ISO 20022

International Securities Services Virtual Roundtable

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ISO 20022 is one of the major standards used in financial transactions. It is currently being discussed / implemented in close to 200 market infrastructure initiatives around the world (major examples include SEPA, TARGET 2, T2S, EBA, EURO 1 / STEP 1, DTCC, CPA, SADC, JASDEC, ASX, SGX and RTGS India) and is also increasingly used as the business language between banks and their corporate and financial institution clients.

Industry standards and formats are often unique and complex. Currently there are numerous messaging standards and initiatives addressing financial information flows. There are different standards for different services – low value payments, high value payments, bank statements, securities trades and so on. Moreover, many formats applied to these different standards are used for the same service, usually dependent upon the originating country, proprietary formats or other varying initial needs.

The communication between entities using these multiple standards is burdensome, causing increased complexity and time to process flows. Operational risks and costs are rising as well, resulting in lower profitability. Add to this a lack of secure communications and use of non-automated channels which cause Straight Through Processing (STP) to be missed, and these issues only continue to expand.

So harmonising ISO 20022 efforts are becoming a prominent consideration across the financial services industry, especially within the payments sector where standardisation is a critical step towards the larger goal of international real-time payments, and the securities sector where T2S migration is providing additional motivation through regulatory mandates. In response to this challenge, SWIFT has initiated the ISO 20022 Harmonisation Framework effort, calling out to 20 market infrastructures (some using the SWIFT network, some not) with concrete or future ISO 20022 implementation plans.

In this, one of a popular series of ISS virtual round tables, we gather the thoughts of **Fiona Hamilton, Vice President, Europe and Asia, Volante Technologies**, **Marcus Hughes Head of Strategic Business Development, Bottomline Technologies** and **Charles Kilkenny, CEO of Actuare.**

ISS: Why is take-up of ISO 20022 so slow - is the business case too hard to make either now or in the future?

Fiona Hamilton, Vice President, Europe and Asia, Volante Technologies: In general, financial organisations only implement change when there is a compelling event or overriding commercial interest. For most of the past decade or so, since ISO 20022 was first launched, no such compelling event occurred. SEPA (single European payment area) was the first such event and even then the market waited until the very last moment before implementing the requisite support for the underlying ISO 20022 messages. With many other payments infrastructures such as ACHs (automated clearing houses) migrating to ISO 20022 and real-time payments largely also implementing it, the payments industry has certainly reached that tipping point. In the securities industry no such major compelling events have occurred apart from in very specific areas such as investment funds which migrated a couple of years ago, and the implementation of T2S which is ongoing. It remains to be seen if that is sufficient to force more widespread adoption, especially in settlement & reconciliation.

Charles Kilkenny, CEO, Actuare: Take up of ISO 20022 has been slow, because it has been hard to justify in some areas. The standard initially covered investment funds - which ISO 15022 also supported (although most participants were offline). It wasn't practical, therefore, to switch out of 15022 for just one asset class. Also, the technology is different. Consequently, 15022 continues to be used for funds, even though SWIFT has made repeated attempts to end this.

ISO 20022 previously focused on areas not already covered by, or used much in, ISO 15022 or SWIFT FIN. Investment funds were the main area, and exceptions and investigations another. The idea was not to necessitate institutions changing what they had just implemented in ISO 15022, or to change payment MT (message type) tags etched in our heads. At the time, FIX was in the process of being extended to collectives, and 20022 was in need of a guinea pig. Today, however, the uptake in ISO 20022 is much bigger because of market initiatives such as SEPA, T2S and real-time payments. ISO 20022 is the dominant standard for a number of market practices, funds or otherwise, particularly within Europe and Asia. The UK still retains though its EMX and other solutions for funds.

Marcus Hughes, Head of Strategic Business Development, Bottomline Technologies: The business case for adopting ISO 20022 is compelling in terms of achieving objectives such as improving straight-through-processing (STP), reducing operational risk and processing costs. But we should recognise that in many financial institutions the lion's share of budget is absorbed simply "keeping the lights on" for disparate legacy systems which would be hugely expensive to replace, while the added burden of

fast-flowing regulatory change also weighs heavily on funding requirements, given their mandatory nature. This situation leaves scarce financial and human resource available for discretionary projects, no matter how strong the business case. Furthermore, front office activities, such as new products and sales initiatives, are more likely to get priority in new project funding than back office initiatives relating to ISO 20022, unless they are part of mandatory migrations. Hard experience shows that financial standards normally take a long time to get adopted, and even the best designed standards only take off if they meet real and immediate market needs.

