ISO 20022 and real-time domestic payments

ISO 20022 is not a new standard. Work began on the technology of the standard in 2000, and ISO 20022 was officially recognised by the International Organisation for Standardisation (ISO) in 2004. But, from the outset, ISO 20022 was positioned as a standard for the future: an open standard that would cover all financial business domains, and be flexible enough to work with the latest technology at all times, adapting to new technological developments as they occurred.

Financial standards take a long time to get established, and even the best-designed standards take off only if they meet real and immediate needs in the market. For ISO 20022, the moment seems to have arrived. There are more than 70 major initiatives around the world that have committed to ISO 20022, covering payments, cash management, treasury, and the securities business. Many of these initiatives are payments-related. They are driven by payments market infrastructures (PMIs) or
new payments schemes.
The appeal of ISO 20022 to these initiatives needs explanation. There are many financial messaging standards that have grown up independently of one another. The successful ones typically started out solving a narrow range of problems for a narrow community, then grew as more users got involved and more problems were solved. The downside of this evolutionary process is that design or technology decisions made at the beginning, which were perfectly understandable or even right at the time, tend to constrain the standard as it grows. ISO 20022 is different, because it was designed to evolve with technology. It is also scalable enough to cover the messaging needs of the entire financial industry, rather than a single sector. There are two key aspects to ISO 20022. First, it is a methodology, a “recipe” to be followed to create financial messaging standards. Secondly, it is a body of content. In this context, content means the message definitions themselves and the other content required by the methodology to explain the underlying concepts and processes in the business domain to which the messages will be applied.Anyone can submit content to ISO 20022, as long as they follow the submission procedures. These require those submitting content to gain approval from the managing body of the standard, and to comply with its methodology. New content is accepted only when it complies with the technical demands of the standard. Obviously it also has to make business sense, in the view of qualified business experts and users, in an open evaluation process. Importantly, implementation of ISO 20022 is independent of any specific technology. This reflects the sound assumption that technology tends to change faster than the fundamentals of the financial business it supports. The investment users make in the standard is therefore “future-proofed.” Users can update to the most appropriate implementation technology without breaking the link with the underlying standard. The clearest example of this is in message syntax. Earlier standards, such as the SWIFT MT series, ISO 15022 and FIX, invented a syntax (a definition for how data in the message should be organized). This was typically either optimised for processing speed (FIX) and/or to minimise bandwidth and storage (SWIFT MT), ISO 20022, by contrast, has no syntax of its own but instead uses syntaxes developed by others. Today, the principal syntax for ISO 20022 messages is eXtensible Markup Language (XML), which was developed by the Worldwide Web Consortium (W3C). XML has many advantages over proprietary syntaxes, but its most useful attribute is the extent of technical support it enjoys in modern mainstream computing environments. One disadvantage of XML is that it tends to be verbose, and can therefore be inefficient to send and store (although data compression can reduce this problem). For cases where this is an issue, ISO 20022 can also be used with the more compact Abstract Syntax Notation One (ASN.1) syntax. As new syntaxes emerge with new technical benefits, ISO 20022 will adapt to embrace them. The key advantages of ISO 20022 are therefore clear. First, it is an open standard, which is not controlled by a single interest, and open to participation from its user community. Secondly, its scope covers the entire financial industry, so consistent end-to-end business processes can be realised via a single standard. Thirdly, ISO 20022 implementations make use of mainstream, well-supported technology and can adapt to new technologies as they emerge. These technologies offer important technical advantages over older proprietary equivalents, such as support for non-Latin character sets. There are many other reasons why financial market infrastructures (FMIs) in particular have become early adopters of ISO 20022. One is timescale. FMIs tend to plan with longer time-horizons than other businesses, so the appeal of a well-managed, technically advanced and adaptable standard is obvious. A second is regulation. Regulators understand that the services provided by FMIs provide critical steps in wider business processes, and are likely as a result to require the use of ISO 20022 to drive safety and efficiency in those processes. For example, the European Central Bank (ECB) has recommended that the Real Time Gross Settlement System (RTGSs) built by the Eurosystem – TARGET2 – should adopt ISO 20022. This is partly to ensure that the payment leg of a securities transaction will be consistent with the ISO 20022-based settlement process defined for TARGET2-Securities (T2S), the single securities settlement system for Europe that is expected to begin operations in 2015. A third reason FMIs are at the forefront of ISO 20022 adoption is the “topology” of their relationship with their customers. Standards are used in many types of business process, some of which are inherently “many-to-many” - that is,
they involve many peer organizations interacting with many others – rather than point to point. A good example is foreign exchange (FX) market confirmations. Currencies are traded widely, with many banks involved. This makes it difficult for a new standard to displace an old one, whatever its technical merits, because of the difficulty of migrating a large and disparate user-base. FMIs, however, can act as a catalyst for change, and an organising force in the adoption of ISO 20022. Finally, FMIs are aware that their participants, such as global banks, have many other infrastructures with which they need to work. As responsible actors in the global financial system, they recognise that adopting the same ISO 20022 standard as their peers around the world can help to achieve greater safety and economies of scale at the global industry level.

