the ISO platform for the development of financial message standards. It allows participants and systems in different markets to "talk" to each other using consistent terminology or syntax, which supports domestic and global interoperability. It also allows for more remittance information.

Mostly financial institutions that want to streamline their communication infrastructure and associated costs by opting for a single, common "language" for all financial communications, whatever the business domain, the communication network and the counterparty (other financial institutions, clients, suppliers and market infrastructures). ISO 20022 is targeted at these standards initiatives that are generally driven by communities of users looking for more cost-effective communications to support specific financial business processes with a particular view of facilitating interoperability with other existing protocols.

The drivers for ISO 20022 adoption are, among others, harmonization (driven by regulation or innovation), interoperability with other systems/industry participants, and automation of processes.

The first focus of ISO 20022 is on international (cross-border) financial communication between financial institutions, their clients and the domestic or international 'market infrastructures' involved in the processing of financial transactions. The world of financial services and especially payments is highly reliable and fast. This, however, has developed over time and more jurisdictions are taking the strong opportunity to use ISO 20022 for the development of new domestic financial messages as well, thereby streamlining all communications for financial institutions.

What are the benefits of ISO 20022 for the players on the payments market?

First of all, it should be mentioned the capability to extend both payment and remittance data. Then, maybe more important, industry interoperability will be increased between counterparties both within the domestic and cross-border markets, reducing the complexity, cost and risk of data manipulation and conversion.

Another benefit will be the improved payments resilience via cross scheme interoperability for scheme participants, and easier redirection of payment irrespective of payment type for end-users, particularly in times of crisis or during service disruptions. It need to be mentioned the reduced barriers to entry to the payments infrastructure supply market, as well as potential reduced barriers to entry to the payments market by challenger banks.

The ISO 20022 flexible framework will encourage users to build business

transactions and message models under an internationally agreed upon approach, and to migrate to the use of a common vocabulary and a common set of syntaxes.

The ISO 20022 process is governed internationally through a management group made up of financial services industry representatives from a global constitution. The implementation and supply of services to support the technical registration process is provided by SWIFT in contract to ISO.

In ISO 20022, the outputs are stored in a central financial repository. The ISO 20022 repository offers industry users and developers free access to a Data Dictionary of business and message components and a Business Process Catalogue containing message models and corresponding XML and/or ASN.1 schemas. If there are no ISO 20022 messages to cover a specific transaction, standards initiatives can be launched to define new models and messages and submit the new solution for approval by the ISO 20022 registration bodies. If the messages exist in the ISO 20022 repository, but do not address all requirements of a new community, it can be agreed upon to update the existing models and messages and create a new version that will accommodate the needs of all.

ISO 20022 is currently used globally, not only in the SEPA zone. ISO 20022 is currently mandated through the SEPA Regulation as the message format for SEPA Credit Transfer and SEPA Direct Debit transactions. It is also mandated for Euro Real Time Gross Settlement (Target 2 and Euro1). Jurisdictionally, it is being used in other EEA countries such as Denmark and Switzerland as well as Japan, India, Russia, Australia, Canada, Singapore and South Africa.

There is still a question to be answered: will the entire payments market move to

ISO 20022 for payments in the future? The payments industry via their representatives agreed that there were no immediate plans to make a wholesale move towards ISO 20022. Of course, the standard is a catalyst of collaborative development of the industry and actors could consider the opportunity to invest in ISO 20022. Anyway, the payments industry has a long history of being committed to common industry standards as any successful network business depends on common standards.

For example, Common Global Implementation (CGI) Programme is a forum for banks, corporates and vendors to discuss various corporate to bank implementation topics related to ISO 20022, aiming to simplify the implementation of ISO 20022 based messages to promote wider acceptance within the corporate to bank space. Includes banks and large corporates already using ISO 20022, e.g Citi, Barclays, HSBC, JPM, RBS, Santander, Deutsche Bank, Ikea.

ISO 20022 is a multi part International Standard prepared by ISO Technical Committee TC68 Financial Services. It describes a common platform for the development of messages using:

- a modelling methodology to capture in a syntax-independent way financial business areas, business transactions and associated message flows;
- a central dictionary of business items used in financial communications;
- a set of XML and ASN.1 design rules to convert the message models into XML or ASN.1 schemas, whenever the use of the ISO 20022 XML or ASN.1-based syntax is preferred.

The resulting models and derived messages are published in the Catalogue

of messages and stored in the ISO 20022 Financial Repository available on this website. This flexible framework allows communities of users and message development organizations to define message sets according to an internationally agreed approach using internationally agreed business semantics and, whenever desirable, to migrate to the use of a common XML or ASN.1-based syntax. The catalogue of messages gives access to the current, latest version of approved ISO 20022 message definitions. The Full Catalogue provides access to all current versions of ISO 20022 message definitions sorted in alphabetical order of the business areas and message IDs. The following documentation is provided:

- a Message Definition Report (MDR) and, when necessary, a Message Usage Guide (MUG) fully describing each message set
 - the schema of each message definition
 - examples of message instances, when provided by the submitting organisation
 - the Business Application Header (BAH) documentation.