Despite the challenges to adoption, there are currently some 200 major ISO 20022 initiatives around the world. The majority of these are driven by market infrastructures, relating primarily to payments and securities. Europe leads the field in adoption of ISO 20022 thanks to SEPA, while India, South Africa, Singapore, Switzerland and Australia are close behind. Meanwhile the USA is building up momentum for adopting ISO 20022 in order to improve its payments system.

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ISS: Is it the simple case that ISO 20022 launched too soon after ISO 15022?

Fiona Hamilton: No I don't think so, given it has been more than a decade. ISO 15022 was introduced around 1996 although the forced migration by SWIFT to ISO 15022 didn't happen until a few years later. ISO 20022 was then introduced around 2006 as an underlying methodology across all asset classes and payments. It wasn't specifically intended as a successor to 15022 per se as many messages were related to payments which have nothing to do with 15022 and also many new categories of messages were created that had no equivalent in 15022 or indeed any other previous standard. A decade is a long time in technology and if organisations have the appropriate conversion software and infrastructure in place it shouldn't have presented such a problem.

Charles Kilkenny: I agree with Fiona in that I wouldn't say it was too soon. Technology had already moved onto XML, and SOAP (Simple Object Access Protocol) web services were all the rage at the time. So, SWIFT had to do something to modernise its MTs which were too restrictive. ISO 20022 was the answer at the time. The mistake, I feel, was in choosing to have a separate data dictionary and a separate set of business standards for ISO 20022. This created two standards, each with its own definitions, and left ISO 15022 heading for the buffers. Instead, an XML encoding could have been added and ISO 15022 extended. In any case, this has resulted in fragmentation and a significant cost to the industry (and the consumer).

Marcus Hughes: This feels like a trip down memory lane. Launched some 20 years ago by SWIFT, the ISO 15022 messaging format was regarded as a big improvement compared to its forerunner, the ISO 7775 standard. But nearly a decade ago, SWIFT pressed the financial community hard to convert from the ISO 7775 messaging standard to ISO 15022 with a combination of deadlines and penalties. However, ISO 15022 is now considered to be old-fashioned and rigid. It does not fully meet user needs, and often a significant part of the message data is placed in free-format text fields, which reduces straight through processing (STP). ISO 20022 was introduced about 12 years back.

Recognising that some market players felt they were forced to migrate from ISO 7775 to ISO 15022 relatively recently, it is not

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Actuare

Actuare is a leading provider of financial messaging and integration solutions, committed to simplifying everything digital for all market participants. Founded in 1997, we are experts in our field. We have a wealth of experience in helping businesses to exchange messages efficiently with a variety of participants and perform straight through processing (STP).

We believe in accessibility and flexibility, and enable our customers to be interoperable and to connect securely with other organisations via Actuare or other service providers and networks, such as SWIFT and the Internet.

We specialise in standards such as FIX, FpML, ISO and SWIFT, and are helping to shape industry development through our participation in a number of industry groups. Our software products and managed services provide safety and efficiency as required by our clients and partners, and enable integration and connectivity in a straightforward way for them.

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surprising that it is now proving hard to persuade them to invest in a fresh migration, even though, as we all agree, ISO 20022 clearly has considerable advantages over ISO 15022. With the introduction of ISO 20022, SWIFT has been more easygoing compared to ISO 15022. The desire of ISO 20022 proponents to accelerate migration has in a way been hindered by the comforting assurances from SWIFT to its membership that ISO 15022 will not be withdrawn anytime soon.

ISS: What are the real advantages of ISO 20022 over 15022?

Fiona Hamilton: I'm sure Charles and Marcus will echo my thinking in that the real advantages are in two areas. Firstly, the depth/granularity of the data in so far as these messages can carry much more detailed information and also have the ability to codify it and enforce much more straight through processing ability, in other words the quality of the information is much greater. Secondly, by being expressed in XML, although the syntax is not in itself defined by the standard it is pretty much always XML, the same type of validation engines can be implemented across asset classes and more generic parsers can be implemented than having to have specific ISO 15022 parsers.

