

# ISO 20022 IS THE ANSWER WHAT WAS THE QUESTION?



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## EXECUTIVE SUMMARY

People tend to equate ISO 20022 directly with XML. The benefits are a global set of common standards based on more open and cost effective XML technology platforms – hence life gets easier, doesn't it?

While there is some truth in this, the real picture is more complicated.

This paper will discuss the historical background of financial services standards and the origins of ISO 20022. In addition, we'll discuss what this new global standard for standards does for your business and how you can map out an ISO 20022 adoption program for the next 5+ years.

## HISTORICAL CONTEXT

First, some historical context and an introduction to a world of confusing acronyms to the uninitiated. The world of financial services organizations is about highly reliable, fast, auditable and seamlessly processable intra and inter-firm communications of instructions to enable business transactions. This is the way money and other fungible instruments work – they move financial assets.

Historically these movements (or messages) evolved into standard formats based on national or regional boundaries, market participant initiatives, or standards mandated by specific industry utilities such as SWIFT, the Society for Worldwide Interbank Financial Telecommunication. These message standards developed around silos of automation based on market practice or geographical locations, and the message standards were not compatible.

In order to address this compatibility challenge the International Standards Organization [ISO], a worldwide federation of National Standards Bodies, developed the International Standard ISO 20022 – UNiversal Financial Industry message scheme (also known as ISO 20022/UNIFI, now abbreviated to ISO 20022).

Initially ISO 20022 began in 1990's and was known as ISO 15022 2nd Edition (also known as SWIFTML) which covered just Securities. In 2004 the scope was expanded to include a broader remit of all financial services. The ownership moved to ISO/TC68 (the Financial Service Technical Committee) from its SC4 (Securities and Related Financial Instruments sub-committee). And TC68 created WG4 (Working Group Four) to revise and manage ISO 20022.

## SO WHAT IS ISO 20022?

The ISO 20022 standard provides the financial industry with a common platform for the development of messages in a standardized XML syntax, using:

- > a modelling methodology (based on UML) to capture in a syntax-independent way financial business areas, business transactions and associated message flows;
- > a set of XML design rules to convert the messages described in UML into XML schemas.

ISO 20022 is a standard for Standards – a methodology for the creation of consistent message standards using data to describe data and interactions. This flexible framework allows communities of users and message development organizations to define message sets according to an internationally agreed approach and to migrate to the use of a common XML based syntax.

The ISO 20022 approval and registration process involves three kinds of registration bodies:

- > the Registration Management Group (RMG),
- > the Registration Authority (RA)
- > and the Standards Evaluation Groups (SEGs).

The RA and SEGs work together to validate and process the registration requests under the supervision of the RMG. The current appointed ISO 20022 RA is SWIFT, but it is worth being clear that while some SWIFT services do implement the ISO 20022 Standards, ISO 20022 is not purely a SWIFT standard.

The base ISO 20022 standards methodology provides for variants based on usage by services utilities such as SWIFT as well as for use by other utilities and market participants. These utilities and industry bodies who develop ISO 20022 implementations can submit them to ISO as candidates to be incorporated into the standard catalogues through ISO procedures. The submission by Continuous Linked Settlement [CLS] of the Treasury [treas] message standards is an example.

The current ISO 20022 standards incorporate lessons from the first implementations of ISO 20022 Funds Distribution messages and Customer-to-Bank payment messages, as well as from FpML, FIX, ACORD and others that provide examples of successful market best practices.

ISO 20022 is essentially the road map to having a consistent lingua-franca in global financial markets. Adoption is gaining momentum, and the technology and the approach is complex, but proven. ISO has also published other series of standards outside of ISO 20022 such as ISO 15000 ebXML, which ISO 20022 standards may become consistent with over time.

## SO WHAT ARE THE STANDARDS?

The full and current ISO 20022 message catalogue is always available online at [www.ISO20022.org](http://www.ISO20022.org). The naming conventions for the ISO 20022 messages are based on a format of: xxxx.aaa.bbb.cc

Where:

- > xxxx - 4 char business area; e.g. pacs
- > aaa - 3 digit message type; e.g. 008

- > bbb - 3 digit variant number; e.g. 001
- > cc - 2 digit version number; e.g 01

Business areas xxxx include the following designations that correlate with business areas:

- > Cash Management – camt
- > Payment Clearing and Settlement – pacs
- > Payment Initiation – pain
- > Reference Data – reda
- > Securities Management – semt
- > Securities Settlement – sese
- > Securities Trade – setr
- > Trade Services – tsrv
- > Treasury – trea

So the relevant business domain is identifiable within the message type designation, and those who work in financial services messaging have a new set of terminology to learn.