The first FMIs to implement ISO 20022 were drawn from the payments industry. The European legislation that led to the creation of the Single Euro Payments Area (SEPA) mandates the use of ISO 20022 as a common format. By standardising information exchange in this way, ISO 20022 is making a crucial contribution to achieving the SEPA goal of replacing national payments arrangements with an integrated system for euro payments, credit transfers and direct debits across 28 member-states of the European Union (EU), the four members of the European Free Trade Area (EFTA) plus Monaco and San Marino.

Since the migration to SEPA began, a number of other ISO 20022-based initiatives have gone live, in a variety of different markets. They cover a range of payment schemes, from RTGS systems handling high-value payments (HVPs), such as

The Canadian Payments Association and ISO 20022

“We see ISO 20022 adoption at a tipping point globally. As the payments market infrastructure for Canada, we are adopting ISO 20022 as part of a comprehensive strategy to modernise Canada’s payment system. Our approach capitalises on the value of the standard for all payment participants in Canada: reduced costs for those managing multiple standards today, greater domestic and global interoperability and setting the stage for innovation and efficiencies across our economy through enhanced remittance data.”

- Gerry Gaetz, president and CEO, Canadian Payments Association

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the Indian RTGS, to low-value payments (LVPs) systems, such as the STEP2 system operated by the Euro Banking Association (EBA) and the New Payments Platform (NPP) proposed by the Reserve Bank of Australia. Importantly, the Canadian Payments Association, which operates the retail payments infrastructure in Canada, will adopt ISO 20022.

There are many more ISO 20022 initiatives at different stages of development, from industry consultation to live operation (see “Global ISO 20022 adoption by Payment Market Infrastructures,” page 6). In fact, the convergence of the payments industry on the ISO 20022 standard is gathering pace throughout the world. It is a healthy development, because it brings a measure of consistency to a fragmented landscape of overlapping standards. Most standards are proprietary or local or both, and they vary widely in terms of their functionality, notably in their capacity to carry remittance information.

This makes it difficult for global banks to offer similar service levels in different locations, or to benefit from the economies of scale that stem from accessing FMIs via a single standard in every market where they are active. ISO 20022 offers the prospect of simplification, and inter-operability between banks and FMIs in multiple jurisdictions. It streamlines the process of making and receiving payments on a global scale, enables banks to re-use expensive skills and infrastructure, and provides them with a standardised platform off which to offer innovative services.

The opportunity to compete through innovation is an important one for banks, because the payments industry is undergoing a period of great upheaval. New and non-traditional competitors are emerging, while regulators are pressing FMIs to deliver faster and cheaper payments, in response to consumer pressure and in pursuit of economic growth.

Many of the conventional distinctions in the industry are breaking down. That between “value” (associated with HVPs) and “volume” (associated with LVPs) is blurring, as regulators push LVP payments timetables closer to real-time. The distinction between domestic and cross-border payments is also disappearing, most obviously in the case of SEPA.

In their place, new orthodoxies are emerging. One is that ISO 20022 is now the default choice of messaging standard for new or revitalised payments systems, whatever their market position. It is replacing proprietary domestic and international standards. A second is that even domestic payments are now expected to accelerate, as they catch up with consumer expectations and the commercial supply chain. In short, domestic payments are moving towards real-time processing.

The market for real-time domestic payments is gathering pace, with 16 systems in operation worldwide, four more in development and at least another five countries exploring how to implement such a system. Most of the systems now live have opened since 2008. They include Faster Payments in the United Kingdom, the IMPS system in India, the NIP mobile payments-enabled system in Nigeria, the Bankgirot/SWISH platform in Sweden, Express Elixir in Poland and G3 in Singapore. In addition, the NETS system in Denmark, and...
Countries that have recently announced their intention to build a new real-time retail payments systems (RT-RPS) to replace an existing platform, or develop a faster alternative, or are in the process of formal or informal industry consultations on the topic, include Australia, Hong Kong, New Zealand, and the United States. In the United States, the Federal Reserve Bank has recently released a strategic consultation paper on real-time retail payments. The evidence suggests that RT-RPS are on the cusp of a period of accelerating growth. In fact, an interesting parallel can be drawn between the potential future development of real-time domestic payment systems and the historical adoption of RTGSs by central banks. Since the early 1990s, according to the International Bank for Reconstruction and Development (IBRD, or World Bank), RTGS implementations have grown from five markets to more than 110 (see “Will RT-RPS follow a similar adoption curve to RTGS?” page 8).