Charles Kilkenny: As Fiona rightly observes, ISO 20022 does have some tangible advantages over ISO 15022 and SWIFT FIN. It gives much needed flexibility and there is good support for XML, generally, in programming and

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Fiona joined Volante Technologies in 2010 to set up and lead the Volante EMEA region. Based in London, Fiona currently holds the position of Vice President, Europe and Asia. Fiona has spent the past 31 years working in wholesale financial services IT, the majority of which has been related to the integration of structured financial messaging standards such as SWIFT, ISO 20022, FIX, FpML, etc. Fiona has worked on over 100 integration projects in 30 countries across buy and sell side market participants, payments and treasury operations. She is an invited participator in industry working groups, instrumental in bringing the first model-driven code developer's tool to market and is a regular speaker at industry events.

Fiona started her career as a trainee programmer at BIS Banking Systems (Misys) on the Midas product, and went on to manage the support and consultancy operations related to the payments and communications modules. After working with City-based consultancies, Fiona joined Braid Systems in 1994 where she held board positions covering services and pre-sales. In 2000 Fiona co-founded C24, a messaging technology company that was acquired by Iona Technologies in 2007.

application tools. A number of solutions incorporate ISO 20022 off the shelf, while the revised 2013 edition of ISO 20022 ensures that modelling can be done openly outside SWIFT. However, the complexity of ISO 20022, and the fragmentation it has created, has to be addressed. For example, who in operations (or even IT) has UML (Unified Modelling Language) skills, understands what's in the 20022 dictionary or what's in the pipeline for 20022? It is a recipe for confusion and thus, duplication. Even SWIFT has acknowledged it has a problem with the launch of its ISO 20022 Harmonisation Programme.

Another aspect is maintenance. Not everyone realises that ISO 20022 and ISO 15022 are not just about the layout of the messages. They lay down governance and the process by which messages are registered, reviewed and maintained, by whom, how open it is and how intellectual property is handled. They also specify a meta model (i.e. how message models are held), principals to be adhered to and encoding rules. This is not only for XML or, in the case of ISO 15022 for SWIFT FIN tags, but also for binary ASN.1, and I've heard (but not had confirmed) that JSON (JavaScript Object Notation) may be on the cards as an encoding. In any event, maintenance and some aspects of the standard are not agile, and this is true for ISO 15022 too. Clearly there is a balance to be had between stability and agility, but I don't believe maintenance in ISO 20022 is working at the moment. Notwithstanding all this, I believe we need to accept ISO 20022 in areas like funds, and embrace it fully in order to make it our common language. There just needs to be a commitment to a programme of improvement.

Marcus Hughes: ISO 20022 was created by the International Organisation for Standardisation as a new way to develop message standards for the finance industry. Its purpose was to create a single, open standard, a common language for all financial communications, whatever the business domain, communication network or counterparty. A big difference between ISO 20022 and other standards is that it was designed to evolve flexibly over time, without changing the underlying business concepts and data, hence it can adapt to new technologies and protect investments from future syntax changes.

The advantages of ISO 20022 over ISO 15022 are legion. ISO is a methodology for creating standards, and it is also the standards themselves. It enables business processes to be managed in a consistent way. It supports rich and comprehensive information. It accommodates global standards as well as local market practice. It enables increased automation and lower cost processing. Using the more flexible ISO 20022, complex messages such as corporate action events can achieve greater straight through processing (STP), since they contain less narrative or "free text" and more fielded and tagged data. Models and outputs are stored in a central repository for which the Registration Authority is SWIFT. The ISO 20022 repository offers any industry users and developers free access to a data dictionary of business and message components and a business process catalogue containing message models and XML 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 them for approval by the ISO 20022 registration bodies. With all these advantages, it was inevitable that ISO 20022 would become the financial industry's preferred standard for new initiatives.

Charles Kilkenny,
CEO,
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Charles Kilkenny is CEO of Actuare and has over 25 years experience in financial messaging. Starting out in Silicon Valley, California, he has held key project management, architecture and consulting roles in a wide range of companies, including Standard Bank, JPMorgan Chase, Daiwa Capital Markets, Old Mutual, CIBC, Paribas and SWIFT.

Charles participates in a number of standards working groups with an emphasis on FIX, FpML, ISO and SWIFT standards. Under his directorship, Actuare is very much part of the international FinTech wave, helping banks and financial service companies to simplify messaging and integration.

ISS: How is the proliferation of national versions of ISO 20022 (e.g. among national CSDs) damaging adoption rates?

Fiona Hamilton: This is really just a fact of life and has always been foreseen even within the naming conventions which allow variant messages. Additional market practice guidelines can also be defined as business or cross field validation rules all based on the same underlying messages. This surely has to be a better approach than every jurisdiction creating its own bespoke message formats. So the same parsers can be used and intelligent software can then apply routing and validation rules depending on source or destination or any other criteria they choose.