To appreciate the extensibility of the ISO 20022 standards, we can look at the payment message standards used by the Single Euro Payment Area [SEPA] initiative. This is a current example of applied ISO 20022.

## STANDARDS FOR PAYMENT MESSAGES

Payments were the first messages implemented on the SWIFT network back in 1977, [MT100] and are leading the way in ISO 20022 adoption.

The ISO 20022 *pacs* and *pain* standards form the basis for the SEPA payment messages. The European Payment Council [EPC] has developed a set of SEPA implementation guidelines that define the proper use of the ISO 20022 message standards. Further, the EPC has decided to make the ISO 20022 standards compulsory in the bank-to-bank domain [pacs], while for the customer-to-bank domain [pain] the EPC just recommends their usage.

For the purpose of this article we will focus specifically on just the ISO 20022 specialization usage, not the overall SEPA project.

The initial industry implementation focus is on the legally SEPA mandatory pacs messages. The EPC issued two variant schemas for each of the pacs messages, being the 002 and 003, where the standard naming convention is consistent with that used above:

xxxx.aaa.bbb.cc

xxxx - 4 char business area; e.g. pacs

aaa - 3 digit message type; e.g. 008

bbb - 3 digit variant number; e.g. 002

cc - 2 digit version number; e.g. 02

So by way of example for an Interbank Payment we have:

- > pacs.008.001.01.xsd - ISO 20022 (Financial Institution to Financial Institution Customer Credit Transfer)
- > pacs.008.002.02.xsd - SEPA Mandatory
- > pacs.008.003.02.xsd - SEPA AOS (where AOS stands for Additional Optional Services which allow additional elements to be used but which do not compromise the base SEPA restrictions. These can then be used by individual banks or providers to offer value added services to communities of banks.)

As you can see from this SEPA example, the ISO 20022 standards are extensible by design. This is common in other standards such as FIX and FpML, where these standards provide extension points for adding both additional processes and new products while using the core standards as the foundation. This does create new meta-data management challenges as specialized dialects proliferate based on market or usage specializations, and this creates a shift in the technical approach to integration projects to be much more focused on application level data services and meta-data based integration technologies.

We can also look at FpML adoption lessons over the last several years to anticipate the implementation challenges that this will cause. FpML is not ISO 20022 but is an advanced XML-based standard set using similar design principles. With FpML today we see in excess of 40 releases at different versions, and these releases get adopted by market participants at different versions based on the business functionality that is implemented. There is natural selection in the user community implementing specific versions, but no central technical compliance mandate as there is with the older SWIFTNet FIN standards. The base FpML standards are also commonly specialized within firms to support specific internal application requirements. This further illustrates where the ISO 20022 standards will go – a number of concurrent releases with various firm specializations.

At the same time that the ISO 20022 initiative has been evolving, so have XML-based technologies. The attraction is that XML presents at least a common mechanism to express the message syntax, while application and integration development technologies support XML out of the box. But using ISO 20022 standards and XML technologies out of the box is not as simple as it sounds - introducing validation rules, and specializations of validation rules.

The ISO 20022 standards also include semantic validation rules – these are business rules that specify logical relationships between sets of data elements. A simple example may be that trade date should be on or before settlement date. These rules are designed as part of the standard to ensure that the messages are well formed from a business perspective and straight-through-processable. They are not implementable in XML and require some overlay validation logic implementation. And just as the base XML standard is extensible, so are the validation rules.

These validation rules are a mixture of a subset of the ISO 20022 rules where they still apply plus new rules that are specific to these variants. For example in the EPC/SEPA variant Direct Debit [DD] messages there is a rule that needs to be applied to every Identifier of Creditor element called the AT02 which is rather like an IBAN check and requires data manipulation and Modulus 97-10 calculation and checking.

In the EPC/SEPA, specializations usage of IBAN's and BICs are no longer “nice to have” and are mandatory. They are necessities in all payments and invoicing transactions as is the prerequisite static data to support and validate them. IBAN uses the ISO 13616 standard validation algorithm, and BIC uses ISO 9362.