Below is presented the Full catalogue of ISO 20022 messages. This presents the description of the latest version of ISO 20022 message definitions:

- a Message Definition Report (MDR) and, when necessary a Message Usage Guide (MUG), fully describing each message set
 - the schema of each message definition
 - examples of message instances, when provided by the submitting organisation
 - the Business Application Header (BAH) documentation.

The e-Repository includes all current ISO 20022 message definitions in a processable EMF format.

This is the list of ISO 20022 messages per Message Identifier/Business Area:

- acmt - Account Management
- admi - Administration
- auth - Authorities
- caaa - Acceptor to Acquirer Card Transactions
- camt - Cash Management
- catm - Terminal Management
- pacs - Payments Clearing and Settlement
- pain - Payments Initiation
- reda - Reference Data
- remt - Payments Remittance Advice
- seev - Securities Events
- semt - Securities Management
- sese - Securities Settlement
- setr - Securities Trade
- trea - Treasury
- tsin - Trade Services Initiation
- tsmt - Trade Services Management
- tsrv - Trade Services .

Figure 2. Example of pain - Payments Initiation messages

Msg ID (Schema)	Message Name	SD	Submitting Organisation	Instances	Msg Def Report
pain.001.001.05	CustomerCreditTransferInitiationV05	Y	ISTH	Download	MDR
pain.002.001.05	CustomerPaymentStatusReportV05	Y	ISTH	Download	
pain.007.001.04	CustomerPaymentReversalV04	Y	SWIFT	Download	
pain.008.001.04	CustomerDirectDebitInitiationV04	Y	ISTH	Download	
pain.009.001.04	MandateInitiationRequestV04		SWIFT	Download	MDR
pain.010.001.04	MandateAmendmentRequestV04		SWIFT	Download	
pain.011.001.04	MandateCancellationRequestV04		SWIFT	Download	
pain.012.001.04	MandateAcceptanceReportV04		SWIFT	Download	
pain.013.001.03	CreditorPaymentActivationRequestV03		CBI	N/A	MDR
pain.014.001.03	CreditorPaymentActivationRequestStatusReportV03		CBI	N/A	

(source: www.iso20022.org)

The technical standardization based on the use of international standards facilitates the integration of the EU payments market.

The SEPA Credit Transfer (SCT) and SEPA Direct Debit (SDD) Schemes and adjacent implementation guidelines developed by the European Payments Council in close dialogue with the customer community are based on the ISO 20022 messages standards. With the launch of the SCT Scheme in 2008, European banks were the first in the world to deploy the ISO 20022 message standards

for mass payment transactions. The roll-out of SEPA, therefore, represents one of the initiatives that pioneered broad-scale adoption of ISO 20022.

4.Regulation (EU) No 260/2012 and payments interoperability

In February 2012, the EU legislator; i.e. the European Parliament and the Council of the EU representing EU Member States, adopted the 'Regulation (EU) No 260/2012

establishing technical and business requirements for credit transfers and direct debits in euro' (the SEPA Regulation). This legislative act defined 1 February 2014 as the deadline in the euro area for compliance with the core provisions of this Regulation. Effectively, this means that as of this date, existing national euro credit transfer and direct debit schemes will be replaced by SCT and SDD. The SEPA Regulation details, among other things, the use of the ISO 20022 message standards by payment service providers and payment service users.

The Regulation (EU) No 260/2012 details the use of the ISO 20022 message standards by payment service providers (PSPs) and payment service users (PSUs). Article 5 (1) (d) of the SEPA Regulation states that PSPs "must ensure that where a PSU that is not a consumer or a micro-enterprise, initiates or receives individual credit transfers or individual direct debits which are not transmitted individually, but are bundled together for transmission", the ISO 20022 message formats are used.

Article 2 (17) of the SEPA Regulation defines the ISO 20022 XML message standard as "a standard for the development of electronic financial messages as defined by the ISO, encompassing the physical representation of the payment transactions in XML syntax, in accordance with business rules and implementation guidelines of Union-wide schemes for payment transactions falling within the scope of this Regulation." The 'implementation guidelines of Union-wide schemes' referred to in this definition would include, for example, the implementation guidelines published by the European Payments Council (EPC) with regard to the SEPA Credit Transfer (SCT) and SEPA Direct

Debit (SDD) Schemes, which are available on the EPC Website.

Interoperability is the key of this process. According to Potgieser (2010) interoperability is central to establishing SEPA. "The goal of interoperability is to allow information to be presented in a consistent manner between business systems, regardless of technology, application or platform. It thus provides organizations with the ability to transfer and use information across multiple technologies and systems by creating commonality in the way that business systems share information and processes across organizational boundaries."

A number of levels of interoperability can be identified, where the most important are (Potgieser, 2010):

- Technical interoperability based on common methods and shared services for the communication, storage, processing and presentation of data. This includes the technical foundations for a secure environment, compatible technical standards and a common framework, i.e. technical issues involved in linking computer systems and services like open interfaces, accessibility and security services whilst streamlining the integration, presentation and exchange of data.