Charles Kilkenny: Proliferation doesn't help but I see that damage is limited. It's widely accepted that ISO 20022 is complex and unwieldy. We can hardly be surprised, therefore, when national groups end up creating their own versions. But I don't agree with the underlying thinking behind the question i.e. that this appears to be stifling adoption. I see groups wanting to do the right thing and base their market practice on ISO 20022 but, when faced with the enormity of it, they tend to find a workaround. The result may not be exactly ISO 20022 but neither is it discarded completely. They will have borrowed from the standard, and we can capture what they have done to see what has been misunderstood or what's missing. The implementation can then be revisited and reformed. It gives us the opportunity to improve the standard, especially across market practices where there should be harmonisation. Another point is the cost of unavoidable maintenance. This is often overlooked and a proliferation of national versions doesn't help. One can go down a route like FIX, having multiple supported versions instead, but this has its costs and issues too. SWIFT mandates maintenance annually, but it now supports more than one version of 20022 concurrently which is a good compromise.

National versions do add further complexity though as different ones may use the same version of a message. We therefore introduced the market practice version within ISO 20022 to allow us to identify different market practices and their versions. More important than all of this though is for us to get the basics right. The national market practices depend upon us getting the core right. We have, however, introduced settlement and reconciliation messages, but still have separate messages for investment funds, which goes against the spirit of the standard. We need to do the right thing: get rid of those messages and, where possible, define the same processing across asset classes. Also, let's not continue to call portfolios or wealth 'investment funds' when they aren't.

Marcus Hughes: The well-known saying "the problem with standards is there are so many of them" applies very well to the proliferation of local versions of ISO 20022 among national CSDs. This unfortunate situation has parallels with SEPA: corporates doing business in multiple countries across EU quickly find different banks' requirements have local flavours, with small differences in fields and reason codes. This risk of fragmentation needs to be addressed through tighter community management, alongside the adoption of a common framework for ISO 20022 harmonisation. SWIFT is well placed to co-ordinate these efforts. It is the Registration Authority for ISO 20022, as well as a major content contributor and they are responsible for maintaining the content and integrity of ISO 20022. SWIFT also works with local communities in defining and publishing market practice to ensure that ISO 20022 meets local needs.

But more needs to be done to minimise fragmentation. SWIFT have launched a ISO 20022 Harmonisation Charter, working with a number of Market Infrastructures. The best practice principles of this charter are intended to ensure a consistent and aligned approach. They span: Information sharing by publishing implementation plans and specs on MyStandards, SWIFT's portal; Respect for global market practice where this exists; Strict message version control and release management, preferably aligned with SWIFT's own MT/FIN maintenance timeline. This should help the industry to reduce costs and operational risk, with predictable and repeatable pro-

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Marcus Hughes, Head of Strategic Business Development, Bottomline Technologies With more than 25 years' experience in the banking and software industries, Marcus helps corporates and banks to streamline payments & cash management and maximise the benefits of SWIFT and financial supply chain automation. Having held senior positions with RBS and Banco Santander, Marcus is recognised as a thought leader and has presented at numerous industry events and authored articles on working capital optimisation, supply chain finance, regulatory compliance, payment factories, SEPA and SWIFT for corporates.

cesses, which in turn should encourage adoption.

Many CSDs are implementing change to participate in initiatives, to enable regional or international expansion and increase interoperability. The objective has to be less variation, more "best practice" and global interoperability. This includes the important initiative to introduce real-time payments in Europe.

ISS: What can IT vendors do to cut the time and cost of implementation by their clients? Or are they just providing work-arounds (e.g. translation services)?

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Fiona Hamilton: Intelligent routing, transformation, enrichment and validation software shouldn't be just viewed as a work around. For periods of co-existence it is an actual necessity as you need to be able to process both formats. The same software should then also be able to insulate against further change which is undoubtedly happening with respect to blockchain/distributed ledger technology or Open APIs. In most cases the underlying data doesn't change but the format and method of communicating it does. Why rewrite your back end processing every time one of these changes? Appropriate integration software in fact enables an organisation to be agile and to respond quickly to changes in the market or infrastructure. Indeed, we at Volante focus on providing the tools and up-to-date standards plugin libraries to enable organisations to accelerate this process and make it a fairly straight forward activity.