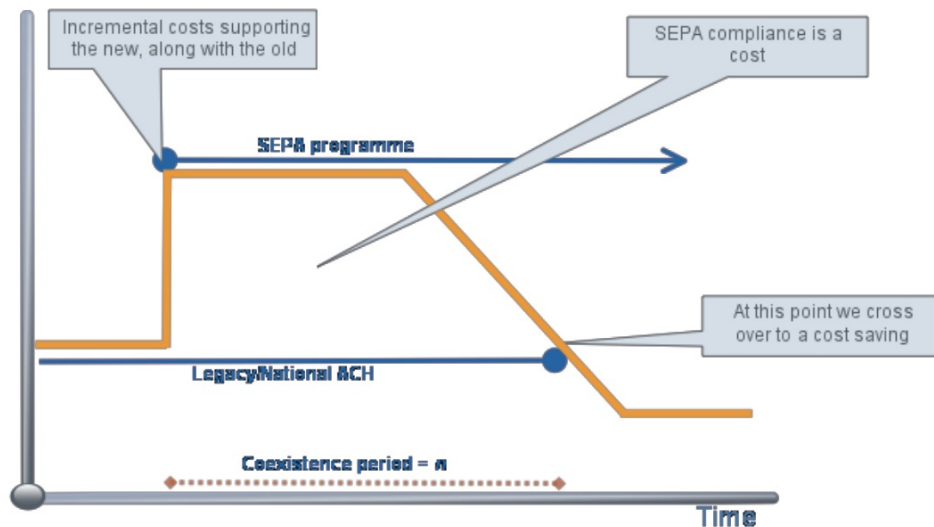
### *Back to “What was the Question?” ...*

ISO 20022 is the road map to having a consistent lingua-franca in global financial markets. Adoption is gaining momentum, and the technology and the approach is complex, but proven.

## **SO THE QUESTION IS WHAT DOES THIS NEW GLOBAL STANDARD FOR STANDARDS DO FOR MY BUSINESS?**

Mandated change is initiated by regulation, through migration by network providers such as SWIFT from the old MT to the new SWIFT MX standards, or by demands of the business to support new transaction flows only available in ISO 20022.

The short term incremental service provision costs to the business to comply with SEPA will be significant. The existing systems require support for the old standards, and the new standards, and an indeterminate period of co-existence where both will be needed. Again the current SEPA program teaches us that banks, infrastructure providers, and corporates need to support the old domestic payment standards, the new ISO 20022/EPC/SEPA standards, and still support the SWIFTNet FIN standards for international transactions.



This diagram illustrates that there will be a time period “n” where both pre-SEPA and new SEPA standards need to be supported, creating an incremental cost to the business. In the case of SEPA “n” will be no less than 2 years, and possibly it will be considerably more.

## ISO 20022 ALSO OFFERS OPPORTUNITY FOR COMPETITIVE ADVANTAGE

Business transactions based on the ISO 20022 standards increase the reach of firms to more customers in more locations with less concern for national boundaries and local legacy standards. While this presents an opportunity to financial services firms, it also presents a threat in that other firms also have the same reach into new markets with lower barriers to entry. This is about differentiation and survival in a larger much more competitive and standardized global market. ISO 20022 will also force consolidation in transaction flows and proprietary implementations will no longer be sustainable or acceptable. This was an objective of the EU SEPA initiative and consolidation pressure in the EURO payments landscape is already evident.

## HOW DO I MAP OUT MY ISO 20022 ADOPTION PROGRAM FOR THE NEXT 5 YEARS?

Most firms now realize that ISO 20022-based standards adoption has reached critical mass. It is not optional and all firms need a coherent plan for how they will support both legacy standards and new standards during the transition period. One option is to simply trust that their vendor suppliers have the answers. If this is the case, firms should be sure to ask them for their road map.

Alternatively, and more advisedly, the firm should have an architectural road map that capitalizes on reusing ISO 20022 messaging and integration services. They should look to use standards-based integration technologies that support the legacy and the new XML-based emerging standards, and solutions that provide platform-neutral deployment technologies to use with existing computing infrastructure.

Adoption of ISO 20022 standards is not a big-bang approach. It is a market-driven migration to a common language.

## **THE QUESTION IS: WHAT IS THE LINGUA FRANCA OF THE GLOBAL FINANCIAL SERVICES MARKETS?**

ISO 20022 is the answer.

For more information on ISO 20022 visit [www.iso20022.org](http://www.iso20022.org). For more information on solutions to facilitate ISO 20022 adoption and co-existence (as well as other financial standards), and to download financial messaging data interoperability evaluation software visit: [www.c24.biz](http://www.c24.biz)