- Semantic or business interoperability designed to address discovery and collaboration aspects, including workflow and decision-making transactions. Creating interoperability in this area can require alignment of business processes as well as operational synchronisation of collaboration data to ensure that the precise meaning of exchanged information is preserved and well understood.

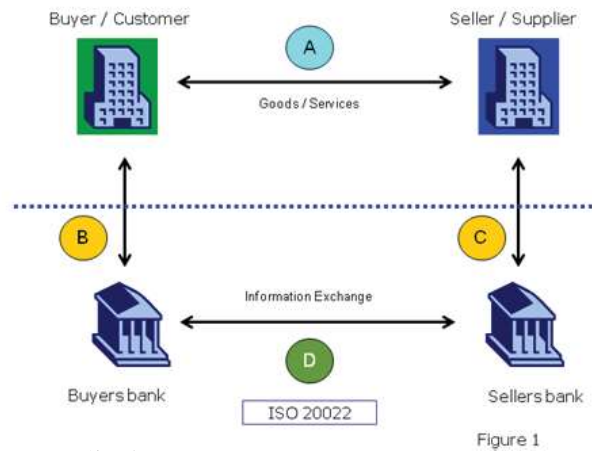
- Organisational interoperability; e.g. the process by which different organisations

(either in public or private sector) collaborate to achieve their mutually beneficial, mutually agreed service-related goals.

- Legal interoperability, e.g. - in the context of the European Union - appropriate synchronisation of national legal regimes is required so that electronic data originated in any one Member State are accorded the proper legal weight and recognition in any other Member State.

This involves both PSP (Payment Service Provider, e.g. a bank or an electronic money institution) and PSU – Payment Service User, e.g. a business or consumer. PSUs should therefore make arrangements to adapt to the usage of ISO 20022 XML message standards in the customer-to-bank space in relation to files of payment transactions.

Figure 3. SEPA flow of a payment transaction (the four corner model)



<http://www.europeanpaymentscouncil.eu/>

From 31 October 2016 the use of the ISO 20022 XML4 message standard becomes

mandatory for the credit transfers and direct debits in euro by businesses that are not microenterprises (microenterprises are those with less than ten staff members and a turnover or a balance sheet total of up to €2 million). Businesses must take steps to ensure they have the capability to initiate and receive bundled payments in ISO 20022 XML format by 31 October 2016. For example, their systems must be capable of processing cash management (CAMT)

and payment initiation (PAIN) messages. PSPs have a legal requirement to ensure that their business customers use this format from 31 October 2016.

The SEPA Regulation does not specify how businesses should meet this requirement.

Some businesses may choose to make their own internal systems ISO 20022 XML compliant in support of their SEPA traffic. Others may wish to use conversion services to convert their existing message formats into the ISO XML 20022 format, at least for a transition period.

5. Conclusions

Still, the legal framework does not guarantee the success of a standard.

Standards succeed when they achieve critical mass and consistency of use. Sometimes, if the users make bilateral arrangements to overload or circumvent usage rules, the value of a standard is diminished and the importance is reduced.

On the other side, in the payments domain, the standards have been extremely successful. First, the standard was well designed to be clear and concise, and it has been amended in an orderly way. We should add here that almost all messages following the standard are processed through SWIFT's central switches, and there is little reason to circumvent the standard for the small fraction of messages that will go via other communication channels.

ISO 20022 starts with the ambitious goal of unifying financial message standards, e.g. payments. ISO 20022 provides a clear and comprehensive language for expressing the rich variety of information that accompanies payment instructions with many distinct purposes. It is here that the rich opportunity presented by ISO 20022 can be unlocked. The standard defines messages with clarity of purpose for each message type. The purpose is to convey information between parties in the payment chain, as an instruction from the originating corporation to a bank, to pass settlement information among multiple banks that are involved in the settlement of the payment or to deliver a report about the payment.

The objective in creating a Single Euro Payments Area is to eradicate the current fragmentation of the European payments landscape. The use of ISO20022 aims to this goal.

Abbreviations used

- SEPA – Single Euro Payments Area - all European Union Member States as well as Norway, Iceland, Liechtenstein, Switzerland and Monaco but with a focus on the Eurozone (i.e. those states that have adopted the euro as their currency).

- ACH – 'Automated Clearing House' payments are usually lower value retail payments, rather than the higher value payments that tend to go through real time gross settlement (RTGS) systems. Payments going through large value payment systems excluding direct debit payments which the payer has not explicitly requested be routed via a large value payment system e.g. TARGET2, Euro1 and STEP1 are not in scope of the SEPA Regulation.

- EPC – European Payments Council
- SCF – SEPA Cards Framework
- SCT – SEPA Credit Transfer
- SDD – SEPA Direct Debit (the Core scheme)
 - SDD B2B – SEPA Business-to-Business Direct Debit (only for use by corporates)
 - PSP – Payment Service Provider, e.g. a bank or an electronic money institution
 - PSU – Payment Service User, e.g. a business or consumer
 - IBAN – International Bank Account Number
 - BIC – Business Identifier Code

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