Marcus Hughes: With deep expertise in implementing new schemes and close participation in industry working groups relating to ISO 20022, IT vendors are well placed to help, especially those offering secure cloud-based solutions. IT vendors can help in many ways: Reducing total cost of ownership (TCO) for accessing latest technology and innovative solutions; Converting capital expenditure into operating expenditure with a subscription- and transaction-based pricing model; Providing up-to-date standards libraries which facilitate mapping from old formats into new formats; Delivering two-way data transformation solutions which allow organisations to continue using legacy systems and therefore maximise their return on this investment; Enabling compliance with new regulations and technical upgrades; Ensuring secure communication with multiple counterparties via multiple networks and protocols; Providing peace of mind, based on proven track record of resilience and scalabil-

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ity; Giving improved visibility and control, with flexible workflow and entitlement management and reporting; future proofing against standards upgrades and new schemes; Offering a menu of value-added services relating to cyber fraud identification and prevention, anomaly and duplication detection, reconciliation, validation and verification of counterparties to reduce operational risk and errors.

Corporate Actions are often cited as a complex activity burdened by disparate standards and manual processing. We can help market participants migrate from proprietary standards or ISO 15022 to ISO 20022. Using this more flexible ISO 20022, corporate action events can achieve greater straight through processing, since they use a data model that conforms to market practice and also contain less narrative or "free text" and more fielded and tagged data.

Charles Kilkenny: Like other technology firms in this space, Actuare succeeds in reducing costs and times for our customers. Yes, we are providing translation services but we are doing much, much more. We help participants to comply (and stay compliant) with what the industry has agreed - what they themselves have often agreed as their standard. We help customers to do this in the most efficient manner for them which, for example, may be an integrated solution, a CSV (comma separated value) file or a manual workaround. Actuare achieves this through a range of solutions built up over a number of years, at the heart of which is openness and simplicity. We're platform-agnostic. We work with our customers to find solutions in their organisations that leave them in control and offer them the freedom to connect how they like.

We believe ISO 20022 isn't practical without the kind of solutions we and other IT vendors offer. We often help firms, including application vendors, make the business case to delegate messaging and integration. This decouples them from the specifics, enabling them to concentrate on their core competencies. We look after messaging and integration and maintain it for them. Additionally, we provide a framework for interoperability which might not otherwise have been included.

ISS : Should regulators intervene?

Charles Kilkenny: Not if it can be helped, I suspect we would all answer. But there is already inadvertent inter-

vention. You may be aware that ESMA mandated XML and ISO 20022 for Regulatory Data Reporting. This will push ISO 20022 further as the mainstream standard for the industry. Interestingly, though, the FIX community has worked hard in recent months to support MIFID II, and firms are looking to use FIX to report to their Approved Reporting Mechanism (ARM). Why? Because FIX is the dominant standard in trading. This aspect should not to be overlooked - you need a critical mass to make a standard. So, it makes sense to look at commonalities across ISO, FIX and FpML, and to try to arrive at one set of definitions. It's already happening, especially with reference data identifiers, and it looks promising. Such harmonisation will increase interoperability and reduce costs.

Technology and everything 'digital' is moving much faster than ISO 20022. So, we need to concentrate our efforts on our business definitions, to capture them and standardise them across the industry, perhaps with 20022 being the main repository in some areas. Then, we should be able to better achieve interoperability. Digital is likely to play out these standards in a usable form for users and businesses unimagined previously, making it easier and more secure for everyone. But by the time the regulator gets around to it, we'll have moved on.

Marcus Hughes: At present, in many market infrastructure projects we have the opposite situation to the regulators imposing deadlines for ISO 20022 adoption: Given the co-operative nature of SWIFT, this organisation has had to reassure its members that they are not mandating migration to ISO 20022 and that they are committed to continued support for FIN.

However, on the long, slow path to SEPA, regulators eventually had to intervene to set an end date for adoption of ISO 20022 and the SEPA Schemes for Credit Transfers and Direct Debits. If they had not imposed a mandatory deadline, it is likely that ISO 20022 adoption would still be work in progress. With all its imperfections and the growing need for a pan-European Instant Payment solution, SEPA is ironically the greatest achievement of ISO 20022 to-date. On this evidence, there is a case for regulators imposing fixed deadlines on other initiatives.