If the development of RT-RPS follows a similar trajectory to RTGS, the market is already somewhere between the early adopter and early majority phases of the five categories of adopter outlined by Everett Rogers in Diffusion of Innovations, first published in 1962 (see “Will RT-RPS develop faster than RTGS?” page 8). However, there is a critical difference: RT-RPS has reached this stage in just five years, compared to ten for RTGSs. This reflects a general increase in the pace of innovation observable in many markets. At the risk of over-simplifying, extrapolation suggests that RT-RPS will be adopted twice as fast as RTGS.

From a standardisation perspective, the projected pace of adoption could scarcely be more important. Standardisation can bring great benefits to an industry, but the timing has to be right. Standards adopted too early in the innovation adoption cycle, when best practice has not yet emerged, are problematic. Multiple standards compete, but it is too soon to judge which is best. Standards adopted too late in the cycle, on the other hand, struggle to displace entrenched practices, and standardisation brings too little advantage to warrant investment in change.

In the case of RT-RPS, the payments industry is currently in a period of experimentation, with many different approaches being tried. As “early adopters” give way to “early majority,” the results of these experiments will become evident. The payments industry will then need to evolve a consensus around the optimum design for RT-RPS, and what aspects of that design can be standardised.

However, it is already possible to agree the key characteristics of a successful RT-RPS: round-the-clock availability, and immediate, certain and irrevocable payment (see “Key characteristics of an RT-RPS,” page 10). While there is industry consensus around these core characteristics, variations in implementation have emerged. For example, not all RT-RPS offer 24/7 availability (Brazil, Taiwan and Japan do not) although all systems strive to attain that goal. Notions of immediacy carry different connotations too. In Mexico, banks must post the money to the account of a beneficiary within 30 seconds. In the United Kingdom, by contrast, Faster Payments mandates two hours.
Another important difference between existing RT-RPS is their approach to liquidity and settlement risk management. The majority maintain a deferred net settlement approach, with a limited number of settlement cycles per day. Others settle each payment gross on dedicated “shadow accounts,” with the actual funding level managed through the existing RTGS system.

These (and other) differences are likely to persist for some time. But one common denominator has emerged at all the RT-RPS that are developing now: the adoption of ISO 20022 as their messaging standard. This is true of Bankgirot/SWISH in Sweden, Elixir Express in Poland and FAST in Singapore. It is also true of Nets in Denmark, which goes live in November 2014, and of the NPP in Australia, which aims to go live in late 2016.

On this issue, Simon Newstead, managing director and head of market engagement at RBS, has made an interesting observation about Faster Payments, which was launched in the United Kingdom in 2008. “If we would do one thing differently if we were starting again today, that would be to implement ISO 20022 rather than the current standard being used, ISO 8583,” he says. “We took that decision at the time partly because ISO 20022 was not mature enough. We are six years down the road now and things are different.”

Indeed they are. The rationale for adopting ISO 20022 for RT-RPS includes not just a proven track record but the fact it has become the de facto standard in the payments industry. There are many reasons for that. One is the fact that the new generation of payments infrastructures focus not on real-time per se but also aim to improve the payments process as a whole, by including more detailed and better structured remittance information, especially for corporate payments. This will greatly facilitate the automation of the invoicing and payment reconciliation process. Finally, while the current geographical scope of RT-RPS is domestic, some of their operators have already indicated their ambition to offer a cross-border service as well. ISO 20022 will help them achieve that ambition efficiently.

ISO 20022 is already delivering significant benefits to users of payments market infrastructures. It is bringing consistency to the definition of payments data, with the ultimate promise of enabling banks to re-deploy expensive resources, and reduce switching costs, while creating scope for them to compete through innovation on service range and quality. The real-time payments market has embraced ISO 20022, and that is already driving greater consistency in implementation. However, there is still a great deal of variation in real-time schemes and systems. As the market matures, further convergence of system requirements and design, stretching far beyond data and messaging standards, will open up a new market in re-usable or modular implementations of real-time payment processing. These will further reduce the cost and time-to-market for real-time schemes, accelerating adoption and benefiting many more domestic markets.

**Key characteristics of an RT-RPS**

- **24x7 availability:** consumers should be able to make a payment at any moment
- **Immediacy:** the transferred amount should be available on the beneficiary’s account in real-time or near real-time
- **Irrevocability:** once a payment has been initiated, it cannot be revoked
- **Certainty:** both ordering and beneficiary customers must be notified that the payment has been accepted or rejected by the beneficiary’s bank

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