In the US, the DTCC has been a pioneer of migrating to ISO 20022 in securities and corporate actions. Even

though they use ISO 20022 messages for corporate action notifications, they have hesitated about imposing the use of ISO 20022 formats for corporate action decisions, known as elections. As a result it is hard for financial intermediaries to persuade their fund managers to upgrade their systems. The XML-based ISO 20022 message formats for corporate actions are superior to their ISO 15022 equivalents, with more data fields and reduced reliance on narrative text.

Fiona Hamilton: Certainly that is when change happens as we have seen with SEPA in the payments world. T2S being a smaller example in the securities realm. So whether it is regulators or underlying infrastructure providers such as SWIFT, the point made earlier regarding the trigger for change really is down to it being mandated. Markets won't migrate unless they have to. Once a substantial part migrates then the picture changes to one of pressure to quickly migrate everything else so that multiple syntax doesn't have to be supported.

ISS: Which businesses (securities payments, FX, trade finance) are making fastest/slowest progress?

Marcus Hughes: It is above all the payments industry which has achieved the fastest progress to-date in adopting ISO 20022. Despite the need to make migration mandatory, there are now billions of ISO 2002 messages being used to support SEPA credit transfers and direct debits across 34 countries in the EU and neighbouring areas. If you add to this, other payment infrastructure projects involving ISO 20022 in countries including, USA, China, Brazil, Canada and Australia, and it begins to look likely that a significant share of all electronic payments globally will be using ISO 20022 within three to five years. The ISO Real-Time Payments Working Group, supported by financial institutions, clearing houses payment associations and schemes, is helping to co-ordinate international efforts to introduce real-time payments in a large number of geographies and regions, while ensuring interoperability. They are driving commonality and convergence and are all using ISO 20022.

One major ISO 20022 initiative making slow progress is T2S, the ambitious securities settlement project run by the European Central Bank. First conceived in 2007, T2S is one of the largest infrastructure projects ever undertaken by the Eurosystem, with the intention of streamlining the region's complex settlement systems, saving banks and brokers billions of euros. But the project has suffered numerous delays, which has impacted onboarding of multiple national CSDs, with some major participants such as Clearstream not now joining until 2017. These delays are of course not just about migration to ISO 20022, but it is slowing down adoption of this standard in a consistent and homogenous way.

Fiona Hamilton: Undoubtedly the payments and cash management domain. SEPA, real-time payments and migration of existing RTGS (real-time gross settlement) and ACH infrastructure are happening at an ever increasing pace. Adoption in this area easily outstrips any other asset class and much can be learnt from the journey banks have had in this respect.

Charles Kilkenny: I hear little about FX in relation to ISO 20022, but things are certainly hotting up in payments and securities settlement. Another area is retail transfers, here, in the UK. Much progress has been made since RDR (Retail Distribution Review) with ISA (Individual Savings Account) and pension transfers, and I expect this trend to continue with ISO 20022 outside the UK.

ISO 20022 however isn't a panacea. It's good for machine processing but it doesn't really lend itself to humans. So, for example, the SWIFT FIN MT700 series standard is likely to continue for trade finance, although, there is now the Bank Payment Obligation (BPO) using ISO 20022.

ISS: CSDs seem to be taking up ISO 20022, but not their users. Why, and what does this imply for adoption?

Fiona Hamilton: This possibly could be down to the lack of its being mandated and also CSDs wanting to keep their client base happy by implementing the transformation at their end rather than forcing their clients to do it.

Charles Kilkenny: I feel this is a result of a specific industry initiative rather than there being a business case for users. T2S requires the euro CSDs to use ISO 20022 centrally and maybe there is a requirement for them to offer ISO 20022 with Giovanni. The CSDs have all therefore implemented ISO 20022 but, if their existing customer links are working fine, there isn't necessarily the business case for customers to move to ISO 20022. The notable exception to this is CREST which falls outside the euro. The CREST DEX, with its roots in ISO 7775, remains the dominant standard for the UK CSD. This works well because: a) it has good scalability; b) ISO 15022 is more about custody than the CSD interface so it doesn't change much; c) it has a critical mass. So sometimes there is a case not to resort to ISO 20022 but, where 20022 is established, it generally makes good sense.

Marcus Hughes: ISO 20022 messages are more versatile and less tied to specific formats than ISO 15022 but most firms are unwilling to migrate so soon to a new standard, since ISO 15022 and 20022 are compatible. As a result many firms are waiting for regulatory or industry pressure. Besides, SWIFT has been reassuring the market that ISO 15022 and ISO 20022 will co-exist for some time to come.